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April 2, 1998

00486

US Army Engineering and Support Center, Huntsville
ATTN: CEHNC-CT (Lynda Bonds)
P. O. Box 1600
Huntsville, AL 35807-4301

Reference: Contract DACA87-97-D-0005; Task Order 0003; Work Plan for the OE Removal Action Seneca Army Depot, Romulus, New York

EODT Document Control No. 0165-0003-003

Dear Ms. Bonds:

EOD Technology, Inc. (EODT) is pleased to submit the enclosed changed pages to the Final Work Plan , requested February 17, 1998. In addition, we are enclosing a listing of the revised and new pages for your convenience. Additional copies of the corrected pages have been distributed to the addresses as specified in the Statement of Work.

EODT appreciates the opportunity to be of continued service to you, your staff, and the US Army Engineering and Support Center, Huntsville.

Sincerely,

EOD TECHNOLOGY, INC.

for Jeffrey P. Bleke
Program Manager

Enclosures as noted

cc: Ms. Dorothy Richards
Ms. Pat Newman
Mr. Randy Battaglia
Mr. Steve Absolom
52nd EOD Group S-3

0165.jpb

REVISED AND NEW PAGES

The following pages are deleted and replaced with revised or new pages of the same number. A copy of each revised page accompanies this submittal. Please remove the old page(s) and insert the corresponding new one(s).

Remove Old Page(s)	Replacement Page(s)
Volume I	Volume I
Acronyms ii - iv	Acronyms vii - ix
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REVISED AND NEW PAGES

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U. S. ARMY ENGINEER DIVISION HUNTSVILLE
DESIGN REVIEW COMMENTS
Open Burning Grounds, Seneca Army Depot Activity
Draft Work Plan for Ordnance and Explosives Characterization

Reviewer: B. Bohannon, 5-1793

Item	Reference	AC	Action
1.	Page ii Para DRMO Line 22	A	Text has been edited as noted in comment.
2.	Page iii Para OEW	A	OEW deleted.
3.	Page 2-2 Para 2.2.3 Line all	A	Due to the relatively small size of the administrative scope of this project, and the limited size of the project site, the SUXOS will be able to spend at least 50% of his time devoted to safety without compromising his SUXOS duties. The QCS position will be a stand alone assignment. All references to the combined SUXOS/QCS have been deleted throughout the WP and replaced with SUXOS/SSHO.
4.	Page 2-4 Para 2.3.2 Phase 3	A	EODT could not ascertain from the comment which portion of Phase 3 is being referenced by the comment. However, all tasks within Phase 3 will be given early priority to ensure maximum productivity.
5.	Page 2-4 Para 2.3.2 Line all	A	Parsons Engineering will be the CEHNC contractor that will provide an on-site person to physically delineate the lead contaminated areas. However, EODT will accept this flagging and will take its direction from the CEHNC SREP.
6.	Page 2-6 Para 2.5.1.3 Line 5	A	Referenced sentence has been deleted.
7.	Page 2-7 Table 2-1 Line all	A	See response to comment 3 above.
8.	Page 2-7 Table 2-1 Line all	A	Pre-mobilization team total has been changed to "3".

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Reviewer: B. Bohannon, 5-1793

Item	Reference	AC	Action
9.	Page 2-8 Table 2-2 Line all	A	See response to comment 3 above.
10.	Page 2-10 Para 2.6.5 Line 2	A	All references to "33, 200" within the WP and SSHP have been changed to 33-200, as referenced in this Item.
11.	Page 2-11 Para 2.6.9 Line 7	A	Text has been changed as referenced in the comment.
12.	Page 2-11 Para 2.6.9 Line 7	A	Text has been changed as referenced in the comment.
13.	Page 2-14 Para 2.6.11.1 Line 14	A	The PWD has been changed to 850 feet which is consistent with a MCE involving a MK2 hand grenade. According to site records, this is the largest ordnance item with the largest fragmentation distance known to have been burned at the site. This distance was obtained from HNC-ED-CS-S-96-8, Revision 1.
14.	Page 2-14 Para 2.6.11.3 Line all	A	Text of the referenced paragraph has been modified to reflect that the DOT class codes presented are those listed on the product data sheets and supplier supplied shipping documentation and containers. Generally explosive items used for detonation in commercial applications have a lesser DOT rating than those listed by the DoD due to additional packaging. The Compatibility Codes were obtained from TM 9-1300-206.
15.	Page 2-16 Para 2.6.11.8 Line 5-8	A	See response to Item 14 above.

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Reviewer: B. Bohannon, 5-1793

Item	Reference	AC	Action
16.	Page 2-16 Para 2.6.12.1	A	Referenced paragraph has been edited to indicate that EODT will provide UXO avoidance services during all tasks listed in the paragraph where there is a potential for encountering surface or subsurface OE.
17.	Page 2-17 Para 2.6.13 Line 9	A	Reference to the CEHNC SREP has been deleted and a reference to paragraph 2.7.1 has been added.
18.	Page 2-18 Para 2.7.2 Line 4	A	IAW paragraph 3.4.1.11 of the SOW, the referenced sentence has been edited as noted in the comment.
19.	Page 2-20 Para 2.8 Line 1,2	A	Due to the unique nature of this project, EODT has planned to video tape major activities and OE discoveries associated with this project. While the SOW does not require the submission of a video, EODT will make available to the CEHNC a copy of the video created during the project.
20.	Page 2-21 Para 2-1	A	See response to Item 3 above.
21.	Page 2-22 Para 2-2	A	See response to Item 3 above.
22.	Page 6-3 Para 6.5 Line 3,4	A	Last sentence referenced as specified in the comment.
23.	Page 7-3 Para 7.3 Line 5	A	Referenced line has been re-written as directed in Item 18 above.
24.	Page 7-5 Para 7.6.4 Line 9	A	Text changed to reflect that EODT will take its guidance from the CEHNC on-site SREP or SEDA BRAC Coordinator.
25.	Page 7-6 Para 7.7.4 Line 5	A	Referenced line has been edited as specified in the comment.

Reviewer: B. Bohannon, 5-1793

Item	Reference	AC	Action
26.	Page 7-10 Para 7.13 Line 2	A	Referenced line has been edited as specified in the comment.
27.	Page 7-10 Para 7.13 Line 5	A	Referenced line has been added as specified in the comment.
28.	Page 7-11 Para 7.14.3 Line 3	A	Referenced line has been edited as specified in the comment.
29.	Page 7-11 Para 7.14.4 Line 2	A	Referenced line has been edited as specified in the comment.
30.	Page 8-2 Para 8.2.2 Line all	A	Referenced paragraph has been re-written according to the specifications of Item 3 above.
31.	Page 8-4 Para 8.3.4 Line 14, 15	A	Referenced lines have been re-written IAW the requirements of paragraph 3.4.1.7 of the SOW.
32.	Page 8-6 Para 8.3.5.4).A)	A	See response to Item 32 above.
33.	Page 8-8 Para 8.3.6.8) Line 2, 3, 5	A	See response to Item 19 above.
34.	Page 8-10 Para 8.7.5 Line 5	A	Referenced line has been edited as specified in the comment.
35.	Page 9-1 Para 9.1.1 Line 4, 5	A	References to Figures 9-1 and 9-2 have been changed to Figures 2-1 and 2-2.

Reviewer: B. Bohannon, 5-1793

Item	Reference	AC	Action
36.	Page 9-4 Table 9-3	A	Referenced category total cost has been changed.
37.	Page 9-4 Table 9-3	A	Referenced total hours has been changed.
38.	Page 9-5 Table 9-3	A	Referenced task total cost has been changed.
39.	Page 9-8 Figure 9-3	A	Figure 9-3 has been renumbered to 9-1 as referenced.
40.	Page A-ii Para all	A	Page A-ii has been included.
41.	Page A-xv ACGIH	A	"Industrial" has been added to the title.
42.	Page A-xv ALS	A	Text has been edited as specified.
43.	Page A-xvi OEW	A	Reference to OEW has been deleted.
44.	Page A-5 Para 2.2.4 Line 2	A	See Item 3 above.
45.	Page A-6 Para 2.2.4 Line 4	A	See Item 44 above.
46.	Page A-6 Para 2.2.4.9) Line 1	A	See Item 44 above.
47.	Page A-9 Figure 2-1	A	See Item 44 above.
48.	Page A-12 Para 3.4.1 Line 1, 2	A	Bracketed sentence has been deleted.

Reviewer: B. Bohannon, 5-1793

Item	Reference	AC	Action
49.	Page A-12 Para 3.4.2 Line 2	A	Parenthetical expression has been deleted.
50.	Page A-12 Para 3.4	A	See Item 10 above.
51.	Page A-13 Para 3.5.2 Line 10		Yes. During the site visit, a thorough investigation was conducted of the surface to be magnetically swept, and no fuzes of any kind were observed on the surface.
52.	Page A-14 Para 3.5.3 Line 22, 23	A	Reference to nitro methane and ammonium nitrate have been deleted.
53.	Page A-19 Para 4.3.1.5 Line 1	A	Referenced paragraph has been edited as noted in the comment.
54.	Page A-22 Para 4.3.7 Line 16	A	Referenced text has been edited as specified in the comment.
55.	Page A-24 Para 4.3.10 Line 8	A	Referenced text has been edited as specified in the comment.
56.	Page A-25 Para 4.3.12 Line 2, 3	A	SUXOS has been changed to QCS. See Item 44 above.
57.	Page A-61 Para 10.2 Line 8	A	Referenced text has been edited as specified in the comment.
58.	Page A-74 Para 11.4 Line 4	A	Referenced text has been edited as specified in the comment.

Reviewer: B. Bohannon, 5-1793

Item	Reference	AC	Action
59.	Page A-74 Para 11.5 Line 4	A	Referenced text has been edited as specified in the comment.
60.	Page A-75 Para 11.6 Line 4	A	Referenced text has been edited as specified in the comment.
61.	Page A-79 Para 12.4 Line 2	A	Referenced text has been edited as specified in the comment.
62.	Page A-79 Para 12.4.1 Line 10	A	Reference to 5% bleach solution changed to "soap" solution.
63.	Page A-87 Para 13.5 Line 3	A	Referenced text has been edited as specified in the comment.
64.	Page A-94 Para 13.11.2 Line 9, 23-26	A	Reference to the cottonmouth has been deleted.
65.	Page A-99 Figure 13-1	A	Referenced text within the figure has been edited as specified in the comment.
66.	Appendix G Figure 120E-1	A N	A copy of EODT's BATF license has been included. The requirement for a New York License was reviewed with the SEDA BRAC Coordinator and EODT was informed that no license was required.

U. S. ARMY ENGINEER DIVISION HUNTSVILLE
DESIGN REVIEW COMMENTS
Open Burning Grounds, Seneca Army Depot Activity
Draft Work Plan for Ordnance and Explosives Characterization

Reviewer: Scott Bradley

Item	Reference	AC	Action
1.	Section 2.6.12 p.2-16	N	According to discussions with CEHNC personnel and the SEDA BRAC Environmental Coordinator (BEC), EODT is to process and stockpile the soils according to guidance provided by the on-site CEHNC Representative and the BEC. The location of the stockpiled soils will be communicated to EODT prior to the initiation of site activities and will be coordinated by the BEC with the site remediation contractor.
2.	Section 7.8 p.7-7	N	See item 1 above.

U. S. ARMY ENGINEER DIVISION HUNTSVILLE
DESIGN REVIEW COMMENTS
Open Burning Grounds, Seneca Army Depot Activity
Draft Work Plan for Ordnance and Explosives Characterization

Reviewer: Kevin Healy

Item	Reference	AC	Action
1.	Para. 1.3 Page 1-2	A	Referenced text has been edited as specified in the comment.
2.	Para. 2.6.10 Page 2-13	A	Referenced text has been edited as specified in the comment.
3.	Para. 2.6.11 Page 2-14	A A	See response to B. Bohannon Item 13 for explanation of PWD. The referenced text has been edited to reflect that the design NEW of the SEDA igloos is 450 pounds, however, EODT does not anticipate storing more than 100 pounds NEW in either igloo.
4.	Para. 2.6.12 Page 2-16	N	Referenced text has been changed as requested.
5.	Para. 2.6.12 Page 2-17	A A A	Text in the referenced paragraph has been changed to include the addition of the sentence specified in the comment. Text referencing the TCLP limits has been edited as specified. All references to "para" in the WP and SSHP have been changed to "paragraph".
6.	Para. 2.7.1 Page 2-18	A	Term "inert" has been added as requested by the comment.
7.	Para. 2.7.2 Page 2-18	A	See Item 5 above.
8.	Para. 4.1 Page 4-1	A	According to paragraph 3.4.1.7 of the SEDA SOW, the items to be used for verification of the magnetometer response check will be a MK2 hand grenade buried at a depth of one foot, and a M31 rifle grenade buried at a depth of two feet. The Schonstedt 52 CX has been shown to detect these items at the depths specified.

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Open Burning Grounds, Seneca Army Depot Activity
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Reviewer: Kevin Healy

Item	Reference	AC	Action
9.	Para. 7.5 Page 7-5	A	The referenced paragraph has been edited as specified.
10.	Para. 8.3.4 Page 8-4	A	See response to Healy Item 8, and Bohannon Item 31.
11.	Para. 8.3.5 Page 8-6	A	See response to comment 10 above.

LIST OF ACRONYMS AND ABBREVIATIONS

ABIH	American Board of Industrial Hygienists
AR	Army Regulation
BATF	Bureau of Alcohol, Tobacco and Firearms
BIP	Blow-In-Place
BRAC	Base Realignment and Closure
BZ	Breathing Zone
CA	Contract Administrator
CAP	Contractor Acquired Property
CEHNC	U. S. Army Engineering and Support Center, Huntsville
CERCLA	Comprehensive Environmental Responsibility, Compensation and Liability Act
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CO	Contracting Officer
COR	Contracting Officer Representative
CRZ	Contamination Reduction Zone
CSHP	Corporate Safety and Health Program
DERP	Defense Environmental Restoration Program
DID	Data Item Description
DoD	Department of Defense
DOT	Department of Transportation
DRMO	Defense Reutilization and Marketing Office
EE/CA	Engineering Evaluation/Cost Analysis
EIS	Environmental Impact Statement
EM	Engineering Manual
EMM	Earth Moving Machinery
EODT	EOD Technology, Inc.
EPP	Environmental Protection Plan
ER	Engineering Regulation
EZ	Exclusion Zone
FAR	Federal Acquisition Regulation
FUDS	Formerly Used Defense Sites
GFE	Government Furnished Equipment
GFP	Government Furnished Property
GSA	General Services Administration

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

HARC	Historical, Archeological, Religious and Cultural
HAZWOPER	Hazardous Waste Operations and Emergency Response
HE	High Explosive
HEPA	High Efficiency Particulate Air
HTRW	hazardous, toxic and radioactive waste
IAW	in accordance with
LCD	Liquid Crystal Diode
mm	millimeter
MSDS	material safety data sheets
NAD	North American Datum
NEPA	National Environmental Policy Act
NEW	net explosive weight
NFPA	National Fire Protection Association
NYSDEC	New York State Department of Environmental Conservation
OB	open burn
OBG	Open Burning Grounds
OD	open detonation
OE	ordnance and explosives
OERA	Ordnance and Explosives Removal Action
Line deleted	
ORS	ordnance related scrap
OSHA	Occupational Safety and Health Administration
OSHM	Occupational Safety and Health Manager
PA	Property Administrator
P.A.	Preliminary Assessment
PAO	Public Affairs Office
PARSONS	Parsons Engineering Science, Inc.
PDS	personal decontamination station
PM	Project Manager
PO	Purchase Order
PPE	personal protective equipment
PWD	public withdrawal distance
QA	quality assurance
QC	quality control

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

QCI	quality control inspection
QCM	Quality Control Manager
QCP	Quality Control Program
QCS	Quality Control Specialist
QP	Quality Program
REC	Record of Environmental Consideration
ROD	Record of Decision
SAA	Small Arms Ammunition
S&H	Safety and Health
SEDA	Seneca Army Depot Activity
SI	Site Investigation
SOP	standard operating procedure
SOW	Statement of Work
SR	State Road
SREP	Safety Representative
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
SUXOS	Senior UXO Supervisor
SZ	support zone
TCRA	Time Critical Removal Action
USA	U. S. Army
USACE	U. S. Army Corps of Engineers
USGS	United States Geophysical Society
UTM	Universal Transverse Mercator
UXO	unexploded ordnance
VHF	very high frequency
WAA	War Assets Administration
WDCMP	Work Data and Cost Management Plan
WP	Work Plan
W.P.	white phosphorus

1.2 OE REMOVAL ACTION SITE DESCRIPTION

Open burning/open detonation (OB/OD) operations have been conducted at SEDA for more than forty years at the 90 acre munitions destruction area. The OERA to be conducted during this project will be at the OBG which occupies an area of approximately 30 acres within the southern portion of the munitions destruction area. The maps presented in Figures 1 through 3 in Appendix C of this WP show the relative location of the SEDA, the location of the OBG within the SEDA, and a close-up view of the prominent features of the OBG facility. The OBG is situated on gently sloping terrain and is partially vegetated with grasses and brush.

