01913

PM Copy
Rec'd
27 Aug 01

U.S. Army Corps of Engineers

New England District
Concord, Massachusetts

UXO AND SOIL REMEDIATION
AREA 44A
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Contract No. DACW33-00-D-0007
Task Order No. 0003

WORK PLAN - AMENDMENT

DCN: SEDA2-082101-AABG

August 2001

01M-0007

WESTON
MANAGERS DESIGNERS/CONSULTANTS

AMENDMENT
WORK PLAN

UXO AND SOIL REMEDIATION
AREA 44A
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Contract No. DACW33-00-D-0007
Task Order No. 0003
DCN: SEDA2-082101-AABG

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 Virginia Road
Concord, Massachusetts 01742-2751

Prepared by:

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

August 2001

W.O. No. 20140.007.203

TABLE OF CONTENTS

LIST OF FIGURES

Title **Page**

LIST OF ACRONYMS

CEHNC	Huntsville Center, Corps of Engineers
CENAE	U.S. Army C orps of Engineers, New England District
CENAN	U.S. Army Corps of Engineers, New York District
CPM	Critical Path Method
CQCP	Contractor Quality Control Plan
CRZ	Contamination reduction zone
DDESBH	Department of Defense Explosive Safety Board
DoD	Department of Defense
ESS	explosive safety submission
EZ	exclusion zone
ft	foot/feet
HE	High Explosive
mm	millimeters
MPM	Most Probable Munition
NYSDEC	New York State Department of Environmental Conservation
OB	open burning
OE	Ordnance and Explosives
ORS	Ordnance-Related Scrap
OSHA	Occupational Safety and Health Administration
POTW	publicly owned treatment works
PPE	personal protective equipment
QA	quality assurance
QC	Quality Control
SEDA	Seneca Army Depot Activity
SSHASP	Site Specific Health and Safety Plan
SZ	Support zone
T&D	transportation and disposal
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
WBS	work breakdown structure
WESTON®	Roy F. Weston, Inc.
WP	Work Plan
yd3	cubic yards

SECTION 1

INTRODUCTION

1. INTRODUCTION

This Work Plan (WP) amendment defines the technical approach of Roy F. Weston, Inc. (WESTON®) for the unexpoded ordnance (UXO) and Soil Remediation activities at the Area 44A site located at the Seneca Army Depot Activity (SEDA) in Romulus, New York under Contract No. DACW33-00-D-0007 (Delivery Order No. 0003). This amendment was prepared for the U.S. Army Corps of Engineers, New England District (CENAE). Under this contract, the U.S. Army Corps Of Engineers, New York District (CENAN) will oversee performance of this Task Order.

The project involves the excavation and screening of stockpiled soils, oversized sorting to remove and dispose of Ordnance and Explosives (OE), and geophysical mapping and clearing of the underlying site. Ancillary activities associated with this effort include mobilization, site preparation, installation of erosion and sedimentation controls, backfilling of screened material, and site restoration. Sessler Wrecking will be performing all operations within the Area 44A site related to the handling and transportation of soils containing OE under the supervision of WESTON's UXO subcontractor SpecPro, Incorporated. SpecPro will be performing UXO support for all site activities, oversize sorting and removal of OE, geophysical mapping and clearance.

1.1 SITE DESCRIPTION

The Area 44A project site is located in the southeast section of SEDA adjacent to the Five Points Correctional Facility. The Area 44A site comprises an area of approximately 25 acres within the 10,587 acres of land within the SEDA facility located in Romulus, New York. The site was formerly used as a quality assurance (QA) function test range and is part of a 720-acre parcel that is to be transferred to the New York State Department of Corrections once site closure is received. The entire site is located within a fenced in area and access is available from a central gate on the west side of the property. A drainage swale runs west to east along in the middle of the site and is the receptor of site run-on and stormwater.

The purpose of the test range is unknown, however fuses and 40-millimeters (mm) grenades (practice and CS) have been identified within the area. Characterization sampling performed in April/May 1999 showed large numbers of 40-mm practice grenades, at depths ranging from 1 to 5-inches, over approximately 5 acres that were sampled. Numerous M407A1, 40-mm practice grenades were discovered and at least one still contained the RDX pellet used to expel the marking dye. In addition, the remains of one M651, 50mm Grenade (CS) was located. As a result, the Most Probable Munition (MPM) chosen for the Area 44A is the M406, 40-mm Grenade, High Explosive (HE).

During previous OE clearance activities at the site, approximately 25 acres were surface cleared for OE (by UXO subcontractor), cleared of all vegetation (by Depot personnel), the existing berms were bulldozed and stockpiled (by others), and the surrounding area was stripped of soil down to a maximum depth of 1-foot (ft). Depressions have formed on the surface creating collection points for stormwater. Area 44-A contains six ponds that were previously identified in May 2001 as containing large volumes of water (as shown in Figure 1-0), however, actual conditions may vary due to current precipitation conditions. In addition, Area 44-A contains a total of 3 stockpiles of stumps as shown in Figure 1-1. These stump stockpiles are the result of clearing activities by the Depot personnel and will be left in place during the scoped OE removal activities. A total of 8 soil stockpiles were generated as a result of the 1-ft. cut to remove OE material. According to Parsons data, all the stockpiles need to be resifted to remove both OE and additional fines. None of the adjacent or surrounding surface soils require additional removal of the 1-ft. cut since the prior UXO subcontractor completed this task in accordance with the explosive safety submission (ESS).

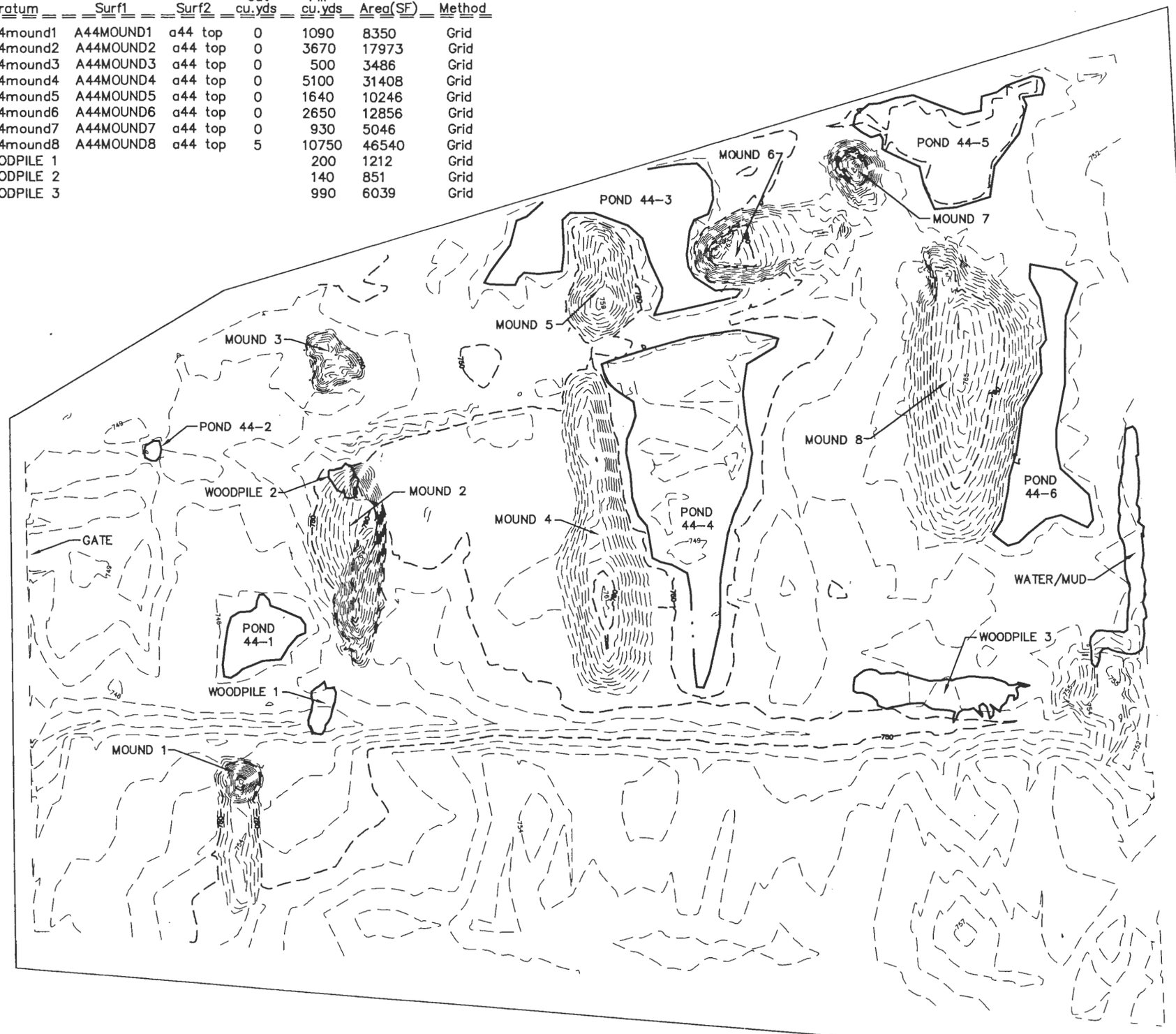
1.2 PROJECT OBJECTIVES

The objective of this WP Addendum is to address specific changes in the scope of work related to the remediation of Area 44A within Seneca Army Depot Activity (SEDA). Specific project objectives include the following:

- Excavate soil associated with 1-ft. cut material
- Screen stockpiled soils down to 1-inch minus to remove oversize material and OE
- Perform oversize sorting to removal and dispose of OE from the soil
- Perform geophysical mapping and clearance to remove OE to a total depth of 3-ft.

Site Volume Table: Unadjusted

Site	Stratum	Surf1	Surf2	Cut cu.yds	Fill cu.yds	Area(SF)	Method
A44	a44mound1	A44MOUND1	a44 top	0	1090	8350	Grid
	a44mound2	A44MOUND2	a44 top	0	3670	17973	Grid
	a44mound3	A44MOUND3	a44 top	0	500	3486	Grid
	a44mound4	A44MOUND4	a44 top	0	5100	31408	Grid
	a44mound5	A44MOUND5	a44 top	0	1640	10246	Grid
	a44mound6	A44MOUND6	a44 top	0	2650	12856	Grid
	a44mound7	A44MOUND7	a44 top	0	930	5046	Grid
	a44mound8	A44MOUND8	a44 top	5	10750	46540	Grid
	WOODPILE 1				200	1212	Grid
	WOODPILE 2				140	851	Grid
	WOODPILE 3				990	6039	Grid



OVERALL SITE AREA – 25 ACRES

POND ID	AREA(SF)	VOLUME(G)
44-1	8,260	185,000
44-2	444	17,000
44-3	22,447	252,000
44-4	37,957	568,000
44-5	15,292	114,000
44-6	9,084	102,000

GRAPHIC SCALE

120 60 0 60 120

APPROXIMATE SCALE IN FEET

WESTON MANAGERS DESIGNERS/CONSULTANTS MANCHESTER, NEW HAMPSHIRE

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

AREA MAP
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NY

Site Layout Plan

DRAWN	DATE	FIGURE NO.
BEG	MAY 24, 2001	1- 1
CHECKED	W.O. No. 20140 007 003	

M:\design\dwg\Acad\Seneca\2110 phase\A44-2.dwg, Layout1, 06/06/2001 03:00:37 PM, wURRU1, 1:1

- Dispose of all OE, OE scrap, and ferrous materials.
- Backfill the screened soils over the mapped/cleared areas of the site.
- Perform site restoration.

The work will be implemented in accordance with existing project plans and the following amendments;

- Site Specific Health and Safety Plan (SSHASP) Amendment
- Contractor Quality Control Plan (CQCP) Amendment

SECTION 2

MANAGEMENT

2. MANAGEMENT

2.1 STAFFING

WESTON's management team will be led by the Program Manager (Mr. Roberto Rico), the Deputy Program Manager (Mr. Bruce Campbell), and Project Manager (Mr. Christopher Kane). They will be responsible for WESTON's overall performance on this Task Order. The WESTON project team will consist of a Site Manager (Mr. Edwin Benton), a Project Engineer/Quality Control (QC) Officer (Mr. Ralph Willey), a Site Safety and Health Officer/Sample Technician (Mr. Steven Kirejczyk), and a UXO Quality Control/Health and Safety Officer (Mr. Michael McCarley). The project team will closely monitor site activity, performance, costs, schedule, QC, and safety to ensure that the project objectives set forth in this WP Addendum are achieved.

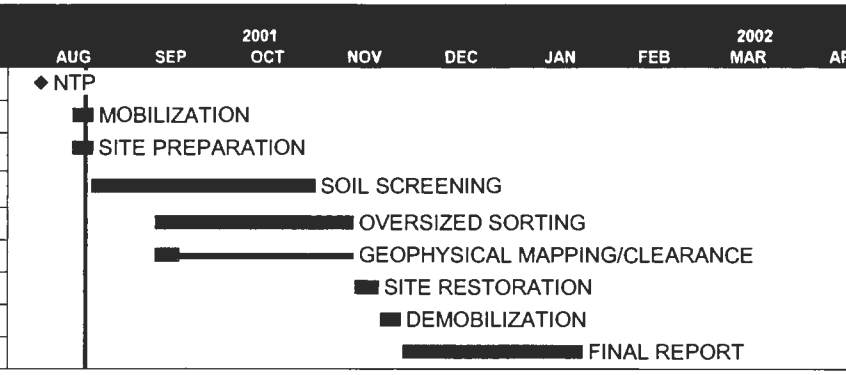
2.2 PROJECT SCHEDULE

As a result of the change in work scope in these areas, the project schedule has been modified to incorporate the additional activities to be completed by WESTON. The Project Schedule has been prepared using Primavera Systems, Inc. Critical Path Method (CPM) software and is organized by the tasks outlined in the work breakdown structure (WBS). The updated Project Schedule is presented in Figure 2-1.

The left portion of the schedule contains the WBS number, task description, remaining duration and early start and finish dates. The right side of the schedule depicts the task period of performance presented in Gantt bar chart form. Task time-frames have been established using estimated durations for labor and where applicable, material procurements.

Figure 2-1
Seneca Army Depot Activity
Area 44A Site
Romulus, NY

Description	Orig Dur	Rem Dur	Early Start	Early Finish
TP	0	0	06AUG01 A	
OBILIZATION	5d	3d	16AUG01 A	22AUG01
TE PREPARATION	5d	3d	16AUG01 A	22AUG01
OIL SCREENING	40d	40d	22AUG01	31OCT01
VERSIZED SORTING	36d	36d	11SEP01	12NOV01
EOPHYSICAL MAPPING/CLEARANCE	5d	5d	11SEP01	18SEP01
TE RESTORATION	5d	5d	13NOV01	20NOV01
EMOBILIZATION	3d	3d	21NOV01	27NOV01
NAL REPORT	30d	30d	28NOV01	23JAN02



	03AUG01
	23JAN02
	20AUG01
	21AUG01
r	1A
	ra Systems, Inc.

U.S. ARMY CORPS OF ENGINEERS, NE DISTRICT
CONTRACT NO. DACW33-00-D-0007
T.O. No.: 20140.007.203
Prepared by:
WESTON

Early ba
Total flo
Progress
Critical b
Summar
Start mil
Finish m

SECTION 3

SITEWORK

3. SITEWORK

3.1 MOBILIZATION

WESTON will mobilize personnel and subcontractors to the SEDA Area 44A site to implement the specific tasks scheduled to be performed.

A WESTON project field team has been selected to optimize the efficient execution of each phase of the field operations. The crew will consist of a Site Manager, Project Engineer/Quality Control Officer, Site Health and Safety Officer/Sample Technician, and UXO Quality Control Officer/Health and Safety Officer. WESTON has designated certain qualified individuals to perform dual roles to maximize operation efficiency. Mobilization of staff and construction facilities will be initiated upon Notice to Proceed. WESTON will work with base personnel to determine security procedures to be followed for subcontractors, supplies, and deliveries to ensure timely performance without delays. With the support of SEDA personnel, WESTON will notify the installation environmental coordinator and/or Dig-Safe to identify and locate utilities within the open burning (OB) Grounds. WESTON will also investigate the need for, and if necessary, obtain local permits (e.g., utility clearance and digging permits). After receipt of necessary permits, utility clearances, and clearance by the UXO subcontractor, temporarily facilities will be established, including the delivery and set-up of storage facilities, decontamination facilities (personnel and equipment), portable water, communications equipment, and sanitary facilities. Construction equipment will be brought onsite in a phased manner, as required, to support the field work at the designated access gate, off State Route 96, along the access road to the Five Points Correctional Facility.

All equipment mobilized on-site will be routinely maintained and inspected for safety operating practices as detailed in the SSHASP. The following Equipment (or similar) is proposed for use at the site during various phases of work:

- Excavator — JD 450
- Front-end Loader — (6yd) Volvo L120C/Michigan L140
- Bulldozer — 2 CAT D6
- Off-Road Dump Truck: — CAT D250 (30-35 ton)
- Scissors Man-Lift — JLG

- Roll-Off Container (20yd)
- Mixing Screen Commander 510
- Conveyor 2 M65 (50 ft)

All earthmoving equipment used during OE operations will be fitted with plexiglass shields. Shield thickness has been calculated to be a minimum of 3-inches of plexiglass (by Dr.Crull, Structures Branch, USAGE, Huntsville, using THOR equations for fragment penetration from TM 5-1300) using the Q-D MPM, the M406 40-mm Grenade.

3.2 SITE PREPARATION

3.2.1 Work Zones

Once mobilization is complete, field crews will establish site controls and delineate the project work zones. These zones include areas for the placement of a storage trailer, equipment, and materials staging.

To prevent both exposures to unprotected personnel and migration of contamination due to tracking by personnel or equipment, work areas and personal protective equipment requirements within those areas will be clearly identified. Signs will be posted at entrance roads that declare the area as hazardous. Signs will also be erected that direct visitors to the only authorized support zone entrance. (This will include vendors, and WESTON guests).

WESTON will designate work areas or zones, as suggested in Occupation Safety and Health Guidance Manual for Hazardous Waste Site Activities, NIOSH/OSHA/USCG/EPA, November 1985. The areas surrounding the work area will be divided into the following three zones:

- Exclusion zone (EZ)
- Contamination reduction zone (CRZ)
- Support zone (SZ)

The EZ will include the areas within the perimeter fence where intrusive activities are occurring and where personnel may expose themselves to soils. The CRZ will include the area where personal protective equipment (PPE) is doffed and secured. The SZ will include parking/staging areas, trailer location, perimeter access roads and any other area outside the CRZ.

3.2.2 Site Security and Control

WESTON will comply with existing access control procedures, site security protocols, and work permit requirements of SEDA.

3.2.3 SEDA Requirements

WESTON will provide a list of all employees, subcontractors, and suppliers to CENAN. Samples of signatures for all employees on the list will be provided. All vehicles entering the Site will be required to follow the posted Speed Limits (Ammo Area – 5-miles per hour (mph), Limited/Exclusion Area – 25 mph).

3.2.4 Site Entry

Security fencing exists around the perimeter of the site and will remain for the duration of the project. A sign will be posted directing all site visitors, subcontractors, and suppliers to report to the main office at the gate to sign in. All site visitors and personnel will be required to have positive identification and enter their name, affiliation, purpose of visit, and time of site entry/exit into a permanently bound logbook maintained by WESTON at the entrance to the work area. The logbook will include all equipment and vehicles entering and leaving the site.

Visitors and vendors will only be allowed in the designated Support Zones. Those who must gain access to an Exclusion Zone must show proof of required training and medical clearances as described in the SSHASP.

Two-way radios will be used to maintain full time communications with the main site trailer and WESTON field staff. In the event the Area 44A site is too far for two-way radio use, cellular phones will be used to communicate.

3.3 SOIL SCREENING

The soil identified by Mounds 1-8 [approximately 27,000 cubic yards (yd^3)] as shown in Figure 1-1 will be screened/sifted. Following site preparation activities, the screening plant will be mobilized and placed at a central location (to be approved in advance by WESTON, CENAN,

and UXO subcontractor) in order to maximize production for sifting operations while minimizing redundant materials handling operations. Soil removed from the stockpiles will be processed in the screening plant down to 1-inch. Material passing the 1-inch screen will be hauled directly to the fill area for direct placement as cover once a designated area has been mapped and cleared by the UXO subcontractor. No soil will be placed over ponded areas greater than 2-inches in depth. All reject material or oversized material (assuming 20% of total screened quantity) will be hauled directly to an oversize stockpile outside the Public Withdrawal Distance (345-ft) for UXO clearance. All excavation, soil screening, and ancillary tasks will be performed in accordance with the Area-44A Explosives Safety Submission dated April 2000 and ESS attached appendices.

3.4 ADDITIONAL EXCAVATION OF 1-FT. CUT & SCREENING

Additional excavation within the 25-acre area may be required in order to obtain the 1-ft. cut clearance requirement site wide. This may include perimeter soils, overlying areas (not previously excavated to the required depth) or soil beneath the existing stockpiles. Soil will be excavated, removed, and hauled to the soil screening plant, screened to 1-inch and either hauled to a stockpile staging are for fill purposed or hauled to the oversize stockpile for processing reject and/or OE. All excavation, soil screening, and ancillary tasks will be performed in accordance with the Area 44-A Explosives Safety Submission dated April 2000 and attached appendices (See Discussion on Project-Specific Procedures and Appendix B of the ESS).

3.5 OVERSIZED SCREENING

All oversized material, i.e., items greater than one inch in diameter will be removed for UXO clearance. It is anticipated that approximately 5,400 yd^3 (8,100 tons), 20% of excavated, screened soil volume will result in oversized material that will need to be separated out by hand. The oversize materials will then be spread out within one of two cleared 100 x 100-ft grids. The depth of the lift will not exceed 1-ft. The material will then be examined by UXO technicians to determine the presence of OE and OE related materials using an EM-61. Items identified as OE will be segregated into a demolition holding area. OE related scrap will be segregated separately. OE items will be destroyed weekly and stored in the magazine area as noted below in

Subsection 3.9, OE Disposal. OE related materials will be examined and certified inert then processed as scrap. The metal scrap generated from the sorting operation will be used as fill/grading material or disposed of offsite at the request of CENAN. Wood debris will be segregated, stockpiled, and remain onsite.

The following Occupational Safety and Health Administration (OSHA) standards and the U.S. Army Corps of Engineers (USACE) requirements directly apply to the conduct of operations associated with this SOP.

- OSHA Construction Industry Standard 19 CFR Part 1926, Subpart O
- OSHA General Industry Standard 29 CFR Part 1910, Subparts N and O
- USACE EM 385-1-1, Sections 16 A and B Section 17A

3.6 TRANSPORTATION & DISPOSAL (T&D) WASTEWATER

It is not anticipated that wastewater will be generated, however, any wastewater requiring offsite disposal will be tested prior to transportation and disposal.

3.7 GEOPHYSICAL TEST GRID

A Geophysical Test Grid will be constructed and daily tests performed to verify that the detection equipment is capable of detecting the target ammunition to the required depths in accordance with the Area-44A, ESS, Section 6.0 (Phase II) and the Statement of Work (23 June 1997). The detection equipment must be able to detect down to two feet for the M407A1, 40-mm Practice Grenade.

3.8 GEOPHYSICAL MAPPING AND CLEARANCE

A sweep of the entire 25-acres will be performed; all anomalies to depth of two feet will be investigated and removed. Anomalies that are deeper will be chased and removed. Each grid will be divided into 5-ft. lanes (at a minimum). Mapping and clearance will be performed in accordance with the ESS, Section 6.0 (Phase V & VI) and the Statement of Work (23 June 1997) Section 3.3.

3.8.1 QC Audit

The QC Safety UXO Technician and the UXO subcontractor's QA/QC representative will conduct a QC audit in accordance with the ESS, Section 6.0 (Phase VII), QA/QC Requirements. This audit will include a surface and subsurface check of an area representing 20% of the work completed. The QC/Safety UXO Technician, assisted by the UXO subcontractor's QA/QC representative, will proceed on a predetermined pattern starting on the opposite side from the QC/Safety UXO Technician's check. If the site fails, it will be scheduled for re-work. In addition, an inspection of all logs and a check of contractor and subcontractor personnel will be conducted to ensure that they are complying with the WP.

The pass/fail criteria for the final clearance are set by the Huntsville Center, Corps of Engineers (CEHNC). This criteria specifies that a grid will be failed if, during the QC audit:

- A live item is found
- More than three OE scrap items are found in a grid
- Any inert OE item, which resembles a live UXO, is found
- Any piece of scrap with dimensions greater than 2 in. x 2 in. is discovered

3.9 OE DISPOSAL

Disposal operations will be carried out weekly. Items which can be removed will be consolidated in accordance with "Procedures for Demolition of Multiple Rounds (Consolidate Shots) on Ordnance and Explosives (OE) Sites", dated August 1998 and approved by DDESB on 27 October 1998. Disposal will be carried out at the OB Grounds, which is adjacent to the OB Grounds. Since the explosive storage magazines will be located within SEDA, all transport will be performed on dirt/gravel roads, thereby eliminating the necessity to transport on public highways. The transport vehicles shall meet all the requirements of 49 CFR 100-199. Items that cannot be moved, will be blown in-place, individually.

All Stockpiled, inert ordnance and Ordnance-Related Scrap (ORS) will be turned into a local scrap dealer. The procedures outlined in Department of Defense (DoD) 4160.21.M will be followed and the shipment certified as being free from explosive hazards. A DD Form 1348-1 will be utilized as turn-in documentation and will include the statement (I certify that the property listed heron has been inspected by me and, to the best of my knowledge and belief,

contains no items of a dangerous nature). The DD 1348 form will be signed by the SUXO and all turn-in documentation will be submitted to WESTON.

The UXO subcontractor will supply explosives for destruction operations. Due to the Location of the U.S. Coast Guard (USCG) Loran C station within 1-mile from the site, WESTON will not use anything other than non-electrical charges. Explosives will be stored in the SEDA OB/OD area double igloo type, earthen covered magazine. The existing magazine is constructed to Department of Defense Explosive Safety Board (DDESB) and U.S. Army standards and is complete with the required lightning protection. Refer to the disposal procedures outline in the attached Areas-44A, ESS, Section 6.0.

3.10 STORMWATER COLLECTION AND MANAGEMENT

During performance of site remediation activities, WESTON will manage all run-on, run-off, storm water, ponded water, and decontamination water that will be generated at the site. No water will be pumped directly to the swale, discharged, or transported offsite without being tested by WESTON. It is assumed that the water is non-hazardous but the water must meet New York State Department of Environmental Conservation (NYSDEC) discharge criteria (if discharged onsite) or transported to publicly owned treatment works (POTW) if disposed of offsite. It is assumed that water does not have to be pumped unless the underlying soil requires excavation grading, or fill. All decontamination water will be pumped into a storage tank (if applicable). All water generated within the site will be tested by WESTON in advance, however, it shall be assumed that all ponded water may be managed within the site limits. The equipment, materials, and personnel that are in contact with the OE will be decontaminated (if applicable).

3.11 SITE RESTORATION

Following completion of excavation activities at Area-44A, WESTON will complete limited site restoration activities. Area-44A will be seeded with a rye type grass using conventional methods (e.g., tractor, drop spreader). It is not anticipated that binder or hay will be required, however, the site conditions will be reviewed with CENAN prior to seed application.

3.12 DEMOBILIZATION

Following completion of all sitework and restoration activities, WESTON shall demobilize all personnel, equipment, and materials. All contaminated material shall be properly loaded and transported off-site to a disposal facility. Subcontractors will demobilized the heavy equipment. All temporary erosion control measures such as construction fence, silt fence, hay bales, line posts, and banner guard will be removed and WESTON shall demobilize the temporary storage/site and office location. Coordination with the Base Environmental Coordinator will be performed to remove all utilities and to ensure existing conditions are established prior to demobilization. It is anticipated that all labor staff/equipment and supplies will be mobilized to the Open Burning Grounds following demobilization of the Area 44A site.

SECTION 4

FINAL REPORT

4. FINAL REPORT

Upon completion of site activities at the Area 44A site, WESTON will prepare and submit a closeout report, which documents all site activities. The report will be submitted to the USACE within 30 days from demobilization and will include a summary of the work activities described in this WP Amendment. In addition the report will include at a minimum; a final contour map of the site; geophysical mapping data and drawings; a final schedule; sampling data (if applicable); and any other information as required by the April 2000 ESS.

SECTION 5

REFERENCES

5. REFERENCES

EOD Technology, Inc. Knoxville, TN. 1997. Prepared for U.S. Army Engineering and Support Center, Huntsville, Alabama. *Workplan for the Ordnance and Explosive Removal Action, Open Burning (OB) Grounds – Volumes I and II.).* Seneca Army Depot Activity (SEDA), Romulus, NY.

New York State Soil and Water Conservation Committee. *New York Guidelines for Urban Erosion and Sediment Control*, Syracuse, N.Y., October 1991.

NIOSH/OSHA/USCG/EPA 1985. Occupational Safety and Health Guidance Material for Hazardous Waste Site Activities. November 1985.

Parsons Engineering Science, Inc. Boston, MA. 1997. Prepared for U.S. Army Corps of Engineers. *Draft Record of Decision, Former Open Burning (OB) Grounds Site.).* Seneca Army Depot Activity (SEDA), Romulus, NY. Contract No. DACW33-95-D-00005.

Parsons Engineering Science, Inc. Boston, MA. 1998. Prepared for U.S. Army Engineer Division, Huntsville, Alabama. *Section C – Technical Specifications Soil and Sediment Remediation at the Open Burning Grounds.* August 1998.

U.S. Army Corps of Engineers, New England District (CENAN). 1997. *Superfund Proposed Plan, The Open Burning (OB) Grounds at the Seneca Army Deport Activity (SEDA).* Seneca Army Depot Activity (SEDA), Romulus, NY. Contract No. DACW33-95-D-00005.

U.S. Army Engineer Division. Huntsville, Alabama. 1998. Draft Section C – Technical Specifications, Soil, and Sediment Remediation at the Open Burning (OB) Grounds.

U.S. Army Engineer Division. Huntsville, Alabama. 2000. Explosive Safety Submission, Ordnance and Explosive Removal at the Former QA Function Test Range (SEAD-44A), Seneca Army Depot Activity, Romulus, New York.

ATTACHMENT I

CONTRACTOR QUALITY CONTROL PLAN AMENDMENT

AMENDMENT
CONTRACTOR QUALITY CONTROL PLAN

UXO AND SOIL REMEDIATION
AREA 44A
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Contract No. DACW33-00-D-0007
Task Order No. 0003
DCN: SEDA2-082101-AABG

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 Virginia Road
Concord, Massachusetts 01742-2751

Prepared by:

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

August 2001

W.O. No. 20140.007.203

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ACRONYMS

CEHNC	Huntsville Center, Corps of Engineers
CENAE	U.S. Army C orps of Engineers, New England District
CENAN	U.S. Army Corps of Engineers, New York District
COR	Contracting Officer's Representative
CPM	Critical Path Method
CQCP	Contractor Quality Control Plan
CRZ	Contamination reduction zone
DDESBH	Department of Defense Explosive Safety Board
DoD	Department of Defense
ESS	explosive safety submission
EZ	exclusion zone
ft	foot/feet
HE	High Explosive
mm	millimeters
MPM	Most Probable Munition
NYSDEC	New York State Department of Environmental Conservation
OB	open burning
OE	Ordnance and Explosives
ORS	Ordnance-Related Scrap
OSHA	Occupational Safety and Health Administration
OTS	Office of Toxic Substances
POTW	publicly owned treatment works
PPE	personal protective equipment
QA	quality assurance
QC	Quality Control
SEDA	Seneca Army Depot Activity
SSHASP	Site Specific Health and Safety Plan
SZ	Support zone
T&D	transportation and disposal
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
WBS	work breakdown structure
WESTON®	Roy F. Weston, Inc.
WP	Work Plan
yd3	cubic yards

1. OVERVIEW

This Contractor Quality Control Plan (CQCP) amendment was developed to identify and implement quality requirements to ensure that project activities are conducted appropriately in accordance with the contract requirements. The CQCP was prepared for the U.S. Army Corps of Engineers, New England District (CENAE), in compliance with the specifications and the Scope of Work (SOW), Contract No. DACW33-00-D-0007 at the Seneca Army Depot Activity (SEDA) in Romulus, NY. Under this contract, the U.S. Army Corps of Engineers, New York District (CENAN) will oversee performance of the Task Order. The existing CQCP that was submitted and approved under the Revised Draft Work Plan (WP) (April 1999) covers all other work activities associated with this task order.

This plan amendment was prepared to ensure that all additional work tasks performed at the Open Burning (OB) Grounds and Area 44A sites are accomplished within acceptable levels of internal controls and review procedures. These controls and procedures will eliminate conflicts, errors, and omissions, and will ensure the technical accuracy of all deliverables. The amendment was prepared with guidance from Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans, QAMS-005/80, and from the Office of Toxic Substances (OTS) Guidance Document for the Preparation of Quality Assurance Project Plans, dated 9 September 1987.

Under contract with CENAE, Roy F. Weston, Inc. (WESTON®), will implement remedial activities at the OB Grounds and at the Area 44A site. To achieve this goal, it will be necessary to remove and dispose of ordnance and explosives (OE) and OE related scrap from soils associated with the two sites.

The work will consist of the following:

- Excavation
- Soil Screening
- Oversize Sorting and OE Removal/Disposal
- Geophysical Mapping, Clearance, and Removal/Disposal of OE

2. SCOPE

The scope of this plan provides quality control (QC) measures applicable to administrative, engineering, and technical activities associated with the additional tasks scoped under Contract No. DACW33-00-D-0007 at SEDA. The requirements of this plan are also applicable to all WESTON-affiliated project support groups and their contractors and subcontractors unless an alternate Quality Control Plan, which is consistent with or exceeds the requirements of this document either in whole or in part, is used. This CQCP has been developed for the activities associated with the above tasks at the OB Grounds site and the Area 44A site.

3. PROJECT ORGANIZATION AND RESPONSIBILITIES

Under the direction of CENAE, WESTON is responsible for implementing the Scope of Work (SOW). WESTON will provide a staff of experienced administrative and technical professionals to serve as key personnel for this project. These personnel were selected for their management and technical abilities. A discussion of WESTON roles and responsibilities is provided in Section 2 of the Revised Draft WP. A revised organizational chart is included in Attachment A of this plan amendment. WESTON onsite subcontractors will include Sessler (sitework subcontractor) and SpecPro (OE subcontractor).

4. FIELD ACTIVITIES

4.1 QUALITY REQUIREMENTS

The quality requirements associated with field activities in support of this task order are defined in Table 4-1. These requirements apply to the additional field activities that affect the quality of work and work products. The quality requirements associated with sampling and analysis are identified in the Sampling and Analysis Plan (SAP). The approved SAP and SAP Amendment will be followed for sampling activities, except in cases where field conditions may not coincide with the conditions outlined in the SAP.

QA/QC checks will be conducted as follows:

- **Daily Briefings** - The Site QA/QC Officer will ensure that daily safety and operational briefings are conducted routinely. The Site QA/QC Officer will accomplish this by personally observing or conducting the briefings.
- **Communications** - Positive communications with USACE Field Representative and site personnel will be maintained throughout the workday.
  - Communication checks will be conducted each morning prior to starting work, after the lunch break, and following any period of prolonged interruption of operations.
  - Teams will not start operations until satisfactory checks have been achieved and have been approved by CENAN.
- **Training** - The Site Safety and Health Officer and SUXOS will ensure that initial site-specific training is performed for all field personnel prior to startup of field activities, and that all safety control measures have been established.

Training will be accomplished using only approved training materials

- **Documentation** - The Site QA/QC Officer will ensure the completion of all documentation of all surveys and clearance reports.
- **Review** - The Site Manager will review all documentation for accuracy.

Table 4-1

Remediation Activities
Open Burning Grounds and Area 44A Remediation
Seneca Army Depot Activity

Objective	Activity	Activity Quality Requirement	Quality Control Verification
Site-work	Excavation	OBG: Excavate in-situ soils within OBG at Pad/Berm areas, complete remaining 1-ft. cut, remove sediments from Reeder Creek, and excavate haul road in accordance with the limits set forth in the SOW, ESS, and sampling criteria. Area 44A: Excavate the remaining 1-ft. cut beneath existing stockpiles in accordance with the SOW and ESS.	Daily Inspection Report Daily Site Health and Safety Meeting Report Daily Equipment Checklist Construction Equipment Inspection Checklist (NAD Form 478) PM Health and Safety Compliance Inspection. QA Audit Checklist and Audit Form Final Inspection
Site work	Soil Screening	OBG: Screen stockpiled soils to ½ in. in accordance with ESS. Area 44A: Screen stockpiled soils to 1 in. in accordance with the ESS.	Daily Inspection Report Daily Site Health and Safety Meeting Report Daily Equipment Checklist Construction Equipment Inspection Checklist (NAD Form 478) PM Health and Safety Compliance Inspection. QA Audit Checklist and Audit Final Inspection
Site-work	Oversize Sorting and OE Removal/Disposal	OBG: Remove via screening/handsorting all OE, OE scrap, and ferrous material from oversized stockpiles and remaining screened material for disposal. Area 44A: Remove OE, OE scrap, and ferrous material from the oversized material following placement of the oversized soil in 12 in. lifts.	Daily Inspection Report Daily Site Health and Safety Meeting Report Daily Equipment Checklist Construction Equipment Inspection Checklist (NAD Form 478) PM Health and Safety Compliance Inspection. QA Audit Checklist and Audit Form Final Inspection

Table 4-1 (continued)

Remediation Activities
Open Burning Grounds and Area 44A Remediation
Seneca Army Depot Activity

Site work	Geophysical Mapping and Clearance and OE Removal/Disposal	OBG: Visually clear 30-acre site, perform geophysical mapping to a depth of 2 ft. (below 1 ft. cut) to identify, flag, and remove anomalies via UXO tech support. Area 44A: Visually clear 25-acre site, perform geophysical mapping to a depth of 2 ft. (below 1 ft. cut) to identify, flag, and remove anomalies via UXO tech support.	Daily Inspection Report Daily Site Health and Safety Meeting Report PM Health and Safety Compliance Inspection. GIS Anomaly Map QA Audit Checklist and Audit Final Inspection

4.2 FIELD DOCUMENTATION

All field activities affecting quality control will be performed in accordance with documented procedures, instructions, or drawings identified in the specifications or the scope of work. During all field activities, WESTON will use the following reporting formats:

- Daily Inspection Report (Form 1).
- Quality Assurance Audit Checklist and Audit Notes (Form 2).
- Daily Site Health and Safety Meeting Report or equivalent(Form 3).
- Daily Equipment Checklist (Form 4).
- Construction Equipment Inspection Form (Form 5).
- Health and Safety Compliance Inspection (Form 6).
- Field Logbooks.

These reports will be used to document construction quality control activities and are located in Appendix A of the CQCP (April 1999). Related laboratory test reports and vendor data will be attached to these QC reports when daily work activities are associated with these data (upon CENAN request).

5. FIELD INSPECTIONS

The WESTON Site QA/QC Officer will maintain a field logbook of the inspection and test activities. This daily logbook will be used in preparing the Daily Construction Quality Control (CQC) Report form. The Daily Construction Quality Control Reports for the activities of each day of the previous week will be submitted weekly to the Contracting Officer's Representative (COR) or CENAN resident field engineer. Reports will not be submitted for days on which no work is performed. At a minimum, one report will be submitted for every seven days of no work and on the last day of a period of work stoppage. Reports will be signed and dated by the Site QA/QC Officer.

The Daily CQC Report and the Daily Inspection Report include:

- Contractor/subcontractors and responsibilities.
- Equipment used, with any idle or downtime noted.
- Location, personnel, and description of work for each day.
- Test and/or control activities performed. Any deficiencies to the specifications will be noted along with the corrective action taken.
- Quantity of materials received at the site. For all materials received, acceptability, storage, and compliance with specifications will be noted.
- Review of submittals.
- Off-site surveillance activities.
- Safety evaluations including a description of inspections, results, and any corrective actions.

6. AUDITS

Field performance will be evaluated to ensure that the quality standards and objectives of the WP are met. The evaluation will be accomplished through audits and corrective action through use of the Daily Construction Quality Control Report. Audits will be conducted and corrective actions will be implemented when non-conformances or deficiencies are identified. Additional audits will be conducted periodically. The audits will be planned and conducted by the Program or Project QC Manager, Site QA/QC Officer, or the Site Health and Safety Officer and clearly defined before they are initiated. Procedures for auditing activities will be identified prior to implementation of the audits.

