00457

WORK PLAN

21

FOR THE

ORDNANCE AND EXPLOSIVES REMOVAL ACTION

OPEN BURNING GROUNDS
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

VOLUME I

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

Prepared For:

The U.S. Army Engineering and Support Center
Huntsville, Alabama

Prepared By:

EOD Technology, Inc.
10938 Hardin Valley Road
Knoxville, Tennessee 37932

November 1997

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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 Materials 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
OEW	Ordnance and Explosives Waste
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

CHAPTER 1: GENERAL

1.0 INTRODUCTION

This Work Plan (WP), with its associated Appendices, describes the procedures, sequence and resources EOD Technology, Inc. (EODT) will utilize while conducting an Ordnance and Explosives Removal Action (OERA) at the Open Burning Grounds (OBG) located at the Seneca Army Depot Activity (SEDA), near Romulus, New York. Authorization for performance of this work is contained in Task Order No. 0003 under Contract DACA87-97-D-0005, which was issued to EODT by the U. S. Army Engineering and Support Center, Huntsville (CEHNC), on December 13, 1996.

1.1 SEDA LOCATION AND DESCRIPTION

1.1.1 General Project Location and Description

SEDA is a government owned facility under the jurisdiction of the U.S. Army Material Command. The SEDA installation consists of approximately 10,600 acres located west of the Township of Romulus, New York in Seneca County. Located between the Seneca and Cayuga Finger Lakes, SEDA is bounded on the west by State Route (SR) 96A and on the east by SR 96. The facility is located on an uplands area, at an elevation of approximately 600 feet Mean Sea Level, that forms an elongated divide separating the two Finger Lakes. The entire installation is approximately eight miles long (north to south) and an average of four to four and a half miles wide (east to west). Out of the nearly 10,600 acres within SEDA, approximately 8,400 acres are designated storage areas for ammunitions, which include 519 storage igloos, eight above ground magazines, two inert warehouses, and 2 small-arms warehouses. The remaining facility acreage is used for an airfield, housing, and recreational, administrative and community services.

The annual climate at the SEDA is characterized as relatively moderate with four distinct seasons. The winter months of December to March are typically cold, with the low temperatures reaching single digits, with the average highs in the upper 30's to low 40's. The summer months are warm, with high temperatures reaching the low 90's, but with lows that can reach into the 40's and 50's.

1.1.2 Site History

Since its inception in 1941, SEDA's primary mission has been the receipt, storage, maintenance and supply of military ordnance. As a part of this function, SEDA has conducted disposal operations for surplus and off-specification military munitions and explosives by burning and detonation at the munitions destruction area located in the northwestern corner of the SEDA. In early 1995, under the Base Realignment and Closure (BRAC) process, the Department of Defense recommended the closure of SEDA. This recommendation was approved in October 1995, and the depot is scheduled for closure by July 2001.

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 February 1997 USACE document entitled Record of Decision for the Open Burning (OB) Grounds Site, 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 1997 Record of Decision (ROD), and the 1994 Final Remedial Investigation Report, indicates that environmentally significant levels of organic and heavy metal contaminants have been detected in the soils and groundwater 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.

1.4 STATEMENT OF WORK OBJECTIVES

The primary objective of this OERA is to safely locate, identify and dispose of surface and subsurface OE within the 30 acre OBG site to a depth of two feet, to include the burn pad berms and the low lying hill. Due to the environmental concerns related to the lead contamination, the secondary objective of this project will be the segregation of soils from the berms, low lying hill and other areas of the site according to the levels of lead contamination. The on-site CEHNC Safety Representative (SREP), in conjunction with a consultant from Parsons Engineering Science, Inc., will delineate the boundaries of the various areas within the site, berms and low lying hill that have the differing levels of lead contamination.

1.5 PURPOSE

The purpose of this plan is to delineate the management structure, operational plan, safety considerations and environmental concerns that EODT will utilize and address during the performance of work associated with Task Order 0003. This WP encompasses all aspects of the work to be conducted at the OBG and includes all of the requirements stated in the Data Item Description (DID) OT-005. All site activities will be conducted in accordance with (IAW) this WP and any deviation from this plan will require the prior approval of both the EODT Project Manager (PM) and the CEHNC.

1.6 WORK PLAN ORGANIZATION

To accommodate the requirements of the SOW and DID OT-005, the WP has been divided into Volumes I and II, with the required topics addressed in separate Chapters, and Appendices have been used to organize associated documents, and resources. In addition, a Table of Contents and a list of Acronyms have been presented in the front of this document for reference and assistance with the location of pertinent chapters.

1.7 CHANGES TO THE WORK PLAN

This WP was prepared after a review of archival data, prior investigations, discussions with CEHNC personnel , and a thorough evaluation of the site, which included a site visit. This WP is based on the information available at the time of its preparation, and may be subject to change in the event that unforseen circumstances arise during the execution of this WP which necessitate a modification to this plan. Should the WP require modification, the following procedures will be followed:

- As previously stated, under no circumstances will any change to the approved WP be executed without prior approval of the EODT PM and CEHNC.
- The Senior UXO Supervisor (SUXOS) will notify the CEHNC SREP and the EODT PM of the needed changes and the rationale for them.
- Recommended changes will initially be conveyed verbally with written changes to follow.

- Should the recommended changes involve safety or quality issues, the task(s) affected by the changes will be suspended until written procedures are developed by EODT and approved by the CEHNC, unless directed otherwise by the CEHNC.
- The EODT PM, SUXOS, Site Safety and Health Officer (SSHO), or Quality Control Specialist (QCS), as appropriate, will develop the changes in conjunction with the CEHNC.
- Once approved, the change(s) will be incorporated into this WP and site personnel briefed prior to their implementation.

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CHAPTER 2: UXO OPERATIONAL PLAN

2.0 INTRODUCTION

This plan details the organization, personnel responsibilities, approach, and operational procedures (both OE related and technical) to be employed by EODT to meet the objectives of the Task Order 0003 SOW to be performed at the SEDA OBG . This plan further describes the individual activities to be conducted by EODT during each task, and outlines the methodologies to be employed to accomplish these activities.

2.1 PROJECT ORGANIZATION

The project team consists of the CEHNC Project Manager (Alicia Allen), the CEHNC Project Engineer (Kevin Healy); the on-site CEHNC SREP (to be determined); and EODT. Figure 2-1 depicts the overall project organization, and shows the key responsible personnel and project organizational details. Figure 2-2 depicts the project site organization which EODT will use to accomplish the on-site tasks.

2.2 EODT PERSONNEL RESPONSIBILITIES

The following paragraphs describe the specific responsibilities of the EODT personnel shown on the project organizational chart. All EODT personnel assigned to this project meet the CEHNC training and experience requirements for the position to which they are assigned. In addition to the project management responsibilities presented below, additional responsibilities have been given to specific key personnel and are defined further in this WP and the SSHP.

2.2.1 Program Manager

Mr. Jeffrey Bleke is the EODT Program Manager for this project and is responsible for the overall implementation of this project. Mr. Bleke is a registered Professional Engineer with extensive experience in the management of multiple project OE programs. Mr Bleke's qualifications and experience are presented in Appendix F of the WP. In this role, Mr. Bleke will be responsible for the management of the EODT resources needed for the implementation of site operations.