Originally, open burning was conducted directly upon the clay soil surface. However, due to the seasonally wet nature of the local soils, the individual burn pads were subsequently built up with shale and other fill material to provide a drier environment on which to perform the munitions and explosives burning. OE burning and detonation has been performed at nine burning pads labeled A through H and J. Each of these burn pads is surrounded on three sides by an earthen berm created by the bulldozing of surrounding soils and fill material brought in from another site on SEDA. According to a 1980 Installation Assessment Report, the burning area pads were in use from the early 1960's until 1987, when the destruction of munitions was moved to an open air steel enclosure located immediately west of burning Pad D. According to previous investigations, Pads A and J were only used for the burning of trash and rubbish, while pads B through H were used for projectiles, explosives and propellants. Along with the burn pads and berms, an elongated, low lying hill will also be remediated during this project. The low lying hill is located in the southern portion of the OBG and was designed to form a pseudo barrier in this portion of the site. Based upon the vegetation which covers the hill and its geographic location relative to the burn pads, the formation of the low lying hill is believed to be time-equivalent to the berms around the burn pads.

1.3 PREVIOUS SITE INVESTIGATIONS

The USACE document entitled Proposed Remedial Action Plan (PRAP) for the Open Burning Grounds (OB) at Seneca Army Depot Activity, includes reference to 22 previous site investigations and studies related to the characterization of the OBG. The referenced studies were conducted on the OBG between 1980 and 1996 and have produced a substantial volume of data related to archival data, soil sampling, monitoring well installations, and groundwater sampling at the OBG. Inclusion of this volume of data is beyond the scope of this WP, however, an examination of the PRAP and the 1994 Final Remedial Investigation Report, indicates that environmentally significant levels of organic and heavy metal contaminants have been detected in the soils of the OBG, with the primary contamination being lead in the soils. The safety and health issues relevant to the contaminants of concern are presented in paras 3.5.3 and 4.2.2 of the Site Safety and Health Plan (SSHP) presented in Appendix A of this WP.

3. Acts as the point of contact for CEHNC project personnel, and communicates with the CEHNC through the CEHNC PM;
4. Oversees the overall performance of all EODT individuals assigned to the project;
5. Reviews the SEDA SOW to ensure necessary elements are addressed in project plans; and
6. Coordinates all contract and subcontract work and controls contractual costs and schedules;.

2.2.3 Senior UXO Supervisor/Site Safety and Health Officer

Mr. Salvatore Molle, will be the SUXOS and the Site Safety and Health Officer (SSHO) for this project. As both the SUXOS and the SSHO, Mr Molle will address all ordnance and non-ordnance related safety issues, as well as all operational issues. Due to the small size of the field crew, Mr. Molle will be able to provide the site with over 50% of his time dedicated to safety, without compromising his duties as the SUXOS. Mr. Molle is a master EOD technician and a graduate of the Basic and Advanced Naval EOD School, Indian Head, Maryland. Mr. Molle has over 18 years combined military and civilian EOD experience, with extensive experience as a SUXOS. As the SUXOS, Mr. Molle will be responsible for the following:

1. Manages the EODT on-site manpower and equipment necessary to conduct site operations;
2. Detects and identifies any problem areas and coordinates with the EODT PM to institute corrective measures;
3. Ensures that all site activities are conducted according to this WP and relevant Federal, state and local regulations;
4. Acts as the lead technical consultant for all on-site OE related matters; and
5 Directly interfaces with, and relays concerns to, the CEHNC SREP.

2.2.4 Occupational Safety and Health Manager

Mr. Andrew Bryson, the EODT OSHM, is an American Board of Industrial Hygienist (ABIH) Certified Industrial Hygienist (CIH) with over seven years of industrial hygiene, safety, and hazardous waste experience, including over four years of experience with sites contaminated with OE. During the performance of this project, Mr. Bryson will provide occupational safety and health management and technical support to the SSHO and other EODT project personnel.

2.2.5 Site Safety and Health Officer

As the SSHO, Mr. Molle will work closely with the on-site CEHNC SREP for issues related to OE safety, and will coordinate with the EODT OSHM for issues related to on-site implementation of the SSHP. In this role, Mr. Molle will have the following general responsibilities:

1. Authorizes STOP WORK for safety and health conditions;
2. Identifies and evaluates any known or potential safety problems and implements safety-related corrective actions; and

PHASE 3 - OE REMEDIATION

- Set up field office in the Government furnished offices located at the entrance to the Munitions Destruction Area;
- Set-up site work zones, to include a support area near the OBG site;
- Conduct location surveying and mapping;
- Perform a visual survey of the 30 acre site;
- Vegetation removal;
- Sweep site with a towed magnet;
- Magnetometer survey of approximately 22.5 acres not covered by the berms and low lying hill;
- Anomaly investigation in the 22.5 acres, to include demolition of OE located;
- Excavation, sifting, and stockpiling of soils from the berms, low lying hill and other areas, as indicated by personnel from Parsons Engineering, and approved by the SREP;
- Screen and sort oversize material; and
- Magnetometer survey, anomaly investigation and OE demolition of remaining 7.5 acres previously located under the berms and low lying hill.

PHASE 4 - PROJECT CLOSE-OUT

- Scrap turn in;
- Break down site;
- Close accounts;
- Removal of equipment;
- Demobilization of workforce; and
- Generation of the Final Removal Report.

2.3.3 Project Assumptions

The above sequence of events and its timely completion is predicated on the following assumptions:

- The 30-acre OBG will be accessible to all EODT personnel and subcontractors, without interruption, during the course of the project.
- The actual volume of soil to be excavated, sifted and stockpiled, as stipulated in the Task 0003 SOW (in cubic yards), is no greater than the estimated volume of 33,400 cubic yards.
- The government furnished towed magnet will remove the surface metallic scrap without magnetizing the soil.
- The various levels of contaminated soils to be excavated are clearly delineated by the CEHNC using flags, wooden stakes, or a similar marking system prior to EODT's readiness to initiate soil excavation and this identification does not slow or impede EODT or its subcontractor.

IAW DID OT-045, all site personnel will be instructed in the public relations procedures. During this training, all site personnel will be informed that they are to refer all inquiries from the public to the SUXOS, who will in turn forward the request to the CEHNC for action. Site personnel will not make any public statements to the media without prior coordination with and approval of the Public Affairs Office (PAO), USACE New York District, and the CEHNC. In the event the CEHNC requests assistance in public meetings, media days, and press/news releases, EODT personnel will assist as directed.

Note:

In addition to the mobilization training specified above, all EODT and subcontractor personnel will have current OSHA hazardous waste and emergency response operations (HAZWOPER) training as specified in the SSHP and will meet the medical surveillance requirements outlined in the SSHP.

2.5.1 Set-up Support Facilities and Assemble Equipment

It is EODT's intention to use, to the maximum extent possible and allowable, any previous facilities whose location logistically supports site operations. During the site visit, EODT coordinated with CEHNC and SEDA for the use of igloo type explosives storage magazines and office space.

2.5.1.1 Field Office and Storage Facilities

EODT will establish its administrative field office in the office located at the entrance to the Munitions Destruction Area. This area will also serve as storage for hand-held field equipment and supplies.

2.5.1.2 Communications Equipment

EODT will install, inspect, and test all site communications equipment, to include:.

- Hand-held five-watt portable radios, with a range of five-to-eight miles that will be used to maintain communications between SEDA, subcontractors, and the field team.
- EODT will use cellular telephones, acquired through a local cellular service (very high frequency band 150-174), as back up communications between the field office and SEDA.

2.5.1.3 Explosives Storage

EODT will utilize double igloo-type earthen covered magazines for storage of demolition material. These magazines are located adjacent to the OBG inside of a fenced enclosure. The magazines are double locked with the required lightning system installed. (Line deleted)

2.5.2 Coordinate with Local Agencies

The PM, SUXOS/SSHO and QCS will coordinate with the following agencies:

- CEHNC, to reconfirm priorities/schedules, and to identify any changes in the SOW;
- Local vendors and suppliers;
- The Air Traffic Controller; and
- SEDA fire, medical, and police agencies.

2.6 REMEDIATION

2.6.1 General Site Organization and Practices

Upon completion of mobilization activities, EODT will commence the OE remediation portion of this project. Team composition for the SEDA is organized as indicated in Table 2-1. The permanent on-site team consists of four personnel as shown in Table 2-2. The subparagraphs presented below describe the general work practices that EODT will follow during all operations, and the specific procedures and methods EODT will use to implement these practices.

TABLE 2-1: TEAM COMPOSITION

TEAM	LABOR CATEGORY	QUANTITY
Pre-Mobilization Team	PM SUXOS/SSHO	1 1
Pre-mobilization Total		**2**
Location Survey & Mapping Team	UXO Specialist Surveyor Rodman	1 1 1
Location, Survey & Mapping Team Total		**3**
OE Remediation	SUXOS/SSHO QCS UXO Specialist	1 1 2
Remediation Team Total		**4**
Soil Excavation Team	Subcontractor UXO Specialists	TBD 2
Soil Excavation Team Total		**TBD**
Close-out Team	SUXOS/SSHO QCS UXO Specialists	1 1 2
Close-out Team Total		**4**

TABLE 2-2: PERMANENT ON-SITE FIELD PERSONNEL

LABOR CATEGORY	QUANTITY
SUXOS/SSHO	1
QCS	1
UXO Specialist	2
Soil-handling Subcontractor	TBD
Surveyor	1
Rodman	1
TOTAL	**6**

All operational activities at SEDA will be performed under the supervision and direction of qualified UXO personnel. Non-UXO qualified personnel will be prohibited from entering work areas, or performing any operation, unless they are accompanied, and supervised, by a UXO technician. Throughout the entire operation, EODT will strictly adhere to the following general practices.

1) **Work Hours:** Operations will be conducted only during daylight hours, which is thirty minutes after sunrise until thirty minutes prior to sunset. EODT intends to work four 10-hour days, with five 8-hour days as an option. In no case will personnel work more than ten hours in any day, or more than forty hours in any week, and will have a minimum 48-hour rest prior to the start of the next work week. The five 8-hour day schedule will be used during the project as required. The soil handling subcontractor will work longer hours with EODT personnel acting as safety observers. EODT personnel will be scheduled in such a manner that the above requirements are met.
2) **Site Access:** EODT will control access into work areas and will limit access to only those personnel necessary to accomplish the specific operations or to those personnel who have a specific purpose and authorization to be on the site. No hazardous operations will be conducted when unauthorized personnel are in the vicinity.
3) **Handling of OE:** OE items will be handled by qualified UXO personnel only. Non-UXO site personnel will be instructed and closely supervised to ensure they do not handle any OE. Ordnance related scrap (ORS) will not be handled or touched by non-UXO qualified personnel until it has been checked by a UXO technician and it has been determined to be free of explosive hazards.

2.6.2 Compliance with Plans and Procedures

All personnel will strictly adhere to approved plans and established procedures. If operational parameters change and there is a corresponding requirement to change procedures or routines, careful

2.6.4 Preparation of Work Areas

Prior to initiating work in a new area, the SUXOS will review the area and determine what preparatory measures are needed. Preparatory measures may include, but are not limited to, the items listed below.

1) In some cases, dirt roads and tracks into a grid site may require repair or fill. If such repair does not deter from the SOW, and is within EODT's capability, it will be undertaken immediately. Approval from the CEHNC Contracting Officer/Contracting Officer Representative (CO/COR) approval will be obtained prior to any major unforseen work being attempted.
2) Access routes and work areas will be searched and cleared of all UXO prior to the commencement of grid activities to ensure safe ingress/egress routes for all personnel and equipment.
3) To ensure the safety and health of all site personnel, EODT will establish three work zones on the OBG site. The first zone will be the exclusion zone (EZ) that will be used to control access to the lead contaminated site. At no time will personnel enter the EZ without authorization. The second zone will be the contamination reduction zone (CRZ) that will be used for the decontamination of site personnel and field equipment, and will contain a personal decontamination station (PDS) and an equipment wash area. The final zone will be the support zone (SZ) which will be established according to prevalent site conditions. Since the field office will be located a significant distance from the work site, the SZ will serve as a staging area for personnel and equipment. The SZ will be located in an area known to be free of lead soil contamination, and will to the extent possible, be established up-wind of the EZ. The CRZ will exit into the SZ, and site personnel will be able to use the SZ as a break area during morning and afternoon breaks.

2.6.5 Location Surveying and Mapping

The mapping team will consist of a surveyor, a rodman, and a UXO specialist. The team will survey and map the 30 acre project site into approximately 33 - 200 foot by 200 foot grids, IAW Chapter 5, Location, Surveying and Mapping Plan, of this WP. The team will survey the grids in the order agreed to by EODT and CEHNC and proceed from there as directed by CEHNC. The team reports directly to the SUXOS and will keep him apprized of their progress. The team will use instrumentation capable of accurate measurements to within one foot. The site boundary will be marked at the corners using Schedule 40 PVC and the individual 200 foot by 200 foot grids will be marked at the corners using highly visible wooden stakes with the grid number on the wooden stake. Any unusual terrain or other peculiar features in the grid, as well as any OE encountered, will be annotated on the grid map and reported to the SUXOS. A magnetometer check will be made at each location where a stake, or other marker, is to be set to ensure the location is free of anomalies.

2.6.6 Visual Survey

The team will conduct a visual survey of each grid within the thirty-acre site by lining up search personnel in a line and extending arms to the side, fingertip to fingertip, to obtain proper interval. Once the interval is established, arms are dropped and personnel will then advance to the end of the grid. The team then turns around, moves over, and proceeds as above. The process is repeated until the grid is completed. Any OE encountered will be marked with two crossed pin flags. The OE will either be blown-in-place (BIP) or, if the item is unfuzed and identified as safe to move, it will be moved to the adjacent open detonation range for disposal.

2.6.7 Vegetation Removal

The team will commence vegetation removal operations in a manner similar to the survey and mapping team. The equipment used for vegetation clearing will consist of weedeaters with blades, a bush hog, and a hydro-ax. The equipment used in each grid is dependent on the features and characteristics of the grid. All vegetation removal activities will be IAW Chapter 7, Environmental Protection Plan and the SSHP found in Appendix A of this WP, and only those items necessary to conduct the magnetometer survey will be removed. Grass and brush will be removed to within at least six inches of the surface and tree limbs will be removed to a height of six feet. No trees greater than three inches in diameter will be cut down without the prior approval of the CEHNC.

2.6.8 Towed Magnet Sweep

Once the vegetation removal is complete, the team will use a tractor to pull a wheel mounted magnet over the entire 30 acre OBG site, excluding the berms and low-lying hill. The collected metallic debris will be stockpiled and sorted. To ensure that the magnet does not magnetize the soil, a test area will be established outside the OBG. The results will determine the practicality and efficiency of the process. In the event the process magnetizes the soil, precluding the use of magnetometers, this step will be eliminated.

2.6.9 OE Magnetometer Survey

The SOW for this project requires that the entire 30 acre OBG site be visually and magnetically swept, and cleared to a depth of two feet. To conduct the magnetometer sweeps, EODT personnel will follow the procedures outlined below for each 200 by 200 foot grid. EODT personnel will initially sweep the approximate 22.5 acre area not covered by the berms or the low lying hill. OE clearance of the berms and low lying hill will occur during the soil excavation and sifting operations. Once the berms and low lying hill have been removed the areas under these areas will be swept with the magnetometers and cleared of OE to a depth of two feet.

1) **Search Lanes:** Once the grid location has been surveyed and the vegetation removed, the magnetometer survey team can commence their search. Each grid will be subdivided into

feet, the SUXOS, in conjunction with the CEHNC SREP, will determine the appropriate action: a) continue the excavation; or b) record the location of the anomaly for pursuing at a later time.