The audit process will involve identifying non-conformances or deficiencies, reporting and documenting them, initiating corrective action through appropriate channels, and following up with a compliance review. Records will be kept of all auditing tasks and findings on the Quality Assurance Audit Checklist and Audit Notes. In addition, copies of the audit findings will be provided to CENAE/CENAN within 1 week of completion of the audit.

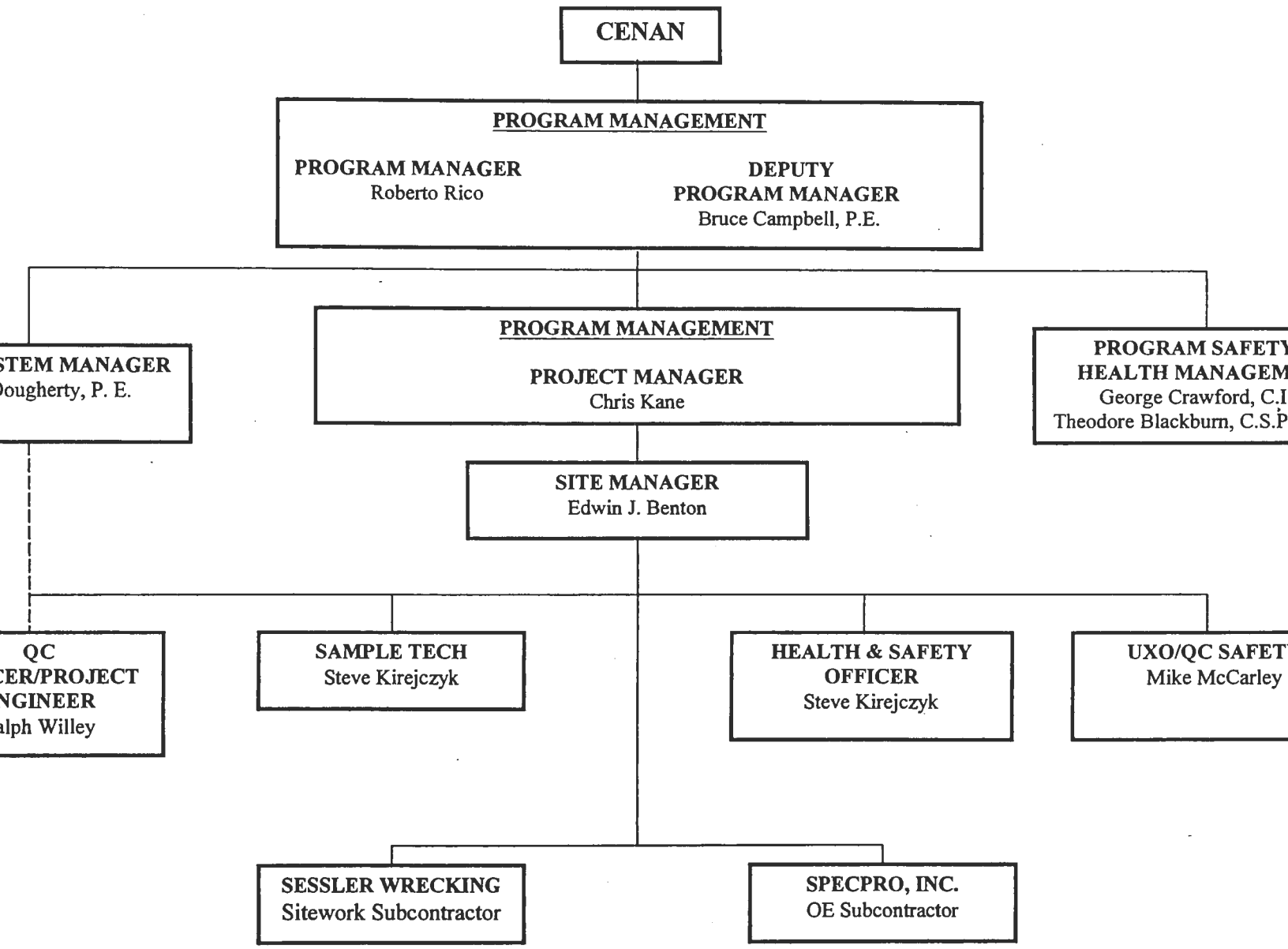
Additional field activities requiring an audit include the sampling activities. Proper sample collection (location, number, parameters, and QA/QC samples) and delivery (packaging, labeling, chain-of-custody, custody seals, etc.) will be closely verified.

The field teams involved with the construction activities are responsible for reporting all suspected technical non-conformances or deficiencies to the Program or Project QC Manager. The Program or Project QC Manager is responsible for evaluation of the situation and taking action, if any is required, after following the notification protocol.

APPENDIX A – ORGANIZATIONAL CHART

ATIONAL CHART

UXO and Soil F
Seneca
Romul



ATTACHMENT 2

SITE SPECIFIC HEALTH AND SAFETY PLAN AMENDMENT

AMENDMENT
SITE SPECIFIC HEALTH AND SAFETY PLAN

UXO AND SOIL REMEDIATION
AREA 44A
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Contract No. DACW33-00-D-0007
Task Order No. 0003
DCN: SEDA2-082101-AABG

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 Virginia Road
Concord, Massachusetts 01742-2751

Prepared by:

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

August 2001

W.O. No. 20140.007.203

Site Specific Health and Safety Plan Amendment
Approval/Signoff Form
UXO and Soil Remediation
Area 44A Site
Seneca Army Depot Activity
Romulus, NY

Contract No. DACW33-00-D-0007

SITE SPECIFIC HEALTH AND SAFETY PLAN APPROVALS

By their specific signature, the undersigned certify that this site specific HASP is approved for utilization during OE activities at the Area 44A site at the Seneca Army Depot Activity site located in Romulus, New York.

Signature, Name, Title

WESTON – Program Manager for Roberto Rico	8-22-01 Date
WESTON - Project Manager Christopher G. Kane	8/21/01 Date
WESTON - Program CIH George M. Crawford, CIH	8-22-01 Date
WESTON - Program Safety Manager Theodore L. Blackburn, CSP, CET	8-22-01 Date
WESTON - Site Health and Safety Officer Steve Kirejczyk	Date

Site Specific Health and Safety Plan Amendment
Approval/Signoff Form
UXO and Soil Remediation
Area 44A Site
Seneca Army Depot Activity
Romulus, NY

Contract No. DACW33-00-D-0007

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

Name	Signature	Date

Name	Signature	Date

TABLE OF CONTENTS

LIST OF ACRONYMS

CEHNC	Huntsville Center, Corps of Engineers
CENAE	U.S. Army C orps of Engineers, New England District
CENAN	U.S. Army Corps of Engineers, New York District
CPM	Critical Path Method
CQCP	Contractor Quality Control Plan
CRZ	Contamination reduction zone
DDESBH	Department of Defense Explosive Safety Board
DoD	Department of Defense
ESS	explosive safety submission
EZ	exclusion zone
ft	foot/feet
HE	High Explosive
mm	millimeters
MPM	Most Probable Munition
NTP	Notice to Proceed
NYSDEC	New York State Department of Environmental Conservation
OB	open burning
OE	Ordnance and Explosives
ORS	Ordnance-Related Scrap
OSHA	Occupational Safety and Health Administration
POTW	publicly owned treatment works
PPE	personal protective equipment
QA	quality assurance
QC	Quality Control
SEDA	Seneca Army Depot Activity
SHSO	site health and safety officer
SSHASP	Site Specific Health and Safety Plan
SZ	Support zone
T&D	transportation and disposal
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
WBS	work breakdown structure
WESTON®	Roy F. Weston, Inc.
WP	Work Plan
yd3	cubic yards

1. INTRODUCTION

The purpose of this document is to amend the Revised Site Safety and Health Plan (SSHASP) prepared in April 1999. This amendment will update the existing SSHASP by outlining the procedures and safety concerns that may apply to workers performing fieldwork activities at **AREA-44A**. Upon receiving notice to proceed (NTP) from CENAE, WESTON, with Sessler Wrecking and SPECPRO, Inc. serving as the two primary subcontractors, will mobilize onsite. Sessler Construction will serve as the sitework subcontractor while SPECPRO, Inc. will provide the unexploded ordnance (UXO) support as the ordance and explosives (OE) subcontractor during intrusive activities.

The subcontractors are responsible for supplying all Personnel Protective Equipment (PPE) for their staff. The anticipated level of protection, for this phase of work is Modified Level D (Hardhat, safety glasses, ANSI approved footwear, gloves, Tyvek, rubber booties, chemical resistant gloves, and hearing protection, however action levels may vary depending on air monitoring data). All work will be performed in accordance with this H & S Addendum, SpecPro's SSHASP, the Explosive Safety Submission (ESS), July 1999, the Statement of Work, 23 June 1997, any referenced regulations contained within the ESS, USACE EM 385 1-1, and all other state, federal, and local requirements.

2. EXISTING SITE CONDITIONS

During previous OE clearance activities at the site, approximately 25 acres were surface cleared for OE (by UXO subcontractor), cleared of all vegetation (by Depot personnel), the existing berms were bulldozed and stockpiled (by others), and the surrounding area was stripped of soil down to a maximum depth of 1-foor (ft). and stockpiled. Currently, the previous berms and the 1-ft. cut material are stockpiled into 8 separate mounds. These mounds are identified and shown in Figure 1-1 of the Workplan Amendment. Due to the stripping of soil down to a depth of 1-ft., depressions have formed on the surface creating collection points for stormwater. Six ponds were previously identified in May 2001 as containing large volumes of water (also shown in Figure 1-1), however, actual conditions may vary due to current precipitation conditions. In addition, a total of 3 stockpiles of stumps are shown in Figure 1-1. These stump stockpiles are the result of clearing activities by the Depot personnel and will be left in-place unless directed otherwise by CENAN.

3. GENERAL OBJECTIVES

- Remove berms and stockpile the soil (complete)
- Excavate/strip entire parcel to a depth of 1-ft. and stockpile the soil (approximately 60%-70% complete)
- Screen material down to 1 inch and remove all OE
- Perform geophysical survey to a depth of 2-ft. (after the first 1-ft. of soil is removed) to remove any OE or magnetic anomalies
- All OE shall be removed and detonated/disposed of by UXO Subcontractor
- Place all sifted and oversized material within the 25 acre footprint

4. FIELD ACTIVITIES

The scope of work for the remediation of soil at the Area 44A site consists of the activities listed in the following table:

Table 4-1

Field Activities

Activity Number	Activity
1	Mobilization
2	Site Preparation
3	Soil Screening
4	Additional Excavation of 1 ft. Cut & Screening
5	Oversize Screening
6	T & D Wastewater
7	Geophysical Test Grid
8	Geophysical Mapping and Clearance
9	OE Disposal
10	Storm Water Collection and Management
11	Site Restoration
12	Demobilization

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

4.1 ACTIVITY 1- MOBILIZATION

Subcontractors are responsible for the mobilization of all equipment, materials and personnel to perform the work described in this document. In addition, the subcontractors are also responsible for providing all temporary facilities including but not limited to the following: portable

sanitation facilities, site utilities (phone, fax, copier, printer, etc.), potable (bottled) water, PPE, conex storage box, fuel, etc. as necessary to perform all sitework services.

4.2 ACTIVITY 2 – SITE PREPARATION

Following mobilization but prior to the start of soil screening, it may be necessary for the OE subcontractor to clear all staging areas for construction equipment, to establish an OE grid system, to clear locations established for erosion and siltation controls, and to assist WESTON during sampling activities.

The subcontractor will install silt fence and hay bales at all environmentally sensitive areas that shall include but not be limited to the following: north and west sides of the drainage ditch, at the interface between the bottom of any stockpile and the adjacent pond areas (if ponded water exists), along the perimeter of any staging areas, and at any drainage outlet points initially and throughout the project. All hay bales will be secured via two-1 in x 1 in stakes. Since the entire site is fenced in, the existing chain link fence will be used to secure the site. However the access gate will be secured by WESTON on a daily basis to prevent unauthorized access into the work areas.

4.3 ACTIVITY 3 – SOIL SCREENING

Subcontractor is responsible for screening/sifting the soil identified by Mounds 1-8 as shown in Figure 1-1 of the Workplan Amendment. Following site preparation activities, the Subcontractor will mobilize the screening plant and place the equipment at a central location (to be approved in advance by WESTON, USACE, and OE subcontractor). Soil removed from the stockpiles will be processed in the screening plant down to 1-inch. Material passing the 1-inch screen will be hauled directly to the fill area for direct placement as cover or stockpiled once a designated area has been mapped and cleared by the OE subcontractor. No soil will be placed over ponded areas that are greater than 2-inches in depth. All reject material or oversize material (assuming 20% of total screened quantity) will be hauled directly to an oversize pile outside the Public Withdrawal Distance (345-ft) for UXO processing or hand sorting. All excavation, soil screening, and ancillary tasks will be performed in accordance with the Area 44A Explosives Safety Submission

dated April 2000 and attached appendices (See Discussion on Project-Specific Procedures and Appendix A). UXO oversight during screening operations will be performed in accordance with SpecPro SSHASP dated August 2001 (Appendix B).

The OE subcontractor will be responsible for providing all labor, equipment, and materials for UXO support during the screening of this material. The OE subcontractor will be responsible for all provisions in ESS relating to OE monitoring, removal, clearance and support for this activity in accordance with the ESS and Appendix A - Standard Operating Procedure 120-B. The sitework subcontractor will be responsible for the continuous removal of all screened soil and reject from stockpiles at the discharge ends of the conveyor(s).

4.4 ACTIVITY 4 – ADDITIONAL EXCAVATION OF 1 FT. CUT & SCREENING

Additional excavation within the 25-acre area may be required in order to obtain the 1-ft. cut clearance requirement site wide. This may include perimeter soils, overlying areas (at grades above the 1-ft. cut elevation) or soil beneath existing stockpiles. Soil will be excavated and removed at the direction of WESTON and/or USACE, hauled to the soil screening plant, screened to 1-inch and either hauled to a stockpile staging area for fill purposes or hauled to the oversize stockpile for processing reject and/or OE. All excavation, soil screening, and ancillary tasks will be performed in accordance with the Area 44A Explosives Safety Submission dated April 2000 and attached appendices (See Discussion on Project-Specific Procedures and Appendix A). A tolerance of 1-inch is allowed for and excavated soil associated with the 1-ft. cut. All material passing the 1-inch screen will be stockpiled and graded to a uniform depth. UXO oversight during screening operations will be performed in accordance with SpecPro Site Specific Health and Safety Plan (August 2001).

4.5 ACTIVITY 5 – OVERSIZE SCREENING

It is anticipated that approximately 5,400 yd^3 (8,100 tons), 20% of excavated, screened soil volume will result in oversized material that will need to be separated out by hand. Sitework subcontractor is responsible for providing the loading equipment, discharge equipment, personnel (except UXO techs.), fuel, and maintenance for all oversize sorting.

OE subcontractor will supply a power screen (1-inch screen), hopper and conveyor system that will be used to process the scrap. Sorting process shall include the gradual feeding of the oversized material past UXO personnel stationed along the conveyor. As the soil proceeds along the conveyor, the UXO personnel will search for, remove, and properly dispose of OE related hazardous items. The items remaining on the belt will be conveyed to a stockpile where the non-OE debris will be managed by the site work subcontractor. OE subcontractor shall be responsible for the handling and disposing of the suspect OE. OE Subcontractor shall also submit a detailed spec of equipment anticipated for hand sorting operation. A Standard Operating Procedure 120-B for sifting operations is included in Appendix A of the Area-44A, ESS. The following Occupational Safety and Health Administration (OSHA) standards and the U.S. Army Corps of Engineers (USACE) requirements directly apply to the conduct of operations associated with this SOP. The sitework subcontractor will load all oversized material into the equipment and remove all non-OE oversized material following processing by OE subcontractor. Oversized sorting shall be performed in accordance with SpecPro SSHASP (August 2001).

- OSHA Construction Industry Standard 29 CFR Part 1926, Subpart O
- OSHA General Industry Standard 29 CFR Part 1910, Subparts N and O
- USACE EM 385-1-1, Sections 16 A and B and Section 17 A

4.6 ACTIVITY 6 – T & D WASTEWATER

If determined, Subcontractor may treat water onsite for discharge in accordance with NYSDEC Discharge Criteria for a Class C Stream or provide offsite disposal as a non-hazardous wastewater (treatment/disposal at POTW required). WESTON will sample any water that is collected and stored onsite prior to discharge and/or disposal offsite. Data generated from sampling activities will be forwarded to CENAN, NYSDEC, and USEPA for approval prior to discharge onsite or offsite. In the event onsite discharging is performed, a SPDES Equivalent Permit will be completed and submitted for approval.

4.7 ACTIVITY 7 - GEOPHYSICAL TEST GRID

A Geophysical test grid will be performed to verify that the detection equipment is capable of detecting the target ammunition to the required depths in accordance with Area-44A, ESS,

Section 6.0 (Phase II), April 2000 and the Statement of Work (23 June 1997). The detection equipment must be able to detect down to two feet for the M407A1, 40 mm Practice Grenade. Documentation of this test will be transmitted to USACE prior to performing geophysical mapping or clearance.

4.8 ACTIVITY 8 – GEOPHYSICAL MAPPING AND CLEARANCE

OE subcontractor will perform a sweep of the entire 25 acres to confirm the absence or presence of OE or anomalies to a depth of two feet. Any anomalies encountered will be investigated and removed. Anomalies that are deeper will be chased and removed. However, it is not anticipated that anomalies below a depth of two feet will be detected to due instrument detection limitations. Mapping and Clearance will be performed in accordance with the ESS, Section 6.0 (Phase V & VI) and the Statement of Work (23 June 1997) Section 3.3. If additional supplemental data for the previous geophysical survey is submitted by Parsons, the data will be reviewed by USACE and WESTON prior to continuing with ongoing geophysical activities.

4.9 ACTIVITY 9 - OE DISPOSAL

Disposal operations will be carried out weekly. Items which can be removed will be consolidated in accordance with "Procedures for Demolition of Multiple Rounds (Consolidated Shots) on Ordnance and Explosives (OE) Sites", dated August 1998 and approved by DDESB on 27 October 1998. Disposal will be carried out at the OD Grounds which is adjacent to the OB Grounds. Since the explosive storage magazines will be located within SEDA, all transport will be performed on dirt/gravel roads, thereby eliminating the necessity to transport on public highways. The transport vehicles shall meet all the requirements of 49 CFR 100-199. Items that cannot be moved, will be blown in-place, individually. OE Disposal shall also be performed in accordance with SpecPro Site Specific Health and Safety Plan (August 2001).

The subcontractor will supply explosives for destruction operations and will work under a licensed blaster in the State of New York. Due to the Location of the USCG Loran C station within a mile of the site, the contractor shall not use anything other than non-electrical charges for detonations. Explosives will be stored in the SEDA OB/OD area double igloo type, earthen

covered magazine. The existing magazine is constructed to DDESB and Army standards and is complete with the required lightning protection. Refer to the disposal procedures outlined in the attached Area-44A, ESS, Section 6.0, April 2000.

4.10 ACTIVITY 10 – STORM WATER COLLECTION AND MANAGEMENT

During performance of site remediation activities, the subcontractor will manage all run-on, run-off, storm water, and decontamination water that will be generated at the site. No water will be pumped directly to the swale, discharged, or transported offsite without being tested by WESTON. It is assumed that the water is non-hazardous but the water must meet NYSDEC discharge criteria (if discharged onsite) or transported to a POTW if disposed of offsite. The subcontractor is responsible for collecting, pumping, and managing the water during all phases of work. It is assumed that water does not have to be pumped unless the underlying soil requires excavation, grading, or fill. All decontamination water will be pumped into the modular storage tanks. All water generated within the site will be tested by WESTON in advance, however, it shall be assumed that all ponded water can be pumped to the settling area at elevation 620 (NYSP). The subcontractor will be responsible for decontaminating all equipment, materials, and personnel that are in contact with the OE soil. Subcontractor will be responsible for wastewater generated from OE Subcontractor as well.

4.11 ACTIVITY 11 – CONVENTIONAL SEEDING

Upon completion of all soil screening activities, Area 44 will be seeded with a rye type grass using conventional methods. These conventional methods include, but are not limited to: a tractor and drop or rotary spreader. Watering, mulching, and/or perpetual care of the 25 acres is not anticipated following seed application.

4.12 ACTIVITY 12 - DEMOBILIZATION

Upon completion of all soil screening activities, oversize sorting, grading, the subcontractor will be responsible for removing all temporary equipment and materials including construction fence, decontamination facilities, signs, hay bales, and silt fence from the site. All expendable material

generated as a result of remediation activities will be disposed of as municipal solid waste or non-hazardous contaminated soil.

5. ACTIVITY HAZARD ANALYSES

The attached activity hazard analyses table summarizes the hazards and hazard controls associated with each task for field activities for operations beginning on 22 August 2001. Prior to start-up, affected personnel will be required to review the information found in the activity hazard analysis. Personnel will be required to attend the daily morning safety meeting at which time the site health and safety officer (SHSO) will review the material, and answer any questions.

Activity Hazard Analysis

ity 1 – Mobilization

Task	Hazards	Hazard Control
lization, identify underground es, establish work zones.	***Chemical Hazards***—Non-intrusive activities and therefore, the risk level of exposure to site contaminants during this activity is low.	No intrusive activities allowed during this activity. Wear appropriate PPE dermal contact. Avoid liquid pools and stained areas if possible. A backg will be conducted to ensure the levels of protection are correct. Action le established in the Table 4-1 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. Sufficient illumination shall be main personnel shall conduct walkover in groups of two as a minimum. Site pe refer to and follow WESTON FLDs 02-Inclement weather and 39-Illumi see 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 FLD12
	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 Propane cylinders will be stored outside in secured areas. Fuel storage ta placed in impermeable dikes. Properly rated fire-extinguishers will be pl ft of the fuel storage area, in construction equipment, and strategically in 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 inspected for rough or sharp edges, and appropriate precautions shall be contact. Personnel shall wear work gloves and avoid placing hands betw
	Electric Hazards	Generators will be grounded unless self-grounded. GFCIs will be used as Extension cords will be properly rated for intended use. Prior to any intr authorities will be contacted for permits. Elevated parts of machinery, la antennas will be kept at least 10' from overhead electric lines. Qualified will make electrical Installations. A lockout/tagout program consistent w will be used for equipment maintenance.

vity 1 - Mobilization

	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate careful handling equipment operations. Guards will be kept in place during ope Maintain safe distance from moving mechanical parts. Always use appr See FLD 22.
	Hand tools, manual and power.	Tools shall be inspected prior to use. Damaged tools will be tagged out a qualified person can perform repair. Use tools properly and for their i purpose. A ground fault circuit interrupter (GFCI) will protect all power for hand tools. See FLD 38.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of t appropriate measures as required. Adhere to WESTON Bloodborne P Exposure Control Plan - First Aid Procedures FLD.
	Radiation: USACE waived RAD requirement from ESS. Potential sun burn/sun poisoning hazard on bright, sunny days.	Use sunblock as appropriate. Avoid direct exposure to sun for long pe

vity 2 - Site Preparation

Task	Hazards	Hazard Control
clearance (UXO work will be ucted according to UXO SSHASP he ESS, non UXO qualified nnel will remain at designated nces from UXO related work), lation erosion control, and ruction fence.	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead and fragments of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air moni conducted as defined in Section 4 of the SSHASP. See FLD 28. Engin Controls / Dust Suppression (e.g. wetting) will be utilized as necessary UXO personnel will examine excavated soil as it is excavated.
	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. Sufficient illumination shall be main personnel shall conduct walkover in groups of two as a minimum. Site p refer to and follow WESTON FLDs 02-Inclement weather and 39-Illumi see FLD 11 and 12.
	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 FLD12
	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 sto Propane cylinders will be stored outside in secured areas. Fuel storage ta placed in impermeable dikes. Properly rated fire-extinguishers will be pl ft of the fuel storage area, in construction equipment, and strategically in construction area.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate ca handling and placement of heavy objects. Materials and objects being ha inspected for rough or sharp edges, and appropriate precautions shall be contact. Personnel shall wear work gloves and avoid placing hands betw

	Electric Hazards	Generators will be grounded unless self-grounded. GFCIs will be used a Extension cords will be properly rated for intended use. Prior to any intr authorities will be contacted for permits. Elevated parts of machinery, la antennas will be kept at least 10' from overhead electric lines. Qualified will make electrical Installations. A lockout/tagout program consistent w will be used for equipment maintenance.
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate careful handling equipment operations. Guards will be kept in place during oper 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 a qualified person can perform repair. Use tools properly and for their in purpose. A ground fault circuit interrupter (GFCI) will protect all power for hand tools. See FLD 38.
	Soil excavating.	Personnel working near or around an open excavation shall avoid wall standing near the edge of the excavation. Excavation equipment and st will not be closer than two feet from the edge of excavation. No perso allowed in excavations greater than 4.0 ft. Excavation edge flagged an Visually inspect sheet piling daily for signs of stress. See FLD 28, 29 Subpart P and EM 385-1-1 Section 25.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	Striking and being struck by operating equipment, loads, falling objects, and pinch points. 1181' clearance distance required during all excavation sifting operations.	Workers shall stay out of the swing range of all equipment and from u Remain within view of operator. All heavy equipment should be equip back-up alarms. See FLD 20, 22, and 23. Workers exposed to traffic h wear traffic/reflectorized vests.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of th appropriate measures as required. Adhere to WESTON Bloodborne P Exposure Control Plan - First Aid Procedures FLD.
	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 pe

ity 3 – Soil Screening

Task	Hazards	Hazard Control
work subcontractor will form excavation, hauling, ening, and stockpiling of s. UXO subcontractor will vide support during intrusive vities.	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead, and fragments of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air monit be conducted as defined in Section 4 of the SSHASP. See FLD 28. Engi Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. UXO personnel will examine excavated soil as it is excavated. Blasting will be utilized for personnel and equipment during screening operations Screening oversight to be performed in accordance with SpecPro SSHA
	Physical Hazards: Slip, trips, falls from construction debris, equipment, materials, tools, terrain; uneven walking surfaces or deep excavation limits. Weather hazards, such as severe weather and lightning; poor visibility. UXO escort required.	The work area will be visually inspected. Slip, trip, and fall hazards shal 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.
	Strains and sprains from manually lifting and moving objects.	Use proper lifting techniques such as keeping straight back, lifting with avoid twisting back, use mechanical equipment or get help from others. area will be visually inspected. See FLD 10.
	Inclement weather, including rain, lightning, and heat stress.	Personnel shall be dressed according to weather conditions; personnel w rain and direct sunlight shall follow FLD 05.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate ca handling and placement of heavy objects. Materials and objects being ha will be inspected for rough or sharp edges, and appropriate precautions taken to avoid contact. Personnel shall wear work gloves and avoid plac between objects. See FLD 10.
		Lockout/Tagout procedures must be followed when performing service and mai activities on equipment in which the unexpected energizing or start up of the ma equipment, or release of stored energy could cause injury to employees. Emplo work operations are or may be in an area where energy control procedures may shall be instructed about the procedure, and about the prohibition relating to att restart or re-energize machines or equipment which are locked or tagged out. Pe will be required to review and understand (Attachment B) JSA-Lockout/Tagout See FLD 10 and 42.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.

	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. All conveyors and screening equipment to contain appropri guarding and shielding in accordance with OSHA.
	Soil excavating.	Personnel working near or around an open excavation shall avoid walki standing near the edge of the excavation. Excavation equipment and sto soil will not be closer than two feet from the edge of excavation. No pe allowed in excavations greater than 4.0 ft. Excavation edge flagged and barricaded. Visually inspect sheet piling daily for signs of stress. See Fl CFR 1926, Subpart P and EM 385-1-1 Section 25.
	Electric Hazards	Generators will be grounded unless self-grounded. GFCIs will be used as Extension cords will be properly rated for intended use. Prior to any intru activity, authorities will be contacted for permits. Elevated parts of machi ladders, and antennas will be kept at least 10' from overhead electric lines electricians will make electrical Installations. A lockout/tagout program c with FLD42 will be used for equipment maintenance.
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress symptom will be available to workers. See FLD 05 and 06. Work rest periods wil established according to ACGIH and NIOSH guidelines.
	***Biological*:** Poisonous plants, insects, and 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.
	***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.

vity 4 – Additional Excavation of 1 ft. Cut & Screening

Task	Hazards	Hazard Control
ework subcontractor shall avate and perform the dling of the material. The O subcontractor will provide port over intrusive activities screen all stockpiled rsized material. The ndards and procedures lined in the listed references st be followed: Standard erating Procedure 120-B, pendix Area 44A, ESS; HA 29 CFR Part 1926, part O; OSHA 29 CFR Part 0, Subparts N,O; USACE 385-1-1, Sections 16A, B, A.	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead and nuggets of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air monit be conducted as defined in Section 4 of the SSHASP. See FLD 28. Engi Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. UXO personnel will examine excavated soil as it is excavated. Blasting be utilized by personnel and on equipment during excavation.
	Physical Hazards: Slip, trips, falls from construction debris, equipment, materials, tools, terrain; uneven walking surfaces or deep excavation limits. Weather hazards, such as severe weather and lightning; poor visibility. UXO escort required.	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 avoid twisting back, use mechanical equipment or get help from others. area will be visually inspected. See FLD 10.
	Inclement weather, including rain, lightning, and heat stress.	Personnel shall be dressed according to weather conditions; personnel v rain and direct sunlight shall follow FLD 05.
	Electric Hazards	Generators will be grounded unless self-grounded. GFCIs will be used as Extension cords will be properly rated for intended use. Prior to any intru activity, authorities will be contacted for permits. Elevated parts of machi ladders, and antennas will be kept at least 10' from overhead electric lines electricians will make electrical Installations. A lockout/tagout program c with FLD42 will be used for equipment maintenance.

ivity 4 - Additional Excavation of 1 ft. Cut & Screening

	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate ca handling and placement of heavy objects. Materials and objects being h will be inspected for rough or sharp edges, and appropriate precautions taken to avoid contact. Personnel shall wear work gloves and avoid pla between objects. See FLD 10. Lockout/Tagout procedures must be followed when performing service and ma activities on equipment in which the unexpected energizing or start up of the m equipment, or release of stored energy could cause injury to employees. Empl work operations are or may be in an area where energy control procedures may shall be instructed about the procedure, and about the prohibition relating to at restart or re-energize machines or equipment which are locked or tagged out. P will be required to review and understand (Attachment B) JSA-Lockout/Tagou See FLD 10 and 42.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	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.
	Soil excavating.	Personnel working near or around an open excavation shall avoid walki standing near the edge of the excavation. Excavation equipment and sto soil will not be closer than two feet from the edge of excavation. No pe allowed in excavations greater than 4.0 ft. Excavation edge flagged and barricaded. See FLD 28, 29 CFR 1926, Subpart P and EM 385-1-1 Sec
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress symptom will be available to workers. See FLD 05 and 06. Work rest periods wi established according to ACGIH and NIOSH guidelines.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of th appropriate measures as required. Adhere to WESTON Bloodborne Pa Exposure Control Plan - First Aid Procedures FLD.
	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 per time.

ity 5 – Oversize Screening

Task	Hazards	Hazard Control
UXO subcontractor will en all stockpiled oversized erial, however sitework contractor shall perform the dling of the material. The dards and procedures ined in the listed references t be followed: Standard erating Procedure 120-B, pendix Area 44A, ESS; HA 29 CFR Part 1926, part O; OSHA 29 CFR Part 0, Subparts N,O; USACE 385-1-1, Sections 16A, B, .	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead and nuggets of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air monito be conducted as defined in Section 4 of the SSHASP. See FLD 28. Engi Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. UXO personnel will examine excavated soil as it is excavated. Equipme must have blasting shields. Oversize sorting to be performed in accorda SpecPro SSHASP.
	Physical Hazards: Slip, trips, falls from construction debris, equipment, materials, tools, terrain; uneven walking surfaces or deep excavation limits. Weather hazards, such as severe weather and lightning; poor visibility. UXO escort required.	The work area will be visually inspected. Slip, trip, and fall hazards shal removed or marked and barricaded. Sufficient illumination shall be mai ensure a safe working environment and weather conditions to be continu 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 avoid twisting back, use mechanical equipment or get help from others. area will be visually inspected. See FLD 10.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate ca handling and placement of heavy objects. Materials and objects being h will be inspected for rough or sharp edges, and appropriate precautions taken to avoid contact. Personnel shall wear work gloves and avoid plac between objects. See FLD 10.
		Lockout/Tagout procedures must be followed when performing service and mai activities on equipment in which the unexpected energizing or start up of the m equipment, or release of stored energy could cause injury to employees. Emplo work operations are or may be in an area where energy control procedures may shall be instructed about the procedure, and about the prohibition relating to att restart or re-energize machines or equipment which are locked or tagged out. P will be required to review and understand (Attachment B) JSA-Lockout/Tagout See FLD 10 and 42.

	Electric Hazards	Generators will be grounded unless self-grounded. GFCIs will be used as Extension cords will be properly rated for intended use. Prior to any intru activity, authorities will be contacted for permits. Elevated parts of machi ladders, and antennas will be kept at least 10' from overhead electric line electricians will make electrical Installations. A lockout/tagout program c with FLD42 will be used for equipment maintenance.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	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.
	Soil excavating.	Personnel working near or around an open excavation shall avoid walk standing near the edge of the excavation. Excavation equipment and sto soil will not be closer than two feet from the edge of excavation. No pe allowed in excavations greater than 4.0 ft. Excavation edge flagged and barricaded. See FLD 28, 29 CFR 1926, Subpart P and EM 385-1-1 Sec
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress sympton will be available to workers. See FLD 05 and 06. Work rest periods wi established according to ACGIH and NIOSH guidelines.
	***Biological*:** Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of th appropriate measures as required. Adhere to WESTON Bloodborne Pa Exposure Control Plan - First Aid Procedures FLD.
	***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 per time.

ity 6– T&D Waste water
ity 10 – Storm Water Collection and Management

Task	Hazards	Hazard Control
work subcontractor will nage all run-on, run-off, m water, and ontamination water generated ne site.	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead and nuggets of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air monit be conducted as defined in Section 4 of the SSHASP. See FLD 28. Engi Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. UXO personnel will examine excavated soil as it is excavated.
	Physical Hazards: Slip, trips, falls from construction debris, equipment, materials, tools, terrain; uneven walking surfaces or deep excavation limits. Weather hazards, such as severe weather and lightning; poor visibility. UXO escort required.	The work area will be visually inspected. Slip, trip, and fall hazards shal 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 avoid twisting back, use mechanical equipment or get help from others. area will be visually inspected. See FLD 10.
	Inclement weather, including rain, lightning, and heat stress.	Personnel shall be dressed according to weather conditions; personnel v rain and direct sunlight shall follow FLD 05.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate ca handling and placement of heavy objects. Materials and objects being h will be inspected for rough or sharp edges, and appropriate precautions taken to avoid contact. Personnel shall wear work gloves and avoid plac between objects. See FLD 10. Lockout/Tagout procedures must be followed when performing service and ma activities on equipment in which the unexpected energizing or start up of the m equipment, or release of stored energy could cause injury to employees. Emplo work operations are or may be in an area where energy control procedures may shall be instructed about the procedure, and about the prohibition relating to at restart or re-energize machines or equipment which are locked or tagged out. P will be required to review and understand (Attachment B) JSA-Lockout/Tagou See FLD 10 and 42.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.

	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefull handling equipment operations. Guards will be kept in place during opera Maintain safe distance from moving mechanical parts. Always use appro See FLD 22.
	Soil excavating.	Personnel working near or around an open excavation shall avoid walk standing near the edge of the excavation. Excavation equipment and st soil will not be closer than two feet from the edge of excavation. No pe allowed in excavations greater than 4.0 ft. Excavation edge flagged an barricaded. See FLD 28, 29 CFR 1926, Subpart P and EM 385-1-1 Se
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress symptor will be available to workers. See FLD 05 and 06. Work rest periods wi established according to ACGIH and NIOSH guidelines.
	***Biological*:** Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of th appropriate measures as required. Adhere to WESTON Bloodborne Pa Exposure Control Plan - First Aid Procedures FLD.
	***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 per time.

ity 7 – Geophysical Test Grid

Task	Hazards	Hazard Control
hysical Test Grid will be performed E subcontractor to verify that tion equipment is capable of ting target ammunition to the red depths in accordance with A-44A, ESS Section 6.0 (Phase II), 2000. The detection equipment be able to detect down to two (2) feet e M407A1, 40 mm Practice ade.	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead and nuggets of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air moni conducted as defined in Section 4 of the SSHASP. See FLD 28. Engine Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. UXO personnel will examine excavated soil as it is excavated.
	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. Sufficient illumination shall be main personnel shall conduct walkover in groups of two as a minimum. Site pe refer to and follow WESTON FLDs 02-Inclement weather and 39-Illumi see 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 redu hazards. See FLD12
	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 Propane cylinders will be stored outside in secured areas. Fuel storage ta placed in impermeable dikes. Properly rated fire-extinguishers will be pl ft of the fuel storage area, in construction equipment, and strategically in 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 inspected for rough or sharp edges, and appropriate precautions shall be contact. Personnel shall wear work gloves and avoid placing hands betw
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefull handling equipment operations. Guards will be kept in place during oper 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 a qualified person can perform repair. Use tools properly and for their in purpose. A ground fault circuit interrupter (GFCI) will protect all power for hand tools. See FLD 38.
	Soil excavating.	Personnel working near or around an open excavation shall avoid wal standing near the edge of the excavation. Excavation equipment and s will not be closer than two feet from the edge of excavation. No perso allowed in excavations greater than 4.0 ft. Excavation edge flagged ar Visually inspect sheet piling daily for signs of stress. See FLD 28, 29 Subpart P and EM 385-1-1 Section 25.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress sympto will be available to workers. See FLD 05 and 06. Work rest periods w established according to ACGIH and NIOSH guidelines.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of t appropriate measures as required. Adhere to WESTON Bloodborne P Exposure Control Plan - First Aid Procedures FLD.
	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 pe

ity 8 - Geophysical Mapping and Clearance

Task	Hazards	Hazard Control
nomalies to a depth of two feet will vestigated and removed. Anomalies re deeper will be chased and ved. Mapping and Clearance will be rmed in accordance with the ESS, on 6.0 (Phase V & VI) and the nent of Work (23 June 1997) Section	***Chemical Hazards*:** The likelihood of exposure is present while conducting these activities because the soils may contain lead and nuggets of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air moni conducted as defined in Section 4 of the SSHASP. See FLD 28. Engine Controls / Dust Suppression (e.g. wetting) will be utilized as necessary. UXO personnel will examine excavated soil as it is excavated.
	***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. Sufficient illumination shall be maint personnel shall conduct walkover in groups of two as a minimum. Site pe refer to and follow WESTON FLDs 02-Inclement weather and 39-Illumi see 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 FLD12
	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 Propane cylinders will be stored outside in secured areas. Fuel storage ta placed in impermeable dikes. Properly rated fire-extinguishers will be pl ft of the fuel storage area, in construction equipment, and strategically in 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 inspected for rough or sharp edges, and appropriate precautions shall be contact. Personnel shall wear work gloves and avoid placing hands betw

	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate careful handling equipment operations. Guards will be kept in place during ope Maintain safe distance from moving mechanical parts. Always use appr See FLD 22.
	Hand tools, manual and power.	Tools shall be inspected prior to use. Damaged tools will be tagged out a qualified person can perform repair. Use tools properly and for their ir purpose. A ground fault circuit interrupter (GFCI) will protect all power for hand tools. See FLD 38.
	Soil excavating.	Personnel working near or around an open excavation shall avoid wal standing near the edge of the excavation. Excavation equipment and s will not be closer than two feet from the edge of excavation. No perso allowed in excavations greater than 4.0 ft. Excavation edge flagged ar Visually inspect sheet piling daily for signs of stress. See FLD 28, 29 Subpart P and EM 385-1-1 Section 25.
	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress sympto will be available to workers. See FLD 05 and 06. Work rest periods w established according to ACGIH and NIOSH guidelines.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of t appropriate measures as required. Adhere to WESTON Bloodborne P Exposure Control Plan - First Aid Procedures FLD.
	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 pe

Task	Hazards	Hazard Control
osal operations will be carried out ly. Items which can be removed will nsolidated in accordance with cedures for Demolition of Multiple ds (Consolidated Shots) on ance and Explosives (OE) Sites", ust 1998, approved by DDESB, 27 ber 1998. Disposal procedures are ned in the AREA-44A, ESS, Section Phase VII).	***Chemical Hazards***: The likelihood of exposure is present while conducting these activities because the soils may contain lead and nuggets of UXO, TNT or other explosive elements. The risk level associated with these activities is expected to be from low to high based upon specific task(s).	Appropriate PPE will be utilized during excavation activities. Air mon conducted as defined in Section 4 of the SSHASP. See FLD 28. Engin Controls / Dust Suppression (e.g. wetting) will be utilized as necessary UXO personnel will examine excavated soil as it is excavated. OE rer activities to be performed in accordance with ESS and SpecPro SSHA shields and equipment shall be utilized during handling, storage, and d OE. Only NY certified blaster will be approved to dispose of OE.
	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 sha removed or marked and barricaded. Sufficient illumination shall be mair personnel shall conduct walkover in groups of two as a minimum. Site p refer to and follow WESTON FLDs 02-Inclement weather and 39-Illum see FLD 11 and 12.
	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 FLD12
	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 FI
	Fire	Flammable liquids will be stored in safety containers and flammable sto Propane cylinders will be stored outside in secured areas. Fuel storage ta placed in impermeable dikes. Properly rated fire-extinguishers will be pl ft of the fuel storage area, in construction equipment, and strategically in construction area.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate ca handling and placement of heavy objects. Materials and objects being ha inspected for rough or sharp edges, and appropriate precautions shall be contact. Personnel shall wear work gloves and avoid placing hands betw
	Hand tools, manual and power.	Tools shall be inspected prior to use. Damaged tools will be tagged out a qualified person can perform repair. Use tools properly and for their in purpose. A ground fault circuit interrupter (GFCI) will protect all power for hand tools. See FLD 38.