2.2.2 Project Manager

Mr. John (Jack) Scott, the EODT PM, is a registered Professional Engineer with substantial experience in the management of USACE and CEHNC projects, including in excess of 20 years of experience in project planning, design, implementation and management. As the PM for this project, Mr. Scott will have the following management responsibilities:

1. Reports directly to the Program Manager for all project and operational matters;
2. Manages the funding, manpower and equipment necessary to conduct site operations;

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 and ensures that 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/Quality Control Specialist

Mr. Salvatore Molle, the project SUXOS, 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 and QCS. As the SUXOS and QCS, Mr. Molle will be responsible for the daily supervision of all site activities, to include 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

Mr. Edward Pinson will be the SSHO for this project. Mr. Pinson has over 18 years of combined military and civilian EOD/OE experience. He is qualified as a UXO Supervisor and is a graduate of the U.S. Navy EOD School, Indian Head, Maryland. In this role, Mr. Pinson 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

3. Coordinates with the SUXOS for the implementation of safety and health requirements in the SSHP.

2.2.6 QUALITY CONTROL MANAGER

Mr. Michael Short is the Quality Control Manager (QCM) for this project. He is a Master Explosives Ordnance Technician with over 10 years of experience in the planning, design and implementation of OE projects and quality control (QC). As the QCM, Mr. Short will have the responsibility of ensuring that all site deliverables meet the requirements of the SOW and the QC Plan presented in Chapter 8.0 of this WP.

2.3 APPROACH AND OPERATIONAL SEQUENCE

2.3.1 General

The systematic approach to be used by EODT on-site personnel is presented in this Chapter, and detailed information related to personnel, hours and costs is presented in the Work Data Cost Management Plan found in Chapter 9 of this WP. To complete the Task Order 0003 SOW, EODT on-site personnel will complete the activities identified below according to the planned approach for this project.

2.3.2 Project Operational Sequence

EODT will perform site operations at the SEDA in a systematic manner using proven operating techniques and methods. Based on EODT's experience with UXO operations and information obtained during the site visit, site operations will include the required elements as specified in Task Order 0003 which will be executed in four phases. These phases and the tasks associated with each phase are listed below and are discussed in detail in paragraph 2.4 to 2.7.

PHASE 1 - PRE-MOBILIZATION

- Procure, package, and ship equipment to the site;
- Coordinate with subcontractors to ensure availability of subcontractor personnel and equipment, and schedule mobilization of same; and
- Coordinate with local agencies via telephone.

PHASE 2 - MOBILIZATION

- Mobilizing personnel and remaining EODT equipment to the SEDA site;
- Conduct site-specific and public relations training; and
- On-site coordination with local agencies.

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 designated by the CEHNC 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.

- The EODT earthmoving and sifting subcontractor can process the soil in the time frame presented (i.e., twenty-two work days within thirty-one calendar days), which is contingent upon dry weather conditions.
- There will be no more than 334 cubic yards of oversize material to be sorted.
- A total of 500 items will require demolition.

2.4 PRE-MOBILIZATION

EODT will commence pre-mobilization operations upon written notification of WP approval, to include the "Notice to Proceed" from the Contracting Officer (CO). During this phase, EODT will systematically build and establish its operational capability for the SEDA.

During the development of this WP, EODT has assessed equipment, personnel and subcontractor requirements for this project and has arranged for delivery of the same to the site, corresponding with the arrival of the site personnel. Project equipment will come from EODT sources, local leases/purchases, and Government Furnished Equipment (GFE) from SEDA. All equipment, regardless of source, will be checked to ensure its completeness and operational readiness. Coordination of equipment acquisition will include communicating with CEHNC and SEDA personnel to determine the availability of Government furnished equipment (GFE), and the requisitioning of equipment from commercial sources. (During pre-mobilization, the PM and SUXOS will schedule the subcontractors which EODT plans to use for the performance of location, surveying and mapping, and soil excavation/sifting.)

2.5 MOBILIZATION

EODT will schedule the arrival of the work force in a manner that is most effective and designed to allow for immediate productivity. As part of the mobilization process, EODT will perform site-specific training for all personnel assigned to this project. The purpose of this training is to ensure that all site personnel fully understand the procedures and methods EODT will use to perform operations at the SEDA, their individual duties and responsibilities, and all safety and environmental concerns associated with operations. Any personnel arriving at the site after this initial training session will be trained as they arrive. Training topics and training responsibilities are listed below:

- All personnel will receive training on the individual equipment that they will operate while on site, to include safety and health precautions and field inspection and maintenance procedures.
- All site personnel, to include subcontractor personnel, will receive detailed training on the WP, SSHP and the site-specific environmental protection plan (EPP). This training will be presented by the SSHO and SUXOS.

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. A detailed discussion of the magazine area can be found in paragraph 2.6.12, Item (8) of this Chapter.

2.5.2 Coordinate with Local Agencies

The PM, SUXOS, and SSHO 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/QCS	1 1
Pre-mobilization Total		**6**
Location Survey & Mapping Team	UXO Specialist Surveyor Rodman	1 1 1
Location, Survey & Mapping Team Total		**3**
OE Remediation	SUXOS/QCS SSHO 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/QCS SSHO UXO Specialists	1 1 2
Close-out Team Total		**4**

TABLE 2-2: PERMANENT ON-SITE FIELD PERSONNEL

LABOR CATEGORY	QUANTITY
Senior UXO Supervisor/QCS	1
Site Safety and Health Officer	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

evaluation of such changes will be conducted by on-site supervisory personnel in close liaison with the CEHNC SREP. Any new course of action, or desired change in procedures, will be submitted in writing, with justification for approval, as required. Approved written changes will be implemented in a manner that will ensure procedural uniformity and end-product quality on the part of EODT.

2.6.3 Safety and Operational Training and Briefings

EODT will conduct safety and operational briefings daily. In addition, the SUXOS or the SSHO may hold a safety stand-down any time a deviation/degradation of safety warrants a review. The safety and operational training and briefings listed below shall be conducted and documented as specified.

1) **Daily Tailgate Safety Briefing**: Each day, prior to the commencement of work, a tailgate safety brief will be conducted for all site personnel by the SSHO or SUXOS. A written record of this training will be maintained on the EODT Safety Meeting Attendance Log found in Appendix E of this WP. The briefing will focus on specific daily hazards, potential hazards and risks that may be encountered, and the safety measures that should be used to eliminate or mitigate those hazards. Additionally, a detailed review of site-specific topics (ie; specific safety equipment, emergency medical procedures, accident forms, and notification procedures) will be included in this brief at least once a week. The Certification of Task Hazard Assessment Form, found in Attachment 2 of the SSHP, (Appendix A to the WP) will be used to conduct daily briefings. These briefings will provide personnel with task-specific known or potential hazards associated with conducting specific tasks related to the day's operation. These forms also delineate the required personal protective equipment (PPE).
2) **Visitor Safety Brief**: All visitors entering the site must sign in at the EODT site office. Site visitors must receive a safety briefing, as outlined in the SSHP, prior to entering any work area. Visitors must be escorted at all times by a UXO-qualified individual.
3) **Environmental Concerns**: The promotion of environmental sensitivity will be ongoing as a part of the daily safety and operational briefs.
4) **UXO Refresher**: All UXO personnel will be given a UXO refresher by the SSHO and SUXOS on the known ordnance to be encountered on site. The refresher includes identification features, hazards and disposal methods.
5) **Additional Training**: Chapter 6 of the SSHP, found in Appendix A, lists in detail additional specific training required for site operations.