2) **Location Recording:** The SUXOS will direct and supervise the following operations for UXO/OE encountered.
   - Complete a Grid Survey Summary Log Form and an OE Operations Grid Map, examples of these can be found in Appendix E of the WP.
   - Measure the approximate distance to within one foot from the southwest grid corner to the OE item of concern, and also record the depth at which the item was found.
   - If the item is determined to be fuzed, or is otherwise unsafe to move, its location will be marked with crossed pin flags, so that the item may be relocated for BIP demolition.
3) **Records.** The SUXOS will maintain in a hard bound notebook, a detailed accounting of activities performed at each grid, which will include information pertaining to the following:
   - The date and time operations began;
   - Team composition and personnel names and positions;
   - The date and time operations were completed;
   - Any event which impacted on the day's operations; and
   - The number of OE located, with the identification, condition, depth, disposition and location recorded on the Grid Survey Summary Log and OE Operations Grid Map.
4) **Removal and Disposal of Scrap Metal:** Within, or adjacent to, each operating grid, the SUXOS will establish a temporary collection point for ORS. During operations, the anomaly investigation team member who uncovers an item will inspect the OE item for the presence of explosives. OE items that are free of explosive contamination and do not require venting will be placed in the grid ORS collection point. Upon completion of operations in that grid, the material in the temporary collection point will be collected and loaded into containers, weighed and the weight entered in the team log book. Inspection of ORS will be conducted IAW the QC requirements outlined in Chapter 8 of this WP.

2.6.11 Disposal Operations

All OE-related material containing explosives will be disposed of by detonation utilizing standard demolition procedures as outlined in TM 60A-1-1-31 and the EODT Disposal/Demolition Operations SOP found in Appendix G, Tab 14 of this WP. The following paragraphs describe in general the procedures EODT will use to detonate OE related items at the SEDA.

1) **Procedures:** EODT will dispose of explosively contaminated OE and OE related materials on a daily basis. Demolition operations will begin in a grid site, or at the open demolition range, when all nonessential personnel are out of the public withdrawal distance (PWD) of the ordnance being detonated. OE that is unfuzed and safe to move may be consolidated

within the grids or open demolition range to reduce the number of shots. The SSHO will be at the demolition site at all times during disposal operations. The operation will be performed under the direction and supervision of the SUXOS, who is charged with the responsibility of ensuring that the procedures contained in this WP and the referenced documents are followed. The SSHO will monitor compliance with the safety measures contained in the WP and associated documents, and in the event of noncompliance, the SSHO is vested with the authority to stop or suspend operations. Disposal activities are inherently hazardous and require strict adherence to approved safety and operational procedures. IAW Appendix A, Site Safety and Health Plan, violations of procedures will result in immediate removal from this project and termination of employment. Prior to the start of disposal activities, the SSHO will verify that the exclusion zone, which is the PWD, consisting of the safe blast and fragmentation zone around the demolition site, is clear of all non-UXO personnel, and that other UXO supervisors have been notified. The minimum PWD distance required will be 850 feet, which is the PWD for a MK2 hand grenade. According to CEHNC provided documents, EODT believes the MK2 will be the largest ordnance item that may be encountered at the former OBG. However, depending on the actual type and number of munitions being destroyed, the PWD distance may be increased or decreased (with the approval of the on-site CEHNC SREP) based on data contained in CEHNC-OE-CX (200-1c) dated 30 September 97. Personnel remaining on-site will be limited to those personnel needed to safely and efficiently prepare the item(s) for destruction.

2) **Equipment:** Standard demolition equipment will be used. The procedures to be followed will meet the guidelines dictated by TM 60A-1-1-31, Chapter 4 and Appendix G of this WP.

3) **Demolition material:** EODT will utilize either jet perforators and electric detonators connected to detonating cord, or the detonating cord and electric detonators, in its shots to control the operation and reduce the net explosive weight. EODT uses Department of Transportation (DOT) Class 1.3 and 1.4 explosives whenever possible, which are safer to handle, easier and less expensive to ship and store and more readily available. The demolition materials anticipated for use on the SEDA are:

DESCRIPTION	WEIGHT	DOT EXPLOSIVE CLASS[1]	COMPATIBILITY GROUP[2]
Perforators	19 grams	1.3	D
Detonating Cord	80 grain	1.3	C
Electric Detonators	No. 8	1.4B	B

1 - The explosive classes are those provided to EODT from the supplier on the product data sheets and they reflect commercial classifications that are usually lower than US Army classifications for the same items.
2 - The compatibility codes were obtained from TM9-1300-206.

4) **Evacuation and Site Control:** Prior to initiation of demolition operations, all nonessential personnel will be evacuated to a distance outside the PWD for the item being detonated. Prior to priming of demolition charges, all avenues of ingress will be physically blocked by site personnel. The SUXOS will coordinate the blocking of the main road with SEDA personnel, if required. Radio communications will be maintained among all concerned parties. Avenues of ingress will not be opened without the express permission of the SUXOS. A constant state of vigilance must be maintained by all personnel to detect any intrusion into the PWD. EODT will use the appropriate number of personnel to ensure the area is properly secured.

5) **Explosive Acquisition, Accountability, and Transportation:** EODT will supply all explosives and maintain total control of the explosives while on site IAW the company SOP found in Appendix G, Tab 15 of this WP. Explosives will be removed from the SEDA explosive storage as required, and only the amount of explosives required for the day's operation will be issued each day. EODT will comply with the requirements listed below:
   - Strict accountability of explosives will be maintained at all times. EODT will maintain explosives accountability logs, found in Appendix E of this WP, and will reconcile amounts daily.
   - Only UXO qualified personnel will be issued explosives and allowed to transport explosive materials.
   - All vehicles transporting explosives will be properly inspected, equipped, and placarded prior to the loading of explosives onto the vehicle.

6) **Disposal Shots:** While preparing UXO for detonation, the SSHO will ensure that the number of personnel on site is kept to the minimum required to safely accomplish the task. Authority to initiate demolition operations will rest solely with the SUXOS. This individual is responsible for ensuring all personnel have been evacuated from the area and accounted for, and that the area is secure prior to authorizing the detonation of explosive charges. The QCS will ensure all pertinent parties have been notified of an impending demolition shot. Prior to priming the demolition shots, the SUXOS will: direct all personnel not involved in the priming process to evacuate the area and assemble at the designated assembly point; ensure that the roadblocks are posted; ensure that a minimum of three feet of tamping soil has been placed on the demolition shot; and sound the required warning as indicated in Appendix D of this submittal.

   Should multiple OE items be encountered that preclude individual detonation (e.g., the items are so close together that one shot would interfere with the others and the items cannot be moved), the disposal team will explosively link these shots using detonating cord. If this situation occurs, the SUXOS, in conjunction with the CEHNC SREP, will recalculate the PWD according to the procedures listed in item 1 presented above.

Upon completion of the demolition shot, the SUXOS and one UXO Technician will visually inspect each disposal shot. While one of these individuals performs a visual inspection of the disposal site(s), the second one will stand by at a safe distance and be prepared to render assistance in the event of an emergency. Upon completion of this inspection and providing there are no residual hazards, the SUXOS will authorize the resumption of site operations.

7) **Transporting OE and Demolition Materials:** EODT's SOP for the safe transport of explosives is included in Appendix G of the WP. Since the explosive storage magazines will be located within the SEDA, all transport will be on dirt/gravel roads, thereby eliminating the necessity to transport over public highways. The transport vehicle shall meet all the requirements of 49 CFR 100-199, CEHNC Safety Concepts and EODT's SOP's.
8) **Explosive Storage:** EODT will utilize an earthen covered double igloo type magazine for the storage of demolition materials. The igloos are constructed to Army and DDESB standards, including lightning protection and lighting. According to SEDA personnel, the design net explosive weight (NEW) of each magazine is 450 pounds, however, EODT does not anticipate storing more than 100 pounds NEW in either magazine. Additionally, as stated above, EODT will utilize Class 1.3 and 1.4 explosives, further reducing the explosive hazard. The perforators (Class 1.3, compatibility group D) and detonating cord (Class 1.3, compatibility group C) will be stored in one magazine, and the electric detonators (Class 1.4B, compatibility group B) will be stored in the second magazine.

2.6.12 Soil Excavation and Processing

The soil processing subcontractor, will excavate, sift and stockpile approximately 33,400 cubic yards of soil from the berms, low lying hill and selected areas of the OBG according to the procedures outlined below. During all soil penetration and handling EODT will provide OE avoidance services.

1) Soil Identification: Parsons Engineering Science, Inc. (Parsons), a CEHNC contractor, will provide at least one person who will stake out the two levels of lead contaminated soils using visual markings such as wooden stakes or pin flags. In addition, the depth of these marked areas will be annotated on a map provided by Parsons.
2) High Contamination Soils: This category of soils is defined as having lead concentrations greater the EPA Toxicity Characteristic Leaching Procedure (TCLP) limit (to be established). Approximately 3,800 cubic yards of this soil will be removed and cleared of OE prior to being stockpiled. Using a combination of backhoes and excavators, the earthmoving subcontractor will excavate this soil and transport it in dump trucks to the sifting operation. The sifting operation will consist of a Reed Screen, using a one-inch mesh screen as the final screen. The soil and miscellaneous debris which is smaller than one inch will fall through the screen onto a series of conveyor belts for transportation away from the sifter where it will be collected and transported to the stockpile area. The soil will be

stockpiled on one of three 20mm, poly liners, surrounded by a geo-membrane reinforced with hay bales. At the end of each day's operations, the pile will be covered with an 8mm liner and secured in place using rubber tires. Geo-membrane will also be used when applicable to control run-on/off around excavations to control contamination migration. A potential change to the above is the collection of the soil by SEDA personnel and equipment as the soil comes off the conveyor belt for transportation to a solidification treatment facility, thereby avoiding the need to stockpile the material. In the contingency, some of the soil may need to be temporarily stockpiled and, if so, the above process will be utilized. If immediate soil collection is performed, the process will be overseen by UXO-qualified personnel.

3) **Moderately contaminated soil:** This soil type is defined as having lead concentrations greater than 500 mg/kg, but below the TCLP limit. Approximately 4,200 cubic yards of this soil will be removed from the berms and low lying hill, and approximately 9,400 cubic yards of this soil will be removed from other areas in the OBG that are not part of the berms or low lying hill. The moderately contaminated soils will be sifted and cleared of OE prior to being stockpiled. Upon the completion of the heavily contaminated soil processing, the same procedures as those listed in Item 2 of this paragraph, will be used to process the 13,600 cubic yds. of moderately contaminated soil. This soil will be stockpiled, underlain and covered by EODT after excavation and sifting to be land filled at a future date by others.
4) **Non-contaminated soil:** The remainder of the approximate 16,000 cubic yards of soil to be removed from the berms and low lying hill will be transported to the sifting operation using either dump trucks or a bulldozer. The processed soil will be stockpiled in its own pile and will be covered at the end of each day as outlined above and may be used for fill after the OE remediation is completed.
5) **Oversize material:** The material which is greater than one inch in diameter will fall onto a second conveyor belt and will be collected in a roll-on/off container. This material will be processed by EODT personnel using the procedures listed in the next paragraph.

2.6.13 Oversize Material Processing

All oversize material, i.e., items greater than one inch in diameter, will be processed by EODT personnel at the conclusion of soil processing. EODT will use a hopper and conveyor system to process the scrap. The sorting process will involve the gradual feeding of the oversize material onto a slow moving, waist high conveyor belt which will move the material past the EODT personnel stationed along the conveyor. As the soil proceeds along the conveyor, the EODT personnel will search for, and remove OE related hazardous items and will place them in plastic pails to be destroyed later. The items remaining on the belt will proceed to a roll-on/off container and will be disposed of according to the procedure outlined in paragraph 2.7.1 of this Chapter.

2.6.14 Quality Control Inspections

EODT will utilize QC procedures for controlling and measuring quality of all work performed during site activities. All QC activities will be performed and documented IAW applicable professional and technical standards, USACE requirements, and project goals and objectives. All site activities will be monitored and documented for precision, accuracy and completeness IAW Chapter 8 of this WP.

2.7 PROJECT CLOSE-OUT

During this phase, EODT will remove its operational capability from the area and will reallocate its personnel and equipment to other projects. The SUXOS will closely monitor operational performance throughout the execution of this task order. When a clear projection can be made of the actual completion date, the SUXOS will, with the approval of the CEHNC PM, initiate actions to demobilize personnel and equipment. Demobilization and close-out activities will be performed by EODT's SUXOS, SSHO, and UXO Specialist.

2.7.1 Scrap Turn In

Upon completion of the project, all inert, stockpiled ordnance and ORS greater than one square inch in size will be turned in to 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 the 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 item of a dangerous nature." The DD Form 1348-1 will be signed by the SUXOS and all turn-in documentation included in the Removal Report.

2.7.2 Break Down Site

This paragraph and Chapter 7 of this WP will be followed in the break down of the site. All temporary facilities will be removed and the site returned, as nearly as feasible, to its original condition. All holes and excavations will be filled in, graded and re-seeded with indigenous grasses.

2.7.3 Removal of the Workforce

EODT will demobilize site personnel as activities are completed and a workforce reduction is warranted. The decision to reduce personnel will be based on operational requirements and will be submitted to CEHNC for review and approval.

2.7.4 Close Out Accounts

Following the completion of operations, EODT's SUXOS will take action to close all accounts with local vendors and suppliers. Final billing for these accounts will be forwarded to the EODT Knoxville office for payment. In the event that CEHNC has other activities scheduled at the SEDA,

Figure 2-1. Project Organization and Chain of Command

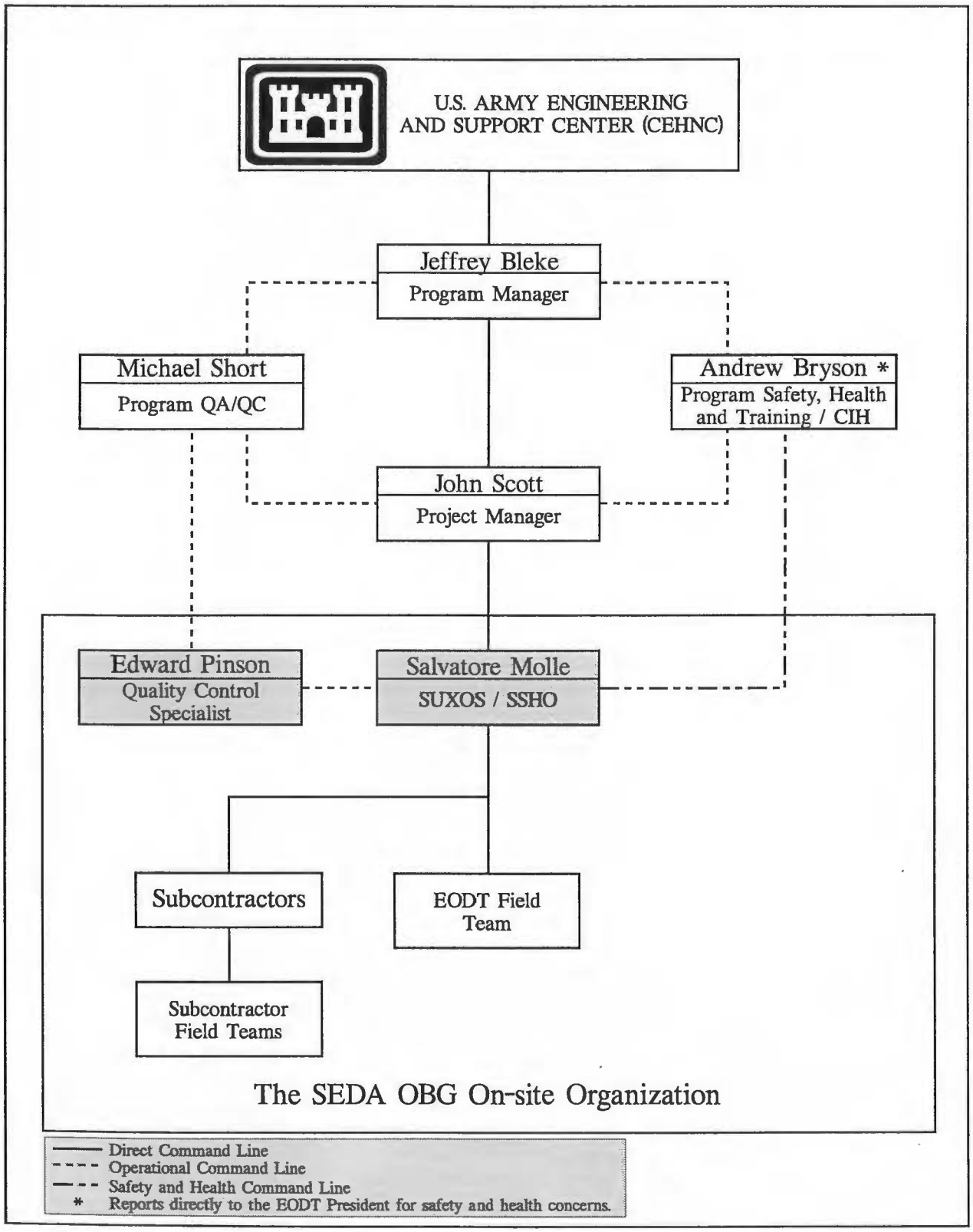
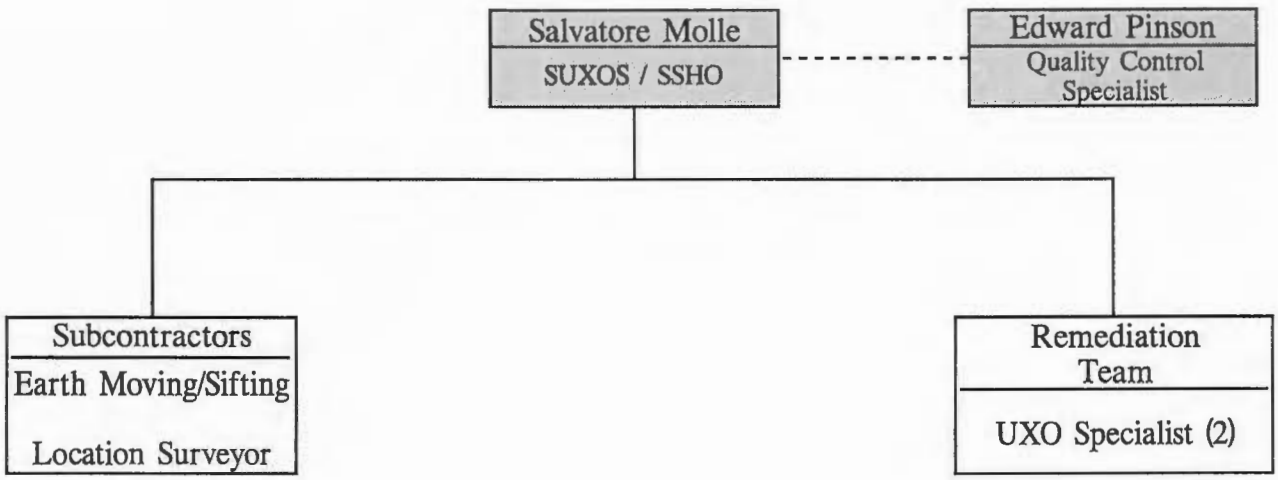