	Noise during the operation of heavy equipment.	Personnel shall wear hearing protection as necessary. See FLD 01.
	Inclement weather, heat/cold stress.	Workers shall be briefed and cognizant of heat and cold stress sympto will be available to workers. See FLD 05 and 06. Work rest periods w established according to ACGIH and NIOSH guidelines.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of t appropriate measures as required. Adhere to WESTON Bloodborne P Exposure Control Plan - First Aid Procedures FLD.
	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 pe

Task	Hazards	Hazard Control
completion of all activities, ntractor will be seed area with a rye grass using conventional methods.	***Chemical Hazards***—Non-intrusive activities and therefore, the risk level of exposure to site contaminants during this activity is low.	No intrusive activities allowed during this activity. Wear appropriate PPE dermal contact. Avoid liquid pools and stained areas if possible. A backg will be conducted to ensure the levels of protection are correct. Action le established in the Table 4-1 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. Sufficient illumination shall be main personnel shall conduct walkover in groups of two as a minimum. Site pe refer to and follow WESTON FLDs 02-Inclement weather and 39-Illumi see 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 redu hazards. See FLD12
	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 Propane cylinders will be stored outside in secured areas. Fuel storage ta placed in impermeable dikes. Properly rated fire-extinguishers will be pl ft of the fuel storage area, in construction equipment, and strategically in 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 inspected for rough or sharp edges, and appropriate precautions shall be contact. Personnel shall wear work gloves and avoid placing hands betw
	Electric Hazards	Generators will be grounded unless self-grounded. GFCIs will be used a Extension cords will be properly rated for intended use. Prior to any intr authorities will be contacted for permits. Elevated parts of machinery, la antennas will be kept at least 10' from overhead electric lines. Qualified will make electrical Installations. A lockout/tagout program consistent w will be used for equipment maintenance.
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate carefull handling equipment operations. Guards will be kept in place during oper 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 a qualified person can perform repair. Use tools properly and for their i purpose. A ground fault circuit interrupter (GFCI) will protect all powe for hand tools. See FLD 38.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of t appropriate measures as required. Adhere to WESTON Bloodborne P Exposure Control Plan - First Aid Procedures FLD.
	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 pe

ity 12 – Demobilization

Task	Hazards	Hazard Control
completion of all soil screening ities, oversize sorting, grading, ng, subcontractor will be responsible emoving all temporary equipment and rials.	***Chemical Hazards***—Non-intrusive activities and therefore, the risk level of exposure to site contaminants during this activity is low.	No intrusive activities allowed during this activity. Wear appropriate PPI dermal contact. Avoid liquid pools and stained areas if possible. A backg will be conducted to ensure the levels of protection are correct. Action le established in the Table 4-1 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 sha removed or marked and barricaded. Sufficient illumination shall be mair personnel shall conduct walkover in groups of two as a minimum. Site p refer to and follow WESTON FLDs 02-Inclement weather and 39-Illum see FLD 11 and 12.
	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 FLD12
	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 sto Propane cylinders will be stored outside in secured areas. Fuel storage ta placed in impermeable dikes. Properly rated fire-extinguishers will be pl ft of the fuel storage area, in construction equipment, and strategically in construction area.
	Hands or fingers caught between objects; abrasions and lacerations.	Personnel shall be made aware of the hazard and asked to coordinate ca handling and placement of heavy objects. Materials and objects being ha inspected for rough or sharp edges, and appropriate precautions shall be contact. Personnel shall wear work gloves and avoid placing hands betw
	Electric Hazards	Generators will be grounded unless self-grounded. GFCIs will be used a Extension cords will be properly rated for intended use. Prior to any intr authorities will be contacted for permits. Elevated parts of machinery, la antennas will be kept at least 10' from overhead electric lines. Qualified will make electrical Installations. A lockout/tagout program consistent w will be used for equipment maintenance.
	Moving mechanical parts from heavy equipment operations.	Personnel shall be made aware of the hazard and will coordinate careful handling equipment operations. Guards will be kept in place during ope Maintain safe distance from moving mechanical parts. Always use appr See FLD 22.

	Hand tools, manual and power.	Tools shall be inspected prior to use. Damaged tools will be tagged out a qualified person can perform repair. Use tools properly and for their i purpose. A ground fault circuit interrupter (GFCI) will protect all powe for hand tools. See FLD 38.
	Biological: Poisonous plants, insects, and snakes.	Review recognition of poisonous plants, insects, or snakes typical of t appropriate measures as required. Adhere to WESTON Bloodborne P Exposure Control Plan - First Aid Procedures FLD.
	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 p

6. REFERENCES

USACE, Statement of Work, Ordnance and Explosive (OE) Removal Action, At the Open Burning Grounds (OB), Seneca Army Depot Activity, Romulus, New York, 23 June 1997

APPENDIX A

USACE, AREA 44A, ESS, APRIL 2000
STATEMENT OF WORK, ORDNANCE AND EXPLOSIVES (OE)
REMOVAL ACTION AT THE OPEN BURNING GROUNDS (OB)
23 JUNE 1997

APR-27-2001

U.S. Army Corps of Engineers
New York District
Seneca Office for Project Management
CENAN-PP-M, Building 115, Seneca Army Depot
Route 96, Romulus, NY 14541

Fax: 607-869-1251

From: X Randall W. Battaglia Phone: 607-869-1523
____ Thomas R. Enroth Phone: 607-869-1255
____ Janet R. Fallo Phone: 607-869-1248

Number of Pages including Cover: 36 Date: 27 Apr 01

TO: Chris Kane / Michelle Brock

FAX: 603-656-5401 / 978-318-8663

COMMENTS:

Attached please find:

ESS for SEAD 44A

AMSOS-SF (DDESB-KO/12 Jul 00) (385-10b) 2d End
SUBJECT: Explosives Safety Submission for Ordnance and Explosives (OE) Removal at the Former Quality Test Range (SEAD-44A) Seneca Army Depot Activity, Romulus, NY

Operations Support Command (PROV), 1 Rock Island Arsenal, ATTN: AMSOS-SF, Rock Island, IL 61299-6000 25 JUL 100

FOR Department of Army, Huntsville Center, Corps of Engineers, ATTN: CEHNC-OE-CX. P.O. Box 1600, Huntsville, AL 35807-4301

1. The Department of Defense Explosives Safety Board approved the subject OE removal plan 12 July 2000. Upon completion of the OE removal from the Test Range, please prepare a final removal report and forward three copies to this office for distribution.

2. The POC is Mrs. Deb Westervelt, AMSOS-SF, (309) 782-2986 or DSN 793-2986, E-mail amsos-sf@osc.army.mil or westerveltd@osc.army.mil .

for ROSALENE E. GRAHAM
Chief, Safety/Rad Waste Team

CF:
Commander, Seneca Army Depot Activity, ATTN: SMASE-BEC, 5786 State Route 96, Romulus, NY 14541-5001

SMAAC-ESL (DDESB-KO/12 Jul 00) (385[A]) 1st End
SUBJECT: Explosives Safety Submission for Ordnance and Explosives (OE) Removal at the Former Quality Assurance Test Range (SEAD-44A) Seneca Army Depot Activity, Romulus, NY

Defense Ammunition Center, ATTN: SMAAC-ESL, 1 C Tree Road, Building 35, McAlester, OK 74501-9053

19 JUL 2000

FOR Commander, Operations Support Command (OSC)(PROV), ATTN: AMSOS-SF, Rock Island, IL 61299-6000

1. Reference: Memorandum, Defense Ammunition Center, SOSAC-ESL, 26 May 2000, SAB (enclosure 1).

2. Basic correspondence provides Department of Defense Explosives Safety Board (DDESB) approval for subject submission, and is provided for your information and use.

3. Request two copies of the final removal report be sent to this office; we will forward one to DDESB.

4. The POC is Ms. Jean Gallagher, SMAAC-ESL, (918) 420-8876, DSN 956-8876; email gallagher@dac-emh2.army.mil.

FOR THE DIRECTOR:

Melvin L Colberg

Encls
as

MELVIN L. COLBERG
Chief, Ordnance Explosives
Environmental Division

CF:
Office of the Chief of Staff, ATTN: DACS-SF, 2211 S. Clark St., Room 980, Arlington, VA 22202
Commander, U.S. Army Engineering and Support Center, Huntsville, ATTN: CEHNC-PM, P.O. Box 1600, Huntsville, AL 35807-4301

DEPARTMENT OF DEFENSE EXPLOSIVES SAFETY BOARD
2461 EISENHOWER AVENUE
ALEXANDRIA, VIRGINIA 22331-0600

12 JUL 2000

DDESB-KO

MEMORANDUM FOR DIRECTOR, ARMY SAFETY OFFICE
(ATTN: DACS-SF)

SUBJECT: Explosives Safety Submission for Ordnance and Explosives (OE) Removal at the Former Quality Assurance Test Range (SEAD-44A) Seneca Army Depot Activity, Romulus, NY

References: (a) USADAC Memorandum SOSAC-ESL of May 26, 2000, Same subject

(b) DoD 6055.9-STD, DoD Ammunition and Explosives Safety Standards

The subject safety submission submitted by reference (a) to remove ordnance and explosives from the former function test range on Seneca Army Depot, Seneca, New York has been reviewed with respect to reference (b). Based on the information furnished, the safety submission is approved, provided the work is performed as identified in the package of the reference (a).

After completion of the clearance effort, request this office be furnished a copy of the final closure plan report.

Point of contact is Mr. Larry D. Webster at Commercial (703) 325-1378, DSN 221-1378 or E-mail Larry.Webster@hqda.army.mil.

Daniel T Tompkins

DANIEL T. TOMPKINS
Colonel, USAF
Chairman

cc:
USADAC (Attn: SOSAC-ESL)

DEPARTMENT OF THE ARMY
US ARMY DEFENSE AMMUNITION CENTER
1 C TREE ROAD
MCALESTER, OK 74501-9053

REPLY TO ATTENTION OF

SOSAC-ESL (385[A])

26 MAY 2000

MEMORANDUM FOR Chairman, Department of Defense Explosives Safety Board, ATTN: DDESB-KO, 2461 Eisenhower Avenue, Alexandria, VA 22331-0600

SUBJECT: Explosives Safety Submission for Ordnance and Explosives (OE) Removal at the Former Quality Assurance Test Range (SEAD-44A) Seneca Army Depot Activity, Romulus, NY

1. References:

a. DOD 6055.9-STD, Ammunition and Explosives Safety Standards, July 1999.

b. AR 385-64, U.S. Army Explosives Safety Program, 28 November 1997.

c. Memorandum w/ enclosures, HQ, Army Operations Support Command (PROV), AMSOS-SF, 23 May 2000, Subject: Explosives Safety Submission for Ordnance and Explosives (OE) Removal at the Former Quality Assurance Test Range (SEAD-44A), Seneca Army Depot Activity, April 2000 (Enclosure 1).

d. Memorandum, Department of Defense Explosives Safety Board (DDESB), DDESB-KO, 14 July 1999, Subject: Explosives Safety Submission, Ordnance and Explosives (OE) Removal at the Open Burning Grounds, Seneca Army Depot Activity, July 1998.

2. We have reviewed this submission in accordance with the criteria of DOD 6055.9-STD as implemented by AR 385-64, and have granted Army approval. It is provided for Department of Defense Explosives Safety Board (DDESB) review with our recommendation for approval to allow OE removal and transfer of property.

3. Seneca is expecting a DDESB site visit 14 August 2000. We would appreciate approval by 30 June so this operation can be up and running for your visit. Request you fax us any correspondence dealing with this submission to expedite the process.

4. The following information is provided to assist in your review.

a. This submission requests approval for a removal action at the former function test range. This is the second area at Seneca to undergo an OE removal operation. Reference 1d provided final approval by your office of a prior submission addressing the burning grounds. There will be additional submissions for other areas in the future.

b. The function test range is a 14-acre parcel on the periphery of an overall 720-acre area that is to be transferred to the New York State Department of Corrections for construction of a prison. This parcel will be part of a buffer zone inside a fenced area of the prison; no construction is planned there.

c. The exact extent of function testing performed in this area is unknown. According to the Archives Search Report, fuzes may have been tested there. During sampling only 40mm grenades (practice and CS) were found at depths ranging from 1 to 5 inches.

d. The site will be cleared to at least a 3-foot depth.

(1) The existing berms will be removed and then the entire parcel will be excavated to a depth of 1 foot. All the OE should be within this excavated layer.

(2) After the first foot of soil is removed, the site will be geophysically mapped.

(3) All anomalies to a depth of 2-feet will be investigated and removed. A 2-ft clearance is used because that is the maximum depth the detector can reliably locate a 40mm practice grenade. If deeper anomalies are noted they will also be removed.

(4) The excavated soil will be sifted (See Appendix B of the submission) and replaced upon completion of the removal action.

e. It is reasonable to assume all OE will be within the first 12 inches because of the nature of function test activities and the sampling results. The data obtained from this clearance will either prove or disprove this theory.

(1) A 3-ft clearance will be done and if that removes all the OE the property will be released for unrestricted use.

(2) If OE potentially exists below the clearance depth, an addendum to this submission will be prepared requesting approval for property release.

f. The same two magazines that were approved for storage of demolition explosives and recovered OE for the burning grounds operation will be used for this operation too. (See Figure 1-2 and Site Map 4 of the submission.)

SOSAC-ESL (385[A])
SUBJECT: Explosives Safety Submission for Ordnance and Explosives (OE) Removal at the Former Quality Assurance Test Range (SEAD-44A) Seneca Army Depot Activity, Romulus, NY

2. The POC is Ms. Jean Gallagher, SIOAC-ESL, DSN 956-8876, Facsimile 8503: email gallagher@dac-emh2.army.mil.

FOR THE DIRECTOR:

Melvin L Colberg

Encl
as

MELVIN L. COLBERG
Chief, Ordnance Explosives
Environmental Division

CF (wo/encl)):
Office of the Chief of Staff, ATTN: DACS-SF, 2211 S. Clark St., Room 980, Arlington, VA 22202

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY OPERATIONS SUPPORT COMMAND (PROV)
1 ROCK ISLAND ARSENAL
ROCK ISLAND, IL 61299-6000

REPLY TO
ATTENTION OF:

AMSOS-SF (385-10d)

23 MAY 2000

MEMORANDUM FOR Director, Defense Ammunition Center, ATTN: SIOAC-ESL, 1C Tree Road, Building 35, McAlester, OK 74501-9053

SUBJECT: Explosives Safety Submission for Ordnance and Explosives (OE) Removal at the Former Quality Assurance Test Range (SEAD-44A) Seneca Army Depot Activity, April 2000

1. The Operations Support Command Safety Team recommends approval of the enclosed U.S. Army Corps of Engineers (COE) prepared explosives safety submission (ESS) (encl 1). The COE proposes to remove OE from the 14 acre SEAD-44A site. The remediation contractor will excavate the entire 14 acres to a one-foot depth. The COE expects to find fuzes and grenades at the site. The Army will release the site for unrestricted use following remediation.

2. The most probable munition is the M406 40MM Grenade. Site map 1 shows the relationship from SEAD-44A to the Loran "C" Station tower and the prison construction site. Site Map 2 shows the topography of SEAD-44A. There are no buildings within the SEAD-44A site.

3. The ESS incorporates OSC Safety Team comments. The COE requests an expeditious review. Their proposed start date for excavation is 15 June 1999.

4. The POC is Mrs. Deb Westervelt, AMSOS-SF, DSN 793-2986, E-mail amsos-sf@osc.army.mil or westerveltd@osc.army.mil.

Encl

for ROSALENE E. GRAHAM
Chief, Safety/Rad Waste Team

Cc: AMSOS-MAI-O
Department of Army, Huntsville Center, Corps of Engineers, P.O. Box 1600, Huntsville, AL 35807-4301
Commander, Seneca Army Depot Activity, ATTN: SIOSE-BEC, 5786 State Route 96, Romulus, NY 14541-5001

DEPARTMENT OF THE ARMY
HUNTSVILLE CENTER, CORPS OF ENGINEERS
P.O. BOX 1600
HUNTSVILLE, ALABAMA 35807-4301

REPLY TO ATTENTION OF:

CEHNC-OE-CX (200-1c)

15 MAY [illegible]

MEMORANDUM FOR

Commander, Headquarters, U.S. Army Operations Support Command, 1 Rock Island Arsenal, ATTN: AMSOS-SF, Bldg 350 4SE, Rock Island, IL 61299-6000
Director, Defense Ammunition Center, ATTN: SIOAC-ESL (Mr. Cliff Doyle), Building 35, 1C Tree Road, McAlester, OK 74501-9053

SUBJECT: Explosive Safety Submission for Ordnance and Explosives Removal at the Former Quality Assurance Test Range (SEAD-44A) Seneca Army Depot Activity, Romulus, NY

1. The enclosed safety submission was prepared by our organization for the installation and outlines the safety criteria for the protection of site personnel and the public during the explosives operations scheduled at the subject range.

2. The explosives safety submission is being forwarded for your concurrent review. Members of the USACE OE-CX have reviewed the document and concur with safety criteria presented. The installation point of contact has been furnished an electronic copy of the document and should forward the installation's endorsement shortly.

3. Should you have any questions, you may contact me at 256-895-1300 or Mr. Kevin Healy at 256-895-1627.

Encl

HARRY L. SPEAR
COL, EN
Commanding

CF: (wo/encl)
Commander, Seneca Army Depot Activity, ATTN; SIOSE-BEC (Mr. Absolom) 5786 State Route 96, Romulus, NY 14541-5001

Explosive Safety Submission

Ordnance And Explosives Removal
at the Former QA Function Test Range (SEAD-44A),
Seneca Army Depot Activity,
Romulus, New York

April 2000

Prepared by
US ARMY CORPS OF ENGINEERS
Engineering and Support Center, Huntsville

CONTENTS

APPENDICES

INTRODUCTION

This Explosive Safety Submission is for the removal of Ordnance and Explosives (OE) from the Former QA Function Test Range (SEAD-44A), Seneca Army Depot Activity (SEDA), New York. It outlines the safety aspects of the plan for cleanup of Unexploded Ordnance (UXO) and OE on property that is owned by the Department Of Defense (DoD) and is soon to be transferred.

SEDA is a US Army facility located in Seneca County, New York. SEDA occupies approximately 10,600 acres (Appendix A, Figure 1). It is bounded on the west by State Route 96A and on the east by State Route 96. The cities of Geneva and Rochester are located to the northwest (14 and 50 miles, respectively); Syracuse is 53 miles to the northeast and Ithaca is 31 miles to the south. The surrounding area is generally used for farming.

SEDA was included on the Federal Facilities National Priorities List on 13 July 1989. Consequently, all work to be performed under this contract will be performed according to Comprehensive Environmental Response Compensation and Liability Act (CERCLA) guidance and the "Federal Facility Agreement under CERCLA Section 120 in the matter of Seneca Army Depot, Romulus, New York,".

SEDA was included on the 1995 Base Realignment and Closure List and is due to be closed. The Seneca County Industrial Development Agency (IDA) has prepared a reuse report entitled "Seneca Army Depot Reuse Plan and Implementation Strategy". The majority of the installation will be used for housing developments, industrial development, institutional and conservation/recreation uses upon transfer. The current SEAD-44A site is a roughly 14-acre parcel on the periphery of an overall 720-acre area that is to be transferred to the New York State Department of Corrections for the construction of a prison.

1.0 REASON FOR OE.

Aerial photos show that activities at the site began around 1963. There were five structures at the end of the main road and the entire area appeared to be surrounded by fire breaks. Later photos (1978) indicated two structures and the fire breaks were very faint. Photos from 1991 indicate that activities were apparently complete by that time since no structures or fire breaks were at all visible.

The exact extent of function testing performed in this area is unknown. However, it is expected that fuzes were tested and the remains of 40mm grenades have been seen.

2.0 MAPS.

Maps detailing the location and extent of the area of concern and presenting the relevant Public Withdrawal Distances, Q-D Distances, etc., are presented in Appendix A to this submission.

3.0 AMOUNT AND TYPE OF OE.

Characterization sampling done in April/May 1999 showed large numbers of 40mm practice grenades, at depths ranging from 1-5 inches, over the approximately 5-acre area that was sampled. Noted were numerous M407A1, 40mm practice grenades. At least one still contained the RDX pellet used to expel the marking dye. Additionally, the remains of one M651, 40mm Grenade (CS) were located.

For conservatism, the Most Probable Munition (MPM) chosen for this site is the M406 40mm Grenade (HE). The Net Explosive Weight (NEW) is 0.085 lbs. TNT equivalent. The Public Withdrawal Distance (PWD) for this MPM is 345 feet, which was computed using HNC-ED-CS-S-98-1 (approved by DDESB on 6 April 1998) by Dr. Michelle Crull, USAESC, Huntsville, Engineering Division, Structures Branch, 4-10-98. If an OE item having a greater fragment distance is found, its withdrawal distances will be determined in accordance with the procedures defined in ***HNC-ED-CS-S-98-1***. Until the appropriate distances are determined by ***HNC-ED-CS-S-98-1***, the default distances in DoD 6055.9-STD (Chapter 5, Paragraph C 5.5.4.1 (July 1999)) will be used.

4.0 START DATE.

Work is anticipated to start in late late May/early June 2000, beginning with survey work and progressing to intrusive work. Intrusive work should begin by 15 June.

Not Applicable

5.0 FROST LINE DEPTH.

The design frost depth for this site is 40 inches.

6.0 CLEARANCE TECHNIQUES.

This section presents information concerning the techniques to be used during the removal of OE at this site. ***As a special note, strong electromagnetic radiation (EMR) was detected at the SEAD-44A site during characterization efforts with the EM-61. The Contractor will determine, with appropriate instruments, whether the US Coast Guard Loran C Station is emitting HERO unsafe amounts of radiation with respect to the activities to be performed as part of this project. Determination will be made IAW TM 9-1375-213-12, Tables 2-02 and 2-03.***

General Progression. OE remediation at the SEAD-44A site will take place in the following phases:

- Phase I. Surface OE Clearance and Vegetation Removal.

a. During previous characterization activities at the site, approximately 8 acres were visually swept and bush-hogged prior to the performance of any geophysical activities. This acreage will not require any additional OE clearance prior to additional brush clearance being conducted.

b. As for the remaining acreage of the site, a surface clearance for OE will be conducted prior to vegetation removal. With search personnel spaced at 5 foot intervals, advance will be made and the surface

searched for visible signs of OE. Any OE located will be investigated to determine if it can be safely moved or if it will have to be blown in place. Following the surface clearance, all vegetated areas will be bush-hogged. This will be likely be performed by Depot personnel using depot equipment. However, one UXO Specialist will provide avoidance support by proceeding ahead of the brush clearing equipment and checking for the presence of OE. Any OE encountered will be marked and avoided.

o Phase II. A Geophysical Test Grid will be performed to verify that the detection equipment is capable of detecting the target munition to the required depth. This is two feet for the M407A1, 40mm Practice Grenade. The practice version is being used as the target munition since it is predominantly aluminum and is more difficult to find than the largely ferrous, HE version.

o Phase III. The existing berms will be bulldozed and construction debris removed. Following removal of all obvious debris, the soils will be re-stockpiled for future sifting operations. NOT APPLICABLE

o Phase IV. The entire 14 acres will be excavated/stripped to a depth of 1 foot. Soils removed will be sifted for OE. "

o Phase V. Subsequently, the site will be geophysically mapped. Following the mapping effort, all anomalies to a depth of two feet will be investigated and removed, as may be allowed by the absence of bedrock. Anomalies that are deeper will be chased and removed, as well, as allowed by the absence of bedrock.

o Phase VI. All of the sampling data gathered from the mapping/anomaly investigation data and the sifting data collected in the phases above will be compiled to draw conclusions on the existence or non-existence of OE contamination at depth. A conclusion will be drawn regarding the existence of OE-contamination below the two-foot depth at this site:

a. If OE-contamination does not exist within the top 1 foot of depth (beneath the stripped surface), release of the site for unrestricted use from an explosives safety standpoint (even though the end use is currently planned to be highly restricted) will be sought. This request will be based upon the following:

(1) The 1-foot clearance (excavation and sifting) over the site is expected to show that all OE is located at less than that depth. For example, if OE is only found in the top six inches, it is reasonable to assume a 1-foot removal was adequate.

(2) Mapping and anomaly sampling of areas deeper than 1-foot is expected to show that no OE is present at a depth greater than the 1-foot horizon. At such a point, it will be concluded that no additional OE clearance will be required over the site. This conclusion will be presented in the Final Report for this project, which will be distributed for review.

b. If OE-contamination does exist below the 1-foot depth (one foot excavated and sifted), it will be removed to the depths of the instrument capabilities. If OE potentially exists below the clearance depths, an addendum to this ESS will be submitted for approval prior to seeking transfer of the land. However, it should be noted that the presence of burial pits, alone, will not trigger the additional ESS requirement. Pits will be removed.

o Phase VII. The Final Report detailing the actual outcome of this project will be provided for information to those who have reviewed and approved this ESS.

Discussion of Project-Specific Procedures.

All surveying activities will be completed with the accompaniment of a UXO escort. Surveying activities will consist of the location of site grids.

For subsurface mapping and clearance, each grid will be divided into 5 foot transects or lanes. Operators will walk each lane with the chosen geophysical instrument. The chosen instrument(s) will be capable of detecting the Most Probable Munition to the proposed depths. All anomalies will be marked with pin flags for retrieval by another team. Anomalies will be dug to a depth of two feet to determine the identity thereof. If anomalies are found to exist below the 3-foot clearance depth (1 foot stripped and 2 foot mapped and investigated) , they will be pursued.

Following completion of the removal, the one foot of stripped soil will be re-placed on the surface from where it came.

A Standard Operating Procedure for sifting operations is included in Appendix *B* of this ESS. All soil excavation and movement (to the sifter and away from the sifter) will be performed by an excavation contractor ***with proper barricading of equipment.*** All sifting and separation activities will be performed by UXO-qualified personnel. During all OE operations, earthmoving equipment operators and the sifter equipment operators will be protected by plexiglass shields. Shield thickness has been calculated to be a minimum of 0.88 inches of plexiglass (by Dr. Crull, Structures Branch, USAESC, Huntsville, using THOR equations for fragment penetration from TM 5-1300) using the Q-D MPM, the M406 40mm Grenade (HE).

Regarding OE destruction, of specific concern are the locations of explosives storage facilities and detonation operations with respect to facilities and people and any effects thereon. Explosives for destruction operations will be provided by the contractor. It is anticipated that demolition materials and shaped charges, as appropriate, will be used. These are considered flammable liquids and oxidizers and Class 1.4B explosives. Due to the location of the USCG Loran C station within a mile of the site, the Contractor shall not use anything other than non-electric material.

Explosives will be stored in the SEDA OB/OD area double igloo type, earthen-covered magazine. The existing magazine is constructed to DDESB and Army standards and is complete with the required lightning protection. The contractor will store det cord, perforators and time fuzes in one half of one of the magazines. In the other half of the first magazine, the contractor will store initiators. The two halves of this magazine will be separated by a sandbag wall (minimum two feet wide and at least as high as materials

stacked on either side). In the second of the magazines, UXO (which was located and is awaiting the weekly demolition operation) will be stored. The flammable liquid and oxidizers are received in separate packages and are not required to be stored as explosives. These materials will be stored in a nearby building to keep them away from personnel and the elements. Each of the two magazines is designed for a maximum NEW of 450 pounds. At no time will the contractor be storing more than 100 pounds NEW in either magazine. As for security, access into the SEDA ammunition area is, itself, extremely restricted. The magazines are remotely located within the ammunition area. Additionally, the contractor will establish and enforce strict area and site access at the SEAD-44A area. Access into a work site exclusion zone will be limited to contractor personnel specifically authorized to work on site and Corps of Engineers' safety personnel. All other personnel will be restricted from entering the exclusion zone or be escorted by contractor or Corps' safety personnel.

Disposal operations will be carried out weekly for items that can be moved and consolidated. Items which can be moved will be consolidated in accordance with "Procedures for Demolition of Multiple Rounds (Consolidated Shots) on Ordnance and Explosives (OE) Sites", dated August 1998 and approved by DDESB on 27 October 1998. Disposal will be carried out at the OD Grounds which is adjacent to the OB site. UXO will be stored in the second magazine while awaiting demo operations. Items which can not be moved will be blown-in-place, individually, on a daily basis. BIP operations that require the use of sandbags shall be organized as follows:

Required Sandbag Thickness = 12" with a 6" standoff between the round and the sandbags.
Sandbag throw distance = 25 feet
Minimum exclusion Zone = 200 feet

The required sandbag thickness and the sandbag throw distance were calculated IAW CEHNC-ED-CS-S-98-7 ***(approved by DDESB, 2 March 1999).*** The minimum exclusion zone is based upon the largest of the sandbag throw distance or 200 feet or the k328 distance for the total NEW (munition plus donor charge). *Note: A copy of HNC-ED-CS-S-98-7, "Use of Sandbags for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions" must be available on site. This report may be downloaded from the USAESCH homepage at* **http://www.hnd.usace.army.mil.** Select **"Product lines", "Ordnance and Explosives", "Technology", then "Analytical Tools".** A login and password are required.

QA/QC requirements are as follows:

o Due to the planned nature of the project, a QC audit will be conducted by the [redacted] QCM. This audit will include a surface and subsurface check of an area representing an additional 10% of the work completed. The [redacted] QCM, assisted by the QCS, will proceed on a predetermined pattern starting on the opposite side from the QCS's check, which will provide a total combined QC audit of approximately 20%. As with the QCS's check, if the site fails, it will be scheduled for re-work. In addition, an inspection of all

logs and a check of contractor and subcontractor personnel will be conducted to ensure that they are complying with the Work Plan.

o The pass/fail criteria for the final clearance is set by the CEHNC. This criteria specifies that a grid will be failed if, during a QC or QA audit conducted by either [redacted] or CEHNC personnel:

- a live item is found
- more than three OE scrap items are found in a grid
- an inert OE item, which resembles a live UXO, is found.
- any piece of scrap with dimensions greater than 2" by 2" is found.

If any of these conditions occurs, the entire grid will be failed and reswept and cleared. Upon completion of the grid re-work, an additional QC or QA audit will be conducted again by the responsible parties. Any failure will be reported to the CEHNC KO and the [redacted] QCM, PM and SUXOS.

Scrap that is collected from this action will be handled as follows:

o A temporary collection point will be established by the SUXOS or team leader within or adjacent to each operating grid. During operations, the UXO technicians who uncover an item will inspect it for the presence of explosives hazards. OE items that are free of explosive contamination and do not require venting will be placed in the grid collection point. OE that does require venting shall be collected and segregated from the other OE items. Upon completion of operations in the grid, the material in the collection point will be collected and loaded into containers, weighed and the weight entered into the team logbook. Further inspection by the QCS and the SUXOS will be conducted IAW the QC requirements outlined in Chapter 8 of the Work Plan.

o Upon completion of the project, all stockpiled, inert ordnance and Ordnance-Related Scrap (ORS) will be turned into a local scrap dealer. The procedures outlined in DoD 4160.21.M will be followed and the shipment certified as being free of explosive hazards. A DD Form 1348-1 will be utilized as turn-in documentation and will include the statement "I certify that the property listed hereon has been inspected by me and, to the best of my knowledge and belief, contains no items of a dangerous nature.". The DD1348-1 will be signed by the SUXOS and all turn-in documentation included in the removal report.

o When ORS is located on site, it will be inspected by at least two UXO technicians prior to being removed from the grid or sifter area. Whenever ORS is to be placed in a scrap storage container, the QCS and SUXOS will conduct a third and fourth inspection for the presence of explosive components or hazardous residues. In the event that any are discovered, the item will be removed and destroyed and the incident will be recorded and thoroughly discussed at the next daily tailgate safety meeting. The incident will be reviewed by the SUXOS and QCS and a recommended course of action will be presented to the PM, e.g., reprimand or dismissal of the two previous inspectors.

7.0 ALTERNATE TECHNIQUES. NA.

8.0 QUANTITY-DISTANCES.

The appropriate Quantity-Distances are shown on the site maps enclosed in Appendix A of this submission. For ease of review, the distances are repeated here. The rationale for the MPM and citation for the calculation method are presented in Section 3.0 of this submission. In general, team separation distances will be determined by the greater of 200 feet or the K50 (0.9 psi overpressure) distance. The separation distance for all unrelated personnel for an accidental detonation from an OE area will be determined by the greater of 200 feet, the K50 distance or the maximum fragment throw distance. The separation distance for all personnel (related and unrelated) for intentional detonations will be determined by the maximum of 200 feet, the K328 distance or the maximum fragment throw distance. Applying the above principles, the following distances apply:

OE Areas: Minimum of 345 feet (this is the maximum fragment range for the M406 40mm Grenade (HE).

Magazines: Minimum of 500 feet (Front) and 250 feet (Rear and Sides), IAW C9.T1 of DoD 6055.9-STD. Note that these distances are for 1.1 explosives; therefore, they exceed the distance requirements for the 1.4 demolition materials to be stored in one of the magazines. UXO (Class 1.1) will be stored in the second magazine.

Intentional Detonations: Minimum of 345 feet (via approved calculation).

Sifting Operations: During operation, no non-essential personnel will be allowed within a 400 foot radius of the sifter. This is due to the fact that the M406, 40mm Grenade (HE) is a Joint Hazard Classification (04)1.2 item. Therefore, the 400-foot distance will be used. Reference should be made to Site Map No. 4 in Appendix A.

9.0 OFF-SITE DISPOSAL. NA.

10.0 TECHNICAL SUPPORT.

No Chemical Warfare Materials (CWM) are suspected at this site. The contractor will positively identify all OE uncovered before items are removed or destroyed. If a suspect CWM is encountered, the Site Safety Officer will stop all operations on site and notify the on site CEHNC representative. The CEHNC Safety Specialist will notify the appropriate Explosive Ordnance Disposal (EOD) Detachment (725th Ordnance Company (EOD) out of Fort Drum) and/or Technical Escort Unit.

11.0 LAND USE RESTRICTIONS.

There will be no reuse restrictions required following this action. The site will be transferred (sometime during the closure process) for use as discussed in the INTRODUCTION, above.

12.0 PUBLIC INVOLVEMENT.

This removal is being performed under the CERCLA umbrella since Seneca is a BRAC federal facility on the National Priorities List. Consequently, the required public involvement process is already in place (BCT, RAB, general public involvement) with the SEDA PAO taking the lead.

13.0 AFTER ACTION REPORT.

Following the OE Removal Project at the Former QA Function Test Area, a copy of the Final Removal Report will be provided, to all who reviewed this ESS, for information purposes.

14.0 AMENDMENTS AND CORRECTIONS.

An amendment or correction discussing any changes in the procedures to be used or the conditions encountered during this removal will be provided for review and approval as warranted in the guidance.

15.0 REFERENCES

General

a. DA PAM 385-64, Ammunition and Explosives Safety Standards, dtd 28 November 1997.

b. AR 385-64, US Army Explosives Safety Program, 28 November 1997.

c. DoD 6055.9-STD, Department of Defense Ammunition and Explosives Safety Standards, July 1999.

d. DDESB, Guidance for Clearance Plans, 27 January 1998.

e. Interim Final, "Guidance for Conducting Remedial Investigations/Feasibility Studies Under CERCLA", U.S. EPA, Office of Solid Waste and Emergency Response, October 1988.

f. "U.S. Corps of Engineers Safety and Health Requirements Manual," U.S. Army Engineering Manual No. EM-385-1-1, April 1981.

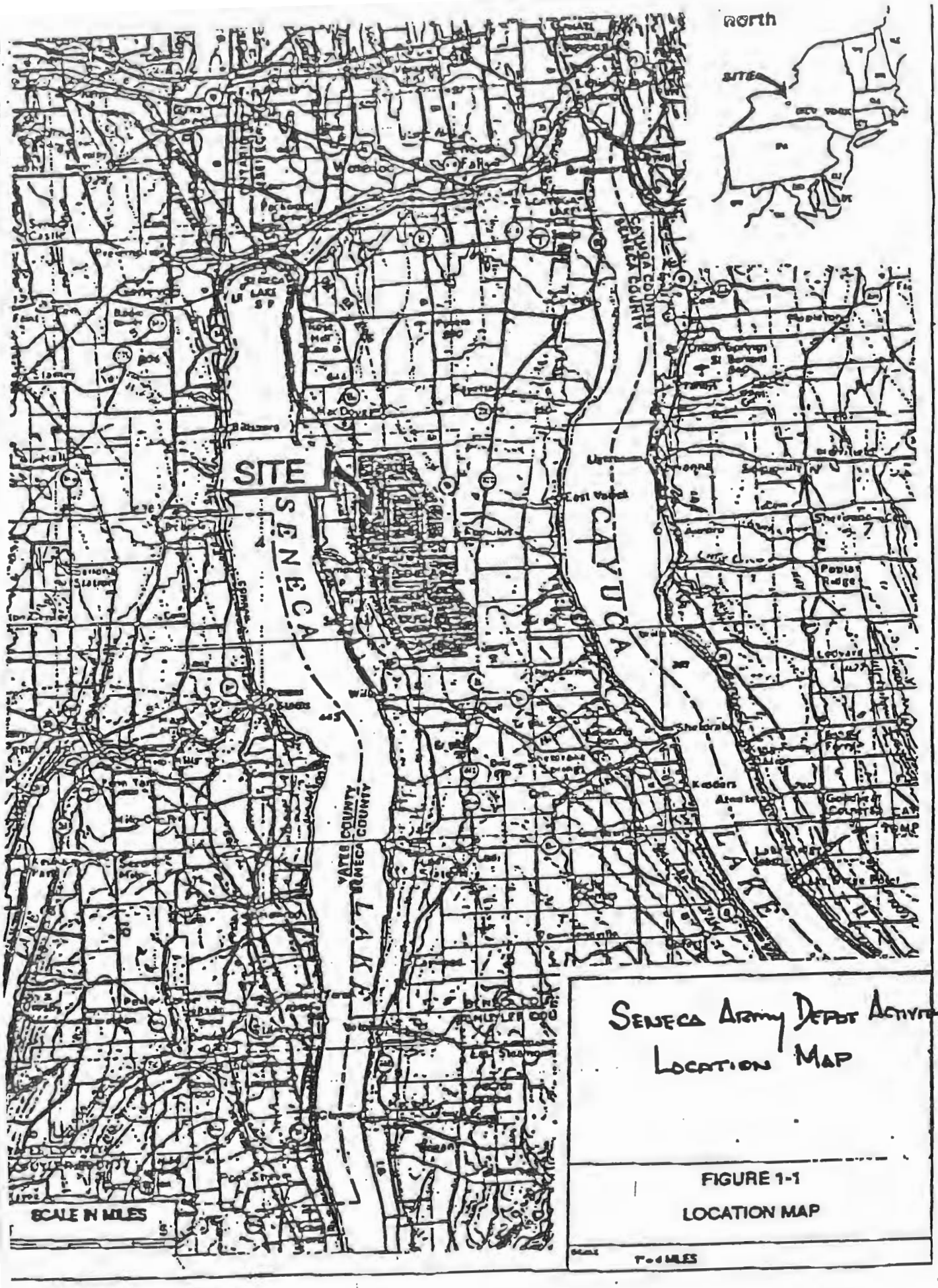
g. "Safety Concepts and Basic Considerations for Unexploded Ordnance (UXO) Operations", U. S. Army Engineering and Support Center, Huntsville, Revised 16 February 1996.