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 apprised 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 unfused, 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 sweep 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

individual search lanes (see Figure 2-3). These lanes will be five foot wide paths adjacent to each other and will run parallel to the east/west boundary line of the grid, (i.e., 40 lanes per grid). To lay out the search lanes, the EODT personnel will lay out pre-marked base lines along the North and South boundary lines, then lay out cones between the marks on both base lines to delineate the lanes.

2) **Grid Search:** This activity will be performed using all four of the EODT on-site personnel, with the SUXOS acting as the team supervisor. To conduct the grid search, a sweep line will be established that is comprised of three UXO magnetometer operators. After the individual search lanes have been assigned, the SUXOS will direct personnel to begin searching their respective lane with the magnetometer. Search personnel will start at one end of each lane and will move forward toward the opposing base line. During the forward movement, the searcher will move the magnetometer from one side of the lane to the other. Both the forward movement and the swing of the magnetometer will be performed at a pace that ensures that the entire lane is searched and that the instrument is able to appropriately respond to subsurface anomalies. Whenever a surface or subsurface anomaly is encountered, either visually or with the magnetometer, the trailing UXO Technician will mark the object or anomaly with a pin flag at that location. Once personnel reach the opposing base line, the sweep line will shift to the next three lanes and will proceed back to the original base line. This process will be repeated until all lanes have been searched.

4) **Equipment:** The equipment to be utilized for this activity includes:
   - Schonstedt GA-72 CD;
   - Wooden stakes or traffic cones will be used to subdivide the grid into individual search lanes;
   - Colored pin flags will be used to mark anomaly locations;
   - Miscellaneous common hand tools; and
   - Forms and logbooks to record activities.

2.6.10 Anomaly Investigation for Subsurface Clearances

Once the grid has been searched, excavation of anomalies will be performed IAW CEHNC Safety Concepts and Basic Considerations for Unexploded Ordnance (UXO) Operations, and will follow the procedures outlined in this paragraph.

1) **Subsurface Clearance:** The subsurface clearance to be conducted in the 33 grids will be to a depth of two feet as required by the SOW. Anomaly investigation will be conducted using a shovel and smaller hand tools. Periodically during digging, the UXO technician will use a magnetometer to verify the location, and approximate depth of the anomaly, based on the signal strength. Once verified, the UXO technician will continue digging with either the shovel or hand tools. In the event an anomaly is determined to be at a depth greater than two

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

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. Minimum PWD distances required are 813 feet. Depending on the type and number of munitions being destroyed, the safe-fragmentation and safe-blast distances 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	COMPATIBILITY GROUP
Perforators	19 grams	1.3	D
Detonating Cord	80 grain	1.3	C
Electric Detonators	No. 8	1.4B	B

4) **Evacuation and Site Control:** Prior to initiation of demolition operations, all nonessential personnel will be evacuated to a distance outside the PWD of 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 site as required. Only the amount of explosives required for the day's operation will be issued each day, and 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 Corporate SOP's.
8) **Explosive Storage:** EODT will utilize a double igloo type earthen covered magazine for the storage of demolition materials. This double igloo is constructed to DDESB and Army Regulations and is complete with lightning protection and lighting. The net explosive weight (NEW) of the demolition material magazines will not exceed 100 pounds. In addition, 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.

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 than 500 milligrams per kilogram (mg/kg) that have also failed the EPA Toxicity Characteristic Leaching Procedure (TCLP). 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.

3) **Moderately contaminated soil:** This soil type is defined as having lead concentrations greater than 500 mg/kg, but have not failed the EPA TCLP. 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 landfilled 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 para.

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 guidance from the CEHNC SREP.

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 vented 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 para 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 and graded.

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,

EODT will work with the incoming contractor(s) to identify qualified and competitive vendors/suppliers.

2.7.5 Removal of Facilities and Equipment

During demobilization, EODT will remove and return all facilities and equipment used to support this project IAW Chapter 7 of this WP. The procedures for documenting equipment transfers, as outlined in Chapter 5 of this WP, will be followed and executed by the SUXOS. Equipment will be removed as specified below.

1) **EODT Equipment:** EODT will remove all of its operating equipment from the SEDA. The equipment, which will be in a clean and operable condition, will either be returned to the EODT corporate office in Knoxville or shipped to another project.
2) **Government Furnished Equipment:** The GFE which has been utilized will be turned-in according to guidance provided by the CEHNC. All GFE will be returned in clean and operable condition.
3) **Termination of Services.** As part of its demobilization activities, EODT will close all utility accounts and terminate its hardwire and cellular telephone service. Should CEHNC desire that these services be transferred to an incoming contractor, EODT will work with the incoming contractor to ensure that uninterrupted service is maintained.

2.8 PROJECT SUBMITTALS

EODT will submit a Draft Removal Report within 30 working days after field work is completed. A Final Removal Report shall be submitted within 30 days after receipt of comments from the CEHNC. The Draft Removal Report will contain, as a minimum, the items identified below.

- All original survey and mapping data IAW Task 3 of the SOW;
- Detailed accounting, by listed area, of all OE and related materials that have been located and disposed of on site.
- A financial breakdown by area and task of all costs and labor hours used to perform the SOW.
- Daily journals of all activities associated with the job site.
- A recapitulation of exposure data. This will include total number of man-hours worked on site, total motor vehicle mileage, total number of flying hours, and total number of flights.
- Scrap material turn-in documentation IAW Task 5.
- Documentation of QC activities.
- A minimum of 20 original four by six inch color photographs depicting major action items and OE discoveries.
- A description of major problems or issues encountered with supporting documentation if available.

- Video tape (VHS with voice narration, minimum 60 minutes) showing major activities and OE discoveries.
- Written record of all endangered or threatened flora and fauna destroyed during OE removal activities.

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Figure 2-1. Project Organization and Chain of Command