Figure 2-2. The SEDA Open Burning Grounds On-site Organization



Command Line
tional Command Line

CHAPTER 4: GEOPHYSICAL EQUIPMENT PLAN

4.0 GENERAL

This Geophysical Equipment Plan presents information related to the type of geophysical detection equipment which EODT will use to conduct this OERA. The geophysical equipment presented below was selected based upon the type of OE anticipated and the depth of the clearance, as specified in the SOW.

4.1 SENSORS

For the performance of all OE detection operations conducted under the SOW for this project, EODT will use the Schonstedt 52 CX Magnetometer. This ferrous metal detector utilizes a Flux-gate magnetic field sensor with a nominal sensor spacing of 20 inches. The sensor is coupled to an audio detection signal that increases in frequency and volume as the signal strength increases and peaks over both ends of a horizontal target. The 52 CX sensor is housed in a sealed metal sensor head that can be used to detect ferrous anomalies in shallow water to depths of approximately 2.5 feet. The 52 CX is capable of easily detecting a MK2 hand grenade and a M31 rifle grenade at the depths specified in the SOW and outlined in paragraph 8.3.4 of this WP.

4.2 SENSOR MOBILITY

The 52 CX is a man-portable, hand-held ferrous metal detector. It weighs approximately 2.5 pounds and has an overall length of approximately 42 inches. When conducting a grid search, personnel hold the magnetometer in front of the body with the sensor end held approximately three to six inches from the ground. As the personnel proceed along the search lane, the magnetometer is swung from side to side in a sweeping motion allowing the operator to search a lane approximately five feet wide. During the search, both the forward movement of the operator and the swing of the magnetometer are maintained at a pace that ensures that the entire lane is searched and that the instrument is able to appropriately respond to subsurface anomalies.

4.3 DATA STORAGE

The 52 CX has no on-board data storage capability, and is typically not used for applications requiring the precise mapping of anomaly locations. IAW the SOW for this project, and since the objective of this project is OE removal and not the geophysical mapping of anomalies, the storage of signal or positional data is not necessary.

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minutes and seconds. Grid lines and tic marks at systematic intervals with their grid values shown on the edges of the map;

d) contain a legend showing the standard USGS map symbols used. A map index showing the site in relationship to any other sites within the limits of the project area shall be shown; and

e) show the location of each UXO item found during clearance operations to an accuracy of plus or minus one foot. Each location will be shown as an individual DOT or "X" on the grid map.

6.4 RECORDING AND TURN-IN OF DOCUMENTATION

All items will be bound, and clearly marked and identified as specified below. Data recorded in the field will be in accordance with standard survey practice. The original copies of all field books, layout sheets, computation sheets, abstracts and computer printouts will be suitably bound and clearly marked and identified. EODT will provide copies of design files consisting of planimetric maps on 3 ½ inch HD disks or approved CD Rom format. The disks will be labeled showing the project name, project number, date, company name, address, telephone number and the number of files.

6.5 SITE LAYOUT

All grids will be comprised of a parcel of land approximately 200' x 200'. The corners of each operating grid will be marked with wooden stakes painted with a high visibility orange paint. (Line deleted)

6.6 MAP REQUEST

Planimetric and digital orthophotography maps have been requested from CEHNC.

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- If sensitive resources are identified within an excavation/demolition site, extra care will be taken to minimize both time spent in the area and the amount of clearing activity.
- Unless directed to do otherwise, areas that receive brush clearing treatment will be allowed to grow back naturally after field survey activities are complete.
- Anomaly excavation areas will be backfilled, graded and re-seeded with indigenous grasses, and proper drainage patterns will be maintained.

7.4 ENDANGERED OR PROTECTED SPECIES AND NATURAL RESOURCES

According to information presented to EODT by the CEHNC during the site visit, there are no endangered or protected resources physically present on the OBG site. Figures 7-1 and 7-2, respectively, depict the significant natural resources within two miles, and within a half mile of the OBG. All on-site operations shall be planned and executed so as to not disturb or endanger any off-site natural resources.

Additionally, information provided to EODT by the SEDA BRAC Environmental Coordinator, indicates that a total of five rare wildlife species (three plant and two birds) are known to occur at the SEDA facility. The rare species of concern are the large-leaf aster, northern reedgrass, rough avens (plants), the osprey and the norther harrier (birds). However, according to the information presented by the CEHNC at the site visit, there are no rare, endangered or protected wildlife species physically residing in the OBG. Should any endangered or protected species or resources be identified during site operations, EODT will follow the mitigation procedures presented in paragraph 7.3.3 and the procedures outlined in the following paragraphs, to eliminate or minimize the potential for harming the identified species or resources.

7.4.1 Vegetation Removal

The OE remedial actions planned for this project require the clearing of vegetation, including perennial species three inches in diameter or smaller. According to the SOW, there are no environmental restrictions to vegetation clearing. However, if any trees larger than three inches in diameter are determined to impede remedial actions, and thereby require removal, authorization will be obtained from the CO/COR prior to removal.

7.4.2 Protection of Endangered/Protected Plant Species (Flora)

As stated previously, no endangered or protected plant species have been identified at the OBG. However, if endangered or protected plant species are later identified during site activities, EODT shall locate and flag-off the areas containing endangered or protected plant species and immediately notify the CEHNC prior to any further activities in the flagged area. Under no circumstances, will any intrusive activities be conducted without the prior approval of the CEHNC. All site personnel

7.5 WETLANDS

While wet areas are located on the site, these areas are not identified as wetlands by the New York State Department of Environmental Conservation (NYSDEC) since the areas are less than 12 acres. However, the US EPA does consider these wet areas as potential wetlands. Therefore, during OE removal activities in wet areas on site, EODT personnel will to the greatest extent possible minimize the effects of site operations on these wetland areas. Remediation of the wetland areas will be accomplished as part of the overall site remediation that will follow the removal of the OE. While not on site, Reeder Creek, which runs along the outer boundary of the 90-acre Munitions Destruction Area, will require protection from site operations. As such, the procedures presented in this Section to control run-off and dust migration will be followed.

7.6 TREES AND SHRUBS

7.6.1 General Requirements

EODT shall take all actions necessary to protect and prevent damage to all trees, shrubs and vegetation not identified for removal. No ropes, cables or guy wires shall be fastened to or attached to any protected trees for anchorages. Additionally, EODT shall take precautions if required to operate heavy machinery or EMM around any trees, shrubs or vegetation not identified for removal.

7.6.2 Tree Protective Structures

Where, in the opinion of the CO/COR, trees may be defaced, bruised, injured, or otherwise damaged by site equipment or operations, the CO/COR may require protection of such trees or shrubs. Protective measures may include the placement of boards, planks, poles or fencing around the tree(s) or shrub(s) to be protected.

7.6.3 Restoration of Damaged Trees

Any tree not identified for removal that is scarred or damaged shall be reported to the CO/COR. Upon written direction of the CO/COR, the damaged tree shall be restored as nearly as possible to its original condition. All scars made on trees not designated for removal will, as soon as possible, be coated with an approved tree wound dressing, if applicable.

7.6.4 Tree and Shrub Clearing Practices

Mechanical vegetation clearing will be conducted in areas where no sensitive tree or shrub species are known to exist. In areas of sensitive tree/shrub species, selective pruning operations may be allowed and will be coordinated through and approved by the CO/COR. Non-sensitive shrubs and trees less than three inches in diameter may be trimmed to the ground as necessary to conduct mapping, surveying and geophysical investigation and removal of anomalies. Pruning or removal of trees greater than three inches in diameter will be coordinated with and approved by the CO/COR.

During vegetation clearing, disposal of discarded plant material will be conducted IAW guidelines specified by the CO/COR.

7.7 WATER RESOURCES

7.7.1 General Requirements

EODT shall control the transfer, use and disposal of fuels, oils and other hazardous materials both on and off the site, and shall comply with applicable local laws and regulations concerning pollution of air, water and soils. Special measures shall be taken to prevent sediment chemicals, fuels, oils or other harmful materials from entering the ground waters.

7.7.2 Control of Water Used On-site

All on-site activities will be conducted in a manner so as to prevent the discharge of any known pollutants into adjacent wetlands and waterways. Toilet facilities will consist of both fixed indoor and portable chemical. The portable wastes will be collected on a weekly basis and disposed of off-site.

7.7.3 Run-on Controls

EODT shall take all reasonable precautions to prevent run-on from entering areas of the site where the water may be exposed to contaminated soils, water or waste. Such precautions may include grading, temporary dikes, sandbags or other actions. These control measures will be monitored and maintained as long as the need exists.

7.7.4 Run-off Controls

Appropriate controls shall be put in place to prevent or minimize rainfall from contact with hazardous or special wastes/materials stored on site. This would include activities such as covering piles of excavated material with plastic coverings, and securing the cover. Where practical, excavated areas shall be diked and covered to prevent rainfall and run-off from migrating off site. In those areas where run-off may contain significant levels of contamination, such run-off shall be contained and collected to prevent its migration from the site. This run-off shall be documented to be non-hazardous or it shall be treated and/or properly disposed of.

7.7.5 Sediment Controls

Sediment which may or may not contain significant levels of contamination shall also be contained to prevent its migrating off site. Disturbances to loose sediment will be limited during surveys and OE investigation and removal activities. Due to the nature of the site and the level of excavation anticipated, it is not anticipated that soil erosion, and therefore sediment control, will present any significant problems. If needed, fabric silt fences, diversion dikes and ditches will be installed to

adequately control erosion problems and control sediment migration. All erosion and sediment control measures will be properly maintained throughout the duration of the project, as needed, and areas of bare soil exposed at any given time during excavation will be kept to a minimum to minimize erosion potential.

7.8 WASTE DISPOSAL

7.8.1 Uncontaminated Waste

Uncontaminated solid wastes, such as trash and general debris, shall be placed in designated trash receptacles and shall be removed from the site and disposed of at a facility authorized by applicable local laws and regulations to receive such waste. No wastes are to be burned, buried or otherwise left on site without the written approval of the CO/COR.

7.8.2 Contaminated Waste

Potentially contaminated hazardous waste consists of a wide variety of materials which may originate on site as a result of on-site activities. Examples may include excavated soil and solid and liquid wastes. Waste water management will be controlled through run-on/off measures. Water and other solutions used for decontamination will be disposed of by placing the water in approved DOT drums. Contaminated wastes will be packaged, handled and labeled IAW applicable Federal and local regulations. Manifesting, transportation and disposal of contaminated wastes will be conducted IAW 40 CFR 262 Subpart B and applicable regulations, as directed by the CO/COR.

7.9 OPEN BURNING AND DUST CONTROL

7.9.1 Open Burning

Except for OB/OD activities conducted as required for OE disposal, materials shall not be burned on site without the written authorization of the CO/COR. In the event that on-site burning is conducted, EODT shall obtain any permits required by applicable local regulations.

7.9.2 Dust Control

EODT shall maintain all excavations, embankments, stockpiles, access roads, staging sites, waste areas and all work areas free from excess dust to such a reasonable degree as to avoid causing a hazard or nuisance. Due to the presence of lead and other contaminants in the soils to be excavated and sifted, and the potential for on-site personnel exposure to dust created by site operations, EODT will be conducting real-time, direct reading dust monitoring in the work zone and personnel breathing zones, as specified in the SSHP. To avoid the potential for on-site personnel exposure to hazardous dust levels, EODT will, as necessary, utilize dust control techniques, such as sprinkling dusty soils with water, treatment of the soils with chemical suppressants, or similar methods. It is anticipated that the dust suppression techniques and monitoring used to protect site personnel will

also prevent the excessive migration of dusts from the site. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs. The dust generating activities anticipated at the OBG are vehicular traffic, soil excavation, sifting and stockpiling, and demolition operations.

7.10 SPILL AND EMERGENCY CONTROL PLAN

7.10.1 Spill Potential

Due to the nature of site activities, the potential for a spill of hazardous materials is minimal and will be limited to the potential for spillage of small quantities of fuels and oils. EODT shall take all necessary precautions to prevent spills and provide contingency measures for the cleanup of potential spills during performance of this SOW. (See Appendix A, Section 14, for a more detailed discussion of spill control and clean-up procedures.) To minimize the potential for spillage and to minimize the impact of spilled materials, EODT shall:

- As part of the SSHP for this project, EODT will submit Spill Response procedures to the CO/COR for review and approval;
- Use and store on site minimal quantities of fuels and oils;
- Utilize work practice controls to prevent spills during refueling and maintenance operations involving power tools, site vehicles and equipment;
- provide all spill response supplies and equipment necessary to contain spilled materials and to remove and contain materials that become contaminated due to spillage; and
- develop and implement decontamination procedures which may be necessary for the removal and clean-up of spilled materials.

7.10.2 Decontamination and Disposal

It is anticipated that EODT personnel or equipment will require a minimal amount of decontamination during the daily conduct of site operations. Decontamination solutions used for personal decontamination will be containerized at the end of each work day. Decontamination of site equipment and vehicles will occur prior to the equipment/vehicles leaving the exclusion zone established at the OBG, and involve the use of plain water to remove visible soils and dirt. Decontamination water from this operation will be collected and containerized.

In the event of a spill which causes contamination of site equipment, EODT shall decontaminate all equipment that has been exposed to contaminated material. This decontamination-derived waste shall be contained, and labeled IAW applicable regulations. This waste will be disposed of according to the direction of the CO/COR.

7.12 CONSIDERATION OF WIND DIRECTION

Prior to the initiation of site activities, EODT shall ascertain the prevalent wind direction and will plan the site layout so as to locate, to the best extent possible, support zones, access lanes and assembly points in a location upwind from the site. Consideration of prevalent wind direction shall also be taken when planning the location of assembly points to be used in the event of emergencies. In the event that wind direction changes significantly, the EODT SSHO will inform all site personnel of the adjusted locations of the assembly points. Prior to on-site demolition operations, the wind direction will be ascertained and demolition personnel will stage the operations from an upwind, protected position. In addition, the SSHO will contact the National Weather Service on a daily basis to determine prevailing winds and temperatures. These factors will be considered in planning the day's operations and personnel will be informed accordingly.