Specific

h. "Federal Facility Agreement under CERCLA Section 120 in the matter of Seneca Army Depot, Romulus, New York," Docket No. II-CERCLA-FFA-00202, USEPA, U.S. Department of the Army, and the New York State Department of Environmental Conservation, November 1990.

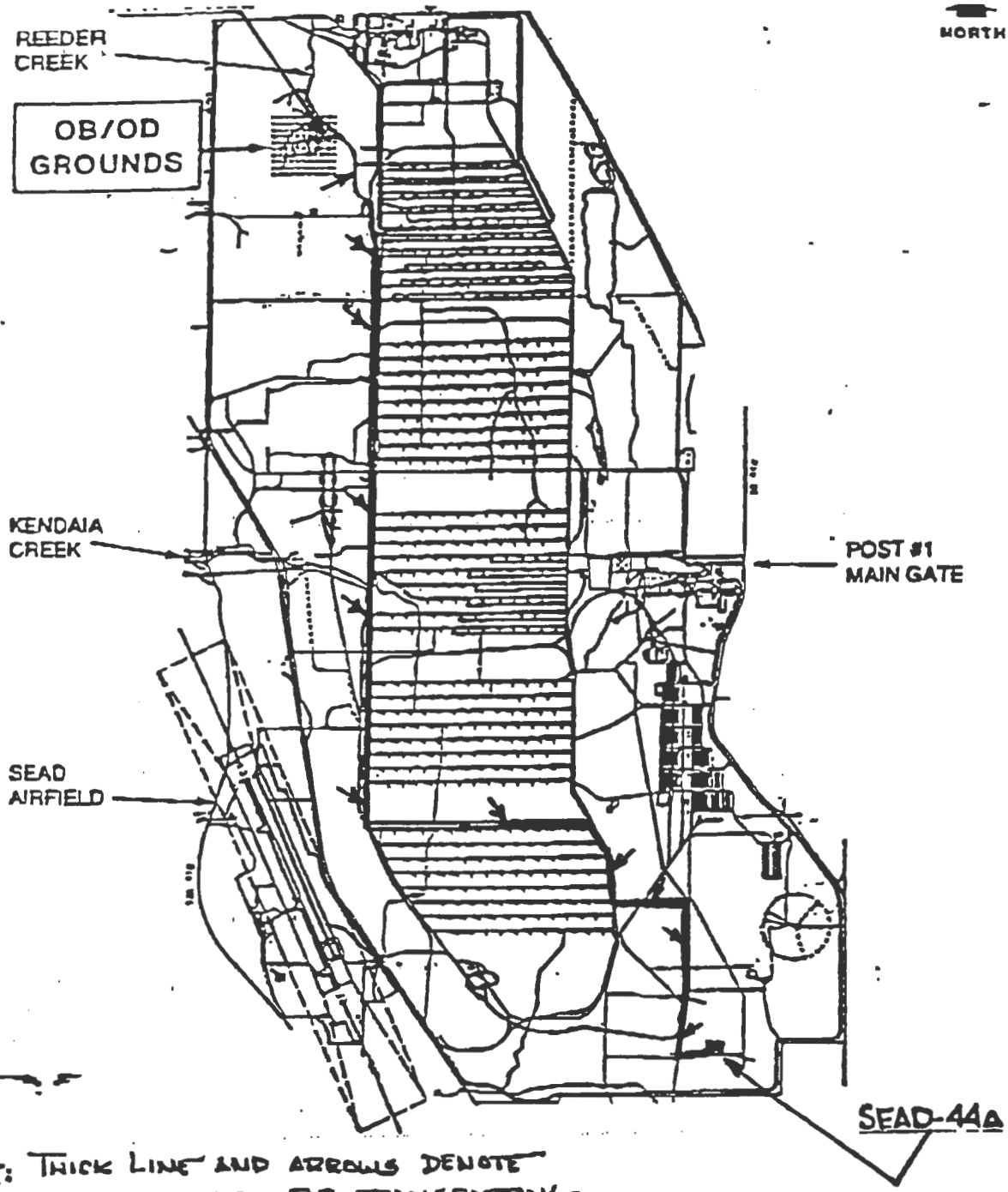
APPENDIX A

MAPS



SENECA ARMY DEPOT ACTIVITY
LOCATION MAP

FIGURE 1-1
LOCATION MAP



NOTE: THICK LINE AND ARROWS DENOTE THE ROUTE TO BE USED FOR TRANSPORTING EXPLOSIVES TO SEAD-44A AND BE TO THE B GROUNDS. KEY WILL BE TO AVOID THE WAREHOUSE AND OFFICE AREAS.

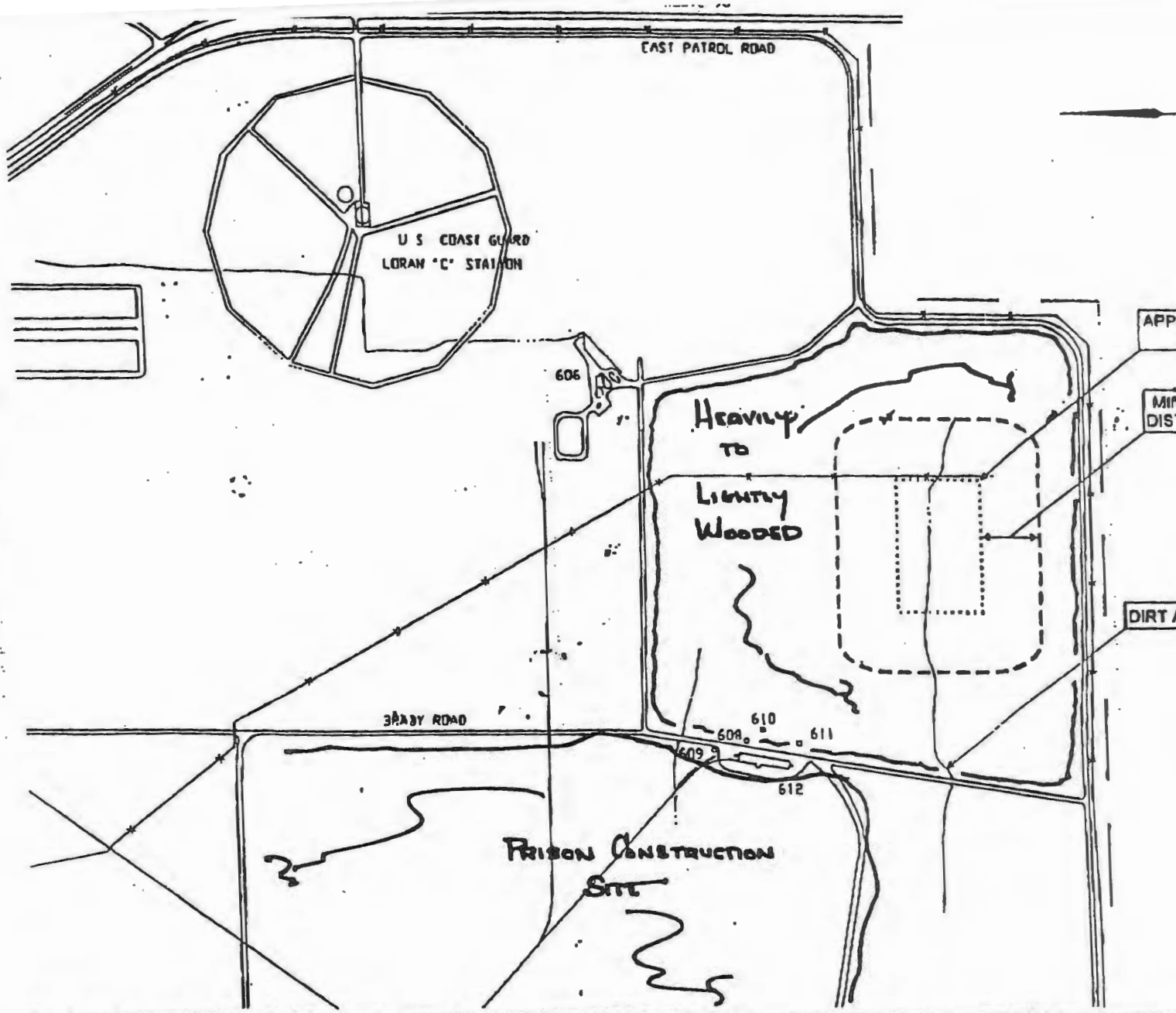
SOURCE: Seneca Army Depot

FIGURE 1-2

SENECA ARMY DEPOT MAP

SCALE 1" = 2000' (APPROXIMATE)

Nearest Point with General Public Presence:
- Straight-Line Distance ≈ 1900 Feet to Prison Construction Area NW Corner



Approx. Site Boundary

Fence Line

MSD

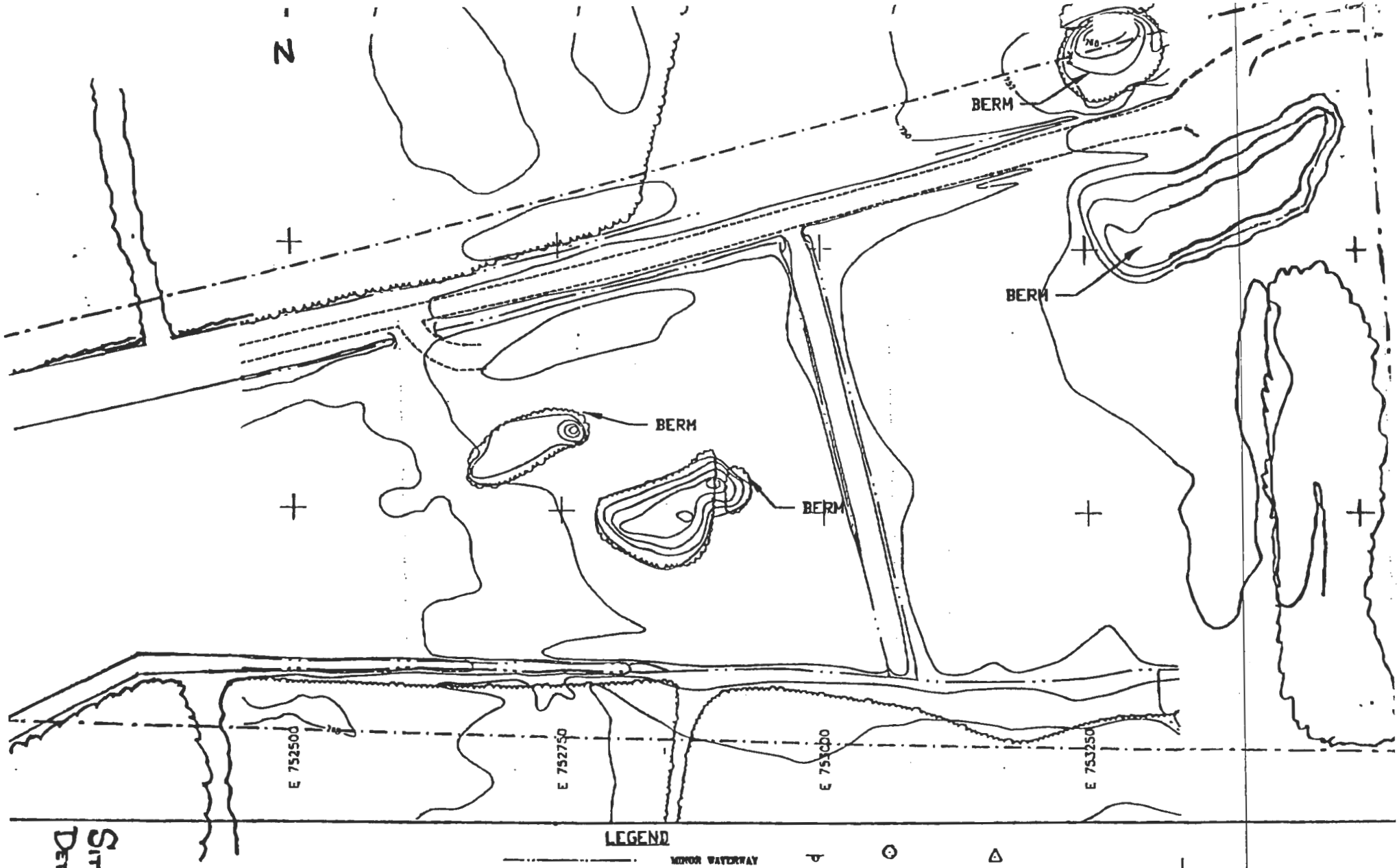
0 400 800
Scale in Feet

Seneca Army Depot Activity

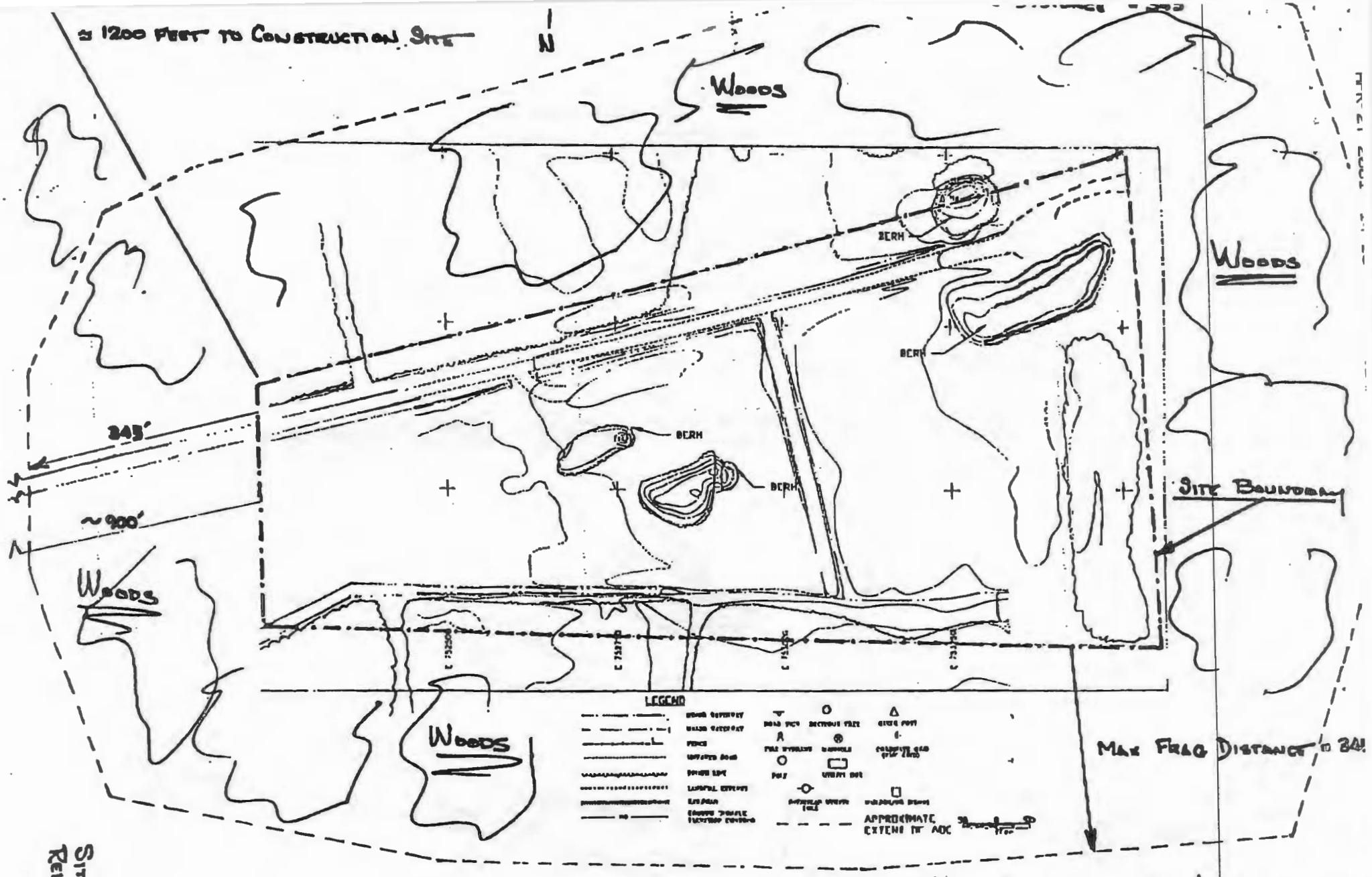
Romulus, New York

Site 44A, Quality Assurance Function Test Range

Drawing Version No.: 1 Rev. 0	Drawn by: JKD	Contract Number: DACA87-97-D-0005
Date: 02/21/00	Checked by: DB/SM	Task Order Number: 0015

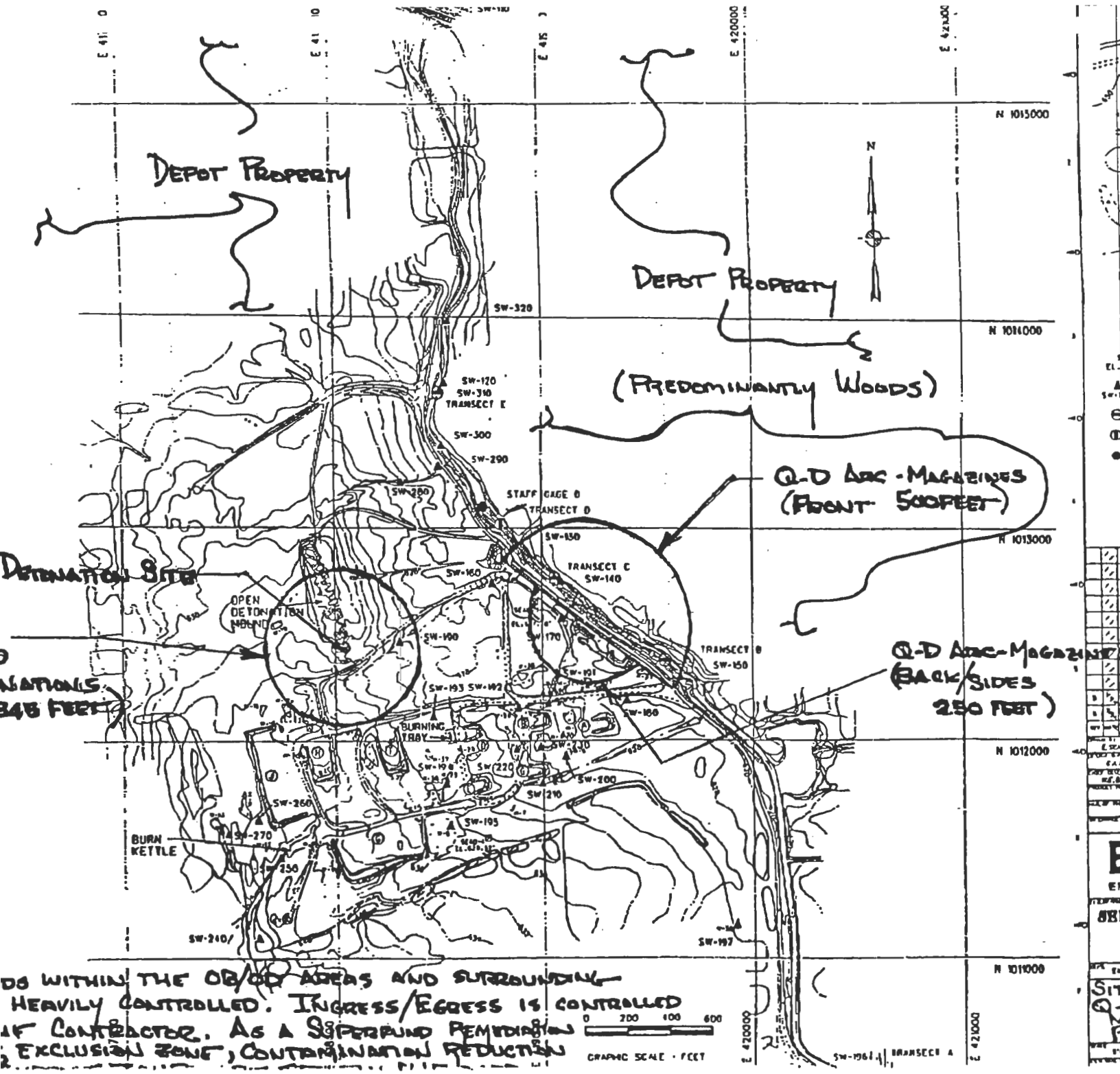


Site Map 2
Detailed Site Layout



SITE MAP 3
RELATIONAL DISTANCES

NOTE: SITTER WILL BE KEPT A MINIMUM OF 55' WITHIN THE SITE BOUNDARY S AS TO KEEP THE 400' SITTER CIRCLE WITHIN THE SITE "MAX FRAG DISTAN BOUNDARY AT ALL TIMES.



DS WITHIN THE OB/OD AREAS AND SURROUNDING
HEAVILY CONTROLLED. INGRESS/EGRESS IS CONTROLLED
F CONTRACTOR. AS A SUPERFUND REMEDIATION
EXCLUSION ZONE, CONTAMINATION REDUCTION

APPENDIX B

Soil Sifting Standard Operating Procedure

STANDARD OPERATING PROCEDURE 120-B

UXO/OEW OPERATIONS - MECHANICAL SCREENING

1.0 PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to outline the minimum safety and health requirements and procedures applicable to the conduct of material separation operations involving the use of mechanical screening equipment.

2.0 SCOPE

This SOP applies to all site personnel, to include [redacted], contractor, and subcontractor personnel, and operations involving the separation of material through the use of mechanical screening equipment. This SOP is not intended to contain all requirements needed to ensure regulatory compliance and is generic in nature. Site-specific requirements for blast shields, plexiglass and safety arcs are presented in the figures attached to this SOP when it is added to a Site Safety and Health Plan. Additionally, consult the documents listed in section 3.0 of this SOP for additional compliance issues.

3.0 REGULATORY REFERENCES

The following Occupational Safety and Health Administration (OSHA) standards and U.S. Army Corps of Engineers (USACE) requirements directly apply to the conduct of operations associated with the SOP. In the event other hazards are associated with the conduct of this SOP, consultation of other SOPs and regulatory references may be needed.

- OSHA Construction Industry Standard 29 CFR Part 1926, Subpart O;
- OSHA General Industry Standard 29 CFR Part 1910, Subparts N and O; and
- USACE EM 385-1-1, Sections 16 A and B and Section 17 A.

4.0 RESPONSIBILITIES

4.1 PROJECT MANAGER

The Project Manager shall be responsible for ensuring the availability of the [redacted] resources needed to implement this SOP, and shall ensure that this SOP is incorporated in the plans, procedures and training for sites where mechanical screening is to be implemented.

4.2 SENIOR UXO SUPERVISOR

The Senior UXO Supervisor (SUXOS) will ensure that this SOP is implemented for screening operations, and that relevant sections of this SOP are discussed in the tailgate safety briefings. Information related to the daily implementation of the SOP is to be is documented in the Site Operational Log maintained by the SUXOS.

4.3 UXO SUPERVISOR

The UXO Supervisor (UXOS) shall be responsible for ensuring the field implementation of this SOP and for implementing the safety and health requirements outlined in section 5.0 of this SOP. In the absence of a SUXOS, the UXOS shall be responsible for implementing the SUXOS responsibilities outlined in para 4.2.

4.4 SITE SAFETY AND HEALTH OFFICER

The Site Safety and Health Officer (SSHO) will be responsible for ensuring that the safety and health hazards and control techniques associated with this SOP are discussed during the initial site hazard training and the daily tailgate safety briefings. The SSHO will also be responsible for daily inspection of site operations and conditions to ensure their initial and continued compliance with this SOP and other regulatory guidelines.

5.0 PROCEDURE

All [redacted], contractor, and subcontractor personnel involved in screening operations shall be familiar with the potential safety and health hazards associated with this operation. Additionally, all effected personnel shall also be familiar with the control techniques that will used to reduce or eliminate these hazards.

5.1 SAFETY HAZARDS

The safety and health hazards potentially associated with mechanical screening operations on an ordnance and explosives (OE) site are listed below. For each of the hazards listed, at least one hazard control measure is listed in paragraph 5.2 for the reduction of the operational hazard. At no time will mechanical screening operations be conducted on site without the use and implementation of the appropriate controls measures.

1. Unexploded ordnance (UXO), possibly resulting in heat, fire, fragmentation, and over pressurization hazards;
2. Vehicle traffic and movement
3. Trips and falls (excavations and man lift)
4. Noise;
5. Heavy equipment operations;
6. Dust, with potential for exposure to toxic metals;
7. Stored energy and pinch points; and
8. Engine exhaust.

5.2 OPERATIONAL CONTROL MEASURES

For the safety hazards listed in paragraph 5.1, the operational control measures presented below shall be used to the greatest extent feasible, to protect site personnel from the hazards associated and identified with mechanical screening operations. The degree and type of hazard, as outlined in the site Work Plan (WP) and Site Safety and Health Plan (SSHP) will determine the extent of control to be used, however, all of the safety measures listed below will be implemented.

1. Daily tailgate safety meetings will be conducted, and noted in the Safety Log, as to the safety and health concerns pertaining to overall operations and the use of screening equipment.
2. Screening equipment and support vehicles shall be equipped with fire extinguishers.
3. The excavation operations will not require barricading, however, the excavator equipment operator will be protected behind a plexiglass window of the thickness specified in Figure 120B-1. For the loader/excavator operator, the plexiglass will be mounted over the existing windshield and windows.
4. The mechanical screening assembly will not require barricading; however, the UXO personnel controlling and monitoring the screening will be protected behind plexiglass windows mounted on a separate blast shield. The blast shield used shall be constructed similar to the blast shield depicted in Figure 2-3. At a minimum, the blast shield shall provide front, side and overhead protection and be constructed to the material thickness specifications depicted. General design characteristics and dimensions of the plexiglass and steel sides required have been specified by Dr. Crull, Structures Branch, Engineering Directorate, US Army Engineering and Support Center, Huntsville (CEHNC). The dimensions were selected based upon the accidental detonation of the most probable munitions (MPM) for the specific site. The UXO personnel controlling the screen will do so by means of a remotely-wired "kill switch." This kill switch will be capable of shutting down the screening operations should the UXOSP monitoring the operation detect an OE item within the screen or screen reject. The location of the UXOSP monitoring the screening process will be such that the UXOSP will be able to see the screening area. This may require the use of a man lift to allow for visual observation of the operation. If needed, the blast shield will be mounted on the man lift platform. According to the manufacturer, the thickness of the steel man lift platform is 0.125" which is less than the thickness of steel required for the observer's shield. Consequently, the Contractor will be required to add a steel plate to the man-lift floor so that the minimum thickness of the platform is 0.15 inches.
5. Any operational observer will be located outside the K24 distance arc of 11.0 feet for the MPM specified for this site. To fill the sifter hopper, the loader operator will be passing temporarily into and out of the K24 distance arc, and as such will be required to wear hearing protection at all times. This will be in addition to the plexiglass shielding that will be installed on all excavation and loading equipment.

6. The UXOSP controlling the screening operation will watch for any materials that may be UXO items and any items that may become lodged/jammed in the screens. If any potential UXO is seen in the hopper, on the conveyors, in the screens, or in the reject material, the screening process will be shut down immediately. Once the process has been halted and secured, the potential UXO item will be inspected by the UXOSPs. If the item is confirmed as being a UXO, the item will be identified and a determination made as to whether the item can be moved. Those items that are unfuzed or safe to move will be removed from the screening equipment and stored for later disposal according to the approved Work Plan (WP). Those items determined to be unsafe to move will be left in place, the CEHNC on-site Safety Specialist will be notified, and the screening operations halted until such time as a resolution can be obtained using the procedures in the approved WP. Those items identified as being OE-related but not UXO will be removed and stored accordingly.

7. Segregation of the oversize materials will be performed according to the following:
   a Debris identified as rocks, roots, shale, etc., will be collected and combined with the screened soil from which they came.
   b. The debris is identified as non-OE scrap that will be disposed of as scrap.
   c. The debris is identified as OE-related scrap or inert OE and must be verified as being free of OE hazards prior to scrap disposal.
   d. The debris is identified as UXO that is unfuzed and safe to move, in which case the item will be removed from the area and destroyed at the existing OD area.
   d. Hazardous UXO identified that cannot be moved, will be brought to the attention of the SUXOS who will immediately notify the USAESCH OSS. The OSS will direct [redacted] as to the next course of action to be taken.

8. When maintenance/servicing is performed on the sifter or conveyor system, all sources of immediate power or stored energy shall be controlled (refer to lockout/tagout SOP).

9. Screening operations shall be restricted to daylight hours, and once operations begin, only UXO-qualified personnel may enter the safety zone around the sifter operation.

10. All personnel involved in the screening operations shall be informed of the "Kill Switch" location, as well as the procedures for summoning emergency support.

5.2 SAFETY AND PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

The following safety measures and personal protective equipment (PPE) shall be used in preventing or reducing exposures associated with screening operations. These requirements will be implemented unless superseded by site specific requirements stated in the SSHP.

1. Hard hats, steel-toe safety boots and protective gloves shall be worn when ever maintenance, adjustment or clearing of the sifter is being performed.

2. Safety glasses shall be worn around screening equipment unless full face respirators are required; and
3. Any of the PPE that will be worn when investigating OE items in the sifter will be secured to the wearer to ensure that it does not fall off and strike suspect UXO items;
4. Hearing protection shall be worn when screening equipment is in operation unless the SSHO has measured and determined the noise levels to be less than 85 decibels on the "A" scale over an 8-hour time-weighted average.

6.0 AUDIT CRITERIA

The following items related to screening operations will be audited to ensure compliance with this SOP:

1. The Daily Operational and Safety Logs;
2. The Documentation of Training form for the initial site hazard training;
3. The Documentation of Training form for the Daily Tailgate Safety Briefings; and
4. The Daily Safety Inspection Checklist.

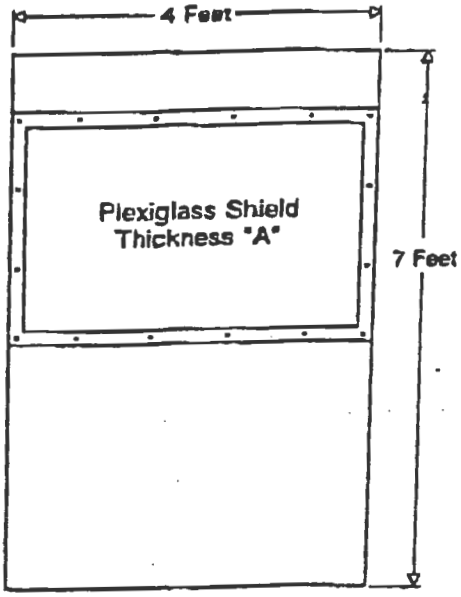
7.0 ATTACHMENTS

No attachments associated with this SOP.

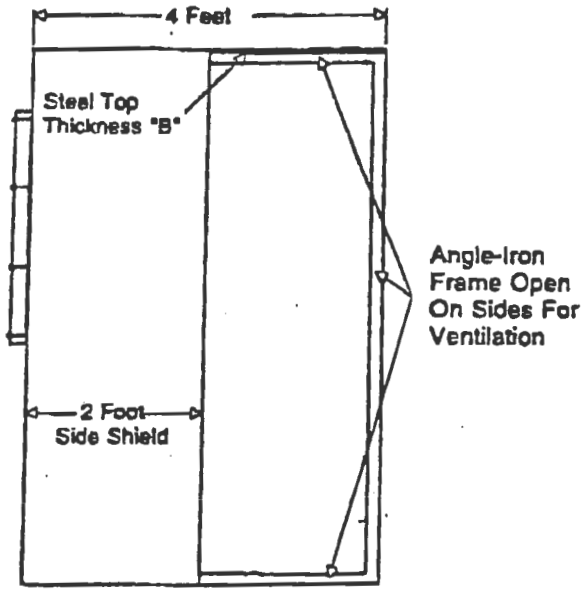
FIGURE 2-3: PROTECTIVE DISTANCES AND BLAST SHIELD DIAGRAM

Site Name: Former QA Function Test Range	Site Location: Seneca Army Depot Activity	
MPM: M406 40mm HE Grenade	Hazard Class/Division: 04 (400 feet)	
Maximum Fragmentation Distance: 345 feet	Range to 0.9 Overpressure: 23 feet	
K328 Overpressure Distance: 153 feet	K24 Distance: 11 feet	MSD: 400 feet
Thickness A for the Plexiglass: 0.88 inches	Thickness B for mild steel: 0.15 inches	

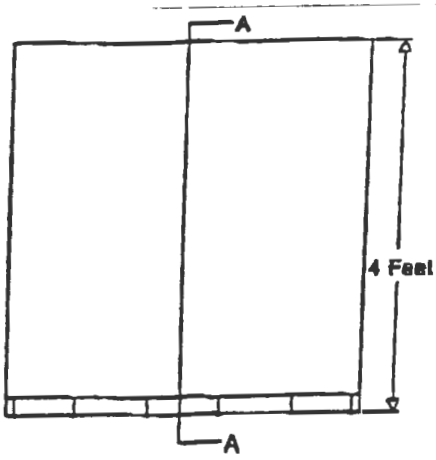
all O.K checked by MC



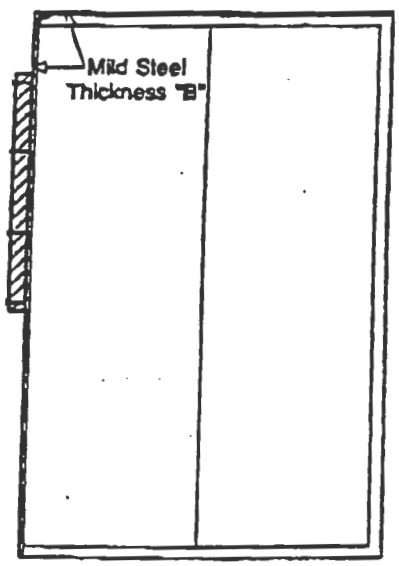
Front View



Right Side View



Top View



Cross Section A - A

Note:
Sizes are approximate, and different configurations may be used upon approval of CEHNC. Additionally, plexiglass window may cover entire front of blast shield.

APPENDIX C

Public Withdrawal Distance Computation SHeets

Public Withdrawal Distance (PWD)
Seneca Army Depot (SEAD-44)
5 October 1999

SANDBAG ENCLOSURE FOR INTENTIONAL DETONATIONS

Required Sandbag Thickness = 12 in. with 6" standoff between munition and sandbags
Sandbag Throw Distance = 25 ft
Minimum Exclusion Zone = 200 ft

The required sandbag thickness and the sandbag throw distance were calculated IAW CEHNC-ED-CS-S-98-7. The minimum exclusion zone is based on the largest of the sandbag throw distance or 200 ft or the K328 distance for the total NEW (munition plus donor charge). A copy of HNC-ED-CS-S-98-7, "Use of Sandbags for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions" must be available on site. This report may be downloaded from the USAESCH homepage at http://www.hnd.usace.army.mil Select "Product Lines", "Ordnance and Explosives", "Technology", then "Analytical Tools". The first time you access the site you will have to register. You will be notified by e-mail when your login and password have been activated. You must have a login and password to download the report.

THICKNESS OF MATERIAL REQUIRED TO DEFEAT DESIGN FRAGMENT

Required Thickness of LEXAN = 1.80 in
Required Thickness of Plexiglass = 0.88 in
Required Thickness of steel = 0.15 in

The required thickness is calculated using the THOR equations and the preformed fragment weight and the initial fragment velocity. Fragment weight and velocity are calculated IAW HNC-ED-CS-S-98-1

SIGNATURES:

Michelle Gould 10/5/99
Subject Matter Expert

William H. Rhodes 5 Oct 99
CEHNC-ED-CS-S Branch Chief

Public Withdrawal Distance (PWD)
Seneca Army Depot (SEAD-44)
5 October 1999

MUNITION: 40 mm M406
REQUESTED BY: Kevin Healy
PREPARED BY: Michelle Crull, PhD, PE
NET EXPLOSIVE WEIGHT: 32 g Comp B (38.4 g TNT Equivalent)

This form shows calculated distances only. It does not constitute approval. Concurrence of CEHNC-OE-S is required to determine the applicable distance for a specific site.

In accordance with (IAW) OE Center of Expertise Interim Guidance Document 98-08, use of the range to no more than 1 hazardous fragment/600 sq ft as the PWD for accidental detonations requires written justification, a risk analysis, calculation of this distance by CEHNC-ED-CS-S, and concurrence of CEHNC-OE-S.

ACCIDENTAL DETONATIONS

Maximum Fragment Range = 345 ft
Range to No More Than 1 Hazardous Fragment/600 sq ft = NA ft
Hazard Class/Division = 04 (400 ft)
Range to 0.9 psi Overpressure = 23 ft
K24 Distance (for sifting operation) = 11 ft

IAW OE Center of Expertise Interim Guidance Document 98-08, the PWD for intentional detonations may not be less than the default distance provided in DoD 6055.9-STD or the maximum fragment range or the K328 overpressure distance.

INTENTIONAL DETONATIONS

Maximum Fragment Range = 345 ft
K328 Overpressure Range = 153 ft

The primary fragmentation characteristics used in the calculation of the values listed above were computed IAW CEHNC-ED-CS-S-98-1. The maximum fragment range was calculated using the maximum weight fragment and the initial velocity from these characteristics in the computer software TRAJ. The range to no more than 1 hazardous fragment/600 sq ft was calculated IAW CEHNC-ED-CS-S-98-2.

STATEMENT OF WORK

ORDNANCE AND EXPLOSIVES (OE) REMOVAL ACTION

AT THE OPEN BURNING (OB) GROUNDS

SENECA ARMY DEPOT ACTIVITY

ROMULUS, NEW YORK

23 JUNE 1997

1.0 BACKGROUND AND GENERAL STATEMENT OF WORK: The work required under this Scope of Work (SOW) falls under the Base Realignment and Closure Act (BRAC) of 1995. Ordnance and Explosives (OE) contamination exists on property owned by the Department of the Army.

1.1 Explosive ordnance is a safety hazard and constitutes an imminent and substantial endangerment to site personnel and the local populace. During this removal action, it is the Government's intent that the contractor destroy, by detonation on-site, all OE encountered. This action will be performed in accordance with (IAW) the Comprehensive Environment Response, Compensation, and Liability Act (CERCLA), Section 104, and in substantive compliance with the National Contingency Plan (NCP), Section 300.400; therefore, permits for on-site disposal are not required.

1.2 Ordnance and explosives found during this removal action fall under the applicable provisions of 29CFR 1910.120.

1.2.1 Due to the inherent risk in this type of operation, the contractor shall be limited to a 40-hour work week (either five 8-hour days or four 10-hour days).

1.3 GENERAL DESCRIPTION. SEDA is a US Army facility located in Seneca County, New York. SEDA occupies approximately 10,600 acres. It is bounded on the west by State Route 96A and on the east by State Route 96. The cities of Geneva and Rochester are located to the northwest (14 and 50 miles, respectively); Syracuse is 53 miles to the northeast and Ithaca is 31 miles to the south. The surrounding area is generally used for farming. The OB Grounds is an approximately 30 acre site located in the northwestern section of the installation.