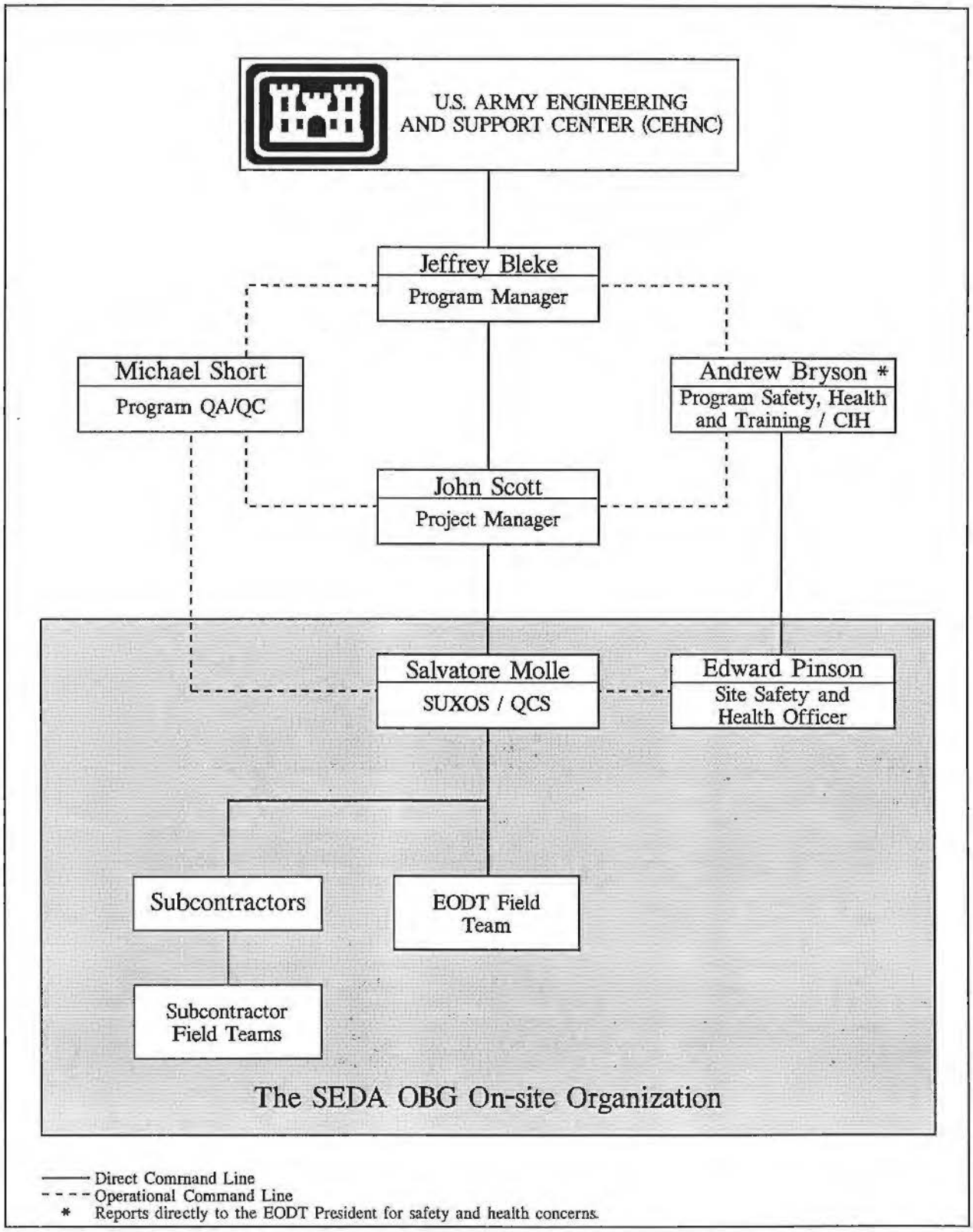


Figure 2-2. The SEDA Open Burning Grounds On-site Organization

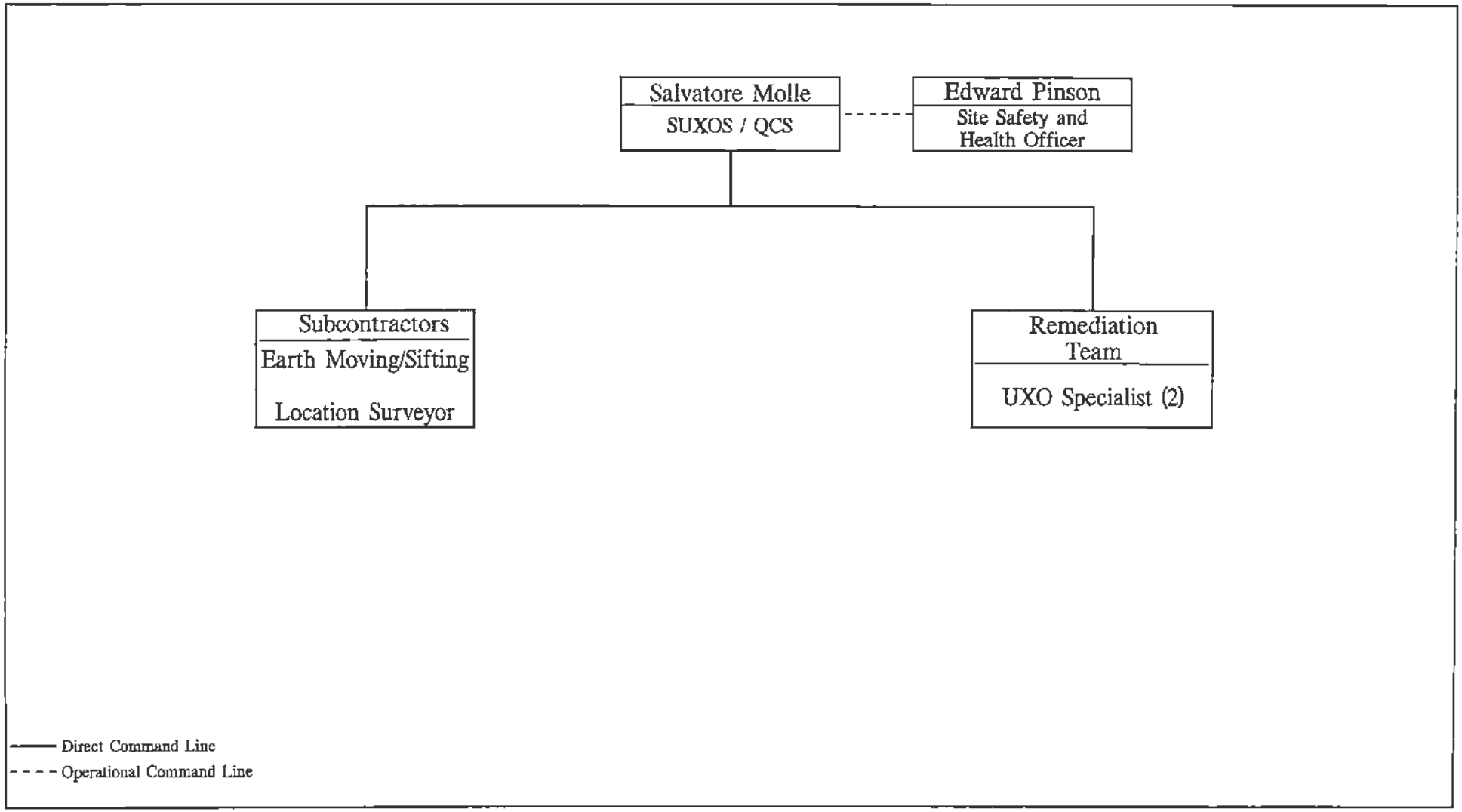
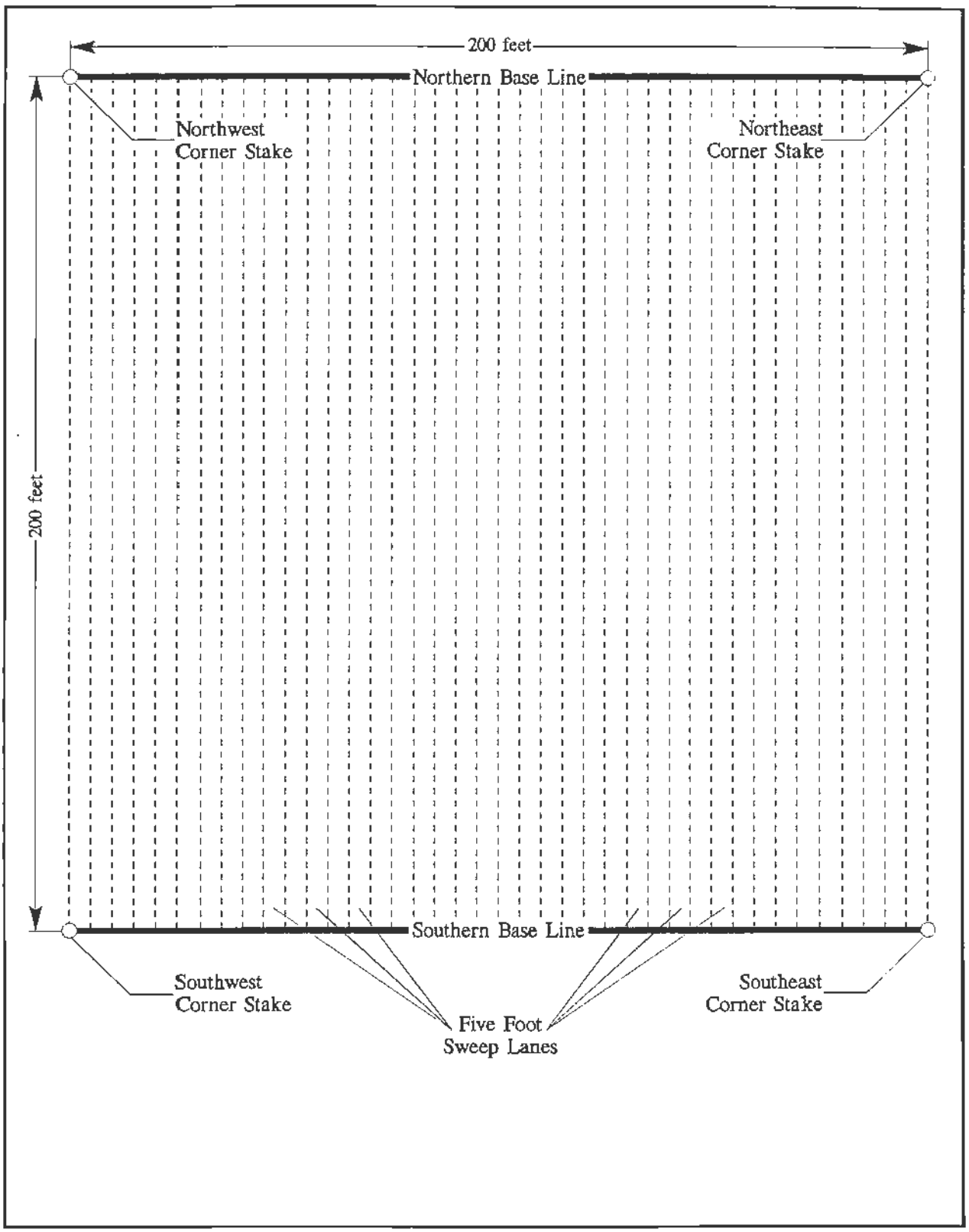