7.13 REDUCTION OF VAPORS, GASSES OR DUST EMISSIONS

EODT designs and plans its work methodically to minimize vapors, gasses and dust emissions. No vapors or gaseous emissions are anticipated under this SOW from excavation or demolition activities. Any vapors created from fuel transfer will be negligible and dust emissions will be controlled IAW paragraph 7.9.2 of this WP.

7.14 POST-REMEDIATION CLEANUP

7.14.1 General Requirements

Except for any work or storage areas and access routes specifically assigned to EODT under this SOW, the land areas outside the limits of the permanent work under this contract shall be preserved in their existing condition. EODT shall confine their site activities to areas defined by the CEHNC or specifically assigned for their use. Storage and related areas and access routes required temporarily in performance of the work will be approved by the CO/COR. No other areas shall be used by EODT without the consent of the CO/COR. Upon conclusion of on-site remediation activities, and subject to instructions by the CO/COR, EODT shall remove all work-related equipment and materials, and shall, unless directed otherwise, remove all evidence of removal or remediation activities. EODT's goal is to leave the area in better condition than we found it.

7.14.2 Temporary Facilities

EODT shall, unless otherwise directed in writing by the CO/COR, remove all signs of temporary facilities such as haul roads, work areas, temporary structures, foundations for temporary structures, stockpiles of excess or waste materials and other vestiges of site operations prior to final acceptance of the work by the CEHNC. Again, EODT's goal is to leave the area in better condition than we found it.

7.14.3 Disturbed Areas

All access/excavation and detonation holes shall, to the greatest extent feasible, be returned to their previous state. Grading and replanting/reseeding is required by CEHNC, and native species will be utilized. Replanting/reseeding may also be conducted to control erosion and soil/sediment run-off.

7.14.4 Post-excavation Cleanup

Upon project completion, and as required in the SOW, EODT will regrade and reseed disturbed sites as necessary, in an effort to restore the area to near original condition. To the extent feasible, EODT shall attempt to remove all evidence of EODT's remediation effort.

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8.1.5 Comparability

Comparability expresses the confidence with which one data set can be compared to another.

8.2 QUALITY PROGRAM MANAGEMENT STRUCTURE

The following section describes the structure of the quality management team for EODT's operations at the OBG. Personnel were selected based on previous experience and their familiarity with the EODT quality assurance (QA)/QC system.

8.2.1 QC Manager

Mr. M. E. Short is the EODT QC Manager (QCM) and has the ultimate responsibility for the EODT QP. Mr. Short reports directly to Mr. James Burger, the President of EODT. The responsibilities of the QCM include:

- Preparation of all QC policies and procedures;
- Establishing guidelines to assist in the development of program, project, site and task specific QC policies and procedures;
- Reporting regularly to the President of EODT on the adequacy, status and effectiveness of the QC program;
- Conducting periodic field audits of the programs, projects and sites and submitting a report of findings to the President with courtesy copies to the SUXOS and EODT's PM; and
- Training site QCS's in the performance of their duties.

8.2.2 Site QC Specialist

The EODT site QCS is Edward Pinson, and he will have the responsibility and authority to enforce the EODT and site specific QC plans and procedures. His responsibilities include:

- Coordinating with the CEHNC QA representative to ensure that QC objectives appropriate to the project are set and all personnel are aware of these objectives;
- Coordinating with the EODT QCM to ensure that QC procedures are being followed and are appropriate for achieving QC objectives;
- Conducting daily QC audits of all site activities and recording the results from these inspections in the QC activity log;
- Conducting inspections of all ORS placed in the roll on/off to ensure there are no explosive components;
- Recommending and implementing actions to be taken in the event of a QC deviation; and
- Reporting noncompliance with QC criteria to the EODT QC Manager and PM.

8.3 CRITICAL ISSUES/ACTIVITIES

EODT has identified the issues/activities listed below as being critical to the delivery of a quality product. The paragraphs following this paragraph describe the QC criteria that EODT will apply to these critical issues/activities and the methods EODT will use to monitor quality. The critical issues are:

- Employee qualifications;
- Employee training;
- Compliance with plans (e.g., safety, UXO operations, environmental, cost management);
- Availability of publications;
- Testing and calibration of equipment;
- Maintenance and accuracy of reports and records; and
- Deliverable accuracy and timeliness.

8.3.1 Employee Qualifications

Prior to the employee's initial assignment or any change in duties/assignment, the QCM will physically review the employee's licenses, training records and certificates to ensure that the employee is qualified to perform the duties to which they are being assigned. The SUXOS will maintain personnel files on each employee, to include copies of licenses, training records and certificates of qualifications that support the employee's placement and position.

8.3.2 Training

Employee training is an integral part of producing high quality products. EODT conducts site-specific employee training prior to the start of operations and supplements this initial training, as necessary, throughout the remainder of the project. Training is conducted by the SSHO, SUXOS and QCS, and records of attendance are generated and maintained. At a minimum, EODT personnel receive the following types of training, as required by the specific tasks to which they are assigned:

- **OSHA**: Current certification IAW 29 CFR 1910-120(e)(f);
- **Safety**: Review of the SSHP with specific emphasis on the hazards known to exist on site, and those hazards that may be generated by site operations;
- **Equipment Operators Training**: Tailored to the experience level of the operator and objectives of the project;
- **Daily Safety Training**: Tailgate briefings outlining the day's activities, unique hazards and safety precautions, and other operational issues related to the project;
- **Weekly Safety Meetings**: On the first workday of each week, a topic will be selected and elaborated on at the tailgate briefings; and
- **Visitor Training**: All site visitors shall receive general and site specific training as a portion of their in-briefing.

response check is performed, a standard indication will be obtained and recorded, which will then be used to gauge the future responsiveness of the instrument. The purpose of this test/calibration is to ensure that the instruments are operating properly and to appropriately adjust the sensitivity level of the instruments. The QCS will monitor the test and complete the Magnetometer Response Check Log (see Appendix E for an example of this form) and any instruments that do not meet the standard during the daily check will be re-calibrated, repaired or replaced.

- Sound level meter: The sound level meter will be calibrated, prior to use, IAW the manufacturer's recommendations and procedures.
- Galvanometer: Prior to demolition operations, the galvanometer will be checked by placing a metal object across the two terminal posts and observing the LED readout, which should indicate the number "1". Any other reading may indicate a defective instrument, at which time the manufacturer's suggested checks will be followed. If there is no reading, the battery must be replaced, after which the continuity check will be repeated.
- Blasting machine: Prior to demolition operations, the blasting machine is checked IAW the manufacturer's suggested sequence.
- Real-time dust monitors: Prior to use each day, the real-time dust monitor will be zeroed and response checked according to the manufacturer's specified procedures.
- Personal sampling pumps: Personal sampling pumps used for the collection of breathing zone (BZ) samples will be pre-calibrated prior to use, and post-calibrated after use. The pre-calibration will be conducted to set the air sampling flow rate and the post-calibration will be conducted to determine the air sampling flow rate at the end of the sampling period. Any pump that does not post-calibrate to within 25% of the pre-calibration flow rate will be removed from service.

All equipment used at the OBG will be dedicated solely to the project until the project is completed, or until it is no longer needed. If equipment field checks indicate that any piece of equipment is not operating correctly, and field repair cannot be made, the equipment will be tagged and removed from service. The EODT SUXOS will be notified and a request for replacement equipment will be placed immediately. Replacement equipment will meet the same specifications for accuracy and precision as the equipment removed from service.

8.3.5 Maintenance Program

1) Preventive Maintenance: The assigned operator of each piece of equipment will perform scheduled, and when necessary, unscheduled, preventative maintenance to ensure the equipment is maintained in a satisfactory operating condition. Preventive maintenance consists of before,

during and after operational checks and documentation of these activities, either in the operators log book or in the team leader's field log book.

2) Routine Repair and Adjustment: Routine repair and adjustment is based on the manufacturer's schedule for adjustment, calibration or replacement. All equipment used on site will be maintained and submitted for routine repair and adjustment IAW the manufacturer's specifications.
3) Emergency Repair: Emergency repair includes any unscheduled repair. This type of repair will be conducted using manufacturer required replacement parts and procedures to ensure the continued integrity of the equipment.
4) Included Equipment: Equipment included in the maintenance program will be checked as follows:
   A) Magnetometers: Before-operation checks shall include battery insertion, the location of a rifle grenade (or similar object) at a depth of two feet and a hand grenade (or similar object) at a depth of one foot, with the check being conducted as prescribed by the manufacturer and this chapter. During-operation checks shall include frequent checks to ensure the sensitivity level is on the designated setting. In addition, the operator will check the batteries at breaks. After-operation checks shall include battery removal and cleaning.
   B) Radios/Cellular Phones: Before-operation checks shall include verification of a complete battery charge and a communications check to ensure the unit is operating properly. During-operation checks shall include periodic checks to ensure battery charge remains adequate and a communications check once an hour for the radios and once a day for the cellular phones. After-operation maintenance shall include a communications check, cleaning, turning off and placing in battery charger.
   C) Vehicles/EMM: Before-operation checks shall include an operator general inspection of the entire unit to include fluid levels, safety equipment operation and tire condition. During-operation shall include frequent checks of the dials and gauges and a tire check at breaks. After-operation checks shall include topping off of any fluids which are low, a general cleaning and a recheck of all safety related equipment.
   D) Monitoring and Sampling Equipment: Before-operation checks shall include calibration IAW manufacturers guidance, and, if applicable, a battery charge check. During-operation use will include frequent checks to ensure unit is operating properly and the battery charge is sufficient. After-operation checks shall include a general cleaning, turning off the unit and placing in a battery charger if applicable.
   E) Demolition Equipment: Before-operation checks shall include a check of all batteries in the blasting machines and galvanometers. Some blasting machines do not contain batteries, so a check will be made to ensure they operate properly. During-operation checks shall include

an inspection of the terminals and condition of the units. After-operation checks shall include a general cleaning and battery removal if applicable.

F) Government Furnished Property (GFP)/CAP: Upon receipt, an examination will be conducted to ensure completeness and operational condition. Periodic inspections will be conducted to ensure adequate storage and to guard against damage or theft. Function testing to determine satisfactory operation will be conducted by the assigned operator/user. The property will be maintained IAW FAR Subpart 45.5.

8.3.6 Logs and Records

For all site work, bound log books with consecutively numbered pages will be used by field personnel. The field log books will be used to record the daily activities of the field team, provide sketch maps and locations of UXOs and other pertinent items, and to note any observations which might affect the quality of data. The field log books and site records will be utilized to record the data discussed below:

1) **Daily Journal**: The SUXOS will maintain the daily journal. This journal will provide a summary of all operations conducted to include information on weather conditions, problem areas, work plan modifications, injuries, start/stop times, tailgate safety briefs, equipment discrepancies, UXO/OE located, training conducted, visitors, and any additional items deemed appropriate.
2) **Field Log Books**: The UXO supervisors will maintain field log books. These log books will be maintained in a neat and legible manner and will provide an historic record of the team's site activities. These log books will include the respective team's daily activities, to include start/stop times.
3) **OE Accountability Log**: The UXO supervisors will prepare individual records for each operating grid at the OBG. The records will consist of a series of sheets that will be used to record data on OE items encountered. Each OE item will be given a unique identifying number to differentiate it from the others. For example, the third OE item encountered in grid A-1 would be A-1-3. These sheets will be consolidated in one log.
4) **Safety Log Book**: The SSHO will maintain this log. The log will be used to record all safety related matters associated with the specific project such as: safety briefings/meetings, including items covered and attendees; safety audits; near-misses/accidents/incidents. It will include cause and corrective action taken; weather conditions; and any other matters encompassing safety.
5) **Training Records**: The SUXOS will maintain training records for all site personnel. These records will contain training certificates, licenses and other qualifying data for an individual's duty position.

6) **Quality Control Log**: The QCS will maintain this log and will record the performance and results of QC checks and audits, as well as calibrations.
7) **Visitors Log Book**: The SUXOS will maintain this log for all personnel that are not directly involved in the project site activities. This log will identify visitors by name, company, date, time in/out and a contact phone number.
8) **Photographic Log**: The SUXOS will maintain a photographic log to record all video recording and photographs taken to document work and/or site conditions. Photographs and video tapes will be marked with a unique identifying number relating back to the photographic log, and will be maintained on file until the end of the project. Photographic negatives will be forwarded to the EODT corporate office in Knoxville, Tennessee for safekeeping.
9) **Site Maps**: The SUXOS will maintain in the field office working maps of the operating areas. These maps will be used to document OE findings, task progression and other pertinent activities and locations.
10) **Document Control Log**: The QCS will maintain this log, which will include identifying numbers and the responsible party for all logs and any other documents of importance.

Log books and records will be inspected by the QCS on a weekly basis. These inspections will focus on the completeness, accuracy, and legibility of the entries and records. Results of these inspections will be forwarded to the SUXOS. The log keeper's immediate supervisor will review and initial in the log book concurrence with the log book's entries on a daily basis.

Note

The log books are utilized to formulate the final report and serve as an "Official Document" in the event of any problem area addressed after the completion of the project. All log books will be maintained on file for a period of seven years after project completion.

8.4 ORDNANCE VERIFICATION, ACCOUNTABILITY AND CONTROL

All OE items located will be positively identified by a qualified UXO specialist and the SUXOS. The specialist and SUXOS will also identify the condition of the item (i.e., misfire, unfired, dud) and associated hazards [high explosives (HE), fragmentation, white phosphorus (W.P.), ejection, chemical, etc.]. The identification, condition, and associated hazards of all items will be verified by the SSHO, and the SUXOS will be responsible for maintaining the Ordnance Accountability Log, and the traceability of all ordnance items located. If the item cannot be moved, the SUXOS and the CEHNC SREP will determine an appropriate course of action IAW the WP and SSHP, which will then be recorded by the SSHO or SUXOS.

8.7.3 Scheduled Audits

Depending upon the nature and duration of the project, audits may be conducted periodically by the EODT QCM. This audit will include a surface and subsurface check of an additional 10% of the work completed. The EODT QCM, assisted by the QCS, will proceed on a pre-determined 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 is 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.

8.7.4 Pass/Fail Criteria

The pass/fail criteria for the final clearance of a site is set by the CEHNC. This criteria specifies that a grid will be failed if one UXO item is found during a QC or QA audit conducted by either EODT or CEHNC personnel. If this occurs, the entire grid will be failed and must be re-surveyed 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 CO/COR, EODT QCM, PM and SUXOS.

8.7.5 Ordnance Related Scrap Inspections

When ORS is located on site, it is inspected by at least two UXO technicians prior to being removed from the grid. Whenever ORS is to be placed in the roll on/off container, the QCS and SSHO will conduct a third and fourth inspection for the presence of explosive components or 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 presented to the PM, i.e., reprimand or dismissal of the two previous inspectors.

8.8 NON-CONFORMANCE/CORRECTIVE ACTION

Any non-conformance to contractual requirements will be documented and reported. Non-conformance includes:

- Delivery of items or services by EODT that do not meet the contractual requirements;
- Errors made in following work instructions or improper work instructions;
- Unforeseeable or unplanned circumstances that result in items or services that do not meet quality/contractual/technical requirements;
- Technical modifications to the project by individuals that do not have the responsibility and authority; and
- Errors in craftsmanship and trade skills.

CHAPTER 9: WORK DATA COST MANAGEMENT PLAN

9.0 GENERAL

The purpose of this Work Data and Cost Management Plan (WDCMP) is to ensure the effective management of allocated funds and manpower. All work will be accomplished in order of precedence set forth in Task Order 0003. This plan describes: the organizational structure EODT will use to manage the project; the sequence in which operations will be performed; and the projected cost by operational milestone.

9.1 PROJECT ORGANIZATION

EODT has evaluated the work requirements for this Delivery Order and has developed a comprehensive approach for meeting its objectives. The planned approach provides a phased structure for performance of the work, which results in maximized project performance. The goals and objectives of each operational task and its specific manpower requirements are identified in Chapter 2 of this WP.

9.1.1 Project Management

Effective management is an essential element in the delivery of a quality product and EODT is committed to providing a management structure that meets this goal and is tailored to the operational requirements of the project. Figures 2-1 and 2-2 depict the overall and on-site management structure that EODT will utilize during the execution of the various tasks associated with this project. This structure provides an appropriate level of management, safety, and quality oversight for the project, and ensures that work performed will be executed in an efficient, safe, and appropriate manner.