1.4 REGULATORY STATUS. The OB Grounds site was included on the Federal Facilities National Priorities List on 13 July 1989. Consequently, all work to be performed under this contract shall be performed according to Comprehensive Environmental Response Compensation and Liability Act (CERCLA) guidance as put forth in the EPA Interim Final "Guidance for Conducting Remedial Investigations/ Feasibility Studies under CERCLA", (Reference 8.1) and the "Federal Facility Agreement under CERCLA Section 120 in the matter of Seneca Army Depot, Romulus, New York," (Reference 8.4).

1.5 DEFINITIONS: Definitions of applicable terms are found in Section C, paragraph 2.3, of the Basic Contract.

1.6 SECURITY REQUIREMENTS. Compliance with SEDA security requirements is mandated. Thes requirements are presented in Section

2.0 OBJECTIVES: - To safely locate, identify, and dispose of all OE within the pad berms and the low-lying hill area of the site.

- To safely locate, identify, and dispose of all surface and subsurface OE at the site to a depth of two (2) feet.

3.0 DESCRIPTION OF SERVICES:

3.1 (TASK 1) PERFORM SITE VISIT AND PREPARE WORK PLAN (WP):

3.1.1 PERFORM SITE VISIT: This task shall be accomplished IAW Section C, paragraph 3.2, of the Basic Contract. ~~Prior to preparation of the WP, a site visit, not to exceed 7 days including travel time, is authorized. The site visit team shall not exceed three persons. The contractor shall notify the CEHNC Project Manager (Ms. Dorothy Richards) of the proposed dates for the site visit at least 10 calendar days prior to the visit. The site visit shall include coordination with the appropriate agencies to include local medical facilities, local airfield, etc., and the DRMO Environmental Coordinator (EEC). During the site visit, environmental concerns and endangered species in the ordnance removal areas shall be addressed.~~ The contractor shall prepare an Abbreviated Site Safety and Health Plan (ASSHP) IAW Appendix B, Standing Operating Procedures (SOP) for Site Safety and Health Plans (SSHP), dated 26 May 1994, prior to the site visit. This plan shall be submitted to the CEHNC-OE-DC for approval at least five (5) days prior to conduct of the site visit.

3.1.2 DISPOSAL ALTERNATIVES: Based on the site visit, the contractor shall provide alternatives for disposal, and recommend the safest and most cost-effective method for treatment and disposal of OE. The contractor shall

provide three disposal alternatives IAW Section C, paragraph 3.3, and Data Item Description (DID): OT-040, of the Basic Contract.

3.1.3 PREPARE WORK PLAN: The WP shall be prepared IAW Section C, paragraph 3.4 and DID: OT-005 of the Basic Contract. All UXO operations shall comply with *CEHNC Safety Concepts and Basic Considerations for UXO*, dated 16 February 1996. The following subplans are not required: Air Monitoring Plan and Chemical Data Acquisition Plan (CDAP).

3.1.3.1 The contractor shall submit a draft WP for review and a final WP for approval IAW paragraph 4.1 of this SOW.

3.1.3.2 The Work Plan shall include the following subplans written IAW DID-005 of the Basic Contract.

a. UXO Operational Plan, which will incorporate the Technical and Management Plan, without duplicate effort or information.

b. Site Safety and Health plan (SSHP). The contractor shall submit an SSHP IAW 29 CFR 1910.120 that contains OE safety standards and procedures.

c. Geophysical Equipment Plan (GEP). The contractor shall prepare and submit a detailed GEP describing the equipment to be employed to perform all necessary operations. Subdivisions within the Geophysical Equipment Plan shall include:

1. Sensors: such as, type of sensor and configuration
2. Sensor Mobility: such as, type of mobility (e.g. man portable, vehicle towed), speed, special considerations,
3. Data Storage: such as, sensor internal storage, external storage and any special data transfer requirements shall be addressed.

d. Equipment Plan (EP). The contractor shall prepare and submit a detailed EP describing the equipment to be employed to perform all necessary operations.

e. Location Survey and Mapping Plan, as detailed in DID-020.

f. Environmental Protection Plan.

g. Quality Control Plan

h. Work, Data and Cost Management Plan.

3.2 (TASK 2) COMMUNITY RELATIONS

3.2.1 The contractor shall assist in the conduct of public meetings as required IAW Section C, paragraphs 3.6 and 4.0, and DIDs OT-045 of the Basic Contract.

~~3.2.2 All press releases and media appearances shall be coordinated with, and approved by, the Public Affairs Office (PAO), Seneca Army Depot Activity, and the PAO at the U.S. Army Engineering and Support Center, Huntsville (CEHNC).~~

3.3 (TASK 3) LOCATION SURVEYING AND MAPPING

3.3.1 Surveying. The Contractor shall perform all location surveys and mapping required to establish boundaries of areas specified in Paragraph 3.4, and as directed in Section C, paragraph 3.5.5, and DID: OT-020 of the Basic Contract. UXO safety requirements are detailed in DID: OT-020 and any decision to relax the requirements shall be made jointly by the SSHO and the USACE on-site Safety Specialist. Grid corners shall be established using precision surveying methods. Each corner of each grid area shall be located by establishing the appropriate state plane grid system to the closest 1' foot, and shall be both tabulated and shown on maps of the site. Other coordinate systems and accuracy specifications are not acceptable and shall not be used. The Contractor shall mark and survey the corners of the designated grids with stakes or other visible temporary markers. The below-ground depth of all UXO shall be measured. The location of ordnance scrap, ordnance fragments, shrapnel, small arms ammunition and metallic debris shall be recorded only on a per-grid basis and not located by coordinates.

3.3.2 Items and data to be submitted to ~~CEHNC~~ WESTON as part of the tasks are as follows:

3.3.2.1 A tabulated list of the respective grid corners for all grids being cleared in the areas described in Section 3.3 of this SOW.

3.3.2.2 An electronic and hard copy of all drawing files and reference files used for and developed as part of this removal action. These files shall meet the following requirements:

3.3.2.2.1 Each sheet shall also have a standard border, revision block, title block, complete index sheet layout, bar scale, legend, metric grid lines, grid tick layout, a magnetic north, a grid north, and a true north arrow, and be plotted at a horizontal scale of 1:2,000.

3.3.2.2.2 ~~The Government shall be provided with a copy of the design files on 8 mm 5.0 or 10.0 gigabyte magnetic tapes, 3 1/2 inch 1.4 MB floppy disks, or~~ approved CD ROM format. The CD ROMs are preferred. The data to be submitted shall contain the final, corrected version of the design file. The tapes or

disks shall be labeled, showing the project name, project number, date, company name, address and telephone number, and the number of files.

3.4 (TASK 4) UNEXPLODED ORDNANCE REMOVAL. This task shall be accomplished IAW Section C, paragraphs 3.5 and 3.7, of the Basic Contract.

3.4.1 General.

3.4.1.1 The contractor shall furnish all necessary personnel and equipment to perform a surface and subsurface clearance of all UXO on the project site as specified below. This action shall include all OE scrap.

3.4.1.2 A planned, systematic approach shall be utilized to search and clear the project site that will result in optimum search effectiveness. The proposed methodology shall be outlined in the WP.

3.4.1.3 Only USAESCH approved UXO personnel shall perform UXO procedures.

3.4.1.4 The contractor shall maintain a detailed accounting of all UXO items/components encountered on the project site. This accounting shall include the amounts of UXO, identification, condition, depth located, disposition, and location/mapping. This accounting shall be a part of the Removal Report.

3.4.1.5 If a scenario is encountered that precludes detonating an UXO on-site (unidentifiable UXO is found, or a suspected toxic chemical munition is found), the on-site USAESCH Safety Specialist will request EOD support.

3.4.1.6 The contractor shall recommend to USAESCH the most appropriate detection equipment for the OE items suspected at this site. During the subsurface operation the subsurface detection equipment shall be capable of detecting ferrous and non-ferrous metallic OE items to a depth of 2 feet. The contractor shall dig to a depth of two feet to identify all geophysical anomalies. The on-site USAESCH Safety Specialist may approve deeper excavations (such as for burial pits and trenches) if he determines it necessary.

3.4.1.7 The chosen detection equipment shall be field tested daily to ensure that it is operating properly. This shall be accomplished by burying an inert Rifle Grenade (M31, HEAT, or similar, inert item) at two feet, and an inert Hand Grenade (Fragmentation, MK2 Series, or similar, inert item) at one foot

to determine the standard indication. If the detection equipment does not meet the standard during the daily check, it shall be recalibrated, repaired or replaced.

3.4.1.8 All recovered OE shall be disposed of ~~during~~ weekly

3.4.1.9 The contractor shall plan to provide demolition materials for disposal of OE items and storage facilities for demolition materials. This shall be outlined in the WP.

3.4.1.10 If an excavation is required in an area of endangered/ protected plant or animal, excavation shall proceed only after approval by appropriate installation personnel.

~~3.4.1.11~~ All access/excavation/detonation holes shall be backfilled to grade and reseeded with indigenous grass.

3.4.2 PERFORM ORDNANCE AND EXPLOSIVES (OE) REMOVAL AT THE SENECA ADA OB GROUNDS. The Seneca OB Grounds encompasses approximately 30 acres (see ATTACHMENT 1). Items that were burned at the site are included in ATTACHMENT 2 to this SOW. OE removal activities shall consist of the following:

o perform UXO clearance of all soil currently stockpiled on the site. These stockpiles consist of the area known as the "low-lying hill" and the berms surrounding each individual burn pad.

o perform a UXO surface and subsurface clearance over approximately 30 acres of the site. The subsurface clearance shall be performed to a depth of two feet.

3.5 (TASK 5) TURN IN OF RECOVERED INERT OE-RELATED SCRAP. The contractor shall furnish all necessary personnel and equipment to turn in all recovered inert Ordnance Items and OE scrap metal. The methodology to accomplish this task shall be proposed in the work plan.

3.5.1 Inert ordnance items shall be vented IAW *Safety Concepts and Basic Considerations* prior to turn in.

3.5.2 If a local DRMO is unavailable or if one is available but is unwilling to accept scrap, the contractor shall utilize locally available resources for disposal of scrap. The contractor shall complete a DD Form 1348-1 as turn-in documentation. Instructions for completion of this form are contained in the

Defense Utilization and Disposal Manual, DoD 4160.21-M. The Senior UXO Supervisor shall sign a certificate as follows:

"I certify that the property listed hereon has been inspected by me and, to the best of my knowledge and belief, contains no items of a dangerous nature."

3.5.3 Turn-in documentation receipts shall be submitted as a component of the Removal Report.

3.6 (TASK 6) PERFORM QUALITY CONTROL:

3.6.1 The contractor shall furnish the necessary personnel and equipment to administer a Quality Control (QC) Program to manage, control, and document contractor and subcontractor activities. The methodology to accomplish this task shall be proposed in the WP. The QC activities shall be documented and included in the Removal Report.

3.6.2 If UXO is located within a grid during the UXO Quality Assurance (QA) search, the contractor will be required to search the entire grid again.

3.7 (TASK 7) PREPARE AND SUBMIT REMOVAL REPORT: At the conclusion of all field activities, the contractor shall submit the Removal Report IAW DID: OT-030 of the Basic Contract. In addition, the following information shall be submitted:

3.7.1 All original surveying and mapping data from Task 3.

3.7.2 A daily journal of all activities associated with this SOW.

3.7.3 A recapitulation of exposure data. This shall include total number of man-hours worked on site, total motor vehicle mileage, total number of personnel flying hours, and number of flights.

3.7.4 Scrap turn-in documentation.

3.7.5 A minimum of ~~20~~ 10 color photographs/day of operation (digital photos)

~~3.7.6 A financial breakdown by area and by task of all costs and labor hours used to perform this SOW.~~

~~3.7.7 A written record of all endangered or threatened plants and animals destroyed during the OE removal activities on site. The contractor shall include all restoration efforts performed as required in Task 4 of this SOW.~~

3.8 CONTRACTOR QUALIFICATIONS: The contractor shall furnish a staff that is qualified through education, training, and experience that shall accomplish the objective and tasks of this SOW IAW Section C, paragraph 3.8, and DID: OT-025 of the Basic Contract. The resumes shall be included in the WP for approval by the Contracting Officer. If UXO personnel are substituted at the project site, their resumes shall be approved by the Contracting Officer prior to their movement onto the site.

3.8.1 Training and medical screening IAW 29 CFR 1910.120(e) is required for this project. Annual physicals shall be accomplished prior to arrival on site.

4.0 SUBMITTALS: The contractor shall furnish copies of the plans, maps, and reports as identified in paragraph 4.1 to each addressee listed below in the quantities indicated. One copy of the final WP and the final report shall be sent to the CEHNC Project Manager on 3.5 inch computer disk or CD ROM in an acceptable format in addition to the number of hard copies identified below. The contractor shall use express mail services for delivering these plans and reports. Following each submission, comments generated as a result of their review shall be incorporated.

ADDRESSEE	COPIES
US Army Engineering and Support Center, Huntsville ATTN: CEHNC-OE-DC (Ms. Dorothy Richards) P.O. BOX 1600 Huntsville, Alabama 35807-4301	X
US Army Engineering and Support Center, Huntsville ATTN: CEHNC-OE-S (Ms. Kara Hetrick) P.O. BOX 1600 Huntsville, Alabama 35807-4301	X
US Army Engineer District, New York ATTN: CENAN-PP (Mr. Randy Battaglia) Seneca Army Depot Activity Romulus, New York 14541	2

Commander,
Seneca Army Depot Activity 10
ATTN: SIOSE-BEC (Mr. Steve Absolom)
Seneca Army Depot Activity
Romulus, New York, 14541

Commander 1
52nd Explosive Ordnance Disposal (EOD) Group
ATTN: S-3
Building 736, Fort Gillem
Forest Park, Georgia 30050-5000

4.1 Submittals and Due Dates:

Data Item	Submittal	Due Date
~~OT-040~~	~~Disposal Possibility Letter~~	~~5 workdays after site visit~~
OT-005	Draft Work Plan	~~30~~ 5 workdays after ~~approval of Disposal Letter~~ NTP
OT-005	Final Work Plan	~~30~~ 5 workdays after receipt of draft WP comments
OT-030	Draft Removal Report	~~30~~ 15 calendar days after completion of field work
OT-030	Final Removal Report	~~30~~ 15 calendar days after receiving review comments

5.0 SECURITY REQUIREMENTS.

5.1 Security Regulations. The following requirements must be followed by the contractor at Seneca Army Depot to facilitate entry and exit of contractor employees and to maintain security.

5.1.1 Personnel Registration.

5.1.1.1 A list of all contractor employees, subcontractors and suppliers indicating firm name and address will be furnished through POC/COR to the Counterintelligence Division, Building 710, 72 hours prior to commencement of work.

5.1.1.2 A confirmation of employment SDSSE-SC Form 268 will be executed by the contractor concerning each employee, to include all subcontractors and their personnel. No forms will be transferred to another file if the contractor has other on-going contracts at SEDA. The contractor will provide a list of personnel who are authorized to sign Form 268 for the firm. A sample of each signature is required. Counterintelligence Division must be notified, in writing, of any changes to this list. All completed forms will be provided through COR/POC to the Counterintelligence Division 72 hours prior to commencement of work. Failure to complete Form 268 correctly will result in employee's denial of access to Seneca. The Counterintelligence Division must be notified, in writing through POC/COR to Counterintelligence, at least 72 hours prior to requesting any action. The chain of command for all contractor actions will be through POC/COR to Counterintelligence Division. There will be no exceptions.

5.1.1.3 Camera permits require written notice from the POC/COR prior to access. Open camera permits will not be issued. The following information is required:

(a) Camera make, model and serial number.
(b) Contract name and name of individual responsible for the camera.
(c) Dates camera will be used.
(d) Where it will be used.
(e) What will be photographed and why.

5.1.1.4 If a rental, leased or privately owned vehicle is required in place of a company vehicle, the following information is needed:

(a) Name of individual driving.
(b) Year, make, model, color and license plate of the vehicle.
(c) Typed letter on company letterhead indicating that the company assumes responsibility for rental, leased or privately owned vehicles.

5.1.1.5 All access media will be destroyed upon expiration date of contract. If an extension is required, a list of employee names and new expiration data must be furnished to the Counterintelligence Division. Contract extensions must be made prior to the contract expiration data or new Form 268s will be required for each individual that requires an extension.

5.1.2 Traffic Regulations.

5.1.2.1 Traffic laws, State of New York, apply with emphasis on the following regulations.

5.1.2.2 Speed Limit: Controlled Area as posted
Ammo Area - 5 mph
Limited/Exclusion Area - 25 mph

5.1.2.3 All of the above are subject to change with road conditions or as otherwise posted.

5.1.3 Parking. Contractor vehicles (trucks, rigs, etc.) will be parked in areas designated by the director of Law Enforcement and Security. Usually parking will be permitted within close proximity to the work site. Do not park within 30 feet of a depot fence, as these are clear zones.

5.1.4 Gates.

5.1.4.1 Post 1, Main Gate - NY Highway 96, Romulus, New York is open for personnel entrance and exit 24 hours daily, 7 days a week.

5.1.4.2 Post 3, Entrance to North Depot Troop Area, located at end of access road from Route 96-A is open 7 days a week for personnel and vehicle entrance and exit.

5.1.5 Security Regulations.

5.1.5.1 Prohibited Property.

5.1.5.1.1 Cameras, binoculars, weapons and intoxicating beverages will not be introduced to the installation, except by written permission of the Director/Deputy Director of Law Enforcement and Security.

5.1.5.1.2 Matches or other spark producing devices will not be introduced into the Limited/Exclusion or Ammo Area' except when the processor of such items is covered by a properly validated match or flame producing device permit.

5.1.5.1.3 All vehicles and personal parcels, lunch pails, etc. are subject to routine security inspections at any time while on depot property.

5.1.5.1.4 All building materials, equipment and machinery must be cleared by the Director of Engineering and Housing who will issue a property pass for outgoing equipment and materials.

5.1.6 Contractor Employee Circulation.

5.1.6.1 Contractor employees are cleared for entrance to the location of contract work only. Sight-seeing tours or wandering from the work site is NOT AUTHORIZED.

5.1.6.2 Written notification will be provided to the Counterintelligence Division (Ext. 30202) at least 72 hours prior to overtime work or prior to working on non-operating days.

5.1.6.3 Security Police (Ext. 30448/30366) will be notified at least two hours in advance of any installation or movement of slow moving heavy equipment that may interfere with normal traffic flow, parking or security.

5.1.7 Unions. Representatives will be referred to the depot Industrial Labor Relations Officer (Ext. 41377).

5.1.8 Offenses. (Violations of law or regulations.)

5.1.8.1 Minor. Offenses committed by a contractor personnel which are minor in nature will be reported by the Director of Law Enforcement and Security to the Contracting Officer who in turn will report such incidents to the contractor for appropriate disciplinary action.

5.1.8.2 Major. Serious offenses committed while on the installation will be reported to the FBI. Violators may be subject to trial in Federal Court.

5.1.9 Explosive Laden Vehicles.

5.1.9.1 Vehicles such as vans, cargo trucks, etc., carrying explosives will display placards or signs stating "EXPLOSIVES."

5.1.9.2 Explosive ladened vehicles will not be passed.

5.1.9.3 When an explosive laden vehicle is approaching, pull over to the side and stop.

5.1.9.4 When catching up with an explosive laden vehicle, slow down and allow that vehicle to remain at least 100 feet ahead.

5.1.9.5 When approaching an intersection where an explosive laden vehicle is crossing - STOP - do not enter the intersection until such time as the explosive carrier has passed through and cleared the intersection.

5.1.9.6 When passing a vehicle that is parked and displaying "Explosive" signs, slow down to 10 miles per hour and take every precaution to allow more than ample clearance.

5.1.10 Clearing Post. All contractor employees are required to return all identification badges and passes on the last day of employment on the depot. The contractor is responsible for the completion of all turn-ins by his employees and informing the Counterintelligence Division and the depot organization administering the contract, for termination of any employee's access to the depot.

6.0 PUBLIC AFFAIRS: The contractor shall conduct Public Affairs activities IAW Section C, paragraph 4.0, of the Basic Contact. All agencies and/or individuals requesting information concerning the conduct of operations at the project site shall be referred to the Seneca Army Depot Activity, Public Affairs Office (PAO) or the U.S. Army Engineering and Support Center, Huntsville, PAO.

7.0 REFERENCES: In addition to references listed below, those cited in section C, paragraph 5.0, of the Basic Contract apply:

7.1 AR 200-1, Environmental Protection and Enhancement.

7.2 AR 385-40 with USACE Supplement.

7.3 AR 405-90, Disposal of Real Estate

7.4 DA Pam 385-64, dated August 1993

7.5 TM 60A 1-1-31, Explosive Ordnance Disposal Procedures.

7.6 Explosive Safety Policy Memorandum 1-95, dated August 1995

7.7 Explosive Safety Policy Memorandum 2-95, dated August 1995

7.8 Draft-Final Proposed Remedial Action Plan (PRAP) for the Open Burning (OB) at the Seneca Army Depot Activity (SEDA), dated January 1997.

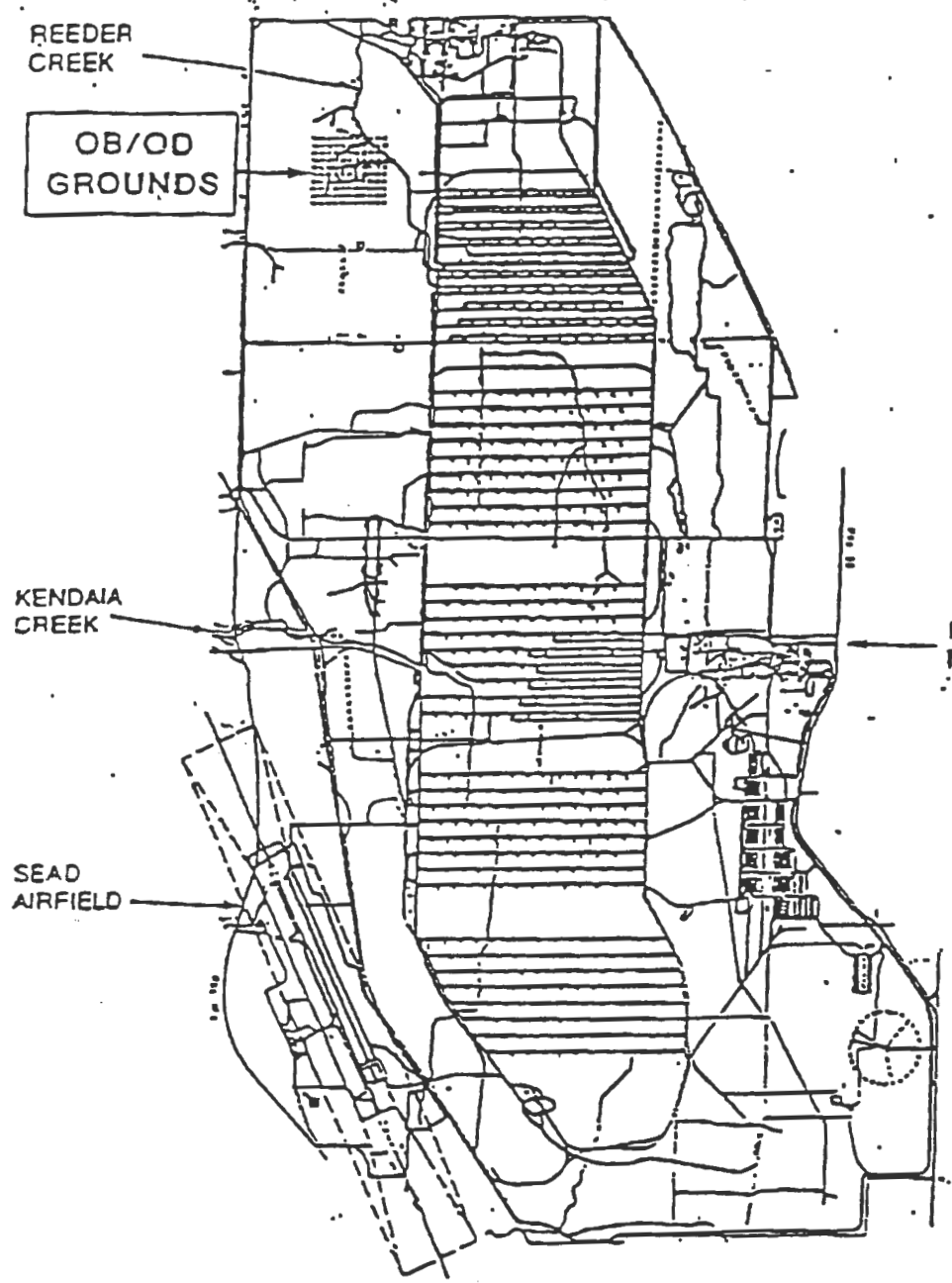
7.9 Pre-Draft Record of Decision (ROD) for Seneca Army Depot Activity, Open Burning (OB) Grounds, dated March 1997.

7.10 Final Remedial Investigation Report at the Open Burning (OB) Grounds at Seneca Army Depot Activity, dated March 1994.

7.11 Standing Operating Procedure (SOP) for Site Safety and Health Plans (SSHP), dated 26 May 1994.

ATTACHMENT 1

Maps



ES
ENGINEERING-SCIENCE, INC.

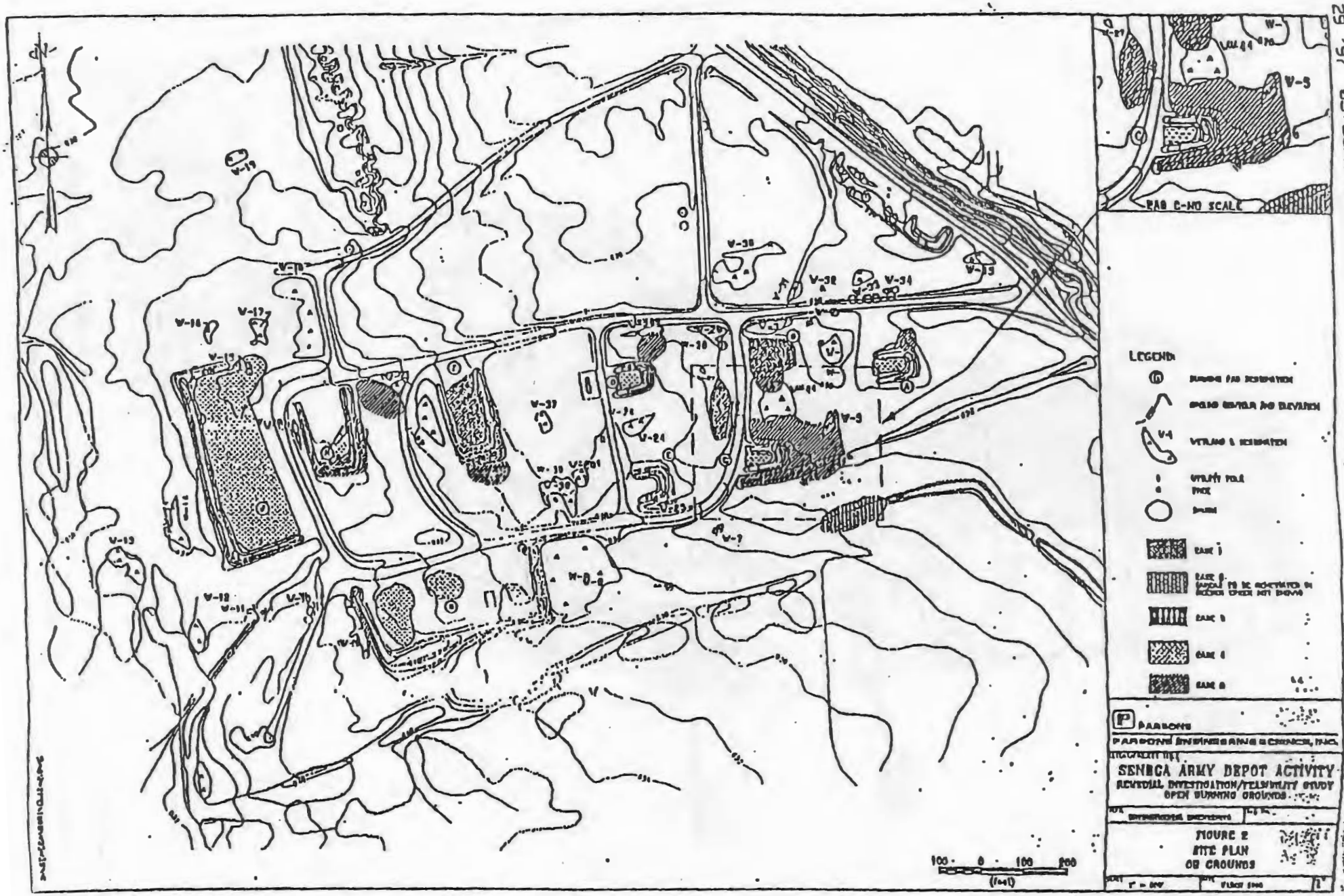
SENECA ARMY DEPOT
REMEDIAL INVESTIGATION FEASIBILITY STUDY
OPEN BURNING GROUNDS

ENVIRONMENTAL ENGINEERS

FIGURE
SENECA ARMY DEPOT MAP

1" = 2000 (APPROXIMATE)

SOURCE: Seneca Army Depot


LEGEND
PARSONS
PARSONS ENGINEERING SCIENCE, INC.
SENECA ARMY DEPOT ACTIVITY
REVISED INVESTIGATION/FEASIBILITY STUDY
OPEN BURNING GROUNDS
FIGURE 2
SITE PLAN
OB GROUNDS

ATTACHMENT 2

List of Demilled Items

73-1-226	Burster, M14
73-1-197	Burster, M19
73-1-202	Burster, M21
73-1-215	Burster, M23
73-2-21	Burster, M24
797832	Burster, M55
73-1-264	Burster, M57
73-1-258	Burster, M40 Series
73-1-226	Burster, M41
73-1-230	Burster, M47
8886484	Burster, M48
8861032	Burster, M71
8454390	Cam, Catapult, Firing
H22-47-18	Cap, Blasting Electric
H22-47-14	Cap, Blasting Electric

APPENDIX A Cont'd

DRAWING NUMBER or MIL-SPEC	ITEM
A18-60-255	Cap, Blasting, Electric, Commercial #6
H22-47-05	Cap, Blasting, Electric, #8
Spec. AXS 1234	Cap, Blasting, Electric, #6, 1st, 2nd, 3rd and 4th Delay
8830972	Cap, Blasting, Electric, J2, PETN Type 2 and M6
8830948	Cap, Blasting, Nonelectric J1, PETN, RDX Type 1 and M7
MIL-C-4546	Cap, Blasting, Nonelectric #6 and 8
MIL-C-20496	Cap, Blasting, Nonelectric Tetryl Type A
TA96713	Cartridge, Activating Device
LD 491836 (Navy)	Cartridge, Activating Device, MK 17, Mod 0
300051-1	Cartridge, Powder Actuated
841155	Cartridge, Aircraft, Fire Extinguisher
398796 (Navy)	Cartridge, Bomb, Ejection, MK1, Mod 2 and 3
008	Cartridge, Bomb, Ejection, MK2, Mod 0
-31-1	Cartridge, Bomb, Ejection, M3
.1-2 (Air Force)	Cartridge, Bomb, Ejection, ARD 863-1
TA97155	Cartridge, Cutting Blade
8886478	Cartridge, Delay, XM352
C 3001	Cartridge, Delay - MI - Shear Corp.
00-33 (Air Force)	Cartridge, Engine Starter, [illegible]

IL-C-27658	Cartridge, Engine Starter, MXU 129A
0022246	Cartridge, Explosive
026-001	Cartridge, Igniter, Turbojet Engine Type 7
9831	Cartridge, Ignition, M2
82287	Cartridge, Ignition, M2A2
-19-78	Cartridge, Ignition M5A1
5-19-71	Cartridge, Ignition, M6
75-19-79	Cartridge, Ignition, M8
-19-82	Cartridge, Ignition, M66
83661 (Navy)	Cartridge, Impulse, MK2, Mod 1.
1013-40 (Navy)	Cartridge, Impulse, MK24, Mod 0.
2518426 (NAVAIR)	Cartridge, Impulse, MK131MOD 0
-1-227	Cartridge, Impulse, M2SA1
-1-280	Cartridge, Impulse, M29A2
75-1-288	Cartridge, Impulse, M50
-1-290	Cartridge, Impulse, M51A1
(1-95-1-11	Cartridge, Impulse, M56
3594084	Cartridge, Impulse, M57
3595295	Cartridge, Impulse, M67
079	Cartridge, Impulse, MK104, Mod 0
21610	Cartridge, Impulse, M141
0521960	Cartridge, Impulse, M150

APPENDIX A Cont'd

DRAWING NUMBER or MIL-SPEC	ITEM
FE 51831	Cartridge, Impulse, M151
1283660	Cartridge, Impulse, ARD 446-1
9311660	Cartridge, Impulse, M796
95-1-15	Cartridge, Initiator, M38
95-1-22	Cartridge, Initiator, M46
8593274	Cartridge, Initiator, M70
8594157	Cartridge, Initiator, M73
9465	Cartridge, Initiator, M91
8593512	Cartridge, Initiator, M93
58D46856 (Air Force)	Cartridge, Kit, Bomb
61D14986 (Air Force)	Cartridge, Kit, Parachute
6RS2C3268	Cartridge, Line Throwing Device
2434364	Cartridge, Mine Safety Appliance
78-0-114	Cartridge, Photo Flash, M112 Series
78-0-132	Cartridge, Photo Flash, M121 Series
78-0-134	Cartridge, Photo Flash, M123 Series
78-0-137	Cartridge, Photo Flash, M124 Series
Commercial Cartridge, Powder Actuated Tool, Cal .22 and Cal .30	
P82257AK	Cartridge, Release Cargo, Parachute, 1.0 sec delay
8258662	Cartridge, Release Cargo, Parachute, 2.0 sec delay
Commercial Cartridge, Set, Escape System-4, MK2	
5-1-17	Cartridge, Thruster, M42
FF7365	Cartridge, Thruster, M43
FF7367	Cartridge, Thruster, M44
596708	Cartridge, Thruster, M94
D20674	Cartridge, Thruster, M119
8797470	Cartridge, Thruster, T238
82-0-158	Charge Assembly, Demolition, M37
9216416	Charge Assembly, Demolition, M183
93-0-93	Charge, Demolition Block, M2 and M3
P84025	Charge, Demolition Block, M5
82-13-9	Charge, Demolition Block, M5A1
117476	Charge, Demolition Block, M112
117651	Charge, Demolition Block, M118
8797111J	Charge, Demolition Block, 1/4-lb TNT
82-13-24	Charge, Demolition Block, 1/2-lb and 1-lb TNT
MIL-E20308	Charge, Demolition Block, 1-lb Nitro-Starch
P84857	Charge, Demolition Chain, M1
D4306-5-1	Charge, Demolition Linear, Component of Demo Kit, M2
D5234-6	Charge, Demolition Linear, Component of Demo Kit, M2A1 and M6
82-13-23	Charge, Demolition Linear, Component Expl. Kit, Earth Rod
D3803	Charge, Demolition, Shaped, M2A1
82-0-120	Charge, Demolition, Shaped, M2A3
1025	Charge, Demolition, Shaped, M3
943	Charge, Demolition, Shaped, 10-lb
9837975	Charge, Demolition, Shaped, 40-lb

APPENDIX A Cont'd

DRAWING NUMBER or MIL-SPEC	ITEM
82-15-26	Charge, Practice, M8 Mine
71-9-237	Charge, Propelling, Earth Rod, M12
D4014-1	Cord, Detonating - Fuse, Primacord PETN
6837262	Coupling Base, Firing Device
82-0-126	Cutter, Powder Actuated, Cable M1
82-0-159	Cutter, Powder Actuated, Line M2, M2A1, M21 and M22 Series
None	Demolition Equipment Set, Expl Initiating, Electric and Non-Electric
82-0-24	Demolition Kit, Bangalor Torpedo, M1A1 No. 1, 2, 5 and 7
796266	Demolition Kit, Projected Charge, M1 Series
D4306-1 thru 6	Demolition Kit, Projected Charge, M2
D5234-1 thru 12	Demolition Kit, Projected Charge, M2A1 and M5
274935 (Navy)	Destructor, Explosive, MK2 Mod 0
82-0-209	Destructor, Explosive, Universal, M10
[illegible]355	Destructor, Explosive, M19
1[illegible]-3137	Destructor, Explosive Type 131
75-9-104	Detonator Kit, Concussion, M1
7[illegible]-9-110	Detonator, Percussion, M1A2
[illegible]9909	Detonator, Percussion, M2A1
[illegible]-D-45413	Dynamite, Military, M1
[illegible]546	Expendable Firing Package
[illegible]e	Explosive Kit, Earth Rod, Set No. 1
[illegible]H5989	Explosive Kit, Parachute
[illegible]9981-1	Fastener Unit, Powder Actuated Tool
[illegible]246784	Firing Device, Delay, M1
[illegible]7612	Firing Device, Pull Type, M1
[illegible]61-1-2	Firing Device, Release, M1
[illegible]-9-70	Firing Device, Pressure Type, M1A1
[illegible]9-100	Firing Device Pull Type, M2
[illegible]7267	Firing Device, Pull Release, M3
[illegible]96865	Firing Device, Demolition, Multipurpose M5
[illegible]437	Firecracker, M80
[illegible]390	Firing Mechanism Assembly
[illegible]4790 (Navy)	Flare, AC, Parachute, MK6, Mod 6
[illegible]63 (Navy)	Flare, AC, AN-MK8 Mod 2
[illegible]-07	Flare, AC, Parachute, M8A1
[illegible]-0-11	Flare, AC, Parachute, M9A1
[illegible]-0-29	Flare, AC, Parachute, M26 Series
[illegible]-45	Flare, Surface, Trip, M48
[illegible]523	Flare, Countermeasure, M206

APPENDIX A Cont'd

DRAWING NUMBER or MIL-SPEC	ITEM
8836957	Flare, Surface, Trip, M49 Series
78-0-44	Flare, Tow Target, M50
78-0-93	Flare, Surface, Airport M76
78-0-95	Flare, AC, Towed, M77, M78 and M79
78-0-153	Flare, AC, Parachute, M138 and M139
78-0-94	Fusee, Red, 20 minute, M72
2506736 (Navy)	Fuze, Auxiliary Detonating, MK396 Mod 0
2512190 (Navy)	Fuze, Auxiliary Detonating, MK935 Mod 1
73-2-168	Fuze, Base Detonating, M62 Series
73-2-178	Fuze, Base Detonating, M66 Series
73-2-181	Fuze, Base Detonating, M68 Series
73-2-239	Fuze, Base Detonating, M91 Series
73-9-17	Fuze, Base, Bullet Impact M1
82-1-31	Fuze, Hand Grenade, M6 Series
82-1-46	Fuze, Hand Grenade, M10 Series
13-10-22	Fuze, Hand Grenade, M201 Series
7548570	Fuze, Hand Grenade, M204, M205 and M206 Series
8822131	Fuze, Hand Grenade, M213
10963447	Fuze, Hand Grenade M217
9235210	Fuze, Hand Grenade, Practice, M228
399141 (Navy)	Fuze, MK 177 Mod 0
73-7-29	Fuze, Mechanical Time, M43 Series
73-7-71	Fuze, Mechanical Time, M61 Series
[illegible] 165255	Fuze, Mechanical Time, MK 61 Mod 1
[illegible]-7-97	Fuze, Mechanical Time, M67 Series
[illegible]-7-97	Fuze, Mechanical Time, 208 MK3 (British)
[illegible]-7-110	Fuze, Mechanical Time, 214 MK1 (British)
[illegible]052291	Fuze, Mechanical Time, M565
73-7-135	Fuze, Mechanical Time & Superquick M500 Series
73-7-136	Fuze, Mechanical Time & Superquick, M501 Series
73-7-98	Fuze, Mechanical Time & Superquick, M502 Series
8596001	Fuze, Mechanical Time & Superquick, M548 Series
10534286	Fuze, Mechanical Time & Superquick, M564
Series	
73-9-13	Fuze, Mine, Combination, M6 and M7 Series
73-9-56	Fuze, Mine, Combination, M10A1
73-9-26	Fuze, Mine, AT, Practice, M12
73-9-55	Fuze, Mine, AT, M603
73-9-86	Fuze, Mine, AT, M604
73-2-311	Fuze, Point Detonating, M8
73-2-312	Fuze, Point Detonating, M9
73-2-140	Fuze, Point Detonating, M48 Series
73-2-145	Fuze, Point Detonating, M51 Series
73-1-161	Fuze, Point Detonating, M52 Series
73-2-137	Fuze, Point Detonating, M57 Series