Figure 2-3. Typical Magnetometer Grid Survey Sweep Lane Layout



CHAPTER 3: SITE-SPECIFIC SAFETY AND HEALTH PLAN

To ensure the continued health and safety of site personnel, the general public, and the environment, EODT's Corporate Safety and Health Program (CSHP) mandates that EODT develop a SSHP whenever site operations fall under the requirements of the Occupational Safety and Health Administration (OSHA) Hazardous Waste and Emergency Operations standard found in Title 29 of the Code of Federal Regulations (CFR), Part 1910, section 120. To ensure EODT's continued compliance with this standard, and to meet the requirements outlined in the OBG SOW, EODT has developed a comprehensive SSHP (see Appendix A of the WP) which addresses all site tasks that have the potential for personnel exposure to chemical, physical or biological hazards. Along with being developed IAW 29 CFR 1910.120 and the OBG SOW, EODT has incorporated the requirements of the following documents:

- Engineering Manual (EM) 385-1-1, *US Army Corps of Engineers Safety and Health Requirements Manual*, 1996;
- Engineering Regulation (ER) 385-1-92, *Safety and Occupational Health Document Requirements for Hazardous, Toxic and Radioactive Waste (HTRW) and Ordnance and Explosives Waste (OEW) Activities;* and
- The EODT CSHP.

The OBG SSHP has been prepared using EODT's professional knowledge of the tasks to be performed and available site-specific data. However, the SSHP is to be considered a living document, intended to grow and change in response to any changes that occur in either the anticipated site conditions or the SOW. In the event that changes must be made to the SSHP, EODT safety, health and UXO-qualified personnel will address the changes and submit them to the CEHNC Contracting Officer for approval prior to implementation.

The OBG SSHP has been written to address the safety and health hazards anticipated for each site operation and also includes the requirements and procedures needed to protect site personnel from the identified task hazards. To assist in its implementation, the OBG SSHP will be maintained on site during all site operations. All EODT and subcontractor personnel working on site will be required to read, understand and comply with the provisions of the SSHP and will sign the EODT SSHP Review Form (see Appendix E of this WP) prior to initiating site operations involving personnel exposure to safety and health hazards. Relevant sections of the OBG SSHP will be used by the SSHO for conducting initial site hazard information training and daily tailgate safety briefings. To ensure the proper implementation and effectiveness of the SSHP, daily site inspections and weekly audits will be conducted by the SSHO. Any on-site deficiencies detected will immediately be reported to the SUXOS, and corrected as requested by the SSHO.

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 OERA SOW for this project, EODT will use the Schonstedt GA-72 CD Magnetic Locator. This ferrous metal detector utilizes a Flux-gate magnetic field sensor with a nominal sensor spacing of 14 inches. The sensor is coupled to an audio detection signal and a liquid crystal diode (LCD) digital readout. The audio speaker increases in frequency or volume as the signal strength increases and peaks over both ends of a horizontal target. The digital readout provides a three digit signal strength reading and two incremental bar graphs to indicate signal strength and polarity, which can be used to distinguish between vertical and horizontal targets. The GA-72 CD sensor is housed in a plastic sensor head that can be used to detect ferrous anomalies in shallow water to depths of approximately two feet. The GA-72 CD is capable of detecting a 175 millimeter (mm) projectile at a subsurface depth of five feet, an 81mm mortar at a depth of 12 inches and a hand grenade at a depth of six inches.

4.2 SENSOR MOBILITY

The GA 72 CD is a man-portable, hand-held ferrous metal detector. It weighs approximately 2.5 pounds and has an overall length of 34.5 inches. When conducting a grid search, personnel hold the GA-72 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 GA-72 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 GA-72 CD 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.

CHAPTER 5: EQUIPMENT PLAN

5.0 GENERAL

EODT is directly responsible and accountable for all Government furnished equipment (GFE) and will establish and implement a system to control, protect, preserve, and maintain all GFE utilized in support of this project. This Equipment Plan prescribes the procedures EODT will use to maintain accountability of its equipment and any GFE. For purposes of this plan, the term equipment will apply to both EODT owned equipment and the equipment provided by the Government.

5.1 PROPERTY MANAGEMENT OBJECTIVES

The objective of this plan is to ensure that equipment is acquired, tracked, utilized, maintained, secured, and, if applicable, disposed of properly. This plan shall be applied to all field and office equipment.

5.2 RESPONSIBILITIES

EODT is responsible for ensuring that its work force at the OBG is furnished with the requisite equipment needed to accomplish the SOW associated with this task order. It is imperative that project equipment is provided in a timely manner, and that it arrives at the work site in functional condition. In addition to this corporate responsibility, the management, supervisors, and workers on site have specific responsibilities regarding the use, maintenance, and storage of equipment.