9.1.2 Subcontractors

For all work performed by an EODT subcontractor, EODT will conduct the following: issue a subcontract which specifies the services that will be provided; audit subcontractor performance to ensure that these services are provided IAW this WP and the subcontract; and review all invoices to ensure that they accurately reflect the services rendered. In the event of a disagreement between EODT and the subcontractor, EODT will resolve these differences/discrepancies prior to submitting either the subcontractor's work or invoices, to CEHNC.

EODT will maintain overall supervisory responsibility for all on-site operations. Subcontractors will work under the direction of the EODT SUXOS and will be audited and monitored by the EODT SSHO and QCS. All operational activities will be scheduled by the SUXOS and a strict accounting will be made of actions performed and activities completed. Throughout their operations,

TABLE 9-3: LABOR REQUIREMENTS AND COST

TASK 2: COMMUNITY RELATIONS				
Labor Category	Personnel Per Category	Hours Per Person	Hourly Rate	Cost By Category
Project Manager	1	92	$69.17	$6,363.64
SUXOS	1	8	$53.50	$428.00
TASK 2 TOTALS	**2**	**100**	**NA**	**$6,791.64**
TASK 3: LOCATION SURVEYING AND MAPPING				
Labor Category	Personnel Per Category	Hours Per Person	Hourly Rate	Cost By Category
SUXOS	1	3	$53.50	$160.50
SSHO	1	3	$44.19	$132.57
UXO Specialist	1	30	$39.53	$1,185.90
Drafter/Mapping Technician	1	15	$43.02	$645.30
TASK 3 TOTALS	**4**	**51**	**NA**	**$2,124.27**
TASK 4: OE REMOVAL				
Labor Category	Personnel Per Category	Hours Per Person	Hourly Rate	Cost By Category
Project Manager	1	112	$76.90	$8,612.80
SUXOS	1	439	$58.85	$25,835.15
SSHO	1	503	$48.61	$24,450.83
UXO Specialist	2	325	$43.48	$28,262.00
Certified Industrial Hygienist	1	14	$71.64	$1,002.96
Program Administrator	1	14	$32.92	$460.88
Word Processor	1	28	$29.58	$828.24
Program Manager	1	14	$92.17	$1,290.38
TASK 4 TOTALS	**9**	**1,774**	**NA**	**$90,743.24**
TASK 5: SCRAP TURN-IN				
Labor Category	Personnel Per Category	Hours Per Person	Hourly Rate	Cost By Category
SUXOS	1	14	$53.50	$749.00
UXO Specialist	1	14	$39.53	$553.42
TASK 5 TOTALS	**2**	**28**	**NA**	**$1,302.42**

TABLE 9-3: LABOR REQUIREMENTS AND COST (continued)

TASK 6: QUALITY CONTROL				
Labor Category	Personnel Per Category	Hours Per Person	Hourly Rate	Cost By Category
SUXOS	1	56	$53.50	$2,996.00
Program QA/QC	1	104	$65.13	$6,773.52
TASK 6 TOTALS	**2**	**160**	**NA**	**$9,769.52**
TASK 7: FINAL REPORT				
Labor Category	Personnel Per Category	Hours Per Person	Hourly Rate	Cost By Category
Civil Engineer	1	16	$59.53	$952.48
Project Manager	1	40	$69.17	$2,766.80
SUXOS	1	40	$53.50	$2,140.00
Drafter/Mapping Technician	1	16	$43.02	$688.32
Surveyor	1	16	$44.19	$707.04
Certified Industrial Hygienist	1	16	$65.13	$1,042.08
Environmental Engineer	1	16	$57.83	$925.28
Program QA/QC	1	16	$65.13	$1,042.08
Contract Administrator	1	16	$34.91	$558.56
Program Administrator	1	40	$29.93	$1,197.20
Word Processor	1	40	$26.88	$1,075.20
Program Manager	1	16	$83.79	$1,340.64
TASK 7 TOTALS	**12**	**288**	**NA**	**$14,435.68**

9.4 TASK AND PROJECT COSTS

The total cost for each task is tabulated and presented in Table 9-4 on the next page.

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TABLE 9-4: TASK AND PROJECT COSTS

TASK 2 COMMUNITY RELATIONS (Fixed Price)	AMOUNT
Labor	$6,791.64
Material	$0.00
Travel	$3,252.00
SUBTOTAL	$10,043.64
TASK 3 LOCATION SURVEYING AND MAPPING (Fixed Price)	**AMOUNT**
Labor	$2,124.27
Material	$13,149.71
Travel	$258.00
SUBTOTAL	$15,531.98
TASK 4 OE REMOVAL (Time and Materials)	**AMOUNT**
Labor	$90,743.24
Material	$325,651.88
Travel	$28,642.00
SUBTOTAL	$445,037.12[1]
TASK 5 SCRAP TURN-IN (Fixed Price)	**AMOUNT**
Labor	$1,302.42
Material	$752.50
Travel	$0.00
SUBTOTAL	$2,054.92
TASK 6 QUALITY CONTROL (Fixed Price)	**AMOUNT**
Labor	$9,769.52
Material	$0.00
Travel	$3,544.00
SUBTOTAL	$13,313.52
TASK 7 FINAL REPORT (Fixed Price)	**AMOUNT**
Labor	$14,435.68
Material	$537.50
Travel	$0.00
SUBTOTAL	$14,973.18
PROJECT TOTAL	**$500,863.64**

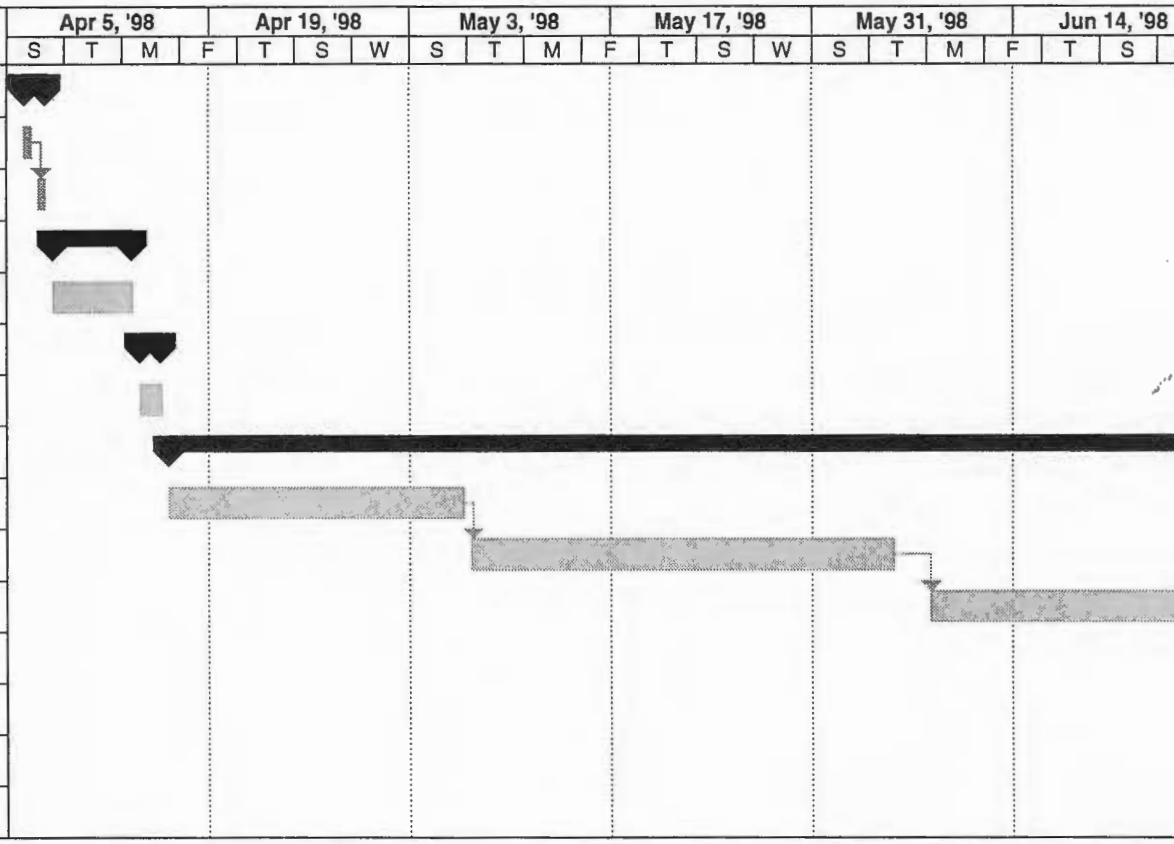
PROJECT CATEGORY TOTALS

CATEGORY	AMOUNT
Labor	**$125,076.05**
Material	**$340,091.59**
Travel	**$35,696.00**
PROJECT TOTAL	**$500,863.64**

[1] Assumes the following: 33,400 cubic yards of soil will be excavated and sifted; 334 cubic yards of oversize materials will require sorting; and no more than 500 items will require destruction.

Figure 9-1: SEDA Open Burning Ground OE Removal Action Time Line

ame	Duration
ation	**20 hrs**
bilization of Main Work Force	10 hrs
e-specific Training	10 hrs
n Surveying and Mapping	**30 hrs**
rvey Grid Locations	30 hrs
tion Clearance	**20 hrs**
move Vegetation	20 hrs
arance	**510 hrs**
g, Flag, Dig & Demo 22.5 Acres	120 hrs
cavate/Sift Berms/low Lying Hill	220 hrs
rt 334 Cubic Yards of Oversize	150 hrs
g, Flag, Dig & Demo 7.5 Acres	20 hrs
out and Demobilization	**10 hrs**
rap/Equipment Turn-in	2 hrs
mobilize Personnel	8 hrs



Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
External Tasks
Project Summary
Split
Rolled Up Split

SITE SAFETY AND HEALTH PLAN APPROVAL

Project: Ordnance and Explosives Removal Action at the Open Burning Grounds

Site: Seneca Army Depot Activity **Site Location:** Romulus, New York

Contract Number: DACA87-97-D-0005 **Task Order:** 0003

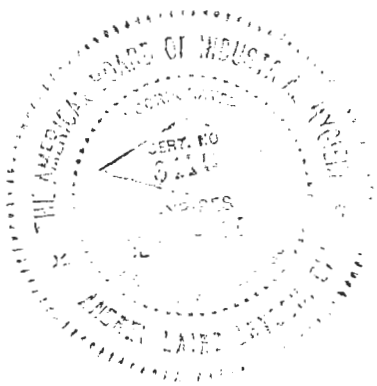
The personnel below have reviewed the attached SSHP for the referenced site, and recognize that upon completion of this form, the attached SSHP will be approved by EODT for application to the assigned tasks for the above referenced project. Changes to this SSHP will be documented in writing, approved by the EODT personnel listed below, and submitted for approval to the CEHNC Contracting Officer prior to the inclusion of the documented changes into this SSHP, and their on-site implementation.

Reviewed by: _____ Date: 4/2/98
for Salvatore Molle
EODT Senior UXO Supervisor

Reviewed by: _____ Date: 4/2/98
FOR John Scott
EODT Project Manager

Reviewed by: _____ Date: 4/2/98
Michael Short
EODT Director of Operations

Prepared and
Approved by: _____ Date: 4/2/98
Andrew Bryson, CIH, MPH
EODT Occupational Safety and Health Manager



LIST OF ACRONYMS AND ABBREVIATIONS

ABIH	American Board of Industrial Hygienist
ACGIH	American Conference of Governmental Industrial Hygienist
ALARA	As Low As Reasonably Achievable
ALS	Advanced Life Support
AR	Army Regulation
BBP	bloodborne pathogens
BIP	blow(n)-in-place
bpm	beats per minute
BRAC	Base Realignment and Closure
BZ	breathing zone
CEHNC	U.S. Army Engineering and Support Center, Huntsville
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CO	Contracting Officer
COC	Chain of Command
CPR	cardiopulmonary resuscitation
CRZ	contamination reduction zone
CSHP	Corporate Safety and Health Program
CTHA	Certification of Task Hazard Assessment
CWM	Chemical Warfare Material
°C	degrees Celsius
DID	Data Item Description
DoD	U.S. Department of Defense
DOT	Department of Transportation
EC	Emergency Coordinator
EM	Engineering Manual
EMM	earth moving machinery
EMT	Emergency Medical Technician
EOD	explosive ordnance disposal
EODT	EOD Technology, Inc.
EPA	Environmental Protection Agency
EPDS	emergency personal decontamination station
ER	Engineering Regulation
EZ	exclusion zone

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

°F	degrees Fahrenheit
FM	Factory Mutual Engineering Corp.
ft	feet
GFCI	ground fault circuit interrupter
HAZCOM	Hazard Communication
HAZWOPER	Hazardous Waste Operations and Emergency Response
HE	high explosive
hr	hour
HR	heart rate
HTRW	hazardous, toxic and radioactive waste
IAW	in accordance with
IDLH	Immediately Dangerous to Life and Health
IHS	industrial hygiene service
LO/TO	Lockout/Tagout
LS&M	location surveying and mapping
mm	millimeter
MSDS	material safety data sheet
MSP	Medical Surveillance Program
NEC	National Electric Code
NESC	National Electrical Safety Code
NIOSH	National Institute of Occupational Safety and Health
OB	open burn
OD	open detonation
OE	ordnance and explosive
OERA	Ordnance and Explosives Removal Action
Line deleted	
OHP	occupational health program
OHS	occupational health services
ORA	Ordnance Removal Action
OSHA	Occupational Safety and Health Administration
OSHM	Occupational Safety and Health Manager
OSIC	On-scene Incident Commander
OT	oral temperature
PDS	personal decontamination station

2. Managing the funding, manpower and equipment necessary to safely conduct site operations;
3. Reviewing and becoming familiar with the SSHP;
4. Furnishing copies of the WP and SSHP to site and subcontractor personnel for their review;
5. Reviewing the USACE SOW and ensuring that the required safety and health elements are addressed in the SSHP;
6. Coordinating the assignment of subcontractor personnel and ensuring that the personnel and equipment provided by the subcontractor meet the requirements of the WP and SSHP;
7. Directly interfacing with, and relaying safety and health concerns related to the conduct of site operations to, the CEHNC Project Manager;
8. Coordinating with the OSHM to ensure compliance with the SSHP and the CSHP; and
9. Conducting training of EODT site personnel.

2.2.3 Occupational Safety and Health Manager

Mr. Andrew Bryson, the EODT OSHM, is an American Board of Industrial Hygienist (ABIH) Certified Industrial Hygienist (CIH) with over seven years of industrial hygiene, safety, and hazardous waste experience, including over four years of experience with sites contaminated with OE. Mr. Bryson has also completed the OSHA 40-hour hazardous waste site worker and the 8-hour supervisor training requirements IAW 29 CFR 1910.120. During the performance of this project, Mr. Bryson will provide occupational safety and health technical support to the SSHO and other project personnel, and will have the following responsibilities:

1. Reporting directly to the EODT President regarding safety and health issues;
2. Developing, approving and sealing the SSHP;
3. Coordinating with the EODT SSHO for field implementation of the SSHP;
4. Maintaining frequent communication with, and providing safety and health consultation to, the PM, SUXOS and SSHO;
5. Evaluating and authorizing any changes to the SSHP in conjunction with the PM, Senior Unexploded Ordnance (UXO) Supervisor (SUXOS) and CEHNC CO;
6. Conducting, or assisting in, the presentation of site, task and hazard specific training;
7. Directly interfacing with, and relaying safety and health concerns related to the conduct of site operations to, the CEHNC PM;
8. Conducting periodic site safety and health audits; and
9. Ensuring site and personnel compliance with the EODT CSHP.

2.2.4 Senior UXO Supervisor

Mr. Salvatore Molle, the project SUXOS, is a master Explosive Ordnance Disposal (EOD) technician and a graduate of the Basic and Advanced Naval EOD School, Indian Head, Maryland. Mr. Molle has over 18 years combined military and civilian EOD experience, with extensive

experience as a SUXOS. He has completed the OSHA 40-hour General Worker and the 8-hour Supervisor training requirements IAW 29 CFR 1910.120. He has also completed the EODT SSHO and Site Manager training course and will be responsible for the on-site management and oversight of all EODT site operations. As the SUXOS, Mr. Molle will have the following responsibilities:

1. Conducting on-site management of the EODT manpower and equipment necessary to safely conduct site operations;
2. Reviewing and becoming familiar with the WP, SSHP and any other documents pertinent to the conduct of site operations;
3. Providing copies of the WP and SSHP to EODT and subcontractor personnel for their review;
4. Reviewing the SOW and ensuring that the required safety and health elements are addressed in the SSHP;
5. Acting as the lead technical consultant for all on-site OE related matters;
6. Scheduling and presenting the operational portion of the daily tailgate safety briefing;
7. Enforcing compliance with the SSHP and WP; and
8. Directly interfacing with, and relaying safety and health concerns to, the on-site CEHNC Safety Representative (SREP).
9. Line deleted.