APPENDIX A Cont'd

DRAWING NUMBER or MIL-SPEC	ITEM
73-2-214	Fuze, Point Detonating, M78 Series
73-2-251	Fuze, Point Detonating, M81 Series
73-1-195	Fuze, Point Detonating, M82 Series
73-2-374	Fuze, Point Detonating, T234 Series
73-2-320	Fuze, Point Detonating, M503 Series
73-2-359	Fuze, Point Detonating, M508 Series
73-2-393	Fuze, Point Detonating, M519 Series
9311100	Safety and Arming Device, Guided Missile XM143
11711435	Fuze, Electronic Time, M587
11711268	Fuze, Electronic Time, M724
12551000	Fuze, Electronic Time, M762
12550850	Fuze, Electronic Time, M767
9226650	Fuze, PIBD, XM579
8797514	Fuze, Point Detonating, M524E1 NOTE: This SOP does not apply to the basic model Fuze, M524
8800197	Fuze, Point Detonating, M525 Series
3-2-393	Fuze, Point Detonating, M526 Series
3-1-195	Fuze, Point Detonating, M527 Series
73-2-141	Fuze, Point Detonating, M535 Series
P963535	Fuze, Point Detonating, M557 Series
1 380696	Fuze, Point Detonating, M572
5258605	Fuze, Point Detonating, M739
5332	Fuze, Point Detonating, M739A1
2-236	Fuze, Point Initiating, M90 Series
9733	Fuze, Point Initiating, Base Detonating, M509 Series
779523	Fuze, Proximity, M504 Series
10367	Fuze, Proximity, M513 Series
5245	Fuze, Proximity, M514 Series
95368	Fuze, Proximity, M515 Series
12852	Fuze, Proximity, M517 Series
76900	Fuze, Proximity, M532 Series
1/16451	Fuze, Proximity, M732
44523 (Navy)	Fuze, Rocket, Nose, MK137 Series
783 (Navy)	Fuze, Rocket, Nose, AN-MK149 Series
4 (Navy)	Fuze, Rocket, Nose, MK154 Series
5 (Navy)	Fuze, Rocket, Nose, MK155 Series
3381	Fuze, Rocket, Nose, M414 Series
745	Fuze, Rocket, Point Detonating, M423 and M423A Series
-E-166	Fuze, Time M84

APPENDIX A Cont'd

DRAWING NUMBER or MIL-SPEC	ITEM
73-3-154	Fuze, Time Superquick, M54
73-3-155	Fuze, Time Superquick, M55
563141	Fuze, MT, MK25 Mod 5 (1390-M257)
258190	Fuze, MT, MK51-4 (1390-M247)
2428426	Fuze, MT, MK342 Mod 0 (1390-M250)
10520791	Fuze, Mechanical Time, M562
10520688	Fuze, Mechanical Time, M563
8594044	Fuze, Mechanical Time, Superquick, M520 Series
9236500	Fuze, Mechanical Time, Superquick, M577
9352381	Fuze, Mechanical Time, Superquick, M577A1
9236701	Fuze, Mechanical Time, Superquick, M582
9352382	Fuze, Mechanical Time, Superquick, M582A1
053001-1	Generator, Gas Pressure, Prop, Actuated
82-0-143	Grenade, Hand, Fragmentation, MK2 Series
75-14-546 PLASTIC FIBER BODY, NOT CRITICAL	Grenade, Hand, Offensive, MK3 Series
82-0-1 INERT	Grenade, Hand, Practice, M2182-0-190
82-0-190	Grenade, Hand, Fragmentation, M26 Series
82-0-191 INERT, MAYBE SMALL SEPARATE BLACK POWDER CHARGE	Grenade, Hand, Practice, M30
13-7-4	Grenade, Hand and Rifle: Smoke, WP, M34
82-0-109 NOT CRITICAL	Grenade, Rifle, Smoke, WP, M19 Series
82-0-117 NOT CRITICAL	Grenade, Rifle, Smoke, M22 Series
82-0-139 NOT CRITICAL	Grenade, Rifle, Smoke, Streamer, M23
82-2-204 NOT CRITICAL	Grenade, Rifle, Illuminating, M27 Series
82-0-195	Grenade, Rifle, HEAT, M31
76-9-62	Igniter, Blasting Fuse, M1 & M2
78-0-127	Igniter, Ram Jet Engine, M113
838168	Igniter, Ram Jet Engine, M114
78-2-590	Igniter, Ram Jet Engine, M132
78-2-592	Igniter, Ram Jet Engine, M133
78-0-155	Igniter, Ram Jet Engine, M134 & M135
8886428	Igniter, Rocket, M29A1
81-1-454	Ignition Cylinder, Portable, Portable Flame Thrower: M1 (MIL-I-11525) NSN 1375-00-219-8583-M680)
75-14-652	Mine, AP, NM, M14
PB5738	Mine, AP, Practice, NM, M17
73-9-25	Primer, Igniter, M10 Series Mine Fuze
74-2-63	Primer, Percussion, M1B1A2
B4760-1	Primer, Percussion, Cap, MCC, Improved No. 2 or 3
74-2-21	Primer, Percussion, Electric MK2A4
36392 (Navy)	Primer, Percussion, Electric MK13
437780 (Navy)	Primer, Percussion, Electric MK 13 Mod 1
437760 (Navy)	Primer, Percussion, Electric MK 13 Mod 2
79132 (Navy)	Primer, Percussion, Electric MK 14 Mod 1
328952 (Navy)	Primer, Percussion, MK22 Mod 0 for 40MM Ammunition
438589 (Navy)	Primer, Percussion, MK23 Mod 1 for 40MM Ammunition

SHAPED CHARGE (ANTI-TANK)

APPENDIX A Cont'd

DRAWING NUMBER or MIL-SPEC	ITEM
391I0	Primer, Percussion, M28 and M31 Series
4-2-49	Primer, Percussion, M32
74-2-50	Primer, Percussion, M33
74-2-51	Primer, Percussion, M34
74-2-63	Primer, Percussion, M38 (MK22), M40, M47, M60, M64 and M65 Series
839472	Primer, Percussion, M49 Series
74-2-86	Primer, Percussion, M57 Series
797087	Primer, Percussion, M58 Series
1-2-68	Primer, Percussion, M62 Series
P85557	Primer, Percussion, M70 Series
74-2-87	Primer, Percussion, M71 Series
161197	Primer, Percussion, M82 Series
E63594	Primer, Percussion, XM92 Series
74-8-5	Primer, Electric and Percussion, MK15, Mod 1
4 9166 (Navy)	Primer, Electric, MK34, Mod 0
563471 (Navy)	Primer, Electric, MK39 Mod 0
748520	Primer, Percussion, Electric, M67
59499	Primer, Electric M80 Series
2508 (Navy)	Primer, Electric, MK 35 Mod 1
97568 (Navy)	Primer, Electric, MK 40 for 6"/47
478 (Navy)	Primer, Percussion, MK 41 Mod 0
277 (Navy)	Primer, Electric, MK 42 Mod 0
B6281 (Navy)	Primer, Electric, MK 42 Mod 2
57 (Navy)	Primer, Electric, MK 43 Mod 0
26 (Navy)	Primer, Electric, MK 48 Mod 1 for 5"/38
182 (Navy)	Primer, Electric MK 15 Mod 3
50 (Navy)	Primer, Percussion, MK 10 Mod 9
74 (Navy)	Primer, Percussion, Electric, MK 20 Mod 0
770 (Navy)	Primer, Electric, MK 48 Mod 1
50628 (Navy)	Primer, Electric MK 42 Mod 3
42368 (Navy)	Primer, Electric MK 49 Mod 1
9 13 (Navy)	Primer, MK 101, Mod 3
3 637 (Navy)	Primer, Electric, MK 133 Mod 0
54756 (Navy)	Primer, Electric, MK 46 Mod 1
-1	Release, Firing Pin, M1 Series
-282	Remover, Aircraft Canopy, M1 Series
42725	Rocket, Practice, 35MM, Sub-caliber, M73
760 (Navy)	Signal, Smoke, Marine, AN-MK1, Mod 1
C 82	Signal, Illum, Marine, Two-Star-Red, AN M75
0-37	Signal, Illum, Grd, Parachute, M17, M19 M21 and M51 Series
58	Signal, Illum, Grd Cluster, M18, M20, M22 and M52 Series
-33	Signal, Illum, AC, Double Star, AN-M37, M38, M39, M40, M41 and M42 Series
-4	Signal, Illum, AC, Tracers AN-M53, M54 M55, M56, M57 and M58 Series
90	Signal, Illum, Grd, Green Star Cluster, M125 Series

APPENDIX A Cont'd

DRAWING NUMBER or MIL-SPEC	ITEM
8797968	Signal, Illum, Parachute, M126 and M127 Series
8797996	Signal, Ground, Smk, M128 and M129 Series
8838071	Signal, Illum, Grd, Parachute, M131 Series
78-0-96	Simulator, Proj Air Burst, M74A1
78-0-115	Simulator, Gun Flash, M110
7549246	Simulator, Proj Ground Burst, M115 Series
8835109	Simulator, Hand Grenade, M116 Series
78-0-120	Simulator, Booby Trap, Flash, M117
78-0-122	Simulator, Booby Trap, Illum, M118
78-0-124	Simulator, Booby Trap, Whistling, M119
9322059	Simulator, Flash, Artillery, M21
11745290	Simulator, Launching, Antitank Guided Missile and Rocket, M22
71-13-3	Simulator, Projectile Airburst: Charge Smoke Puff White *
82-5-146	Squib, Electric, M1 Series
75-17-11	Tracer, M5 Series
8849014	Tracer, XM10 Series
9220866	Fuze, PD, XM716
9220867	Fuze, PD, XM717
9220850	Fuze, PD, XM719
1310347	Fuze, Proximity, M516 Series
727728(S)	Fuze, Proximity, FMU-110/B
727272(S)	Fuze, Proximity, FMU-113

SENECA OB GROUNDS
REMEDIAL DESIGN
PROGRESSION OF OE REMEDIATION

1. Clear surface and subsurface (to a minimum depth of two feet) of the area to be used for staging/execution of the sifting operation. Staging/sifting operation should not be located at an area of the site that is to be remediated for lead contamination.

2. Soils to be remediated for HTRW (i.e soils with lead concentrations greater than 500 mg/kg lead) will be sifted for OE as follows:

A. Soils to be solidified (soils that fail TCLP) will be excavated, sifted and stockpiled so that they are isolated from all other soils. The resulting stockpile will be underlain and covered by an appropriate membrane. The approximate total volume of this soil is 3800 cubic yards.

B. Current pad berm and low-lying hill soils that are simply to be landfilled (ie, >500 ppm of lead but < the TCLP limits) will be excavated, sifted for OE and stockpiled so that they are isolated, underlain and covered. The approximate total volume of this soil is 4200 cubic yards.

C. Soils that are not within the pad berms or the low-lying hill (surface and to a depth of 2 feet (4 feet in isolated occurrences)), and that are simply to be landfilled (ie. >500 ppm of lead but < the TCLP limits) will be excavated, sifted for OE and stockpiled so that they are isolated, underlain and covered. The approximate total volume of this soil is 9400 cubic yards.

3. Soils that do not require remediation for HTRW contamination will be sifted for OE. Following this part of the operation, the sifting should be complete.

A. The pad berms and portions of the low-lying hill that remain will be sifted for OE and stockpiled separately from the stockpiles created above. This soil will be covered with an appropriate membrane. Following overall remediation (OE and HTRW), this soil may be used for fill. Assume that this amount of soil is approximately 16,000 cubic yards.

4. The thirty acre site will be surface swept for OE according to the SOW. {This surface sweep may be conducted following removal and sifting of the pad berms and low-lying hill if that is preferred}.

5. The thirty acre site (that which remains following the sifting of subsurface soils under 2C, above) will be swept (subsurface to a depth of two feet) for OE according to the SOW.

APPENDIX B

SPECPRO SITE SPECIFIC HEALTH AND SAFETY PLAN

SITE SPECIFIC HEALTH AND SAFETY PLAN

FOR:

SITES 44A AND OPEN BURNING GROUNDS
SENECA ARMY DEPOT, NEW YORK

PREPARED BY:

SPECPRO, INC.
10500 HIGHWAY 281 NORTH, SUITE 107
SAN ANTONIO, TX 78216

PREPARED FOR:

ROY F. WESTON, INC.

August 20, 2001

DACA98-P-0051

TABLE OF CONTENTS

SITE SPECIFIC HEALTH AND SAFETY PLAN

1.0 INTRODUCTION

The purpose of this Site Specific Safety and Health Plan (SSHASP) is to establish general guidelines and procedures to ensure protection of SpecPro, Sessler, subcontractor personnel and the public while performing operations at sites 44A and the Open Burning Grounds (OBG) on Seneca Army Depot located at Romulus, New York. All site activities will be performed in accordance with the Site Specific Health and Safety Plan (SSHASP). The objective of this SSHASP is to provide site personnel the necessary tools to maintain a safe and healthy work place and to protect the environment. SpecPro places safety and accident prevention above operations, and places the burden of responsibility on all employees, consultants, teaming associates, and subcontractors. A copy of this SSHASP is available for review by all employees, subcontractors, and visitors upon request. All site personnel will review the SSHASP and acknowledge by signature that they understand the SSHASP prior to performing any work at the site. Personnel that violate policies contained in this SSHASP may be dismissed from the work site and considered for termination. The standard Operating Procedures for health and safety are listed in the SpecPro Corporate Health and Safety Plan and the Explosives Safety Submission and applicable Amendments for the Area 44A site and the OB Grounds site.

1.1 INSTALLATION/SITE DESCRIPTION

1.1.1 Seneca Army Depot (SEDA)

SEDA is a U.S. Army facility located in the town of Romulus, in Seneca County, New York. SEDA occupies approximately 10,600 acres and is bounded on the west by State Route 96A and on the east by State Route 96. The cities of Geneva and Rochester are located to the northwest (15 miles and 50 miles); Syracuse, 53 miles to the northeast and Ithaca, 31 miles to the south.

1.1.2 Site History

The OBG was utilized as an open burning grounds for more than 40 years in the northwest section of the SEDA facility. The OB grounds occupy an area of approximately 30 acres. A total of nine burning pads were used between the early 1960's and the late 1980's. During this time, items burned included explosive trash from an old washout plant and fuzes containing lead compounds. Operations were conducted by preparing combustible beds of pallets and wooden boxes and placing ammunition or components to be destroyed on the beds.

1.1.3 Scope of Work

SpecPro, under contract with Roy F. Weston, Inc. will provide services for UXO Services. These services include:

- Provide UXO support during pre-construction as required and during sampling operations
- Screen soils at sites 44A & OBG
- Perform sorting of oversize material at sites 44A & OBG
- Final disposition of OE Scrap
- Explosive disposal of UXO and hazardous OE

- Provide final disposition of all UXO & non-UXO scrap material

1.1.4 Specific Work Sites

SpecPro will provide UXO services at Seneca Army Depot, New York, sites 44A & OBG.

1.2 OBJECTIVE

The objective is for SpecPro to safely and efficiently provide UXO avoidance support, screen soil, sort oversize material, identify and dispose of UXO and UXO Scrap from approximately 25 acres at site 44A and 30 acres at OBG.

1.3 ORGANIZATION STRUCTURE AND RESPONSIBILITIES

1.3.2 General

- Ensuring the safe and healthful conduct of site operations is the responsibility of everyone assigned to the site. Therefore, all personnel involved in site activities will be responsible for the following:
- Complying with the SSHASP and all other required safety and health guidelines
- Taking all necessary precautions to prevent injury to themselves and to their fellow employees
- Continually being alert to any potentially harmful situation and immediately informing the UXO Site Safety Officer (UXOSSO) of any such identified conditions
- Performing only those tasks that they believe they can do safely and have been trained to do
- Notifying the UXOSSO of any special medical conditions (i.e., allergies, contact lenses, diabetes) which could affect their ability to safely perform site operations
- Notifying the UXOSSO of any prescription and/or over-the-counter medication which they are taking that might cause drowsiness, anxiety or other unfavorable side affects
- Preventing spillage and splashing of materials to the greatest extent possible
- Practicing good housekeeping by keeping the work area neat, clean and orderly
- Immediately reporting all injuries, no matter how minor to the UXOSSO
- Maintaining site equipment in good working order, and reporting defective equipment to the UXO Supervisor (UXOS), UXOSSO and/or Senior UXO Supervisor (SUXOS).
- Properly inspecting and using the PPE required by the SSHASP or the UXOSSO

1.3.3 Organization

The Safety and Health (S&H) requirements listed in this plan may change as work progresses at the site, however, no changes will be made without approval of Weston, SpecPro, and CEHNC personnel. However, SpecPro will staff the project with required personnel based on ESS and USACE requirements. The following personnel will be onsite when required during UXO activites:

1.3.4 Senior UXO Supervisor (SUXOS)

Mr. Chris Brown is a Master EOD/UXO Technician with extensive experience in OE remediation and operating on hazardous work sites. His responsibilities include but are not limited to the following:

1.3.4.1 Responsibilities:

- Reports directly to SpecPro Project Manager on project matters
- Reviewing and becoming familiar with the site Work Plan (WP) and SSHASP
- Furnishing copies of the WP and SSHASP to site personnel for their review
- Directly interfacing with the prime contractor and advising him/her of safety and health matters related to UXO matters concerning site operations and safety
- Monitors performance and safety compliance and acts as the primary point of contact for UXO issues

1.3.5 UXO Site Safety and Health Officer (UXOSSO)

Mr. Floyd Kittle is a Master EOD/UXO Technician with extensive experience in ordnance and UXO safety.

1.3.5.1 Responsibilities

The UXOSSO will have the following responsibilities:

- STOP WORK authority for safety and health reasons
- Complete Personnel Data Sheets on all site personnel
- Implement and enforce the SSHASP, and report safety violations to the PM
- Establishing work zones and controlling access to these zones
- Confirm all contractor and subcontractor personnel's suitability for work, based upon OSHA and site specific medical and training requirements
- Conduct daily General Safety Briefings and all UXO training to site personnel
- Ensure proper condition, maintenance, storage, and use of PPE
- Assisting in the continued development of the SSHASP and other health and safety procedures
- Investigate accidents/incidents and "near misses"
- Conduct visitor orientation
- Enforce the "buddy" system
- Restrict site personnel from site activities if they exhibit symptoms of alcohol or drug use or illness, and continually monitor site personnel for signs of chemical exposure or physical stress
- Maintain the site safety and monitoring logs

- Act as the On-Scene-Incident-Commander (OSIC) in the event of an emergency, notify and coordinate off-site emergency and medical response agencies
- Post the descriptions and maps associated with hospital and emergency evacuation routes
- Ensure field implementation of the SSHASP

1.3.6 UXO Quality Control Officer (UXOQCO)

Mr. Floyd Kittle will conduct Quality Control inspections of SpecPro operations.

1.3.6.1 Responsibilities

- Controlling and measuring the quality of work performed by SpecPro UXO Technicians
- Insuring all magnetometers are function tested each workday or as required
- Determining the effectiveness of work performed
- Inspecting the maintenance and accuracy of site records
- Determining compliance with the site safety, environmental and operational work plans

1.3.7 UXO Technician III

Mr. Richard "Dick" Bilbrey is a Master EOD/UXO Technician with extensive experience in ordnance, UXO safety and UXO operations. He will be the Unexploded Ordnance Supervisor (UXOS). This position is also known as Team Leader.

1.3.7.1 Responsibilities

- Supervise all UXO tasks and UXO team
- Enforce UXO safety at all times
- Monitor lunch breaks and direct team breaks as required
- Conducts demolition operations
- Ensure compliance with SSHASP and Site Work Plan

1.3.8 Responsibilities of all Site Personnel

Ensuring the safe and healthful conduct of site operations is the responsibility of everyone assigned to the site, therefore, all personnel involved in site activities will be responsible for the following:

- Complying with the SSHASP and all other required safety and health guidelines
- Taking all necessary precautions to prevent injury to themselves and to their fellow employees
- Continual alertness to any potentially harmful situation and the need to immediately inform the UXOSSO of any such conditions
- Performing only those tasks that they believe they can do safely and have been trained to do

- Notifying the UXOSSO of any special medical conditions (i.e., allergies, contact lenses, diabetes) which could affect their ability to safely perform site operations
- Notifying the UXOSSO of any prescription and/or over-the-counter medication which they are taking that might cause drowsiness, anxiety or other unfavorable side affects
- Preventing spillage and splashing of materials to the greatest extent possible
- Practicing good housekeeping by keeping the work area neat, clean and orderly
- Immediately reporting all injuries, no matter how minor to the UXOSSO
- Maintaining site equipment in good working order, and reporting defective equipment to the UXOQCS
- Properly inspecting and using the PPE required by the SSHASP or the UXOSSO

1.4 SITE CONTROL

Ordnance removal activities will be performed under this contract. Exclusion zones (EZ) associated with any removal work will be enforced by the UXOSSO and SUXOS in accordance with this SSHASP and the ESS. Site Maps delineating site boundary limits, maximum frag distances, public withdrawal distances, Q-D zones, and planned detonation areas are included in Appendix A of the ESS document. In the event that UXO or OE hazards are identified on-site, the item will be marked with 2 crossed red pin flags. All non-UXO qualified personnel will not be permitted near these items. Visitors will be required to sign the Visitors Log before entering the project site. Visitors will be escorted by Weston personnel, SUXOS or UXOSSO at all times during their visit on the project site. This requirement will apply to all visitors including representatives from regulatory agencies who perform site visits. Further site controls to ensure safety are as follows:

- Eating, drinking, and smoking are prohibited except in designated areas.
- Weston, SUXOS or UXOSSO will escort all authorized visitors while they are on site.
- All personnel entering the site, including visitors, will be in the proper PPE.
- The UXOSSO will maintain the site visitors log to ensure accurate accountability for personnel.
- The UXOSSO will brief this SSHASP to all personnel entering the site to inform them of the potential site hazards. All personnel will acknowledge this briefing by signing the SSHASP briefing log.
- In case of an emergency, personnel will exit the site and move to the designated safe area. The safe area will be located upwind of the site outside of the fragmentation area. The UXOSSO, and SUXOS will determine the severity of the emergency. If the emergency warrants site evacuation, emergency horns will be used to notify all personnel.

1.5 HAZARD/RISK ANALYSIS

SpecPro has analyzed the scope of work to determine the work risk hazards associated with each task. The tasks consist of direct tasks and the implied tasks, or sub tasks, to accomplish the work. SpecPro has identified the following hazards/risks for sites 44A & OBG.

1.5.1 UXO Escort Support

Below are listed potential exposures to hazards associated with providing UXO escort support:

- Exposure to surface and subsurface UXO: These items if moved or handled improperly could explode, either killing or seriously injuring personnel.
- Biological hazards: Potential exposure to irritating plant life; exposure to dangerous wildlife, rodents, insects, etc which present the possibility of bites and associated diseases.
- Potential trip hazard associated with ground cover, irregular terrain, and vegetation
- Lifting hazards, such as back strain, associated with handling UXO scrap
- Heat/Cold Stress

1.5.2 Screening Soils/Separation of Oversize Material

Below are listed potential exposures to hazards associated with Screening Soils/Separation of Oversize Material:

- Exposure to surface and subsurface UXO: These items if moved or handled improperly could explode, either killing or seriously injuring personnel;
- Exposure to white phosphorous munitions;
- Injuries occurring from hand tools, shovels and pry bars;
- Slips, trips and falls;
- Biological hazards: Exposure to irritating plant life; exposure to wildlife, rodents, insects, etc. which present the possibility of bites and associated diseases;
- Potential trip hazard associated with ground cover, irregular terrain, and vegetation;
- Mechanical pinch hazards from exposed belts, pulleys and moving parts
- Falling from man-lift/Mechanical Sifting Plant;
- Items falling from above;
- Lifting hazards, such as back strain;
- Heat/Cold Stress.
- Suspend all operations immediately upon approach of an electrical storm;
- Do not handle any UXO unnecessarily;
- Avoid inhalation and skin contact with smoke, fumes, dust, and vapors of detonations and OE residue;
- Do not attempt to extinguish burning explosives or any fire which might involve explosive materials;
- Utilize engineering controls such as sandbags to reduce fragmentation during demolition operations;

- Do not subject OE to rough handling;
- Avoid the forward portions of munitions employing proximity fuzing;
- Assume unknown fuzes to contain cocked strikers or anti-disturbance features.
- Observe safety precautions for White Phosphorous (WP) munitions;
- Always take precautions to prevent fire

1.5.3 Operating Man-Lift

- Only properly trained operators will be permitted to operate lifting platform.
- Turn engine off when refueling
- Check clearances above, below and on sides and bottom of platform when raising and lowering platform.
- Never use scissors arms to climb up or down platform.
- Ensure machine is positioned on a firm, level and uniform surface prior to raising platform
- Do not use handrails to carry material, equipment or tools
- No stunt driving or horseplay is permitted
- Do not operate without handrails in place and secured
- Keep mud, oil, grease and other slippery substances from footwear, deck and steps

1.5.4 Conveyors

- All exposed moving machinery will be mechanically guarded
- Emergency stop devices will be located along their full length
- Lock out/Tag out devices will be used whenever periodic maintenance is being performed

1.5.5 Blasting

- Operations will be immediately discontinued during the approach of a thunderstorm
- Blasting operations will be under the control of one supervisor
- All blasting will be performed under the supervision of a qualified blaster
- All blasting operations will be conducted in accordance with DoD, CEHNC, Federal and local directives
- Electrically initiated demolition operations are prohibited due to the close proximity of the Coast Guard LORAN "C" Station. Only non-electric initiated demolition systems will be used during demolition operations

1.6 MITIGATING RISKS TO HAZARDS

1.6.1 General

SpecPro personnel will follow the below listed procedures to mitigate the hazards/risks outlined in paragraph 1.5.1 of this SSHASP:

- Any approach to a suspected UXO will be conducted in accordance with procedures outlined in the U.S. Army Engineering and Support Center (CEHNC) Safety Concepts and Basic Considerations Unexploded Explosive Ordnance (UXO) Engineer Pamphlet 385-1-92a, dated 29 June 2001 (enclosed as Appendix A);
- Any UXO found within the confines of the work area will be positively identified by two (2) UXO qualified technicians;
- UXO items will only be moved or handled by UXO qualified personnel;
- Do not transport WP munitions unless they immersed in water, mud, or wet sand;
- If loose pyrotechnic, tracer, flare or similar mixtures are to be transported, they will be placed in No. 10 mineral oil or equivalent to minimize the fire and explosion hazards.
- All personnel will wear as a minimum Level D PPE, sleeves rolled down when in heavy vegetation, leather or canvas work gloves and sturdy work boots. In addition to these measures, any person known to have allergic reactions to insect bites or exposure to toxic plants will be identified and will carry appropriate first aid materials at all times;
- Hard hats will be worn during operations where an overhead hazard exists;
- While on the job, all personnel will move at a moderate pace and stay alert for possible trip hazards. No running at any time;
- Personnel will avoid, to the maximum extent possible, contact with any wildlife. Should a person become bitten he/she will receive immediate first aid;
- Personnel working in vegetated or wooded areas will be reminded to check themselves for insect bites & ticks after leaving the work area;
- While working on site all personnel will use the "buddy" system. They will remain in sight of each other at all times to ensure safe working practices;
- All unprotected personnel will be prohibited from entering the exclusion zones; 400 feet for site 44A and 1181 feet for OBG.
- UXO technicians working near screening will observe the K24 distance of 11 feet for site 44A and 19.4 feet for OBG.

1.6.1.2 Fire Protection

The following safe work practices will be used to protect against fires:

- Vehicles and equipment will not be refueled while running;
- Flammable/combustible liquid storage will have at least one (1) 2A10BC fire extinguisher located within 25-75 feet, marked with the appropriate fire symbol and no smoking signs;
- Temporary offices will be equipped with a fire extinguisher of not less than 2A 10:ABC
- At least one fire extinguisher will be located at each work site, minimum 2A10BC
- All vehicles operated by SpecPro will carry at least one all purpose ABC fire extinguisher.

1.6.2 UXO

These basic safety precautions are the minimum UXO safety requirements required of all personnel on site. Other precautions and requirements are in the CEHNC Safety Concepts and Basic Considerations Unexploded Explosive Ordnance (UXO) in Appendix A.

1.6.2.1 Basic Considerations

The following should be taken into consideration when planning or conducting UXO operations:

- SAFETY IS PARAMOUNT;
- Do not move or disturb unidentified items;
- All UXO will be identified independently by a two (2) UXO technicians;
- Do not collect souvenirs;
- Do not smoke except in designated areas;
- Do not carry fire or spark producing devices into the site;
- All operations will use the "Buddy" system;
- Prohibit unnecessary personnel from visiting the site.

1.6.2.2 Basic Safety Precautions:

(1) Suspend all operations immediately upon approach of an electrical storm;

(2) Do not handle any UXO unnecessarily;

(3) Do not depress plungers, turn vanes, rotate spindles, levers, setting rings or other external fittings on OE items. Such actions may arm or activate the OE.

(4) Do not attempt to remove any fuze(s) from the OE. Do not dismantle or strip components from any OE items.

(5) UXO Personnel are not authorized to inert any OE items found on-site.

(6) OE /UXO items will not be taken from the site as souvenirs/training aids.

(8) Consider OE items, which may have been exposed to fire and detonation, as extremely hazardous. Chemical and physical changes may have occurred to the contents, which might render it more sensitive than its original state.

(9) Do not rely on the color-coding of OE for positive identification. Munitions having incomplete or improper color codes have been encountered.

(10) Avoid approaching the forward area of an OE item until it can be determined whether or not the item contains a shaped charge. The explosive jet, which is formed during detonation, can be lethal at great distances. Assume that all shaped charge munitions contain a piezoelectric (PZ) fuzing system until identified. PZ fuzing is extremely sensitive. They can function at the slightest physical change and can remain hazardous for an indefinite period of time.

(11) Do not approach a smoking white phosphorous (WP) munition. Burning WP may detonate the explosive burster charge at anytime.

(12) Always take precautions to prevent fire

1.6.2.3 Heavy Equipment Operation

- Heavy equipment utilized onsite will be operated under strict adherence to the applicable OSHA regulations found in 29 CFR 1910, 29 CFR 1926, the requirements of EM 385-1-1, Section 16 and the guidelines listed below:
- The operation of heavy equipment will be limited to authorized personnel specifically trained in its operation;
- The operator will visually inspect heavy equipment daily, prior to operation, and report any abnormalities/deficiencies to the UXOSSO and/or SUXOS;
- The operator will use the safety devices provided with the equipment, including seat belts, and backup warning indicators and horns will be operable at all times;
- All equipment used to move material that might possibly contain UXO/hazardous item will be properly shielded as required by the Explosive Safety Submission (ESS);
- While in operation, all personnel not directly required in the area will keep a safe distance from the equipment;
- The operator's cab will be kept free of all non-essential items and all loose items will be secured;
- Personnel will avoid moving into the path of operating equipment and areas blinded from the operator's vision will be avoided;
- When heavy equipment must negotiate in tight quarters, or if operators of earth moving equipment cannot see the bucket, a secondary person will be stationed to guide the operator;
- Additional riders will not be allowed on equipment unless it is specifically designed for that purpose (i.e., there is an additional seat with a seat belt).

1.6.2.4 Excavations and Confined Spaces:

UXO supervision support will be provided during any excavation activities. No confined space entry is anticipated.

1.6.2.5 Definitions

Blood borne Pathogens: Pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Exposure Incident: A specific eye, mouth, other mucous membrane, non-intact skin, or potential contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

Other Potentially Infectious Materials: The following human body fluids:

Semen, vaginal secretions, cerbro-spinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, any body fluid that is visibly contaminated with blood, and all body fluids in

situations where it is difficult or impossible to differentiate between body fluids.

Any unfixed tissue or organ (other than intact skin) from a living or deceased human.

Potential: Piercing mucous membranes or the skin barrier through such events as needle sticks, human bites, cuts, and abrasions.

Work Practice Controls: Controls that reduce the likelihood of exposure by altering the manner in which a task is performed.

Universal Precautions: An approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other blood borne pathogens.

1.6.2.6 Exposure Control Plan:

1.6.2.6.1 Exposure Determination

Due to the hazardous nature of UXO work, there is the potential for accidents and the exposure to blood pathogens. SpecPro employees will be required to perform emergency first aid and/or CPR in the event of an accident or injury.

1.6.2.6.2 Work Practice Controls

PPE (CPR Pocket Mask and disposable surgical gloves) are available in all first aid kits on site. Personnel performing first aid and/or CPR will comply with the following:

- Personnel that provide any first aid will wear disposable latex gloves if there is any visible body fluids;
- The CPR Pocket mask will be used when performing CPR and disposed of after use;
- Personnel will change clothing immediately, or as soon as feasible, that becomes contaminated with body fluids as a result of performing first aid;
- Personnel will immediately wash their hands after performing first aid procedures;
- Contaminated clothing and equipment will be bagged in plastic bags and labeled as to date and contents, and disposed of as infectious waste.

1.6.2.6.3 Post-Exposure Evaluation and follow-up

Following an exposure incident, SpecPro will make available, to the exposed employee, a confidential medical evaluation and follow-up containing the following elements:

- Documentation of the routes(s) of exposure, and the circumstances under which the exposure incident occurred;
- The source individual's and exposed employee's blood will be collected as soon as feasible and tested after consent is obtained;
- The results of the source individual's testing will be made available to the exposed employee, and the employee will be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

1.7 QUALIFICATION TRAINING

All UXO personnel working at this site have completed U.S. Naval Explosive Ordnance Disposal (USNAVSCOLEOD) training which details procedures for evaluation and disposal of OE. All employees who work on hazardous sites receive training, which includes an equivalent of 40 hours of training off-site and actual field experience under the direct supervision of a trained, experienced supervisor. Management and supervisors receive an additional 8 hours training on program supervision. Each employee receives 8 hours of OSHA refresher training annually. Copies of training and qualifications are on file and will be made available upon request.

1.7.1 Site Specific Training

The UXOSSO and SUXOS will give site-specific training to all UXO and non-UXO personnel prior to initial site entry. The training will include:

- Project scope to include: organization and responsibilities; site orientation, facilities, access, egress, evacuation routes, and other general information;
- Safety, to include: safe work practices; physical hazards, PPE; on/off-site emergencies; evacuation routes; emergency agencies/numbers; emergency equipment; medical emergencies; Drug and Alcohol; Blood borne pathogens; and other pertinent safety information.

1.7.2 Additional Training/Meetings

1.7.2.1 Tailgate Meetings

Safety training will be provided each morning on-site at the daily safety meeting. The safety and health considerations for the day's activities will be reviewed. Additional training will be conducted when circumstances dictate. The daily meeting will address that day's activities; safety issues; specific hazards; and emergency procedures, to include:

- Notification procedures and phone numbers;
- Rally points, and safe areas;
- Hospital and evacuation routes;
- Emergency equipment.

1.8 PERSONAL PROTECTIVE EQUIPMENT (PPE)

PPE required at the site will be at a level necessary to protect personnel. Normal work clothing will be level D. During operations, a hard hat is not required unless a possible head injury could result from the use of heavy equipment or overhead hazards. Steel toe footwear will not be used while operating magnetometers.

1.8.1 Level D PPE

- The minimum level of protection required of all personnel at the site is level D. The following is level D protection:

- Short or long sleeve cotton coveralls or work clothing;
- Sturdy work boots/shoes, (steel toe, reflective vest, when working around heavy equipment). Personnel using magnetometers will not use steel toe footwear;
- Safety glasses with side shields or goggles when an eye hazard exists;
- Hard hat (when required);
- Leather or canvas work gloves;
- Hearing protection, when working around heavy equipment or powered hand tools.

1.8.1.2 Modified Level D PPE

At times, Modified Level D PPE may be required. The following is Modified Level D protection:

- Hard hat
- Safety glasses with side shields or goggles when an eye hazard exists;
- ANSI approved footwear
- Leather or canvas work gloves;
- Tyvex/Saranex, rubber booties, chemical resistant gloves;
- Hearing protection, when working around heavy equipment or powered hand tools.

1.9 REGULATIONS AND REFERENCES

- The safety and health of on-site personnel and the local community will be ensured by following all of the applicable requirements and regulations listed in the publications below:
- OSHA Occupational Safety and Health Standards, 29 CFR 1910;
- OSHA Construction Standards, 29 CFR 1926;
- Applicable sections of EPA 40 CFR Parts 260 to 299;
- Applicable sections of DOT 49 CFR Parts 100 to 199;
- SpecPro Corporate Health and Safety Program (HSP);
- USACE EM 385-1-1, Safety and Health Requirements Manual;
- USACE ER 385-1-92, Safety and Occupational Health Document Requirements for Hazardous Waste Remedial Actions;
- DOD 6055.9-STD, DOD Ammunition and Explosives Safety Standards;
- DoD 4160.21-M, Defense Reutilization and Marketing Manual;
- AR 200-1, Environmental Protection and Enhancement;
- AR 385-10, The Army Safety Program;
- AR 385-16, System Safety Engineering and Management;

- AR 385-40, w/USACE supplement, Accident Reporting and Records.
- AR 385-64, U.S. Army Explosives Safety Program
- USACE EM 1110-1-4009, Ordnance and Explosives Response Engineering Manual
- EP 75-1-2, Unexploded Ordnance (UXO) Support During Hazardous, Toxic, And Radioactive Waste (HTRW) And Construction Activities
- EP 385-1-95a, Basic Safety Concepts and Considerations for Ordnance and Explosives Operations
- EP 1110-1-18, Ordnance and Explosives Response.
- ATF P 5400.7 Explosives Law and Regulations
- DA PAM 385-64, Ammunition and Explosives Safety

2.0 MEDICAL SURVEILLANCE REQUIREMENTS

All SpecPro UXO personnel on-site have completed a pre-placement or annual physical examination that complies with the requirements of 29 CFR 1910.120 and have been certified as fit to work by an Occupational Physician certified in Occupational Medicine by the American Board of Preventative Medicine, or who by necessary training and experience is board eligible. All UXO personnel on-site are in the SpecPro Medical Surveillance Program. Refer to SpecPro Corporate Health and Safety Plan for additional information. Documentation as to the medical qualifications of UXO personnel are on file and available for inspection.

2.1 Air Monitoring

Roy F. Weston, Inc. shall perform perimeter air monitoring and personnel air monitoring during Site activities.

3.0 EMERGENCY RESPONSE PLAN

Existing emergency response procedures as outlined in the ERCP will be followed. In the event of an emergency such as injury or illness, fire/explosion or inclement weather the following lines of authority will be utilized:

3.1 Lines of Authority

During an emergency situation, the UXO Team Leader will take control of the scene until the arrival of the Site Safety Officer who will be the On Scene Incident Commander (OSIC). The UXO Team Leader will ensure all personnel are present or accounted for. As soon as practical the following personnel will be notified of the emergency:

- SpecPro Chief Executive Officer – Mr. Armando De La Paz
- SpecPro Health & Safety Manager – Mr. Larry Blackwell
- SpecPro Director of Operations – Mr. Prakash Raja
- SpecPro Project Manager – Mr. Karl Goehring
- Site UXO Supervisor (SUXOS) – Mr. Chris Brown

3.2 Site Communications

Hand held radios will be utilized to communicate between UXO teams. These radios do not require FCC licensing. Team members will also be familiar with emergency hand signals as follows:

- Hands on throat----------Respirator of breathing problems
- Thumbs up----------I'm Alright; Understood
- Thumbs down----------Negative; No
- Hand(s) on head----------Need Help
- Grabbing wrist----------Immediately evacuate area

APPENDIX A

SAFETY AND HEALTH PROGRAM

SpecPro	Page 1 of 1
	Date November, 1999
Title SPECPRO, INC. HEALTH AND SAFETY PROGRAM INDEX	Approved By: Larry Blackwell Director, Environmental Programs Revised By: Michael L. McIntosh, CIH, CHMM

Title

INVESTIGATION, RECORDING, AND REPORTING OF OCCUPATIONAL INJURIES AND ILLNESSES

Approved By:

Larry Blackwell
Director, Environmental Programs

Revised By:
Michael L. McIntosh, CIH, CHMM

1.0 PURPOSE

1.1 The purpose of the Investigation, Recording, and Reporting of Occupational Injuries and Illnesses Program is to ensure all accidents are investigated, recorded and reported according to the requirements of the Occupational Safety and Health Administration (OSHA).