5.2.1 SUXOS

The SUXOS has overall responsibility for ensuring that project specific equipment requirements are projected in sufficient time to allow EODT and/or the Government to acquire, process and ship the required materials to the site. The SUXOS is also responsible for maintaining accountability of issued equipment and ensuring that this equipment is maintained in a state of operational readiness. Whenever possible, equipment that will be used solely by one field team will be issued to the team supervisor.

5.2.2 Team Supervisor

Personnel assigned as Team Supervisors will be responsible for the proper use, storage, and accountability of equipment issued to, and used by, their team. This responsibility includes: performing daily checks to ensure that equipment is available, clean, and operational; and ensuring that equipment used during operations is returned, cleaned, properly secured and maintained.

5.2.3 Individual

All EODT employees are responsible for operating and maintaining equipment in a reasonable and prudent manner. This includes: using the appropriate equipment for the assigned task; using equipment for its intended purpose and in its intended manner; daily cleaning of the equipment; properly storing and securing the equipment at the end of the day; and promptly reporting any equipment failures or breakages.

5.2.4 Contract Administrator

The EODT Contract Administrator (CA) is responsible for acquiring the specified equipment IAW the applicable Federal Acquisition Regulations (FAR) and EODT's purchasing policies. The CA will coordinate the acquisition of required equipment with the EODT PM and SUXOS.

5.3 CATEGORIES OF EQUIPMENT

EODT categorizes equipment based on its source of supply and its physical characteristics. All equipment regardless of category, will be maintained and utilized in an appropriate manner.

5.3.1 Non-expendable Equipment

Non-expendable equipment consists of those items that are not consumed or do not lose their identity during use. Examples of this type of equipment are desks, computers, magnetometers, etc.

5.3.2 Expendable Equipment

Expendable equipment is defined as those items that are consumed during normal use or are discarded after use. This type of equipment includes paper products, fuels, string, explosives and other consumable items.

5.3.3 Government Equipment

Government equipment, as defined in FAR 45.101 is, "all property owned or leased to the Government, or acquired by the Government under the terms of the contract. It includes both Government furnished property and contractor-acquired property." Contractor-acquired property (CAP) is equipment acquired or otherwise provided by the contractor for performing a contract and to which the Government has title.

5.4 ACCOUNTABILITY

The EODT SUXOS is responsible for all equipment used on site and for maintaining accountability documents and records for the equipment. The SUXOS may assign the administrative support tasks associated with this activity to a specific site person (e.g., an equipment manager) but must maintain

sufficient involvement in the accounting and inventory process to ensure that the equipment is accounted for and maintained.

5.5 ACQUISITION

The SUXOS will be responsible for preparing quantity and specification requirements for each piece of equipment to be used on the project. These requirements will be forwarded to the CA, who is responsible for equipment acquisition. The CA will obtain three quotes and perform a lease purchase analysis for each item not available from government sources. All acquisitions will be done in compliance with the applicable FARs and EODT's purchasing policies.

5.6 RECEIVING AND RECORDS

All equipment will be accounted for using an EODT Property Control and Tracking Card (a sample copy of this log is contained in Appendix E, Sample Forms). Upon receipt of equipment, the information from the shipping documents and/or purchase orders will be transcribed to the Tracking Card. The quantities and type appearing on the shipping or purchase documents will be compared with the actual items received, and any discrepancies will be noted and resolved. The Tracking Card will reflect the actual quantity received.

Tracking Cards will be prepared in duplicate, with one copy maintained on file at the work site and the other copy forwarded to the EODT office in Knoxville, Tennessee. In the event that the property recorded on the Tracking Card is GFE, a copy of the Tracking Card will also be forwarded to the CEHNC Property Section. All shipping documents will be maintained on file as proof that equipment and supplies were received and/or purchased. These documents will include the purchase order (PO) request, the PO, shipping document and invoice. A copy of these documents will be maintained on site with a duplicate copy maintained in the project file at the EODT corporate office in Knoxville.

5.7 IDENTIFICATION

All non-expendable government equipment will be clearly marked with an identifying number (e.g., CEHNC-FS-000). Property received directly from CEHNC should already be marked but the SUXOS will ensure that equipment received is in fact marked. When directed to procure CAP, EODT will contact the CEHNC Property Section and obtain an identifying number for the new piece of equipment. Upon receipt of the equipment, EODT will promptly mark the equipment with the number provided by the CEHNC Property Section.

5.8 MOVEMENT

The movement of all GFE or CAP will be tracked throughout the course of the project. Both on and off-site movement is tracked with the EODT Property Control and Tracking Card since this form has data fields for recording to whom the equipment is issued to on site and for recording the date, place, and manner of off-site transfer.

5.9 STORAGE

EODT will maintain a designated equipment storage area at the project site. Small items, such as hand tools, will be kept in a lockable storage area out of the weather. Larger items, such as vehicles, will be kept in a secured (preferably fenced and locked) area, with the keys secured in a controlled manner.

5.10 PHYSICAL INVENTORY

On a weekly basis, the SUXOS will ensure that all equipment and property is physically inventoried and visually inspected. On a monthly basis, a copy of the physical inventory of GFE and CAP will be reported to the CEHNC Property Office.

5.11 REPORTS

On a monthly basis, an equipment status report will be submitted as a part of the report to CEHNC, reflecting the status of government property. The status report will be sent with the physical inventory.

5.12 UTILIZATION

In the event that facilities or special test equipment is furnished by the government to EODT, effected items will be inventoried, tracked and maintained IAW FAR 45.5 and identified as such.

5.13 MAINTENANCE

EODT will maintain all equipment in its possession in functional condition. This includes performance of routine maintenance and service. In the event an equipment item requires maintenance beyond the capability of on-site personnel, EODT will coordinate with CEHNC personnel to determine if the equipment should be sent to a maintenance facility, discarded, or returned to the CEHNC property section. Equipment turned into external agencies for repair or service will be accounted for using shipping invoices and/or repair tags. All equipment will be maintained IAW the quality control procedures outlined in Chapter 8 of this WP.

5.14 SUBCONTRACTOR CONTROL

In the event that subcontractors are used on this project, they will be issued detailed subcontracts, which itemize the services to be provided. The PM and SUXOS will monitor performance of the subcontractor to ensure that the services are provided IAW the subcontract. The SUXOS will supervise all subcontractors, assign work and review all subcontractor invoices to ensure correctness.

5.15 DISPOSITION

Upon completion of operations, or when equipment is no longer needed, GFE will be returned to the CEHNC. Prior to returning property, a list of the property will be forwarded to the CEHNC Property Section. This list will be provided in sufficient time (normally 30 days in advance) for the Property Section to make a determination of whether the equipment is to be returned to Huntsville or shipped to another work site. Property will be cleaned and properly packaged for return shipment. If an item being returned is unserviceable, it will be tagged indicating the shortcoming. At the time of shipment, the SUXOS will complete the Property Control and Tracking Card for the equipment to indicate the date, place and manner of final disposition.

5.16 PROJECT REQUIRED EQUIPMENT AND SUPPLIES

The services, equipment and supplies presented in Tables 5-1 through 5-4 will be required for the performance of the SOW at the SEDA OBG.