2.2.5 Site Safety and Health Officer

Mr. Salvatore Molle will also be the SSHO for this project. Due to the size and nature of this project SOW, Mr. Molle will be able to dedicate at least 50% of his time to safety without compromising his SUXOS responsibilities. In this role, Mr. Molle will be responsible for the following:

1. Authorizing STOP WORK for safety and health reasons;
2. Completing personnel data sheets on all EODT site personnel;
3. Assisting in the development of the SSHP;
4. Implementing and enforcing the requirements and procedures outlined in the SSHP;
5. Conducting daily tailgate safety briefings;
6. Conducting, or assisting in, the training of site personnel in site-specific hazards and ensuring completion of the EODT documentation of training form;
7. Specifying proper levels of PPE IAW the requirements of this SSHP;
8. Consulting with the EODT OSHM prior to downgrading levels of PPE;
9. Developing additional safety and health procedures, as required;

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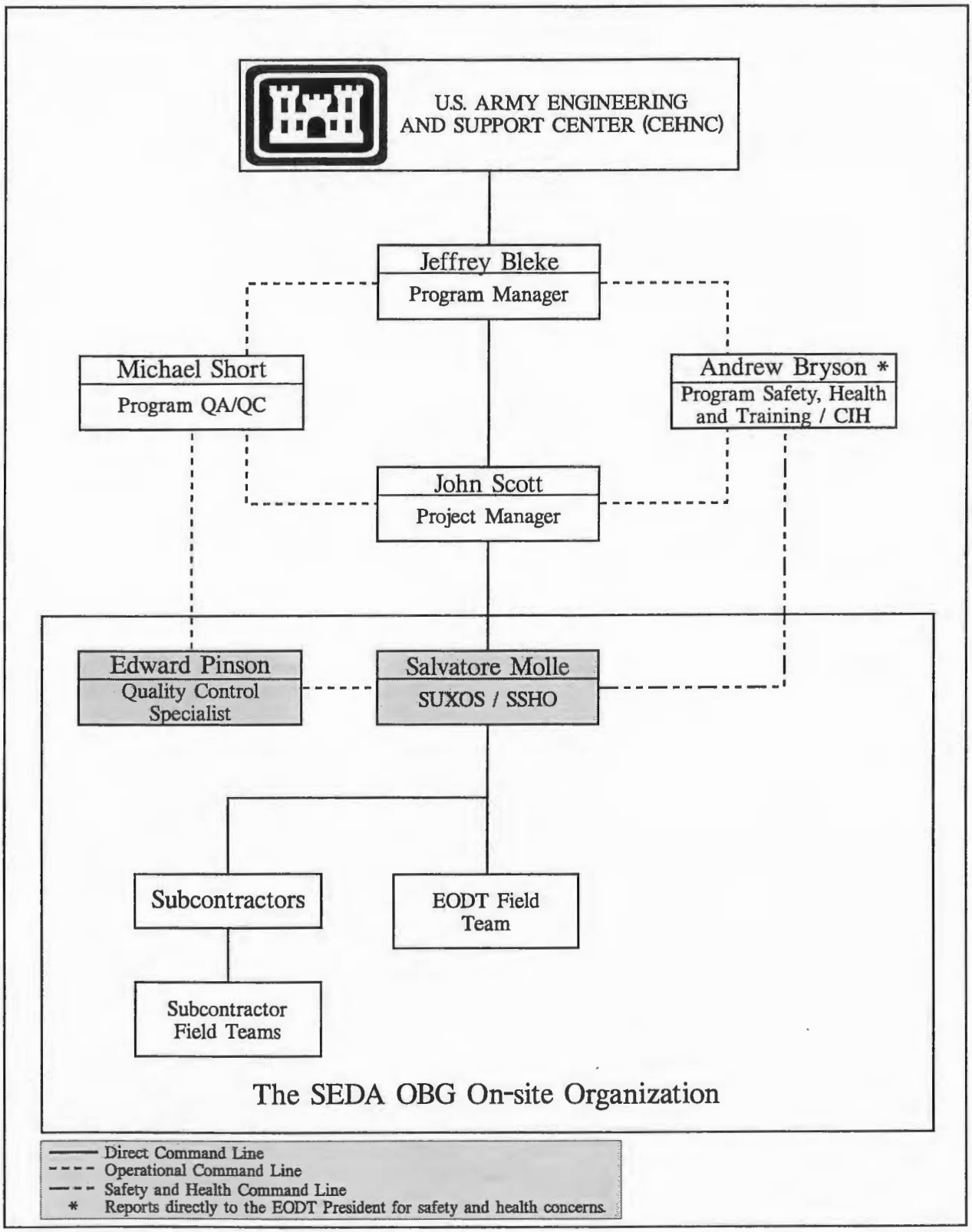
Figure 2-1. Safety and Health Organizational Chain of Command



seasonally wet nature of the local soils, the individual burn pads were subsequently built up with shale and other fill material to provide a drier environment on which to perform the munitions and explosives burning. OE burning and detonation has been performed at nine burning pads labeled A through H and J. Each of these burn pads is surrounded on three sides by an earthen berm created by the bulldozing of surrounding soils and fill material brought in from another site on SEDA. According to an 1980 Installation Assessment Report, the burn pads were in use from the early 1960's until 1987, when the destruction of munitions was moved to an open air steel enclosure located immediately west of burning Pad D. According to previous investigations, Pads A and J were only used for the burning of trash and rubbish, while pads B through H were used for projectiles, explosives and propellants. Along with the burn pads and berms, an elongated, low-lying hill will also be remediated during this project. The low-lying hill is located in the southern portion of the OBG and was designed to form a pseudo barrier in this portion of the site. Based upon the vegetation which covers the hill and its geographic location relative to the burn pads, the formation of the low-lying hill is believed to be time-equivalent to the berms around the burn pads.

3.3 PREVIOUS SITE INVESTIGATIONS

The USACE document entitled Proposed Remedial Action Plan (PRAP) for the Open Burning Grounds (OB) at Seneca Army Depot Activity, includes reference to 22 previous site investigations and studies related to the characterization of the OBG. The referenced studies were conducted on the OBG between 1980 and 1996 and have produced a substantial volume of data related to archival data, soil sampling, monitoring well installations, and groundwater sampling at the OBG. Inclusion of this volume of data is beyond the scope of this WP, however, an examination of the PRAP and the 1994 Final Remedial Investigation Report, indicates that environmentally significant levels of organic and heavy metal contaminants have been detected in the soils of the OBG, with the primary contamination being lead in the soils. Further discussion of the contaminants of concern is presented in paragraphs 3.5.3 and 4.2.2 of this SSHP.

3.4 ON-SITE TASKS TO BE PERFORMED

According to Data Item Description (DID) OT-005 and ER 385-1-92, a full discussion of the tasks to be performed, and the hazards associated with each task, is to be presented in this Section. However, these documents also require a detailed discussion of the tasks hazards in a separate section related to hazard assessment and risk analysis. To avoid duplication of effort, a general outline of the tasks to be performed is presented here, and the full description of each task, to include task hazards, is presented in Section 4.0 of this SSHP, which addresses hazard assessment and risk analysis.

As presented in the SOW, the objective of this OERA is to: safely locate, identify and dispose of all OE within the burn pad berms and the low-lying hill; and to safely locate, identify and dispose of all surface and subsurface OE on the 30-acre site to a depth of two feet. Due to the environmental contamination concerns, various areas within the OBG will be treated differently according to the levels of lead contamination identified in the 1994 Remedial Investigation. In conjunction with the OE remediation activities, EODT will excavate and segregate soil within the site, berms, low-lying hill and burn pads according to guidance provided by the CEHNC SREP. The excavation and segregation of soils will be conducted according to the general criteria presented below, with the actual on-site locations of the various soil types being provided to EODT through the CEHNC SREP.

1. Approximately 3,800 cubic yards of soils to be treated by solidification will be excavated, sifted for OE contamination and isolated from other soils, with the resulting stockpile underlain and covered by an appropriate membrane.
2. Approximately 4,200 cubic yards of soil from the current burn pad berms and low-lying hill that are to be landfilled will be excavated, sifted for OE and stockpiled so that they are isolated, underlain and covered.
3. Approximately 9,400 cubic yards of soils not within the burn pad berms or the low-lying hill (surface and to a depth of two to four feet) that are to be landfilled, will be excavated, sifted for OE and stockpiled so that they are isolated, underlain and covered.
4. Portions of the burn pad berms and low-lying hill that remain will be excavated, sifted for OE and stockpiled separate from the stockpiles listed above and will be covered with an appropriate membrane. Approximately 16,000 cubic yards of soil will be treated in this manner.

The general on-site tasks to be performed by EODT personnel for this project will include those tasks necessary to perform the SOW. A detailed description of the operational procedures EODT will use to accomplish the required tasks, has been presented in Chapter 9 of the WP, and the hazards associated with these tasks are presented in para 4.3 of this SSHP. It is anticipated that this project will begin in April 1998, and will continue for approximately 14 weeks, with the following durations anticipated for each primary task listed below:

- Mobilization/Demobilization of personnel and equipment - one day each event;
- Location survey and mapping of approximately 33-200 foot by 200 foot grids - 3 work days;
- Visual clearance and vegetation grubbing and removal - 2 work days;
- Remediation of OE to a depth of two feet (to include the excavation, sifting and segregation of the soil as specified by the CEHNC SREP) - 52 work days;

3.5.3 Hazardous Substances and Materials

As defined by the Federal EPA, hazardous substances are those products and materials that can threaten human health and/or environmental well-being if released into the environment. Past site sampling and analysis indicates that surface and subsurface soil in various locations of the OBG are contaminated with hazardous substances resulting from past OB/OD operations. As identified in the ROD, the contaminants of concern for the OBG are those that exceed the New York State Department of Environmental Conservation (NYSDEC) guidelines presented in the Technical Administrative Guidance Memorandum (TAGM). According to the ROD, the OBG soil analytes that pose a potential environmental threat are: polycyclic aromatic hydrocarbons (PAH's) benzo(a) anthracene [B(a)A], benzo(a)pyrene [B(a)P] and dibnez(a,h)anthracene [DB(a,h)A]; and the metals barium, copper, lead and zinc. The limits presented in the TAGM are designed to protect potential flora, fauna and human receptors from adverse health effects caused by the accumulation of contaminants from repeated, long term environmental exposures. These limits, however, should not be applied to the assessment of occupational workers experiencing short-term exposures due to soil disturbing activities. Information related to the human hazards associated with short-term, acute exposure to the above listed substances is presented in Table 3-1. An assessment of the potential for personnel receiving an occupational exposure to these substances as a result of site operations is presented in para 4.2.2 of this SSHP.

As a function of site operations, the potential exists for some site personnel to be exposed to potentially hazardous levels of dusts, and personnel may be required to use products containing hazardous materials. The hazardous materials that may be used to support site operations include: gasoline, diesel fuel, two stroke engine oil, and spray paints. It is anticipated that personnel exposure to the hazardous materials will be minimal due to the limited quantities that will be used at any one time. In addition, EODT will provide affected personnel with hazard communication training, as required by paras 6.3 and 6.10 of this SSHP, and will use the work practices outlined in Section 13.0 of this SSHP to further reduce or eliminate the potential for personnel exposure to high dust levels or hazardous materials. To minimize the potential for personnel receiving an excessive exposure to respirable and non-respirable dusts, EODT will employ dust suppression techniques.

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3. Perform location surveying and mapping of the site.
4. Conduct a visual sweep of the site, followed by the grubbing and removal of excess vegetation.
5. Depending upon the results of the test outlined in paragraph 2.6.8 of the WP, sweep the site using a towed magnet to remove excess ferrous surface objects.
6. Conduct a subsurface OE clearance of the entire 30-acre site, to include the areas lying under the berms and low-lying hill. This task will involve the performance of magnetometer surveys for anomalies, hand digging of anomalies to allow for the investigation/identification of the anomalies, removal of metallic scrap, removal of ORS, and disposal of the OE on at least a weekly basis.
7. Operate earth moving machinery (EMM) for the excavation of the berms, low-lying hill and other areas of the OBG, as specified by the CEHNC SREP, with the soils of highest lead contamination being excavated and sifted first, the soils of the mid-range contamination being done next and the soil with the lowest level of contamination being done last.
8. Sift the excavated soil, in the order of highest to lowest contamination, to remove OE and oversize materials from the excavated soils.
9. Sort and segregate the oversize material removed from the excavated soil by the sifting operation, again in the order of highest to lowest contamination.
10. Dispose of the identified OE in the oversize material.
11. Conduct a subsurface clearance of all areas previously covered by the berms and low-lying hill, to include a magnetometer survey, anomaly investigation and OE disposal.
12. Close out the project site and demobilize equipment and personnel.

To ensure that site personnel are fully informed of the nature of the tasks to be performed and the hazards associated with each task, a description of the required tasks/sub-tasks is presented in the following paragraphs. In addition to these descriptions, CTHA forms are presented in Attachment 2 of this SSHP for each task, or group of similar tasks. To conduct each specified task, EODT personnel will use the operational procedures outlined in Chapter 2 of the WP to determine the individual steps to be conducted for each specified task. For the hazards listed for each task, site personnel involved in each task will utilize the procedures and SWPs outlined in Section 13.0 of this SSHP to control or eliminate the hazards. Site personnel will also comply with the requirements of any relevant SOPs found in Appendix G of the WP.

4.3.2 Mobilize and Set-up Site Operational Areas

This task will involve EODT personnel mobilizing the equipment and personnel needed to complete the SOW, and the establishment of an operational area. As part of this task, EODT personnel will establish an office and storage area at the OBG office area located at the main entrance to the

4.3.5 Perform a Visual Sweep and Vegetation Grubbing and Removal

Prior to conducting the vegetation removal, EODT personnel will perform a visual sweep of each grid in the 30-acre site. This will be conducted to locate any obvious surface OE hazards. The procedures for the conduct of the visual sweep are outlined in Chapter 2 of the WP. To allow for the effective performance of the magnetometer sweeps, a limited amount of vegetation removal will be necessary. Vegetation removal will be conducted using a bush hog, hand-held weed cutters equipped with nylon line or saw blades, and, as needed, chain saws. A dedicated safety observer will be present during bush hogging, chain saw and bladed, weed-cutter activities to observe the operators and ensure their safety from obstacles and site hazards. The task hazards that may be encountered during vegetation grubbing and removal include the following:

- Surface OE;
- Biological hazards;
- Sharp objects;
- Inclement weather and cold stress;
- Hand tools and power tools;
- Use of flammable/combustible materials (i.e., fuels);
- Excessive noise levels;
- Flying objects and debris;
- Physical exertion; and
- Slips, trips and falls.

4.3.6 Sweep the Site Using a Towed Magnet

In order to remove excess metallic surface debris that would interfere with the subsurface clearance survey, EODT personnel will conduct a sweep of the site using a towed magnet. This task will involve using a tractor, or other vehicle, to tow a high powered magnet over the site. The magnet shall be adjusted so that it is as near to the surface as possible, without touching the soil surface. When the magnet becomes "loaded" with metallic debris, the operator will halt the vehicle and clear the magnet. Any debris with the potential for being OE, or any debris with potential hazardous residues, will be segregated and disposed of as OE. The towing vehicle will be preceded by UXO personnel who will inspect the vehicle path to ensure no surface OE is present. The hazards associated with this task include:

- Surface OE;
- Sharp objects;
- Inclement weather and cold stress;
- Use of flammable/combustible materials (i.e., fuels);
- Physical exertion; and
- Slips, trips and falls.

4.3.7 Conduct a Subsurface Clearance for OE to Two Feet

EODT personnel will conduct magnetometer surveys of the entire 30-acre site, to include those areas presently covered by the berms and low-lying hill. When potential surface OE or subsurface anomalies are detected, the location of the item will be marked graphically on a grid map and a pin flag will be placed at the location of the anomaly.

In all areas where OE removal is required to two feet, EODT personnel will excavate the locations of suspect subsurface anomalies to identify the anomalies and confirm the presence/absence of OE. Anomalies will be hand dug to a depth of two feet. Those anomalies lying greater than two feet below the surface will be noted on the grid map and left in place for potential future investigation. Investigations to depths greater than two feet must be approved by the CEHNC SREP. For the investigation and remediation of an anomaly, EODT personnel will follow the procedures outlined in Chapter 2 of the WP and paragraph 13.13.2 of this SSHP.