2.0 REFERENCES

2.1 29 CFR, Part 1904, Recording and Reporting Occupational Injuries and Illnesses, Occupational Safety and Health Administration (OSHA)

2.2 Recordkeeping Guidelines for Occupational Injuries and Illnesses, U.S. Department of Labor, Bureau of Labor Statistics, September 1986

3.0 DEFINITIONS

3.1 **First Aid.** Any one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care. Such treatment and observation are considered first aid even though provided by a physician or registered professional personnel.

3.2 **Log and Summary (OSHA No. 200).** The OSHA recordkeeping form used to list injuries and illnesses and to note the extent of each case.

3.3 **Lost Workday Cases.** Cases which involve days away from work or days of restricted work activity, or both.

3.4 **Lost Workdays.** The number of days (consecutive or not) after, but not including, the day of injury or illness during which the employee would have worked but could not do so, that is, could not perform all or any part of his normal assignment during all or any part of the workday or shift, because of the occupational injury or illness.

3.5 **Medical Treatment.** Includes treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even though provided by a physician or registered professional personnel.

3.6 **Occupational Illness.** Any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. It includes acute and chronic illnesses or diseases which may be caused by inhalation, absorption, ingestion, or direct contact

3.7 **Occupational Injury.** Any injury such as a cut, fracture, sprain, amputation, etc., which results from a work accident or from an exposure involving a single incident in the work environment. Conditions resulting from animal bites, such as insect or snake bites or from one-time exposure to chemicals, are considered to be injuries.

3.8 **Recordable Cases.** All work-related deaths and illnesses, and those work-related injuries which result in: loss of consciousness, restriction of work or motion, transfer to another job, or require medical treatment beyond first aid.

3.9 **Restriction of Work or Motion.** Occurs when the employee, because of the result of a job-related injury or illness, is physically or mentally unable to perform all or any part of his or her normal assignment during all or any part of the workday or shift.

3.10 **Supplementary Record (OSHA No. 101).** The form (or equivalent) on which additional information is recorded for each injury and illness entered on the log.

4.0 RESPONSIBILITIES

4.1 The Corporate Industrial Hygienist shall:

4.1.1 Assist Human Resources with determination of recordable injuries and illnesses and maintenance of the OSHA No. 200, Log and Summary of Occupational Injuries and Illnesses.

4.1.2 Certify the annual summary of occupational injuries and illnesses as true and complete at the end of each calendar year.

4.1.3 Provide employees with access to the OSHA No. 200 logs upon request.

4.1.4 Post a copy of the OSHA No. 200 covering the previous calendar year from February 1 to March 1 during each year.

4.1.5. Forward supplementary records for all recordable occupational injures or illnesses to Human Resources, Director of Administration, El Paso, TX for processing of workers compensation claims.

4.1.6 Provide Program Managers with assistance in accident investigations upon request.

4.1.7 Report facilities and accidents involving the hospitalization of 3 or more employees to the nearest OSHA office within 8 hours of occurrence.

4.2 Program Managers shall:

4.2.1 Complete the Supplementary Record of Occupational Injuries and Illnesses (See Appendix A) for all accidents that result in an injury or illness to an employee and provide the Corporate Industrial Hygienist a copy within 24 hours of occurrence;

4.2.2 Investigate and prepare a written report for all accidents that result in an injury or illness to an employee and provide the Corporate Industrial Hygienist a copy within 24 hours of occurrence.

4.3 Employees shall:

4.3.1 Report all accidents to their Program Manager.

5.0 INVESTIGATING, RECORDING AND REPORTING OCCUPATIONAL INJURIES AND ILLNESSES PROGRAM SPECIFIC ASPECTS

5.1 Accident Investigations

5.1.1 All accidents that result in an injury or illness to an employee shall be investigated within 24 hours of occurrence.

5.1.2 A written report shall be prepared for each accident investigation that contains the following information.

5.1.2.1 Date of the accident.

5.1.2.2 Detailed account of events that led or contributed to the accident.

5.1.2.3 Description of injury or illness.

5.1.2.4 Immediate and/or temporary corrective action taken.

5.1.2.5 Final corrective action to be taken if different from above.

5.2 Log and Summary of Occupational Injuries and Illnesses

5.2.1 SpecPro, Inc. shall use the standard OSHA No. 200 log for recording occupational injuries and illnesses.

5.2.2 Each recordable injury and illness shall be entered on the log as early as practicable but no later than 6 working days after receiving information that a recordable injury or illness has occurred. (See Appendix B for determining whether or not a case is recordable)

5.2.3 The annual summary of occupational injuries and illnesses shall be certified as true and complete at the end of each calendar year.

5.2.4 The OSHA No. 200 covering the previous calendar year shall be posted no later than February 1 and shall remain in place until March 1. In the event no injuries or illnesses occurred during the year, zeros shall be entered on the totals line, and the form shall still be posted.

5.2.5 The log and summary of all recordable occupational injuries and illnesses (OSHA No. 200) shall be made available to employees, former employees, and to their representatives for examination and copying in a reasonable manner and at reasonable times.

5.2.6 OSHA No. 200s shall be retained for 5 years following the end of the year to which they relate.

5.3 Supplementary Records

5.3.1 A supplementary record shall be maintained for each injury or illness.

5.3.2 Supplementary Records shall be retained for 5 years following the end of the year to which they relate.

5.4 Reporting of Fatality or Multiple Hospitalization Accidents

5.4.1 All accidents resulting in one or more fatalities or the hospitalization of three or more employees shall be reported by telephone to the nearest office of the Area Director of the Occupational Safety and Health Administration, U.S. Department of Labor within 8 hours of occurrence.

Title

HAZARD COMMUNICATION PROGRAM

1.0 PURPOSE

1.1 The Hazard Communication Program defines a procedure for providing information to employees concerning hazardous chemicals to which they may potentially be exposed. Availability of this information will ensure that employees understand the nature of the hazardous chemicals with which they work and the proper safety procedures and equipment to use when working with such chemicals The goal of the Hazard Communication Program is to reduce chemically related occupational illness and injury for both Vista Technologies Inc. employees and contractor personnel while on the premises of Vista Technologies Inc. operated sites and facilities.

2.0 REFERENCES

2.1 29 CFR Part 1910, Subpart C, General Safety and Health Provisions, Occupational Safety and Health Administration (OSHA)

2.2 29 CFR Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA)

2.3 49 U.S.C. 1801, Hazardous Materials Transportation Act

2.4 International Agency for Research on Cancer (IARC) Monographs, (latest edition)

2.5 National Toxicology Program (NTP), Annual Report on Carcinogens, (latest edition)

2.6 Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment, American Conference of Governmental Industrial Hygienists (ACGIH), (latest edition)

3.0 DEFINITIONS

3.1 **Acute.** Effects usually occur rapidly as a result of short-term exposures, and are of short duration.

3.2 **Agents Which Act On The Hematopoietic System.** Decrease hemoglobin function; deprive the body tissues of oxygen.

3.3 **Agents Which Damage The Lungs.** Chemicals which irritate or damage the pulmonary tissue.

3.4 **Carcinogen.** A substance or agent capable of causing or producing cancer in mammals.

3.5 **Chronic.** Effects generally occur as a result of long-term exposure, and are of long duration.

3.6 **Combustible Liquid.** Any liquid having a flashpoint at or above 100° F (37.8° C), but below 200° F (93.3° C), except any mixture having components with flashpoints of 200°F (93.3° C), or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

3.7 **Compressed Gas.** A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70° F (21.1° C); or a gas or mixture of gases having, in a container an absolute pressure exceeding 104 psi at 130° F (54.4 ° C) regardless of the pressure at 70° F (21.1° C), or a liquid having a vapor pressure exceeding 40 psi at 100° F (37.8°C) as determined by ASTM D-323-72.

3.8 **Container.** Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical.

3.9 **Corrosive.** A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact.

3.10 **Cutaneous Hazards.** Chemicals which affect the dermal layer of the body.

3.11 **Explosive.** A chemical that causes a sudden almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

3.12 **Exposure or Exposed.** Contact by an employee with a hazardous chemical in the course of employment via any route of entry (inhalation, ingestion, skin contact or absorption, etc.); includes potential (e.g. accidental or possible) exposure.

3.13 **Eye Hazards.** Chemicals which affect the eye or visual capacity.

3.14 **Flammable.** A chemical that falls into one of the following categories: flammable aerosol, flammable gas, flammable liquid, or flammable solid.

3.15 **Flammable Aerosol.** An aerosol that, when tested by the method described in 16 CFR 1500.45, yields a flame projection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening.

3.16 **Flammable Gas.** A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13 percent by volume or less or a gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than 12 percent by volume, regardless of the lower limit.

3.17 **Flammable Liquid.** Any liquid having a flashpoint below 100° F (37.8 ° C), except any mixture having components with flashpoints of 100° F (37.8 ° C) or higher, the total of which make up 99 percent or more of the total volume of the mixture.

3.18 **Flammable Solid.** A solid, other than a blasting agent or explosive, that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard

3.19 **Foreseeable Emergency.** Any potential occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which could result in an uncontrolled release of a hazardous chemical into the workplace.

3.20 **Hazardous Chemical.** Any chemical which is a physical hazard or a health hazard.

3.21 **Hazard Warning.** Any words, pictures, symbols, or combination thereof appearing on a label or other appropriate form of warning which convey the hazard(s) of the chemical(s) in the container(s).

3.22 **Health Hazard.** A chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute (i.e. short-term or immediate) or chronic (i.e. long-term) health effects may occur in exposed employees. The term "health hazard" includes carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucus membranes.

3.23 **Hepatotoxin.** Chemicals which produce liver damage.

3.24 **Identity.** Any chemical or common name which is indicated on the Material Safety Data Sheet for the chemical. The identity permits cross-references to be made among the required list of hazardous chemicals, the label and the Material Safety Data Sheet.

3.25 **Immediate Use.** The hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

3.26 **Irritant.** A chemical, which is not corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of the contact.

3.27 **Label.** Any written, printed, or graphic material, displayed on or affixed to containers of hazardous chemicals.

3.28 **Material Safety Data Sheet (MSDS).** Written or printed material prepared by a chemical manufacturer concerning a hazardous chemical per 29 CFR 1910.1200, the OSHA Hazard Communication Standard.

3.29 **Mixture.** Any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction.

3.30 **Nephrotoxins.** Chemicals which produce kidney damage.

3.31 **Neurotoxins.** Chemicals which produce their primary toxic effects on the nervous system.

3.32 **Organic Peroxide.** An organic compound that contains the bivalent -0-0- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

3.33. **Oxidizer.** A chemical other than a blasting agent or explosive that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

3.34 **Physical Hazard.** A chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

3.35 **Pyrophoric.** A chemical that will ignite spontaneously in air at a temperature of 130^{0} F (54.4 ^{0} C) or below.

3.36 **Reproductive Toxins.** Chemicals which affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis).

3.37 **Sensitizer.** A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical

3.38 **Unstable (Reactive).** A chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature.

3.39 **Water-Reactive.** A chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

4.0 RESPONSIBILITIES

4.1 The Corporate Industrial Hygienist shall:

4.1.1 Create and maintain indefinitely a master file of all MSDS(s) received by Vista Technologies Inc.

4.1.2 Review the completeness of the supplier's MSDS and request further information from the manufacturer or importer when information is considered inadequate.

4.1.3 Review and distribute new or revised MSDS(s) from a supplier to the Program Managers in a timely manner.

4.1.4 Maintain a master chemical inventory for SpecPro Inc.

4.1.5. Develop, implement, and monitor the hazard communication training program.

4.1.6 Perform an annual audit to ensure that:

4.1.6.1 An MSDS for each and every hazardous chemical is available in the various work areas.

4.1.6.2 MSDS(s) are readily accessible to employees.

4.1.6.3 All containers are properly labeled or marked as required.

4.1.6.4 Employees have been properly trained in accordance with this standard.

4.2 Program Managers shall:

4.2.1 Obtain, maintain, and provide to the Corporate Industrial Hygienist an MSDS for each hazardous chemical in the work area to which employees may potentially be exposed and make these readily accessible to employees in their respective departments during each work shift.

4.2.2 Maintain and provide to the Corporate Industrial Hygienist a hazardous chemical list for their specific work area using an identity that is referenced on the appropriate Material Safety Data Sheet, making additions and deletions to the list as necessary, and keeping the Corporate Industrial Hygienist informed of these changes.

4.2.3 Ensure that all containers of hazardous chemicals in their work area are labeled in accordance with company requirements (See Section 5.1).

4.2.4 Provide and document hazard communication training on the hazardous chemicals found in his/her area of work using the training form in Appendix A.

4.2.5 Inform employees of the hazards of non-routine tasks and the necessary precautions to take when performing these assignments.

4 3 Employees shall:

4.3.1 Maintain familiarity with the requirements of this occupational safety and health standard.

4 3.2 Take precautionary measures to prevent adverse exposures to hazardous chemicals as specified by Program Managers, the Corporate Industrial Hygienist, and company policy.

4.3.3 Receive information and training in accordance with the requirements of this standard.

5.0 HAZARD COMMUNICATION PROGRAM SPECIFIC ASPECTS

5.1 Labels and Other Forms of Warning

5.1.1 Every container of a hazardous chemical which is produced and shipped offsite for distribution must carry a label or tag or be marked clearly with the following information:

5.1.1.1 Identity of the hazardous chemical.

5.1.1.2 Concisely written hazard warnings including physical and health hazards.

5.1.1.3 Name and address of the manufacturer, importer, or responsible party.

5.1.2 If a hazardous chemical is already regulated by the Occupational Safety and Health Administration (OSHA) in the form of a specific standard, then the labeling and/or other warning requirements of the more specific standard must be met. Contact the Corporate Industrial Hygienist for further clarification, if necessary.

5.1.3 Each container in the workplace shall be labeled, tagged, or marked with the following information:

5.1.3.1 Identity of the hazardous chemical in the container.

5.1.3.2 Concisely written hazard warnings.
NOTE: There are two exceptions to this rule. These are addressed below in 5.1.4 and 5.1.5.

5.1.4 Signs, placards, process sheets, batch tickets, operating procedures, or other such written materials (posters) may be used in lieu of labeling of containers, provided:

5.1.4.1 The containers can be readily identified.

5.1.4.2 The alternative warnings must contain the information required for labels and be readily accessible to employees at all times.

5.1.5 An employee who transfers a quantity of a hazardous chemical from a labeled container into a portable container for his immediate use shall not be required to label the portable container.

5.1.6 Existing labels on incoming containers of hazardous chemicals shall not be removed, covered up, or defaced unless the container is immediately marked with the required labeling information.

5.1.7 Labels or other words of warning shall be highly legible, in English, and readily available to employees. An example of the HMIS labeling system is included.

5.1.8 New labels need not be affixed to containers of hazardous chemicals if existing labels already carry the required information.

5.1.9 The department receiving a shipment shall inspect incoming containers to ensure adequate and appropriate labeling of hazardous chemicals/materials.

5.1.10 Each operating organization shall ensure appropriate and adequate labeling of chemical containers under their jurisdiction.

5.2 Material Safety Data Sheets

5.2.1 A master hard copy file of all MSDS(s) received by SpecPro, Inc. for hazardous chemicals shall be maintained by the Corporate Industrial Hygienist.

5.2.2 MSDS(s) shall be readily accessible during each work shift to employees through their Program Manager and the library.

5.2.3 The Corporate Industrial Hygienist shall make MSDS(s) readily available, upon request, to employees and their designated representatives and applicable state and federal agencies.

5.2.4 The completeness of the supplier's MSDS shall be reviewed by the Corporate Industrial Hygienist. In cases where MSDS information is determined to be inadequate, the Corporate Industrial Hygienist shall request additional information from the manufacturer.

5.3 Hazard Determination

5.3.1 A material is considered to be hazardous when there is significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health affects may occur in exposed employees. This includes materials which are carcinogenic, corrosive, toxic, irritants, and sensitizers.

5.3.2 A chemical is defined as "hazardous" if it is a physical or health hazard and is listed in any one of the following documents (Corporate Industrial Hygienist can verify a listing):

5.3.2.1 29 CFR Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

5.3.2.2 Threshold Limit Valves for Chemical Substances and Physical Agents in the Work Environment, American Conference of Governmental Industrial Hygienists (ACGIH), (latest edition).

5.3.3 A chemical is defined as "carcinogenic" or "potentially carcinogenic" if it is listed as such by one of the following agencies (Corporate Industrial Hygienist can verify a listing):

5.3.3.1 National Toxicology Program (NTP), Annual Report on Carcinogens, (latest edition).

5.3.3.2 International Agency for Research on Cancer (IARC) Monographs, (latest edition).

5.3.3.3 29 CFR Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

5.3.4 The hazards of mixtures shall be evaluated as follows:

5.3.4.1 If scientifically valid health hazard data is available for a mixture as a whole, such data may be used for hazard communication purposes.

5.3.4.2 If no such data is available for a mixture, then the mixture must be evaluated from the standpoint of its components, that is, that mixture shall be assumed to carry the same degree of hazard as do the components provided each component comprises one percent by weight of the mixture, or greater.

5.3.4.3 If a component is identified as a carcinogen or a potential carcinogen (See Section 5.3.3) and comprises 0.1% or greater of the mixture, then the mixture itself shall be identified as having the same carcinogenic potential.

5.3.4.4 If the mixture as a whole has not been evaluated for physical hazards, then any scientifically valid data may be used to determine the mixture's physical hazard. There are no percentage restrictions for physical hazards.

5.2.4.5 If evidence exists that a component present in the mixture in a quantity less than 1% (0.1% if it is a carcinogen or potential carcinogen) could exceed OSHA or ACGIH exposure limits or produce an adverse health effect during normal conditions of use, then the mixture shall be considered to have the same hazard as that component.

5.3.5 In determining chemical hazards, Vista Technologies Inc. shall rely upon the evaluation performed by the chemical manufacturer or importer of the product, as described in the MSDS.

5.4 Employee Information and Training

5.4.1 Employees are required to receive information and training on all hazardous chemicals in their work area upon initial assignment and whenever any new hazardous chemicals are introduced into the work area.

5.4.2 Employees shall be informed of:

5.4.2.1 The requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

5.4.2.2 Operations in the work area where hazardous chemicals are present.

5.4.2.3 The location and availability of the written hazard communication program, the list of hazardous chemicals in the work area, and the MSDS(s) for hazardous chemicals in the work area.

5.4.3 Employees shall be trained on :

5.4.3.1 The methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.).

5.4.3.2 The physical and health hazards of the chemicals in the work area.

5.4.3.3 The measures employees can take to protect themselves from these hazards, including specific procedures that Vista Technologies Inc. has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, personal protective equipment to be used, etc.

5.4.3.4 Details of the Hazard Communication Program, including an explanation of the labeling system, the Material Safety Data Sheets, and how employees can obtain and use this information.

5.4.3.5 The hazards of non-routine tasks and unlabeled piping systems.

5.4 4 Hazard Communication Training is required for all employees who have a potential to be exposed to hazardous chemicals in the workplace or through a reasonably foreseeable emergency resulting from workplace operations.

5.5 Hazardous Chemical List

5.5.1 Each Program Manager shall keep and provide the Corporate Industrial Hygienist with an accurate list of the hazardous chemicals used by Vista Technologies Inc. employees they supervise.

5.5.2 Each chemical shall be listed using the name referenced on the corresponding MSDS. Whenever an MSDS is required and not already on record for a chemical, the Program Manager shall immediately request a vendor MSDS from the chemical manufacturer, and forward a copy to the Corporate Industrial Hygienist.

5.5.3 The hazardous chemical list shall be updated as new hazardous chemicals are introduced into the workplace.

5.6 Multi-Employer Workplaces

5 6.1 The Project Leader shall inform all outside contractors of any precautionary measures that need to be taken to protect employees during Vista Technologies Inc 's normal operating conditions and in foreseeable emergencies.

5.6.2 All contractors shall be provided with the following information:

5.6.2.1 SpecPro Inc. Safety Program.

5.6.2.2 Location of the Hazardous Chemical List and Material Safety Data Sheets for all hazardous chemicals used at the SpecPro Inc. job site.

5.6.2.3 Specific measures taken by SpecPro Inc. to protect employees from exposure to hazardous chemicals (e.g. personal protective equipment, work practices, and emergency procedures).

5.6.3 Contractors shall be responsible for providing necessary information to their employees.

5.6.4 Contractors are required to inform SpecPro Inc. of all hazardous chemicals they will be bringing onsite and shall be required to provide MSDS(s) for all hazardous chemicals to the Program Manager before onsite activity begins.

5.7 Hazardous Non-routine Tasks

5.7.1 Non-routine tasks involving hazardous chemical exposure must be approved by the Program Manager.

SPECPRO INC.
HAZARD COMMUNICATION TRAINING

Employee Name: _____

Position: _____

I acknowledge that I have been informed of the following:

_____ OSHA's hazard communication standard's requirements for SpecPro Inc.

_____ The potentially hazardous chemicals used in my work area or on the job site, by specific chemical or hazard category.

_____ SpecPro Inc. has a written hazard communication program.

_____ The location and accessibility of the written hazard communication program.

_____ The location and accessibility of SpecPro Inc.'s chemical inventory.

_____ The location and accessibility of SpecPro Inc.'s MSDS file.

_____ That all containers of potentially hazardous chemicals must have legible warning labels attached.

I acknowledge that I have received training concerning the following:

_____ The characteristics of each chemical or category of chemicals used in my work area or on the job site.

_____ The potential physical and health hazards presented by the chemicals in my work area or on the job site.

_____ The processes in my work area or on the job site which use potentially hazardous chemicals.

_____ How to read and understand warning labels.

_____ How to read and understand MSDS(s).

_____ The detection of chemical leaks or spills by smell or appearance.

_____ The monitoring devices used in my work area or on the job site to detect the presence of potentially hazardous chemicals.

_____ The proper procedure for safely completing non-routine tasks involving potentially hazardous chemicals.

_____ The proper procedure in case of a chemical spill or leak.

_____ The presence of potentially hazardous chemicals in unlabeled pipes.

The proper emergency and first aid procedures.

_____ The proper disposal procedures.

_____ The reporting procedures in case of a chemical accident or injury.

I understand that I will be retrained when a new hazard is introduced into my work area and when I am assigned to work in another area with different hazards.

_____ _____ _____

DATE EMPLOYEE'S SIGNATURE

_____

HAZARD COMMUNICATION TRAINER

HMIS Chemical Container Markings

vere
reme Danger
zardous
htly Hazardous
rmal Material

Flash Points
4 - Below 73 ^{0} F
3 - Below 100 ^{0} F
2 - Above 200 ^{0} F
1 - Will Not Burn

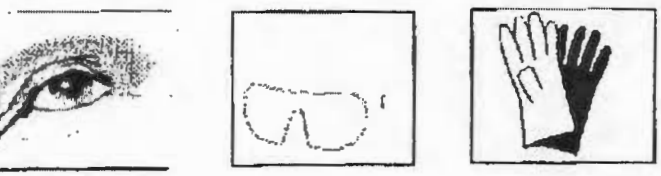
CHEMICAL NAME and NO.

HEALTH

FLAMMABILITY

REACTIVITY

PERSONAL PROTECTION



REACTIVITY
4 - May Detonate
3 - Shock or heat may cause detonation
2 - Violent chemical change
1 - Unstable if heated
0 - Stable

PERSONAL PROTECTION
Pictures will be placed here of any PPE required. Follow PPE requirements and any other special instructions listed

SpecPro	Page 1 of 6
	Date November, 1999
Title **MEDICAL SURVEILLANCE PROGRAM**	Approved By: **Larry Blackwell** **Director, Environmental Programs**
	Revised By: **Michael L. McIntosh, CIH, CHMM**

1.0 PURPOSE

1.1 The purpose of the Medical Surveillance Program is to assess and monitor workers' health and fitness both prior to employment and during the course of work for SpecPro Inc.; to provide emergency and other treatment as needed, and to keep accurate medical records for future reference.

2.0 SCOPE

2.1 The following groups of employees shall be included in the Medical Surveillance Program:

2.1.1 All employees who are or may be exposed to hazardous substances or health hazards at or above the permissible exposure limits or, if there is no permissible exposure limit, above the published exposure levels for these substances, without regard to the use of respirators, for 30 days or more a year.

2.1.2 All employees who are or may be exposed to hazardous substances or health hazards at or above the action level for an OSHA regulated substance for which there are specific exposure monitoring and medical surveillance requirements.

2.1.3 All employees who wear a respirator for 30 days or more a year or as required by 29 CFR 1910.134.

2.1.4 All personnel at hazardous waste sites including members of Hazardous Materials Response Teams and all employees who are injured, become ill or develop signs or symptoms due to possible over exposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation.

2.1.5 All employees whose noise exposures equal or exceed an 8-hour time-weighted average of 85 decibels.

3.0 REFERENCES

3.1 29 CFR Part 1910, Subpart C, General Safety and Health Provisions, Occupational Safety and Health Administration (OSHA)

3.2 29 CFR Part 1910, Subpart H, Hazardous Materials, Occupational Safety and Health Administration (OSHA)

3.3 29 CFR Part 1910, Subpart I, Personal Protective Equipment, Occupational Safety and Health Administration (OSHA)

3.4 Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, NIOSH/OSHA/USCG/EPA, October 1985

3.5 Standard Operating Safety Guides, Environmental Protection Agency, June 1992

4.0 DEFINITIONS

4.1 **Access.** Means the right and opportunity to examine and copy.

4.2 **Exposure or Exposed.** Means that an employee is subjected to a toxic substance or harmful physical agent in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.), and includes past exposure and potential (e.g., accidental or possible) exposure, but does not include situations where the employer can demonstrate that the toxic substance, or harmful physical agent is not used, handled, stored, generated, or present in the workplace in any manner different from typical non-occupational situations.

4.3. **Medical Record.** Means a record concerning the health status of an employee which is made or maintained by a physician, nurse, or other health care personnel or technician.

5.0 RESPONSIBILITIES

5.1 The Corporate Industrial Hygienist shall:

5.1.1 Administer the Medical Surveillance Program.

5.1.2 Maintain employee medical records.

5.1.3 Provide employees with access to medical records upon request.

5.1.4 Provide the attending physician with information including OSHA regulations and specifics related to the duties of employees.

5.2 Program Managers shall:

5.2.1 Assist the Corporate Industrial Hygienist in identifying employees for inclusion in the Medical Surveillance Program.

5.2.2 Ensure employees report for scheduled medical appointments

5.3 Employees shall:

5.3.1 Participate in the Medical Surveillance Program, when required.

6.0 MEDICAL SURVEILLANCE PROGRAM SPECIFIC ASPECTS

6.1 Respiratory Protection

6.1.1 Employees shall not be assigned to tasks requiring the use of respirators unless it has been determined that they are physically able to perform the work while using the required respiratory equipment. The attending physician shall determine what health and physical conditions are pertinent. The respirator user's medical status shall be reviewed annually.

6.2 Hearing Conservation

6.2.1 All employees whose noise exposures equal or exceed an 8-hour time-weighted average of 85 decibels shall be provided audiometric testing on an annual basis

6.3 OSHA Specific Health Standards

6.3.1 All employees who are or may be routinely exposed at or above the action level for an OSHA regulated substance for which there are exposure monitoring and medical surveillance requirements shall be included in the Medical Surveillance Program. Surveillance shall be provided in accordance with the applicable OSHA standard (See Appendix A for a list of hazardous substances with these requirements).

6.4 Published Exposure Limits

6.4.1 All employees who are or may be routinely exposed to hazardous substances at or above the OSHA Permissible Exposure Limit or ACGIH Threshold Limit Value shall be included in the Medical Surveillance Program. Surveillance shall be provided in accordance with the recommendations of the attending physician.

6.5 Hazardous Waste Site Activities

6.5.1 All employees involved in hazardous waste site activities shall be included in the Medical Surveillance Program. This includes members of Hazardous Materials Response Teams and all employees who are injured, become ill or develop signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation. Medical examinations and consultations shall be made available as follows:

6.5.1.1 Prior to assignment.

6.5.1.2 At least once every twelve months unless the attending physician believes a longer interval (not greater than biennially) is appropriate.

6.5.1.3 At termination of employment or reassignment to an area where the employee would not be covered if the employee has not had an examination within the last six months.

6.5.1.4 As soon as possible upon notification by an employee that the employee has developed signs or symptoms indicating possible overexposure to hazardous substances or health hazards, or that the employee has been injured or exposed above the permissible exposure limits or published exposure levels from an emergency response or hazardous waste operation.

6.5.1.5 More frequently as recommended by the examining physician.

6.5.2 Medical examinations shall include a medical and work history with special emphasis on symptoms related to the handling of hazardous substances and health hazards, and to fitness for duty including the ability to wear any required PPE under conditions (i.e., temperature extremes) that may be expected at the work site. The attending physician shall determine what additional health and physical conditions should be evaluated.

6.5.3 SpecPro Inc. shall provide the attending physician with the following information:

6.5.3.1 A copy of 29 CFR 1910.120 and its appendices, Hazardous Waste Operations and Emergency Response.

6.5.3.2 A description of the employee's duties as they relate to the employee's exposures.

6.5.3.3 The employee's exposure levels or anticipated exposure levels.

6.5.3.4 A description of any personal protective equipment used or to be used.

6.5.3.5 Information from previous medical examinations of the employee which is not readily available to the examining physician.

6.5.3.6 A copy of Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, Section 5, Medical Program.

6.5.4 SpecPro Inc. shall obtain and furnish the employee with a copy of a written opinion from the attending physician containing the following:

6.5.4.1 The physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from work in hazardous waste operations or emergency response, or from respirator use.

6.5.4.2 The physician's recommended limitations upon the employee's assigned work.

6.5.4.3 The results of the medical examination and tests if requested by the employee.

6.5.4.4 A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

6.6 Recordkeeping

6.6.1 SpecPro Inc. shall maintain accurate records for all employees included in the Medical Surveillance Program for at least the duration of employment plus thirty(30) years.

6.6.1.1 Audiometric test records shall include:

6.6.1.1.1 Name and job classification of the employee.

6.6.1.1.2 Date of the audiogram.

6.6.1.1.3 The examiner's name.

6.6.1.1.4 Date of the last acoustic or exhaustive calibration of the audiometer.

6.6.1.1.5 Employee's most recent noise exposure assessment.

6.6.1.2 Records maintained for hazardous waste site workers shall include:

6.6.1.2.1 The name and social security number of the employee.

6.6.1.2.2 Physician's written opinions, recommended limitations, and results of examinations and tests.

6.6.1.2.3 Any employee medical complaints related to exposure to hazardous substances.

6.6.1.2.4 A copy of the information provided to the examining physician by SpecPro, Inc., with the exception of the standard and its appendices.

6.7 Access to Records

6.7.1 All medical records shall be provided upon request to employees, former employees, representatives designated by the individual employee, and the Occupational Safety and Health Administration (OSHA).

Note: In most cases, access to a record shall be provided within 15 working days. If this is not possible, the Corporate Industrial Hygienist shall inform the employee or designated representative requesting the record of the reason for the delay and the earliest date when the record can be made available.

6.7.2 Employees shall be informed when hired and at least annually thereafter of the following:

6.7.2.1 The existence, location, and availability of any medical records.

6.7.2.2 The person responsible for maintaining and providing access to medical records.

6.7.2.3 Each employee's rights of access to these medical records.

Appendix A

OSHA TOXIC AND HAZARDOUS SUBSTANCES WITH EXPOSURE MONITORING AND MEDICAL SURVEILLANCE REQUIREMENTS.

Sec.	
1910.1000	Air contaminants
1910.1001	Asbestos.
1910.1002	Coal tar pitch volatiles; interpretation of term.
1910.1003	4-Nitrobiphenyl.
1910.1004	alpha-Naphthylamine
1910.1005	[Reserved]
1910.1006	Methyl chloromethyl ether.
1910.1007	3,3'-Dichlorobenzidine (and its salts).
1910.1008	bis-Chloromethyl ether.
1910.1009	beta-Naphthylamine.
1910.1010	Benzidine.
1910.1011	4-Aminodiphenyl.
1910.1012	Ethyleneimine.
1910.1013	beta-Propiolactone.
1910.1014	2-Acetylaminofluorene.
1910.1015	4-Dimethylaminoazobenzene.
1910.1016	N-Nitrosodimethylamine
1910.1017	Vinyl chloride.
1910.1018	Inorganic arsenic.
1910.1025	Lead.
1910.1027	Cadmium.
1910.1028	Benzene.
1910.1029	Coke oven emissions.
1910.1030	Bloodborne pathogens.
1910.1043	Cotton dust.
1910.1044	1,2-dibromo-3-chloropropane.
1910.1045	Acrylonitrile.
1910.1047	Ethylene oxide.
1910.1048	Formaldehyde.
1910.1050	Methylenedianline.

SpecPro	Page 1 of 9
	Date November, 1999
Title	Approved By:
	Larry Blackwell Director, Environmental Programs
RESPIRATOR PROGRAM	Revised By: Michael L. McIntosh, CIH, CHMM

1.0 POLICY

1.1 SpecPro Inc. shall prevent employee exposure to contaminated air as much as feasible by accepted engineering control measures (i.e., general and local ventilation, substitution of a less toxic material, enclosure or confinement of the operation). Approved respiratory equipment shall be worn when it is clearly impracticable to remove harmful dusts, fumes, mists, vapors or gases at their source. The use of respiratory protective equipment for routine activities shall be permitted while engineering controls are being implemented or as a supplement to engineering controls when required. Other activities that may require the use of respiratory protective equipment are nonroutine or emergency activities (e.g., hazardous waste operations).

2.0 PURPOSE

2.1 The Respirator Program establishes procedures governing the selection and use of respirators.

3.0 REFERENCES

3.1 29 CFR Part 1910, Subpart I, Personal Protective Equipment, Occupational Safety and Health Administration (OSHA)

3.2 NIOSH Respirator Decision Logic, U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health

4.0 DEFINITIONS

4.1 **Air-Line Respirator.** A respirator in which air is supplied to the facepiece from an auxiliary source located at a distance from the wearer. Provides protection against all contaminants in concentrations not immediately dangerous to life or health (IDLH).

4.2 **Air-Purifying Respirator.** A respirator that filters and/or absorbs contaminants from the ambient air (Does not provide protection in oxygen deficient or immediately dangerous to life or health atmospheres).

4.3. **Emergency Situations.** Unplanned events which are characterized by risks sufficient to require immediate action and which may necessitate the use of respirators for respiratory protection.

4.4 **Immediately Dangerous to Life or Health (IDLH).** Exposure condition that poses a threat of exposure to airborne contaminants when that exposure is likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from such an environment. The purpose of establishing an IDLH exposure level is to ensure that the worker can escape from a given contaminated environment in the event of failure of the respiratory protection equipment

4.5 **Negative-Pressure Respirator.** A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere. Any respirator which has a filter, cartridge or canister which cleans the work room air before you breathe it and which requires the force of your inhalation to draw air through the filtering element is a negative-pressure respirator (See Air-Purifying Respirator).

4.6 **Negative Pressure Seal Check.** Close off the inlet opening of the canister or the breathing tube by covering it with the palm of the hand or by replacing the tape seal, gently inhale so that the facepiece collapses slightly, and hold the breath for 10 seconds. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is satisfactory.

4.7 **Nonroutine Operations.** Activities that are either nonrepetitive or occur infrequently and for which adequate protection with engineering controls is impractical or infeasible and which may necessitate the use of respirators to avoid excessive exposure to inhalation hazards.

4.8 **Oxygen Deficient Atmosphere.** Atmosphere which contains an oxygen partial pressure of less than 148 millimeters of mercury (19.5 percent by volume at sea level).

4.9 **Positive-Pressure Respirator.** A respirator in which the air pressure inside the during exhalation and inhalation. A positive pressure respirator supplies air to you directly.

4.10 **Positive Pressure User Seal Check.** If necessary, remove the exhalation valve cover, close off the exhalation valve with the palm of the hand, and exhale gently so that a slight positive pressure is built up in the facepiece. If no outward leakage of air is detected at the periphery of the facepiece, the face fit is satisfactory. (Note: With certain devices, removal of the exhaust valve cover is very difficult, making this test almost impossible to perform.)

4.11 **Qualitative Fit Test.** Involves exposure of the respirator user to an irritant smoke, odorous isoamyl acetate vapor or other suitable test agent easily detectable by irritation, odor, or taste (An air-purifying respirator must be equipped with the appropriate air-purifying element). An acceptable fit has been obtained if the respirator wearer is unable to detect the penetration of the test agent into the respirator.

4.12 **Quantitative Fit Test.** Exposes the respirator wearer to a test atmosphere containing an easily detectable, relatively nontoxic aerosol, vapor, or gas as the test agent and then measures the penetration of the test agent into the respirator.

4.13 **Routine Operations.** Planned activities that occur with various frequencies, which should employ engineering controls to reduce airborne concentrations to a level as low as reasonably achievable

4.14 **Self-Contained Breathing Apparatus (SCBA).** A respirator in which the air supply is carried by the wearer.

5.0 RESPONSIBILITIES

5.1 The Corporate Industrial Hygienist is responsible for maintaining an effective Respiratory Protection Program including:

5.1.1 Selecting proper respiratory protection based upon potential exposure hazards.

5.1.2 Recommending engineering controls to management, when feasible.

5.1.3 Conducting respirator training and fit-testing as required.

5.14 Ensuring SCBA units are inspected annually by the manufacturer.

5.1.5 Performing periodic audits to evaluate the effectiveness of the program

5.2 Program Managers or their Designated Safety Coordinators are responsible for ensuring implementation of this procedure. Specifically, they are responsible for:

5.2.1 Identifying the need for respiratory protection and initiating the process for obtaining a respirator (See Appendix A).

5.2.2 Purchasing respirators upon receipt of fit-testing information from the Corporate Industrial Hygienist.

5.2.3 Monitoring the proper use, maintenance, and care of respirators.

5.2.4 Ensuring SCBA units are inspected monthly by a member of their staff.

5.3 Employees are responsible for:

5.3.1 Wearing appropriate respiratory protective devices as assigned.

5.3.2 Inspecting respirators before and after each use.

5.3.3 Performing the positive and negative pressure respirator seal checks after donning any respirator.

5.3.4 Cleaning the respirator assigned to them after each days' use.

5.3.5 Attending respirator training as required by this program.

6.0 RESPIRATOR PROGRAM SPECIFIC ASPECTS

6.1 Respiratory Selection

6.1.1 Whenever respiratory equipment is required to control harmful exposures, only equipment approved for that purpose shall be used, and such equipment must be jointly approved by the National Institute for Occupational Safety and Health (NIOSH). Only parts approved for the specific respirator system shall be used for replacement. Substitution of parts from a different brand or type of respirator invalidates approval of the device and shall not be allowed.

6.1.2 Respirators shall be selected on the basis of hazards to which the worker is exposed and according to the guidance of American National Standard Practices for Respirtory Protection Z88.2-1969 (See Appendix A, Procedure For Obtaining A Respirator).

6.2 Medical Determination

6.2.1 Employees shall not be assigned to tasks requiring the use of respirators unless it has been determined that they are physically able to perform the work while using the required respiratory equipment.

6.2.2 Medical evaluations shall be conducted by a physician or other licensed health care professional (PLHCP). The medical evaluation may be performed using a medical questionnaire (Appendix E) or an initial medical examination that obtains the same information.

6.2.3 Additional medical evaluations will be provided whenever there is any indication that a reevaluation is appropriate. At a minimum, this would occur: if the employee reports any signs or symptoms that are related to the ability to use a respirator; if the PLHCP, program administrator or supervisor determines that a reevaluation is necessary; if information from the respiratory protection program indicates a need for reevaluation; or if a change in work place conditions could affect the physiological burden place on the employee.

6.3 Air Quality

6.3.1 Breathing air must be free of harmful quantities of dusts, mists, or noxious gases and may be supplied from cylinders or compressors. Breathing air shall meet at least the requirements of the specification for Grade D breathing air as described in Compressed Gas Association Commodity Specification G-7.1-1989 and summarized below:

Oxygen Content (V/V)	19-23.5% (Atmospheric Air)
Hydrocarbon (Condensed)	5 mg/m^3
Carbon Monoxide	10 ppm or less
Carbon Dioxide	1000 ppm or less
Lack of noticeable odor	

6.3.2 Cylinders shall be tested and maintained, as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR Part 173 and 178).