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TABLE 5-1: OFFICE EQUIPMENT

DESCRIPTION	QUANTITY	REMARKS
Cellular telephone	1 each	
Answering machine	1 each	
Battery charger	10 each	radio
Computer	1 each	
Copier	1 each	
Facsimile machine	1 each	dedicated phone line
Filing cabinet	1 each	lockable 4 drawer
Printer	1 each	laser
Radio, hand held	1 each	w/base station and antenna
Typewriter	1 each	
Battery charger	1 each	for vehicle batteries
Billboard system	1 each	
Blood borne pathogen kit	1 each	
Bolt cutters	1 each	
Bulletin board	1 each	
Burn kit w/burn blanket	1 each	
Calculator	1 each	
Eye wash kit/15 gal	1 each	
Fire extinguisher	1 each	20 A:B:C
First aid kit	1 each	
Pencil sharpener	1 each	
Telephone	2 each	
Thermometer	1 each	outside
White Board	1 each	

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TABLE 5-2: FIELD EQUIPMENT

DESCRIPTION	QUANTITY	REMARKS
Airborne Particulate Monitor	1 each	Real-time, direct reading
APV, Explorer	1 each	Four wheel drive, 4 door
Camera	1 each	digital
Cellular telephone	2 each	
Blood borne pathogen kit	1 each	
Brushes, long handle	2 each	equipment/personnel decon.
Buckets, plastic	12 each	five gallon
Burn kit w/burn blanket	2 each	1 each - support and exclusion zones
Bushhog	1 each	
Calibrator	1 each	Calibration of sampling pumps
Camcorder	1 each	
Chain saw 18"	1 each	
Conveyor	1 each	Sifting and sorting operations
Chaps Kevlar	4 each	
Demolition kit	1 each	Blast machine, galvanometer and firing wire
De-watering pump	1 each	on call as required
Drums	1 each	PPE disposal
Explosive Day Box	2 each	
Explosive magazines	2 each	GFE
Eye wash kit	1 each	Vehicular
Fire extinguisher	2 each	10 A:B:C
Fire extinguisher	2 each	20 A:B:C
First aid kit	2 each	1 each - support and exclusion zones
Front end loader	1 each	
Gas can with funnel	2 each	1 gallon-OSHA approved
Hard hats	4 each	
Hard hat combo	3 each	w/face shields & ear muffs
Hydro Axe	1 each	GFE

TABLE 5-2: FIELD EQUIPMENT (continued)

DESCRIPTION	QUANTITY	REMARKS
Ice chest	1 each	Coleman
Jumper cables 4 gauge	1 each	
Igloo drink cooler	2 each	5 gallon for water/gatorade
Magnetometer	3 each	Schonstedt GA-72 CD
Magnet, towed	1 each	GFE
Newton Pad	1 each	
Port-A-John	2 each	
Power washer, portable	1 each	equipment decontamination
Probe	4 each	12" wood/alum
Project signs		
Radio, hand held	3 each	1 each GFE
Roll on/off	1 each	ORS container
Safety glasses	8 pair	
Sampling pumps, personal	2 each	Breathing zone sampling
Shovel	2 each	pointed, long handle
Sledge	1 each	3 lb
Sound level meter	1 each	
Stretcher	2 each	
Siren Banshee	1 each	
Tape	1 each	300 foot
Tool kit	1 each	one per vehicle
Tool kit	1 each	large
Trowel/garden	2 each	
Trash cans	2 each	30 gallon
Tubs	6 each	4 Lg. shallow, 2 small, shallow
Waders	4 each	
Weedeaters	1 each	

TABLE 5-3: FIELD AND OFFICE CONSUMABLES

DESCRIPTION	QUANTITY	REMARKS
Broom	1 each	
Camera	4 each	disposable/35mm
Chains	2 each	for chain saw
Dust pan	1 each	
Electrician's tape	4 rolls	
Envelopes	1 box	various sizes
File folders	4 boxes	8 ½ x 11
Gasoline	2,500 gallons	
Gloves	8 pair	work, leather
Gloves	100 pair	rubber outer
Gloves	2 box	surgical
High lighters, markers, pens, pencils	1 box of each	various colors
Labels, post-it notes	1 pack of each	
Log books	1 dozen	
Mask	3 each	CPR
Note books: Surveyor / Paper, bond / Paper, towels / Paper, lined	2 each / 2 packs / 1 case / 50 each	
Oil	2 each	for weedeater/chain saw - 6 oz
Respirator cartridges	3 boxes	high efficiency particulate (HEPA)
Ruler	1 each	
Snake leggings	8 each	plastic
Stakes, Flags, String		
Stapler / stables	1 each / 1 box	
Tape - Duct	6 rolls	
Tape Scotch / Engineer	2 rolls / 2 boxes	
Tyvek suits / coveralls	10 cases	
Wet/handi wipes	5 containers	

TABLE 5-4: EXPLOSIVES CONSUMABLES

DESCRIPTION	QUANTITY	NOTES
Detonating cord	5,000 feet	80 grain
Electric detonators	1,000 each	
Perforators	5 cases	19 gram

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CHAPTER 6: LOCATION SURVEYING AND MAPPING PLAN

6.0 GENERAL

This Plan outlines the methodology to be used to:

- locate and record the spatial coordinates for the boundaries of the work area;
- establish and record the spatial coordinates for each search grid within the work area; and
- stake the grid corners using four foot sections of 3/4" schedule 40 PVC pipe.

All control points recovered and/or established at the site shall be plotted on planimetric drawings at the appropriate coordinate point and shall be identified by name or number. In addition, the final adjusted coordinates will be shown. A "description card" for each control point established, or used, shall be submitted along with a tabulated master list of all points. The location, identification, coordinates, and evaluations of all control points recovered and/or established at the site, and the corners of all areas cleared of UXO shall be plotted on site maps which will be plotted at a horizontal English unit scale of 1:2000 on reproducible (Mylar) planimetric or topological maps. All drawings will show locations with respect to the surface and planimetric features within the project area.

6.1 SAFETY

All surveying mapping crews will be escorted by an EODT UXO-qualified technician. A magnetometer survey will be conducted at the location of any new monuments, control points, or grid stakes. No intrusive activity of any kind will be started until the area has been verified as safe by the UXO technician. All personnel entering the work site will adhere to the CEHNC Safety Concepts and Basic Considerations for UXO Operations, revised February 16, 1996.

6.2 CONTROL POINTS

Plastic or wooden hubs will be used for all basic control points. Horizontal and vertical control of class 1, third order or better shall be established for the site boundary. Horizontal control will be based on the English system and referenced to the North American Datum of 1983 (NAD83) Universal Transverse Mercator (UTM) grid and the New York State Plane Grid System. The original of all field books, layout sheets, computation sheets, abstracts and computer printouts will be maintained for turn-in and inclusion in the final report.

6.2.1 Description Cards

A description card for each control point used shall be submitted along with a tabulated master list of all points. The description card will include the following: a north arrow; a sketch of each monument; its location relative to reference marks, buildings, roads, railroads, towers, trees, etc. A detailed, typed description telling how to locate the monument from an easily identifiable point, the monument's name or number, a sketch showing how to locate the monument, and the final adjusted coordinates and elevations in meters and feet to the closest 0.001m and 0.01 foot will be completed.

The description cards will be five inches by eight inches, and one monument will be described per card, or an 8.5 inch by 11 inch sheet of bond paper may be used to describe two monuments.