EODT UXO-qualified personnel shall dispose of OE in accordance with the requirements outlined in Chapter 2 of the WP, and the EODT Demolition and Disposal Range Standard Operating Procedure (SOP) included in Appendix G of the WP. Blow-in-place (BIP) operations will be conducted in all cases where an item is identified as either being fuzed or unsafe to move. For those items that are positively identified as being safe to move, EODT personnel will consolidate the items to reduce the number of demolition shots that must be made.

Initially, the subsurface clearance will be conducted in those areas not covered by the berms and low-lying hill. Once these areas have been excavated and sifted, EODT personnel will return to those areas to conduct the subsurface clearance as described above. The task hazards that may be encountered during the subsurface OE clearance include the following:

- Surface and sub-surface OE;
- Biological hazards;
- Hand tools;
- Sharp objects, including OE fragments;
- Inclement weather, cold stress (during the initial clearance) and heat stress (during the clearance of the areas under the berms and low-lying hill after the soil has been excavated);
- Material lifting;
- Handling, transporting, rigging and using demolition explosives;
- Excessive noise;

will be at the sifter to assess the operation for OE hazards that may be uncovered in the sifting. The hazards associated with the sifting operation are as follows:

- OE;
- EMM;
- Use of flammable/combustible materials (i.e., fuels);
- Sharp objects, including OE fragments;
- Inclement weather and cold stress;
- Excessive noise;
- Dust exposure;
- Physical exertion; and
- Slips, trips and falls.

4.3.10 Sort and Segregate Oversize Material

Oversize material accumulated at the sifter shall be stockpiled for future inspection and segregation according to the procedures outlined in the WP. Oversize material shall be sorted to remove any OE through the use of a hopper fed conveyor system that will be manned by EODT UXO personnel. Once all of the excavated soil has been sifted, EODT personnel will use a bobcat to load the feeder hopper, which will feed the material onto a slow moving conveyor belt. As the material proceeds along the conveyor, EODT personnel shall inspect the material and remove any OE-related items or scrap metal. These items shall then be inspected to determine if they are OE or ORS. Suspect inert OE will be stored and explosively vented as required by the WP. Non-OE related oversize shall be removed and stockpiled according to the requirements of the WP. The hazards associated with the sorting of oversize material include:

- OE;
- EMM;
- Use of flammable/combustible materials (i.e., fuels);
- Sharp objects, including OE fragments;
- Inclement weather and cold stress;
- Material lifting;
- Exposure to dust;
- Excessive noise;
- Physical exertion; and
- Slips, trips and falls.

4.3.11 Turn-in Ordnance Related Scrap

ORS located and identified during the OERA process will be collected, and disposed of IAW the requirements of the SOW. All scrap shall be stored in an area approved by the CEHNC SREP. As

the scrap is collected, a four step process will be conducted which requires that the ORS be inspected by: 1) the UXOSP who found the item; 2) an additional UXOSP; 3) the SSHO; and 4) the SUXOS. This inspection system will ensure that no explosive hazards are present prior to final disposition. Prior to the ORS being transferred from the site, the EODT SUXOS will complete a certification form verifying that the scrap is safe, and free of explosive hazards. Site personnel will wear leather gloves at all times when handling ORS/non-ORS. The task hazards that may be encountered during scrap turn-in include the following:

- OE;
- Inclement weather and temperature extremes;
- Material lifting;
- Physical exertion; and
- Slips, trips and falls.

4.3.12 Perform Project Quality Control

The EODT QCS shall be responsible for the continued compliance of on-site tasks with relevant QC procedures. The QCS shall enforce the QC procedures outlined in the WP by conducting daily inspections of the site and site operations. The task hazards that may be encountered by the during QC inspections include the following:

- OE;
- Biological hazards;
- Inclement weather and temperature extremes;
- Power and hand tools;
- Heavy equipment operation;
- Excessive noise;
- Physical exertion; and
- Slips, trips and falls.

4.3.13 Close-out the Site and Demobilize Equipment and Personnel

Once the project has been completed and the on-site portion of the SOW has been accomplished, EODT personnel will arrange for the collection of ORS and non-ORS IAW the requirements of the WP. Additionally, EODT personnel will return all EMM and other equipment, and will secure the site prior to final departure. The hazards associated with this task include:

- EMM;
- Use of flammable/combustible materials (i.e., fuels);
- Hand tools;
- Sharp objects, including OE fragments;
- Inclement weather and heat stress;

10.0 HEAT AND COLD STRESS PREVENTION

10.1 INTRODUCTION

While the anticipated start-up time for this project, along with the anticipated duration of this project should preclude site personnel from the effects of heat stress, there is a potential for this project to extend into the early summer months when heat stress could become problematic. During activities conducted on site, extreme temperature conditions can create serious safety and health threats to site workers. This section addresses the potential hazards associated with heat and cold stress, and outlines the procedures for monitoring and controlling these hazards. This plan will be implemented as needed by the SSHO.

10.2 INTRODUCTION TO HEAT STRESS

Heat stress is one of the most common (and potentially serious) illnesses that can affect site workers. The most common cause of heat stress during site activities is the effect that PPE has on the body's natural cooling mechanism. Impermeable PPE interferes with the evaporation of perspiration and causes the body to retain metabolic and environmentally induced heat. Individuals will vary in their susceptibility and degree of response to the stress induced by increased body heat. Factors which may predispose a worker to heat stress include: lack of physical fitness; lack of acclimatization to hot environments; degree of hydration; level of obesity; current health status (e.g., having an infection, chronic disease, diarrhea, etc.); alcohol or drug use; and the worker's age and sex. For the remainder of this Section, reference to "liquids" shall indicate water or an electrolyte replacement solution - not tea, coffee or soft drinks.

10.3 HEAT STRESS DISORDERS

10.3.1 Heat Rash

Heat rash is caused by continuous exposure to heat and humid air and is aggravated by wet chafing clothes. This condition can decrease a worker's ability to tolerate hot environments.

1. Symptoms: Mild red rash, especially in areas of the body which sweat heavily.
2. Treatment: Decrease amount of time in protective gear and provide powder such as corn starch or baby powder to help absorb moisture and decrease chafing. Maintain good personal hygiene standards and change into dry clothes if needed.

10.3.2 Heat Cramps

Heat cramps are caused by a rate of perspiration that is not balanced by adequate fluid and electrolyte intake. The occurrence of heat related cramps are often an indication that excessive water and electrolyte loss has occurred, which can further develop into heat exhaustion or heat stroke.

Decontamination Station (PDS) that will be used by site personnel to decontaminate PPE prior to its removal.

3. Exclusion Zone (EZ) - This zone shall be established prior to site personnel entering the site to conduct any on-site tasks. Due to the potential for lead contamination, only those personnel who have met the training and medical surveillance requirements of this SSHP shall be allowed to enter the EZ for any reason once on-site operations commence. Personnel exiting the EZ shall do so only through the CRZ PDS and shall be logged in and out of the EZ by the SSHO.

Due to the nature of site activities, various WZ's may be established within the EZ according to the tasks being conducted at a given time at a given place on the site. For example, during on-site excavation and sifting of the soils contaminated with high lead levels, EODT shall establish a separate EZ within the main EZ to exclude those personnel without a need to be in the area(s) where exposure lead may occur.

11.4 SITE CONTROL DURING DEMOLITION OPERATIONS

Site access control will be especially critical during demolition operations. OE found within a given grid will be either be BIP or if found unfuzed and safe to move, may be stockpiled and stored in an appropriate storage area for disposal at the end of the day. During demolition operations, the demolition team will post a sufficient number of sentries in strategic locations so as to effectively secure the EZ in a full 360° arc around the demolition location. The size of the EZ will be determined in the field according to the requirements of the WP and the type of ordnance being disposed of. Besides the road block at the entrance, additional road blocks may be placed and manned by EODT personnel if the need arises and after coordination with the CEHNC SREP and the SEDA Duty Officer. During demolition operations, EODT will also utilize bullhorns and sirens to announce verbal and audible warnings prior to initiating the demolition shot.

11.5 EQUIPMENT STORAGE AND SECURITY

During non-working periods, all project equipment used on site, to include hand tools, will be secured in a lockable location. For the storage of explosives, EODT shall use Government provided facilities which will remain locked at all times when explosives are not being issued or received. Two keys will be required to gain access to the magazine, and EODT ordnance accountability and explosives logs will be used to control inventory.

11.6 SITE MAPS

Prior to initiation of site activities, the SSHO and SUXOS will generate a site map, which will detail the following information: site size and shape; restricted areas; designated assembly points; the site

access routes; demolition areas; staging areas; location of the CRZ, any other information deemed necessary by the SUXOS or SSHO. The site map will be used by the SSHO during the initial site safety training and the daily tailgate safety briefings to inform site personnel of the locations of the areas listed above. To prevent excessive cluttering, overlays can be used to portray the necessary information. The site map will be created prior to initiating site activities, and the SSHO will forward a copy to the OSHM for inclusion in the SSHP. This map will also be posted in the office trailers. General maps of the SEDA project site are included in Appendix C of the WP.

11.7 SITE COMMUNICATIONS

Effective on-site and off-site communication is an integral part of site control and will be established prior to initiating site activities. On-site communication will be used to: coordinate site operations; maintain site control; pass along safety information, work/rest periods, etc.; and to alert site personnel to emergency situations. Off-site communication will be available to ensure effective communication with off-site management personnel and emergency response services. All site personnel will be familiar with the different methods of both on-site and off-site communication. The methods for site communication that will be used on this project are:

1. Off-site Communication
   a. Cellular and hard wire telephones.
2. Communication on site
   a. Two-way radios with the base station located in the field office;
   b. Air horns, bullhorns and sirens; and
   c. Hand signals.

Site personnel will be familiar with the following hand and audible signals:

1. Hand gripping throat: "Breathing problem, can't breathe".
2. Thumbs up: "OK, I'm all right, I understand".
3. Thumbs down: "No, negative".
4. Pointing to ear(s): "Can't hear, don't understand".
5. Waving hand(s) over head: "Need assistance now".
6. Pointing to eyes then pointing to person/object: "Watch person/object closely".
7. Grab buddy's wrist: "Evacuate site now, no questions".
8. One long air horn blast: "Evacuate site to assembly point".
9. Two short air horn blasts: "Condition under control, return to site".

11.8 BUDDY SYSTEM

An important element in controlling personnel exposure to site hazards is the implementation of buddy system procedures. These procedures ensure that no site personnel are allowed to work

12.3 SITE HOUSE KEEPING

All work areas will be maintained in a clean/neat fashion, free of loose debris and scrap. Any materials/equipment not being used will be removed and stored or disposed of accordingly. All work areas shall be supplied with a trash receptacle with lid, the contents of which shall be emptied daily into a central storage container that will be tightly closed each night prior to departing the site.

12.4 PERSONNEL DECONTAMINATION

To minimize the potential for site personnel carrying lead contamination into clean areas, a personnel decontamination station (PDS) shall be established in the CRZ to facilitate decontamination, and protective clothing removal. The PDS shall be established prior to, and utilized during, any site activities involving the potential for personnel exposure to soil in the lead contamination areas. To the greatest extent feasible, the PDS shall be established up-wind from the EZ and shall be geographically located to minimize exposure of the unprotected personnel and equipment in the SZ to contaminated personnel/equipment. During the set up of the PDS, signs shall be set up at each station to remind personnel of the proper activity to be conducted at the particular station.

Since it will be possible for site personnel to be conducting different operations in different areas of the EZ, and for personnel to be wearing differing levels of PPE at any given time, one PDS will be established which will facilitate the decontamination of all levels of PPE anticipated for this project. Figure 12-1 graphically depicts the PDS that will be established and indicates the differing steps that will be used for the decontamination of the various PPE ensembles. Only those personnel using Level C PPE will utilize all of the stations and once the use of Level C has been discontinued, the stations specific to Level C may be closed. To conduct decontamination of the various levels of PPE, EODT personnel shall follow the procedures outlined in the paragraphs presented below.

12.4.1 Emergency PDS

An Emergency PDS (EPDS) will be set-up immediately adjacent to the PDS to facilitate the decontamination of site personnel who are not capable of being processed out of the PDS. The function of the EPDS is to make available all the resources necessary to allow for the combined efforts of rendering first aid and decontamination. The EPDS will be setup so as to allow for the rapid decontamination of an injured worker, rapid removal of PPE, and safe transport of the injured worker across the CRZ/SZ Hot Line. The EPDS will be set-up as outlined in Figure 12-1 and will, as a minimum, include the following stations and supplies:

Station A

Dropcloth for positioning one five gallon sprayer containing a soap solution, five gallons of water, blunt-nosed scissors and first aid supplies.

9. When working on elevated surfaces, tools shall be secured to ensure they cannot fall on someone below;
10. Use non-sparking tools in the presence of explosive vapors, gases, or materials; and
11. If hand tools become contaminated they must be properly decontaminated, bagged, marked and held for disposition by CEHNC.

13.5 EXCAVATIONS

While the current SOW calls for the excavation of lead contaminated soils to a maximum depth of two feet, the potential exists for excavations to be conducted deeper than two feet upon approval and request of the CEHNC SREP. For the conduct of this project, all excavation activities shall be conducted in accordance with EM 385-1-1, Section 25, Subpart P of 29 CFR 1926, and the EODT Excavation and Trenching SOP found in Appendix G of the WP. The guidelines below are intended to reflect minimum requirements to be followed on this site, and shall be implemented if excavations greater than four feet are required by the on-site CEHNC Safety Representative.

1. Prior to initiation of any excavation or trenching activity, the location of underground installations shall be determined;
2. When the excavation/trench achieves a depth of five feet, or if a cave-in hazard exists, a competent person shall inspect the excavation prior to entry by personnel to determine if there are any indications that a cave-in could occur;
3. An excavation greater than five feet in depth shall be inspected daily by a competent individual prior to commencement of work activities;
4. Evidence of cave-ins, slides, sloughing, or surface cracks will be cause for work to cease until necessary precautions are taken to safeguard workers;
5. Excavations five feet or deeper, will be sloped at an angle not greater than one and one half foot horizontal to one foot vertical (34° measured from the horizon);
6. Excavations five feet or deeper which can not be sloped as specified in item 5 above shall require a registered engineer to design the sloping/benching/support system;
7. Protective systems shall be selected from OSHA 29 CFR 1926 Subpart P and/or designed by a registered professional civil engineer;
8. Spoils, equipment and other materials shall be placed 2 ft. or more from the edge of the excavation;
9. Materials used for sheeting, shoring, or bracing shall be in good condition;
10. Timbers shall be sound, free of large or loose knots, and of appropriate dimensions;
11. Safe access shall be provided into the excavation(s) by means of a gradually sloped personnel access/egress ramp, or ladders or stairs will be provided;
12. Ladders used shall extend 3 ft. above grade level and be secured from movement;

3. Avoid contact with contaminated tools, equipment, and clothing, and wash contaminated tools, equipment and clothing on a daily basis; and
4. Barrier creams, detoxification/wash solutions and orally administered desensitization may prove effective and should be tried to find the best preventative solution.

13.11.2 Snakes

When site activities are conducted in warm weather, the potential for contact with poisonous snakes becomes a very real danger. Normally, if a person is approaching a snake, the noise created by the person is usually sufficient to frighten the snake into leaving. However, extreme caution must be exercised when conducting site operations around areas where snakes might be found (i.e., rocks, bushes, logs, or in holes, crevices, and abandoned pipes). Additionally, all site personnel entering or working in areas where snakes could be encountered will be required to wear snake leggings.

The types of poisonous snakes that may be encountered at the SEDA project site include the Timber rattlesnake, and the copperhead. The venomous snakes that may be found on site belong to the pit viper group, which means that they have large, triangular-shaped heads with sensor pits on both sides of the head between the eye and nostril. Pit vipers also have vertical (catlike) pupils versus round pupils and when looking at the snake's head from directly above the snake, the eyes cannot be seen.

The average adult length of the timber rattlesnake is 36-60 inches, and it is typically a large heavy bodied snake. The reddish-brown stripe running down the back is disrupted by a series of large, black chevron-like cross bands on the pinkish gray or tan body. The tail is uniformly black, the head is large and triangular in shape, and sometimes a dark diagonal line can be seen running through, or just behind, the eye.

The copperhead has an average adult length of 22-36 inches, and is a stout-bodied snake with broad, light brown to gray cross bands, alternating with dark brown to reddish-brown cross bands which take on an hourglass shape. On the sides of the body the dark bands usually have light centers and occasionally one dark spot.

(Paragraph deleted)

Figure 13-1: Anomaly Investigation and Disposal Flow Chart