6.3.3 The compressor for supplying air shall be equipped with necessary safety and standby devices as described below:

6.3.3.1 A breathing air-type compressor shall be used.

6.3.3.2 Compressors shall be constructed and situated so as to avoid entry of contaminated air into the system and suitable in-line air purifying sorbent beds and filters installed to further assure breathing air quality.

6.3.3.3 A receiver of sufficient capacity to enable the respirator wearer to escape from a contaminated atmosphere in event of compressor failure, and alarms to indicate compressor failure and overheating shall be installed in the system.

6.3.4 If an oil-lubricated compressor is used, it shall have a high-temperature or carbon monoxide alarm, or both. If only a high-temperature alarm is used, the air from the compressor shall be checked at intervals sufficient to prevent carbon monoxide from exceeding 10 ppm.

6.3.5 Air-line couplings associated with breathing air shall be incompatible with outlets for other gas systems to prevent inadvertent servicing of air-line respirators with nonrespirable gases or oxygen.

6.3.6 Air pressure at the hose connection to the respiratory equipment must be within the range specified in the approval of the respiratory equipment.

6.3.7 Breathing gas containers shall be marked in accordance with American National Standard Method of Marking Portable Compressed Gas Containers to Identify the Material Contained, Z48.1-1954; Federal Specification BB-A-1034a, June 21, 1968, Air, Compressed for Breathing Purposes; or Interim Federal Specification GG-B-00675b, April 27, 1965, Breathing Apparatus, Self-Contained.

6.4 Use of Respirators

6.4.1 Employees shall be instructed and trained in the need, use, sanitary care, and limitations of any respiratory equipment the employee may have occasion to use. Prior to training employees must have medical approval to use respirators as described in Section 6.2.

6.4.1.1 Training shall include explanations and discussions of:

6.4.1.1.1 The respiratory hazard and what happens if the respirator is not used properly.

6.4.1.1.2 The engineering and administrative controls being used and the need for respirators to provide protection.

6.4.1.1.3 The reason for selecting a particular type of respirator.

6.4.1.1.4 The function, capabilities, and limitations of the selected respirator.

6.4.1.1.5 The method of donning the respirator and checking its fit and operation.

6.4.1.1.6 The proper wearing of the respirator.

6.4.1.1.7 Respirator maintenance.

6.4.1.1.8 Recognizing and handling emergency situations.

6.4.1.2 Respirator training shall be repeated annually or more often if necessary.

6.4.1.3 Training shall include a demonstration of the positive and negative pressure sealing checks. Employees shall conduct this positive and negative field test before each use. These tests shall be conducted in accordance with the procedures recommended by the manufacturer.

6.4.1.4 Training shall provide employees with an opportunity to handle the respirator, have it fitted properly, test its face-piece-to-face seal, wear it in normal air for a long familiarity period, and to wear the respirator in a test atmosphere to ensure an adequate fit.

6.4.2 All users of respirators shall be qualitatively or quantitatively fit tested. A satisfactory seal is a prerequisite for successful completion of the training program.

6.4.2.1 Each respirator wearer shall be fit tested at least annually.

6.4.3 Respirators shall not be worn with conditions that interfere with the face-piece-to-face seal. Such conditions include:

6.4.3.1 Growth of beard, sideburns, a skull cap that projects under the facepiece.

6.4.3.2 Temple pieces on glasses.

6.4.3.3 Absence of one or both dentures.

6.4.4 Selection of individuals to receive training and instruction in the use of SCBA will depend upon their potential for exposure during hazardous activities. Program Managers should request training for employees engaged in nonroutine activities where engineering controls are not applicable.

6.4.5 Contact lenses may be worn with full facepiece respirators. Also, systems have been developed for mounting corrective lenses inside full facepiece respirators. Contact the Corporate Industrial Hygienist for assistance.

6.4.6 Corrective spectacles or goggles must be worn so as not to affect the fit of the respirator facepiece. Contact the Corporate Industrial Hygienist for assistance.

6.5 Respirator Care and Maintenance

6.5.1 Respiratory equipment shall be regularly cleaned and disinfected by the user.

6.5.1.1 Routinely used respiratory equipment issued for the exclusive use of one worker shall be cleaned at least after each days' use.

6.5.1.2 Self-Contained Breathing Apparatus (SCBA) and supplied-air respirators shall be cleaned after each use by the using organization.

6.5.2 All respirators shall be inspected routinely by the user before and after each use.

6.5.2.1 Respirator inspection shall include a check of the tightness of connections and the condition of the facepiece headbands, valves, connecting tube, and canisters. Rubber or elastomer parts shall be inspected for pliability and signs of deterioration.

6.5.2.2 Respirators that are not routinely used but kept ready for emergency use shall be inspected after each use and at least monthly by the using organization. (Contact the Corporate Industrial Hygienist for assistance) The breathing air cylinder of the self-contained breathing apparatus shall be fully charged. (Minimum allowable in-service pressures will be posted on the unit.) The hydrotest certification date must be current. Regulator and warning devices must function properly.

6.5.2.3 SCBA(s) shall be inspected annually by personnel trained by the manufacturer.

6.5.3 Replacement or repairs shall be performed by experienced persons with parts designed for the particular respirator. No attempt shall be made to replace components or to make adjustment or repairs beyond the manufacturer's recommendations. Contact the Corporate Industrial Hygienist for assistance.

6.5.4 Respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals.

6.5.4.1 Routinely used respirators may be stored in resealable plastic bags.

6.5.4.2 Respirators should not be stored in such places as lockers or tool boxes unless they are in carrying cases or cartons.

6.5.4.3 Respirators should be stored in one layer with the facepiece and exhalation valve in a normal undistorted position and should never be hung by the straps.

6.5.4.4 Emergency respirators shall be properly stored in accordance with the manufacturer's instructions usually mounted inside the carrying case lid.

6.5.4.5 Respirators placed at stations and work areas for emergency use must be quickly accessible at all times and shall be stored in compartments built for that purpose. The compartments must be clearly marked.

6 6 Work Surveillance

6.6.1 Work area conditions shall be initially and periodically evaluated by the Corporate Industrial Hygienist to ensure adequate respiratory protection is worn by employees as necessary. Employee exposure levels shall be determined by personal monitoring when screening indicates employees may be potentially exposed to high levels of any air contaminant.

Appendix A

PROCEDURE FOR OBTAINING A RESPIRATOR

I. SpecPro Inc. has established the following procedure for requesting a respirator:

1. The Program Manager identifies the need for the respirator (Contact the Corporate Industrial Hygienist for assistance as necessary).

2. The Program Manager must provide the Corporate Industrial Hygienist with the following information:

   a. Physician approval for respirator use.

   b. Description of the task to be performed.

   c. Any known contaminants of concern (Provide a list of hazardous chemicals when possible).

3. Respirator training and fit testing will be scheduled by the Corporate Industrial Hygienist upon receipt of all of the above information.

4. Program Manager purchases the respirator upon receipt of fit-testing information from the Corporate Industrial Hygienist.

Appendix B

QUALITATIVE RESPIRATOR FIT TESTING

1.0 PURPOSE

1.1 The purpose of respirator fit testing is to select a Make, Model and Size of a tight-fitting facepiece that adequately accomodates (or fits) an individual's unique facial size, shape and characteristics

2.0 REFERENCES

2.1 Fit Testing of Respirator Facepieces, Respirator Support Services

2.2 29 CFR 1910.134, Appendix A, Fit Testing Procedures

3.0 PREREQUISITES TO FIT TESTING

3.1 Employees must be clean shaven in the sealing periphery of the facepiece.

3.2 Employees must receive medical clearance to wear a respirator.

3.3 Employees must satisfactorily complete the respirator training class

4.0 ISOAMYL ACETATE (IAA) PROTOCOL

4.1 Test the employee's ability to smell banana oil at a low concentration. Failure to detect banana oil shall void the fit test (See Section 5.0 for alternative fit testing method)

4.2 The employee will pick the most acceptable respirator from a sufficient number of respirator models and sizes to achieve the correct fit.

4.3 Have the employee equip the respirator with organic vapor cartridges.

4.4 Review the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:

(a) Position of the mask on the nose
(b) Room for eye protection
(c) Room to talk
(d) Position of mask on face and cheeks

The following criteria shall be used to help determine the adequacy of the respirator fit:

(a) Chin properly placed;
(b) Adequate strap tension, not overly tightened;
(c) Fit across nose bridge;
(d) Respirator of proper size to span distance from nose to chin;
(e) Tendency of respirator to slip;

(f) Self-observation in mirror to evaluate fit and respirator position.

4.5 Instruct the employee to "seat" his respirator by rapidly moving the head side-to-side and up and down, taking a few deep breaths.

4.6 Have the employee perform the negative and positive-pressure seal checks.

4.7 Allow the employee to wear the respirator for at least 10 minutes before starting the fit test.

4.8 In an isoamyl acetate test environment, have the employee perform the following exercises for at least one minute each:

4.8.1 Normal breathing.

4.8.2 Deep breathing. Be certain breaths are deep and regular.

4.8.3 Turning head from side-to-side. Be certain movement is complete. Alert the employee not to bump the respirator on the shoulders. Have the employee inhale when his head is at either side.

4.8.4 Nodding head up-and-down. Be certain motions are complete and made about every second. Alert the employee to not bump the respirator on the chest. Have the employee inhale when his head is in the fully up position.

4.8.5 Talking. Have the employee read the following paragraph:

THE RAINBOW PASSAGE

WHEN SUNLIGHT STRIKES THE RAINDROPS IN THE AIR, THEY ACT LIKE A PRISM AND FORM A RAINBOW. THE RAINBOW IS A DIVISION OF WHITE LIGHT INTO MANY BEAUTIFUL COLORS. THESE TAKE THE SHAPE OF A LONG ROUND ARCH, WITH ITS PATH HIGH ABOVE, AND ITS TWO ENDS APPARENTLY BEYOND THE HORIZON. THERE IS, ACCORDING TO LEGEND, A BOILING POT OF GOLD AT ONE END. PEOPLE LOOK, BUT NO ONE EVER FINDS IT. WHEN A MAN LOOKS FOR SOMETHING BEYOND HIS REACH, HIS FRIENDS SAY HE IS LOOKING FOR THE POT OF GOLD AT THE END OF THE RAINBOW.

4.8.6 Bending over or jogging in place

4.8.7 Normal breathing.

4.9 If at any time during the test, the employee detects the banana-like odor of IAA, the test must be stopped.

4.10 Have the employee select another respirator and repeat the test.

5.0 IRRITANT FUME PROTOCOL

5.1 Perform this test in a location with exhaust ventilation sufficient to prevent general contamination of the testing area by the irritant smoke.

5.2 Test the employee's ability to react to irritant smoke. Failure to evoke a response shall void the fit test.

5.3 The employee will pick the most acceptable respirator from a sufficient number of respirator models and sizes to achieve the correct fit.

5.4 Have the employee equip the respirator with high efficiency cartridges.

5.5 Review the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:

(a) Position of the mask on the nose
(b) Room for eye protection
(c) Room to talk
(d) Position of mask on face and cheeks

The following criteria shall be used to help determine the adequacy of the respirator fit:

(a) Chin properly placed;
(b) Adequate strap tension, not overly tightened,
(c) Fit across nose bridge;
(d) Respirator of proper size to span distance from nose to chin;
(e) Tendency of respirator to slip;
(f) Self-observation in mirror to evaluate fit and respirator position.

5.6 Have the employee perform the negative and positive-pressure fit checks.

5.7 Allow the employee to wear the respirator for at least 10 minutes before starting the fit test.

5.8 Review this protocol with the employee before testing.

5.9 Advise the employee that the smoke can be irritating to the eyes and instruct him/her to keep his/her eyes closed while the test is performed.

5.10 In an irritant smoke test environment have the employee perform the following exercises for at least one minute each:

5.10.1 Normal breathing.

5.10.2 Deep breathing. Be certain breaths are deep and regular.

5.10.3 Turning head from side-to-side. Be certain movement is complete. Alert the employee not to bump the respirator on the shoulders. Have the employee inhale when his head is at either side.

5.10.4 Nodding head up-and-down. Be certain motions are complete. Alert the employee not to bump the respirator on the chest. Have the employee inhale when his head is in the fully up position.

5.10.5 Talking. Have the employee read the following paragraph:

THE RAINBOW PASSAGE

WHEN SUNLIGHT STRIKES THE RAINDROPS IN THE AIR, THEY ACT LIKE A PRISM AND FORM A RAINBOW. THE RAINBOW IS A DIVISION OF WHITE LIGHT INTO MANY BEAUTIFUL COLORS. THESE TAKE THE SHAPE OF A LONG ROUND ARCH, WITH ITS PATH HIGH ABOVE, AND ITS TWO ENDS APPARENTLY BEYOND THE HORIZON. THERE IS, ACCORDING TO LEGEND, A BOILING POT OF GOLD AT ONE END. PEOPLE LOOK, BUT NO ONE EVER FINDS IT. WHEN A MAN LOOKS FOR SOMETHING BEYOND HIS REACH, HIS FRIENDS SAY HE IS LOOKING FOR THE POT OF GOLD AT THE END OF THE RAINBOW.

5.10.6 Bending over or joggin in place

5.10.7 Normal breathing.

5.10.8 If at any time during the test, the irritant smoke produces an involuntary reaction (cough) by the employee, the test must be stopped.

5.10.9 Have the employee select another respirator and repeat the test.

Appendix C

SpecPro

Fit Test and Training Report

Last Name	
First Name	
Company	
Location	
Notes	

Test Date	
Training Date	
Protocol	
Manufacturer	
Model	
Mask Size	
Cartridge Type	

Exercise	**Duration (sec)**	**Pass**
Normal Breathing	60	
Deep Breathing	60	
Head Side to Side	60	
Head Up and Down	60	
Talking	60	
Bend and Touch Toes	60	
Normal Breathing	60	

Fit Test Operator _____ Date _____

Acknowledgement of fit testing and training:

Name _____ _____ Date _____

Appendix D

RESPIRATOR TRAINING STATEMENT

I understand the following statement with regard to using air purifying respirators at SpecPro Inc.:

yes (please check)

_____ 1. The air-purifying respirator (with cartridges) shall not be worn if oxygen concentration is below 19.5%, highly toxic chemicals are being used or the hazard is unknown.

_____ 2. The air-purifying respirator should only be used when the toxic contaminant(s) can be detected by taste, odor, irritation or in the case of particles, difficulty in breathing. Therefore, when the cartridge becomes saturated or "used up", the employee is warned that breakthrough has occurred and new cartridges are needed.

_____ 3. There are many different types of cartridges; it is important to use the correct cartridge which is determined by which chemical or group of chemicals the employee is exposed to. The cartridges are labeled and color coded; some are chemical absorbents used for gases and others are particle filters for dust, mists and fumes.

__ 4. Replacement cartridges, filters or parts shall be from the same manufacturer as your respirator.

_____ 5. Respirators shall be inspected prior to each use for cleanliness, proper valve placement, sturdy elastic straps and proper cartridges. There should be no defects such as breakage, blistering, worn parts, warped valves, dents, cracks, broken fittings or bubbling of silicone rubber. Many parts of the respirator can be replaced by the Corporate Industrial Hygienist. The respirator shall be cleaned and disinfected after each day of use.

_____ 6. Before entering the contaminated area, check the fit of the respirator by performing the negative and positive pressure test, as demonstrated to you, in order to ensure a proper fit. The respirator must not be removed from the face while still in the contaminated area.

_____ 7. A respirator only protects the wearer if there is a good seal against the face and the correct cartridges are being used. Since facial hair interferes with the seal, employees must be clean shaven (A small mustache may be acceptable).

_____ 8. The respirator shall be placed in its plastic storage bag and stored in a cool, dry, non-contaminated atmosphere to ensure that it is protected against dust, chemicals, moisture, excessive heat and physical damage. Never leave the respirator sitting out or hanging on a hook.

_____ 9. The employee's responsibilities for respiratory protection are.

a. Inspect the respirator before each use and notify the Corporate Industrial Hygienist if there are any worn or defective parts. Do not use a defective respirator

b. Determine a proper fit before use by performing the negative and positive fit tests.

c. Keep the respirator clean by using respirator cleaning pads during and after each day of use and perform a more thorough cleaning with detergent and disinfectant as needed (at least semiweekly if the respirator is used daily).

d. Properly store the respirator in its plastic storage bag with your name on the bag and the respirator

e. Be aware of cartridge depletion warning signs and obtain new cartridges from your Program Manager when needed

f. Do not lend your respirator to anyone.

Trained by: _____ _____

Date: _____

Employee Signature: _____ EE No: _____

Medical Clearance Date: _____

Program Manager: _____

Appendix E
OSHA RESPIRATOR MEDICAL EVALUATION QUESTIONNAIRE

To the employer: Answers to questions in Section 1. and to question 9 in Section 2 of Part A. do not require a medical examination.

To the employee: Can you read (check one): ☐ Yes ☐ No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1. **(Mandatory)** The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date: _____ 2. Your name. _____

3. Date of Birth: ___/___/___ 4. Sex (check one): Male☐ Female ☐

5. Your height: _____ ft. _____ in. 6. Your weight: _____ lbs.

4. Your job title: _____ _____

5. A phone number where you can be reached by the health care professional who reviews this questionnaire (include this Area Code): (_____) _____

6. The best time to phone you at this number: _____ A.M. _____ P.M.

10. Has your employer told you how to contact the health care professional who will review this questionnaire (check one): ☐ Yes ☐ No

11. Check the type of respirator you will use (you can check more than one category):
1. ☐ N, R, or P disposable respirator (filter-mask, non-cartridge type only).
b ☐ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).

12. Have you worn a respirator (check one): ☐ Yes ☐ No
If "yes," what type(s): _____

Part A. Section 2. **(Mandatory)** Questions 1 through 9 below must be answered by every employee who has been selected to use any type or respirator (please check "yes" or "no").

1. Do you *currently* smoke tobacco, or have you smoked tobacco in the last month: ☐ Yes ☐ No

2. Have you *ever* had any of the following conditions?
a. Seizures (fits): ☐ Yes ☐ No
b. Diabetes (sugar disease): ☐ Yes ☐ No
c. Allergic reactions that interfere with your breathing: ☐ Yes ☐ No
d. Claustrophobia (fear of closed-in places): ☐ Yes ☐ No
e. Trouble smelling odors: ☐ Yes ☐ No

3. Have you *ever* had any of the following pulmonary or lung problems?

a. Asbestosis: ☐ Yes ☐ No
b. Asthma: ☐ Yes ☐ No
c. Chronic bronchitis: ☐ Yes ☐ No
d. Emphysema: ☐ Yes ☐ No
e. Pneumonia: ☐ Yes ☐ No
f. Tuberculosis: ☐ Yes ☐ No
g. Silicosis: ☐ Yes ☐ No
h. Pneumothorax (collapsed lung): ☐ Yes ☐ No
i. Lung cancer: ☐ Yes ☐ No
j. Broken ribs: ☐ Yes ☐ No
k. Any chest injuries or surgeries: ☐ Yes ☐ No
l. Any other lung problem that you've been told about: ☐ Yes ☐ No

4. Do you *currently* have any of the following symptoms of pulmonary or lung illness?

a. Shortness of breath: ☐ Yes ☐ No
b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: ☐ Yes ☐ No
c. Shortness of breath when walking with other people at an ordinary pace on level ground: ☐ Yes ☐ No
d. Have to stop for breath when walking at your own pace on level ground: ☐ Yes ☐ No
e. Shortness of breath when washing or dressing yourself: ☐ Yes ☐ No
f. Shortness of breath that interferes with your job: ☐ Yes ☐ No
g. Coughing that produces phlegm (thick sputum): ☐ Yes ☐ No
h. Coughing that wakes you early in the morning: ☐ Yes ☐ No
i. Coughing that occurs mostly when you are lying down: ☐ Yes ☐ No
j. Coughing up blood in the last month: ☐ Yes ☐ No
k. Wheezing: ☐ Yes ☐ No
l. Wheezing that interferes with your job: ☐ Yes ☐ No
m. Chest pain when you breathe deeply: ☐ Yes ☐ No
n. Any other symptoms that you think may be related to lung problems: ☐ Yes ☐ No

5. Have you *ever had* any of the following cardiovascular of heart problems?

a. Heart attack: ☐ Yes ☐ No
b. Stroke: ☐ Yes ☐ No
c. Angina: ☐ Yes ☐ No
d. Heart failure: ☐ Yes ☐ No
e. Swelling in your legs or feet (not caused by walking): ☐ Yes ☐ No
f. Heart arrhythmia (heart beating irregularly): ☐ Yes ☐ No
g. High blood pressure: ☐ Yes ☐ No
h. Any other heart problem that you've been told about: ☐ Yes ☐ No

6. Have you *ever had* any of the following cardiovascular or heart symptoms?

a. Frequent pain or tightness in your chest: ☐ Yes ☐ No
b. Pain or tightness in your chest during physical activity: ☐ Yes ☐ No
c. Pain or tightness in your chest that interferes with your job: ☐ Yes ☐ No
d. In the past two years, have you noticed your heart skipping or missing a beat. ☐ Yes ☐ No
e. Heartburn or indigestion that is not related to eating: ☐ Yes ☐ No
f. Other symptoms that you think may be related to heart or circulation problems: ☐ Yes ☐ No

7. Do you *currently* take medication for any of the following problems?

a. Breathing or lung problems. ☐ Yes ☐ No
b. Heart trouble: ☐ Yes ☐ No
c. Blood pressure: ☐ Yes ☐ No
d. Seizures (fits) ☐ Yes ☐ No

8. If you've used a respirator, have you *ever had* any of the following problems? (If you've never used a respirator, check the following space and go to question 9): ☐ Never Used a Respirator

a. Eye irritation: ☐ Yes ☐ No
b. Skin allergies or rashes: ☐ Yes ☐ No
c. Anxiety: ☐ Yes ☐ No
d. General weakness or fatigue: ☐ Yes ☐ No
e. Any other problem that interferes with your use of a respirator: ☐ Yes ☐ No

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire?: ☐ Yes ☐ No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you *ever lost* vision in either eye (temporarily or permanently): ☐ Yes ☐ No

11. Do you *currently* have any of the following vision problems?

a. Wear contact lenses: ☐ Yes ☐ No
b. Wear glasses: ☐ Yes ☐ No
c. Color blind: ☐ Yes ☐ No
e. Any other eye or vision problem: ☐ Yes ☐ No

12. Have you *ever had* an injury to your ears, including a broken ear drum?: ☐ Yes ☐ No

13. Do you *currently* have any of the following hearing problems?

a. Difficulty hearing: ☐ Yes ☐ No
b. Wear a hearing aid ☐ Yes ☐ No
c. Any other hearing or ear problem: ☐ Yes ☐ No

14. Have you *ever had* a back injury?: ☐ Yes ☐ No

15. Do you *currently* have any of the following musculoskeletal problems?

a. Weakness in any of your arms, hands, legs, or feet: ☐ Yes ☐ No
b. Back pain: ☐ Yes ☐ No
c. Difficulty fully moving your arms and legs: ☐ Yes ☐ No
d. Pain or stiffness when you lean forward or backward at the waist: ☐ Yes ☐ No
e. Difficulty fully moving your head up or down: ☐ Yes ☐ No
f. Difficulty fully moving your head side to side: ☐ Yes ☐ No
g. Difficulty bending at your knees: ☐ Yes ☐ No
h. Difficulty squatting to the ground: ☐ Yes ☐ No
i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: ☐ Yes ☐ No
j. Any other muscle or skeletal problem that interferes with using a respirator: ☐ Yes ☐ No

Part B Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen?: ☐ Yes ☐ No

If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: ☐ Yes ☐ No

2. **At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals:** Yes ☐ No

If "yes," name the chemicals if you know them._____

_____

_____

3. Have you ever worked with any of the materials, or under any of the conditions, listed below?:

a. Asbestos: ☐ Yes ☐ No
b. Silica (e.g., in sandblasting): ☐ Yes ☐ No
c. Tungsten/cobalt (e.g., grinding or welding this material): ☐ Yes ☐ No
d. Beryllium: ☐ Yes ☐ No
e. Aluminum: ☐ Yes ☐ No
f. Coal (for example, mining): ☐ Yes ☐ No
g. Iron: ☐ Yes ☐ No
h. Tin: ☐ Yes ☐ No
i. Dusty environments: ☐ Yes ☐ No
j. Any other hazardous exposures: ☐ Yes ☐ No

If "yes," describe these exposures: _____

_____

_____

4. List any second jobs or side businesses you have:

_____

_____

5. List your previous occupations:

_____

_____

6. List your current and previous hobbies:

_____

_____

7. Have you been in the military services? ☐ Yes ☐ No

If "yes," were you exposed to biological or chemical agents (either in training or combat): ☐ Yes ☐ No

8. Have you ever worked on a HAZMAT team? ☐ Yes ☐ No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications)? ☐ Yes ☐ No

If "yes," name the medications if you know them:

_____

10. Will you be using any of the following items with your respirator(s)?

a. HEPA Filters: ☐ Yes ☐ No
b. Canisters (for example, gas masks): ☐ Yes ☐ No
c. Cartridges: ☐ Yes ☐ No

11. How often are you expected to use the respirator(s) (check "yes" or "no" for all answers that apply to you)?:

a. Escape only (no rescue): ☐ Yes ☐ No
c. Less than 5 hours *per week*: ☐ Yes ☐ No
d. Less than 2 hours *per day*: ☐ Yes ☐ No
e. 2 to 4 hours *per day*: ☐ Yes ☐ No
f. Over 4 hours *per day*: ☐ Yes ☐ No

12. During the period you are using the respirator(s), is your work effort:

a. *Light* (less than 200 kcal per hour): ☐ Yes ☐ No

If "yes," how long does this period last during the average shift: _____ hrs. _____ mins.

Examples of a light work effort are *sitting* while writing, typing, drafting, or performing light assembly work; or *standing* while operating a drill press (1 - 3 lbs.) or controlling machines.

b. Moderate (200 to 350 kcal per hour): ☐ Yes ☐ No
If "yes," how long does this period last during the average shift: _____hrs._____ mins.
Examples of moderate work effort are *sitting* while nailing or filing; *driving* a truck or bus in urban traffic; *standing* while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; *walking* on a level surface about 2 mph or down a 5-degree grade about 3 mph; or *pushing* a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.
c. *Heavy* (above 350 kcal per hour): ☐ Yes ☐ No
If "yes," how long does this period last during the average shift: _____hrs._____ _____mins.

Examples of heavy work are *lifting* a heavy load (about 50 lbs.) from the floor to your waist or shoulder; *working* on a loading dock; *shoveling*; *standing* while bricklaying or chipping castings; *walking* up an 8-degree grade about 2 mph; *climbing* stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator? ☐ Yes ☐ No
If "yes," describe this protective clothing and/or equipment:
_____ _____ _____
_____ _____

14. Will you be working under hot conditions (temperature exceeding 77 F)? ☐ Yes ☐ No

15. Will you be working under humid conditions? ☐ Yes ☐ No

16. Describe the work you'll be doing while you're using your respirator(s):
_____ _____ _____
_____ _____
_____

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):
_____ _____ _____
_____ _____
_____

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

CHEMICAL/PRODUCT NAME	MAXIMUM EXPOSURE LEVEL	DURATION

The name of any other toxic substances that you'll be exposed to while using your respirator:
_____ _____ _____
_____ _____ _____
_____

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):
_____

Date November, 1999

Approved By:
Larry Blackwell
Director, Environmental Programs

Revised By:
Michael L. McIntosh, CIH, CHMM

Title

PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING

1.0 PURPOSE

1.1 The purpose of the Personal Protective Equipment (PPE) and Clothing Program is to protect employees from safety and health hazards, and to prevent injury to the wearer from incorrect use and/or malfunction of the PPE.

2.0 REFERENCES

2.1 29 CFR Part 1910, Subpart G, Occupational Health and Environmental Control, Occupational Safety and Health Administration (OSHA)

2.2 29 CFR Part 1910, Subpart H, Hazardous Materials, Occupational Safety and Health Administration (OSHA)

2.3 29 CFR Part 1910, Subpart I, Personal Protective Equipment, Occupational Safety and Health Administration (OSHA)

2.4 Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities. NIOSH/OSHA/USCG/EPA, October 1985

3.0 DEFINITIONS

3.1 **Audiogram**. A chart, graph, or table resulting from an employee's hearing threshold level as a function of frequency.

3.2 **dBA (A-weighted Network)**. Refers to one of three weighting networks of a sound level meter. The "A" network discriminates against low frequencies to a greater extent than the other networks and simulates the response of the normal ear to frequencies below 500 Hz. The A-weighting is used because studies have shown that it gives a better estimation of threat to hearing by noise than do the other weightings.

3.3 **Decontamination**. Process of removing or neutralizing contaminants that have accumulated on personnel and equipment.

3.4 **Level A Protection**. The highest available level of respiratory, skin, and eye protection.

3.5 **Level B Protection**. The same level of respiratory protection but less skin protection than Level A.

3.6 **Level C Protection** The same level of skin protection as Level B, but a lower level of respiratory protection.

3.7 **Level D Protection**. No respiratory protection. Minimal skin protection.

4.0 RESPONSIBILITIES

4.1 The Corporate Industrial Hygienist shall assess the personal protective equipment (PPE) needs and requirements, ensure the proper PPE is selected, and perform periodic audits on job sites to verify PPE is properly maintained.

4.2 Program Managers shall enforce the use of PPE by all individuals in the work area as required.

4.3 Employees shall use, clean, maintain, and replace PPE as appropriate.

5.0 PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING PROGRAM SPECIFIC ASPECTS

5.1 Hazard Identification, Selection and Use

5.1.1 Personal protective equipment shall be selected and used which will protect employees from the hazards and potential hazards they may encounter while performing work for Vista Technologies Inc.

5.1.2 Factors to be considered in the selection process are:

5.1.2.1 Identification of the hazards, or suspected hazards.

5.1.2.2 Routes of potential hazard to employees (inhalation, skin absorption, ingestion, and eye or skin contact).

5.1.2.3 Performance of the PPE materials in providing a barrier to these hazards.

5.1.3 Personal protective equipment selection shall be based on an evaluation of the performance characteristics of the PPE relative to the requirements and limitations of the work site, the task-specific conditions and duration, and the hazards and potential hazards identified at the work site. A hazard evaluation/assessment checklist is included in Appendix A.

5.2 Head Protection

5.2.1 Hard hats shall be worn when there is a hazard of bumping one's head, having it struck, contacting high voltage equipment or having harmful objects or materials fall upon the head.

5.2.2 Design, construction, testing, and use of hard hats shall be in accordance with American National Standard Safety Requirements for Industrial Head Protection, Z89.1-1969.

5.2.3 For operations and/or areas involving potential exposure to limited electric shock (600 volts or less) and burns, head protection must meet the ANSI requirements for Class A or Class D. Where there may be potential exposure to high voltage electric shock (above 600 volts) and burns, Class B is required.

5.3 Foot Protection

5.3.1 Approved safety toe footwear shall be worn by all Vista Technologies Inc. employees who are exposed to possible foot injuries from hot, corrosive, poisonous substances, falling objects, crushing or penetrating actions, which may cause injuries, or may be required to work in abnormally wet locations.

5.3.2 Safety-toe footwear for employees shall meet the requirements and specifications in American National Standard for Men's Safety-Toe Footwear, Z41.1-1967.

5.3.3 In addition to safety-toe footwear, overshoes of rubber or plastic may be required for specific job tasks.

5.4 Eye and Face Protection

5.4.1 Eye and face equipment shall be required where there is a reasonable probability of injury that can be prevented by such equipment e.g., when working in the presence of chemicals, flying objects, glare, injurious radiation, or a combination of these hazards. At a minimum, safety glasses with sideshields shall be worn when working in any of these environments. For additional protection, chemical goggles shall be worn when handling toxic/corrosive chemicals where there is a potential for a chemical splash.

5.4.2 Employees whose vision requires the use of corrective lenses in safety glasses shall wear goggles or safety glasses of one or the following types:

5.4.2.1 Safety glasses whose protective lenses provide optical correction.

5.4.2.2 Goggles that can be worn over corrective glasses without disturbing the adjustment of the prescription glasses.

5.4.2.3 Goggles that incorporate corrective lenses mounted behind the protective lenses.

5.4.3 Face shields shall be worn as splash protection when there is a potential for face contact with corrosive materials. Face shields are secondary protection, they must be worn with either safety glasses or chemical goggles.

5.4.4 Design, construction, testing, and use of devices for eye and face protection shall be in accordance with American National Standard for Occupational and Educational Eye and Face Protection, Z87.1-1968.

5.5 Respiratory Protection

5.5.1 Employees shall be protected from exposure to atmospheric contamination to the extent feasible by the implementation of accepted engineering control measures e.g., enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials.

5.5.2 Approved respiratory equipment shall be worn when it is clearly impractical to remove harmful dusts, fumes, mists, vapors or gases at their source. The use of respiratory protective equipment for routine activities shall be permitted while engineering controls are being implemented or as a supplement to engineering controls when required. Other activities that may require the use of respiratory protective equipment include nonroutine tasks, hazardous waste operations, and emergency situations.

5.5.3 Respiratory protection shall be selected, used, cleaned, inspected, and maintained in accordance with the Vista Technologies Inc. Respirator Program.

5.6 Arm and Hand Protection

5.6.1 Gloves shall be worn to protect against abrasions and cuts, electrical contact, chemical absorption, and potential contact with blood or other potentially infectious materials.

5.6.2 Arm and hand protective devices shall be selected to fit the job. For example, some gloves are designed to protect against specific chemical hazards. Vinyl, rubber or neoprene gloves are sufficient when working with most chemicals. A synthetic glove is needed, however, when working with petroleum-based products. Gloves made of leather or cotton are appropriate for handling most abrasive materials Contact the Corporate Industrial Hygienist for further information, as necessary.

5.6.3 Oversleeves shall be worn with gloves as necessary to protect the arm.

5.7 Protective Clothing

5.7.1 Similarly to arm and hand protective devices, protective clothing shall be selected to fit the job task based upon anticipated exposure hazards.

5 7.2 Depending upon the job task, protective clothing may range from chemically resistant aprons, to disposable coveralls, to chemically resistant coveralls, for protection against extremely toxic substances (See the Corporate Industrial Hygienist for assistance).

5.8 Hearing Protection

5.8.1 Hearing protective devices shall be made available, at no cost, to all Vista Technologies Inc. employees, irrespective of whether or not employee exposure levels exceed the 85 dBA threshold established by OSHA.

5.8.2 Employees shall be required to wear hearing protective devices whenever exposed to an eight-hour time-weighted average of 85 dBA or greater.

5.8.3 In the absence of noise sampling data to identify a potentially high noise area, employees shall be instructed to wear hearing protective devices when it becomes necessary to raise their voice to be heard by someone less than 2 feet away.

5.8.4 All employees whose exposures equal or exceed an 8-hour time-weighted average of 85 dBA shall be included in a mandatory audiometric testing program.

5.9 Medical Monitoring

5.91 Employees shall not be assigned to tasks requiring the use of respirators unless it has been determined that they are physically able to perform the work while using the required respiratory equipment. The contracted physician shall determine what health and physical conditions are pertinent. The respirator user's medical status shall be reviewed annually.

5.10 Environmental Surveillance

5.10.1 Personal protective equipment requirements shall be established based upon the hazards and/or potential hazards employees may encounter during the course of work for Vista Technologies Inc.

5.10.2 The level of protection provided by PPE requirements shall be increased when additional information becomes available that indicates increased protection is necessary to reduce employee exposures below permissible exposure limits and published exposure levels for hazardous substances and health hazards.

5.10.3 The level of protection provided by PPE requirements shall be decreased when additional information becomes available that indicates decreased protection will not result in hazardous exposures to employees.

5.11 Decontamination Procedures

5.11.1 Decontamination protects workers from hazardous substances that may contaminate and eventually permeate the protective clothing and/or equipment used for hazardous waste site activities.

5.11.2 Decontamination methods involve physically removing contaminants, inactivating contaminants by chemical detoxification or disinfection/sterilization, or removing contaminants by a combination of both physical and chemical means.

5.11.3 Specific decontamination procedures shall be established for all hazardous waste site activities using the NIOSH/OSHA/USCG/EPA, Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities.

5.12 Inspection and Maintenance

5.12.1 Employees shall physically inspect all PPE prior to use to ensure PPE is in proper working order.

5.12.2 Employees shall request replacement of PPE items through their Program Managers.

Appendix A

Personal Protective Equipment Hazard Evaluation/Assessment and PPE Checklist

Employee Name:_____

Job Classification._____

Instructions: Conduct an evaluation of the workplace hazards for the employee. Place a check in the left column for any possible hazards for routine duties, non-routine duties, possible emergency situations or any possible exposure. Then, check the PPE in the right hand column necessary to match the hazard assessment.

HAZARDS ENCOUNTERED	PPE SELECTION
Eye/Face	*Eye/Face*
___ Flying particles/objects	___ Safety glasses w/ side Type _____
___ Molten metals	___ Goggles Type _____ Lens shade _____
___ Liquid chemicals	___ Face shield
___ Acids or caustic liquids	
___ Injurious light radiation	
___ Welding/cutting	___ Welding helmet Lens shade _____
___ Laser use	___ Laser glasses Intensity _____ Attenuation _____
___ Other _____	
___ Bloodborne pathogens	
MSDS requirement	
Head	*Head*
___ Flying or falling objects	___ Hard hat
___ Exposed electrical conductors	___ Safe for electricity
___ Other _____	___ Bump cap
Foot	*Foot*
___ Falling/rolling objects	___ Leather work boot
___ Objects piercing sole	___ Steel toed shoes
___ Electrical hazards	___ Metatarsal guard
Other _____	
Hand	*Hand*
___ Absorption of harmful materials	___ Chemical protective glove
___ Cuts or lacerations	___ Cut/laceration/abrasion
___ Abrasions/punctures	Type _____
___ Chemical burns	___ Temperature protective glove
___ Thermal burns	Type _____

___ Temp extremes (hot and cold)
___ MSDS requirement
___ Other _____

Hearing

___ 8 hour TWA over 85 dBA? (Implement CFR 1910.95, Hearing Conservation Standard)
___ Exposure to harmful noise

Respiratory Protection

___ Breathing harmful materials
___ MSDS requirement

Protective Clothing

Physical hazard (hot, sharp, abrasive materials)
___ Chemical or Bio-hazard

Fall Protection/Confined Space

Fall greater than 6 feet
___ Required by equipment use (Snorkle, JLG, etc.)
___ Confined space entry (If needed, implement CFR 1910.146, Confined Space Entry)

___ Other _____

Hearing

___ Earplugs

Earmuffs
Type _____

Respiratory Protection

___ Respirator/cartridge
Type _____
___ SCBA/Airline
(If needed, implement CFR 1910.134, Respiratory Protection Program)

Protective Clothing

Clothing
Type _____

Fall Protection/Confined Space

Safety belt/lanyard
___ Rescue/retrieval harness

___ Other _____

_____ _____
Immediate Supervisor Signature Date

_____ _____
Employee Signature Date

_____ _____
Safety Officer Signature Date

Appendix B

PPE Training Records

Employee Name _____ _____ SS# ___ _____

(Check one) __ Initial Training __ Annual Training
__ Job Duties Changed __ New Hazard in Workplace

Training on the proper use of Personal Protective Equipment (PPE) is provided prior to allowing employees to work in a hazardous condition. The training includes the following:

1. Discussion of when PPE is necessary and what hazards may be encountered.
2. Discussion of what PPE is needed (See Appendix A - Hazard Evaluation and PPE Checklist for employee)
3. Demonstration of how to properly put on, take off, adjust and wear PPE.
4. Employee allowed to practice during training.
5. Discussion of the limitations of the PPE.
6. Explanation of the proper maintenance, care, useful life, and disposal of the PPE.
7. The location of training materials and company written PPE program

Employee Acknowledgment
I acknowledge that I have completed the training on PPE. My signature affirms that I will apply the practices set forth in this section of the training as I perform my duties:

_____ _____ _____ ...
Signature of Employee Date

As the employee's supervisor or safety officer, I have responded to all questions and comments from the employee.

_____ _____ _____
Signature of Authorized Person Date