6.3 MAPPING

This task order contains two types of mapping requirements:

- to lay out a systematic grid pattern at the site, using established monuments, locate each corner of each grid square to the closest one foot; and
- to record the spatial and description data for OE items encountered to the closest plus or minus one foot from a grid corner.

The purpose of these requirements are to generate permanent records of the boundaries of the areas which have been cleared and/or remediated, and to record historical data concerning the location, types, densities, and dispersal patterns of OE contamination within these areas. EODT will perform the surface survey and data collection activities associated with these requirements using a qualified surveyor and the following procedures:

1) To identify and record the location of work area boundaries and corner locations for individual search grids, EODT will use a surveyor to determine the spatial coordinates for the corner locations of the site and each search grid.
2) UXO located during clearance operations will be recorded by tape measuring the distance from the southwest corner stake of each grid. The location of ordnance scrap, ordnance fragments, shrapnel, small arms ammunition, and metallic debris will not be recorded. These measurements and the known location of the grid stake will provide coordinates to locate the OE, within the grid, to the nearest plus or minus one foot. During operations, data collected on each work area and operating grid will be electronically entered into the project database and will be subsequently used to monitor performance, operational trends, and to produce deliverables for the Final Removal Report.
3) As part of the Final Removal Report, EODT will prepare individual planimetric and/or topographic maps (at a scale 1:2000). The maps will be standard metric A-1 size drawings which are 841mm by 594mm (33.1 inches by 23.4 inches). These maps will:
   a) depict the boundary coordinates for each work area and for individual survey grids (which will be located to an accuracy to the closest one foot and will be plotted on a reproducible (Mylar) map);
   b) depict the location of each control point used to perform the survey and all control points shall be identified on the map by their name or number and their final adjusted coordinates;
   c) include the following: a standard border, revision block, title block, bar scale, grid north, true north, and a magnetic north arrow with the differences between them shown in

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. Figure 9-3 in Chapter 9 depicts a typical layout for areas in which EODT will perform a removal action.

6.6 MAP REQUEST

Planimetric and digital orthophotography maps have been requested from CEHNC.

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CHAPTER 7: ENVIRONMENTAL PROTECTION PLAN

7.0 INTRODUCTION

As specified in the SOW for Task Order 0003 for the OERA at the OBG, this site-specific EPP has been prepared to ensure site activities are conducted such that potential environmental impacts are minimized consistent with US Army Regulations (AR) 200-1 & 2. This plan has been prepared based on information obtained during the site visit, discussions with CEHNC personnel, and previously generated reports. All site activities shall be conducted IAW this EPP and shall be performed in such a manner as to: minimize the pollution of air, water or land; control and maintain noise and dust emissions below limits established by applicable Federal, state, or local regulations; and minimize the environmental impact of site activities. There are no threatened or endangered species of flora or fauna present at the OBG site, and additionally there are no known areas of archaeological significance and no on- or off-site wetlands that will be negatively affected by site activities. While the OERA at the OBG should not result in any adverse impact on any wetlands, endangered/protected flora or fauna, the use of fugitive dust and run-off control procedures may be required since known organic and heavy metal contamination exists in the soils to be excavated, sifted and segregated. IAW with this EPP, all necessary precautions will be taken to prevent site run-off from entering Reeder Creek located along the eastern boundary of the site. The environmental protection procedures addressed in this EPP are presented to ensure that in the event that environmentally sensitive issues, other than those listed above, become evident, appropriate procedures will have been considered and may be implemented if necessary.

7.1 FIELD ACTIVITIES IMPACTING ENVIRONMENTAL RESOURCES

During this project, OE will be located, identified, removed, and disposed of IAW the procedures outlined in this WP. The OBG SOW requires the OE remediation of approximately 33, 200 by 200 foot grids to a depth of two feet. To complete the OBG field activities, EODT will conduct the following: set up on-site support facilities; vegetation removal on the 30-acre site to facilitate OE removal; location surveying and mapping; magnetometer surveying; excavation, identification and disposal of anomalies; removal of OE to two feet; Blow-In-Place (BIP) and other OE disposal operations; excavation of the burn pad berms, the low lying hill and other areas of the OBG; and segregation and stockpiling of soil according to the level of lead contamination in the soil. The environmental protection procedures included in this EPP will be followed to ensure that EODT's on-site activities do not negatively impact the OBG and surrounding environments.

7.2 ENVIRONMENTAL DOCUMENTATION

7.2.1 Existing Environmental Documents

For the development of this WP, the CEHNC provided to EODT a copy of the following documents: Final Remedial Investigation Report at the Open Burning (OB) Grounds, dated September 1994; and the Pre-Draft Record of Decision, Open Burning (OB) Grounds, Seneca Army Depot Activity, dated February 1997. In the event that additional information is required, the CEHNC Contracting Officer (CO)/Contracting Officer Representative (COR) will determine, and make available to EODT, any additional environmental documentation relevant to this project.

7.3 PRE-REMOVAL ACTION ACTIVITIES

7.3.1 Environmental Survey

In preparation for this project, EODT performed an initial site visit to assess the actual site conditions and to allow for the detailed design and preparation of this submission. During this site visit, EODT made an environmental survey reviewing the condition of trees, shrubs, grassed areas and other environs that are located in and around the area that may be affected by site activities. During this survey, the CEHNC also confirmed that no endangered species or special habitats exist on the OBG. Prior to the initiation of site activities, EODT, in conjunction with the CEHNC SREP, will prepare an Environmental Report indicating the condition of trees, shrubs, grassy areas and other environs immediately adjacent to the staging area, access routes, support and work zones. This report will be signed by both EODT and the CO/COR upon mutual agreement as to its accuracy and completeness.

7.3.2 Worker Education

Prior to the start of field activities, EODT shall develop and present a worker education program. This training program will be used to inform field personnel of the relevant environmental and regulatory issues, protocols to be used in the field for protection of off-site resources, and any other identified or potential environmental issues.

7.3.3 Required Mitigation Procedures

Site OE remediation procedures will be developed and implemented so as to avoid impacts to potentially sensitive on- or off-site natural resources. For this reason, extensive mitigation is not anticipated. However, the following general mitigation procedures will be followed during all field activities:

- Impacts to any sensitive species will be minimized during remediation activities by avoiding the suspected sensitive wildlife habitats identified during site tasks, until guidance is obtained from the CEHNC.

- 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 activities will be followed by backfilling and grading so that local drainage patterns will not be disturbed.

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 para 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

will be informed of the procedures to be used in these areas, and all operations shall be planned and performed in such a manner as to avoid, or minimize, adverse effects to identified endangered or protected plant species.

7.4.3 Protection of Endangered/Protected Wildlife Species (Fauna)

As stated previously, there are no rare, endangered or protected wildlife species physically residing in the OBG. If, however, endangered or protected wildlife species are later identified during site activities, EODT shall notify the CEHNC SREP and will then attempt to determine if habitat areas for the endangered or protected species are present at the OBG. If a habitat area is located, it will be flagged-off and no further activities will be conducted in the area until direction is received from the CEHNC. If the endangered or protected species are observed moving through the OBG, EODT personnel will be instructed to avoid disturbing the animal, and no site activities will be conducted in the area where the animal is located until it has left the area. Whenever endangered or protected animal species are observed in the OBG, all site personnel will be informed of the procedures to be used, and all operations shall be planned and performed in such a manner as to avoid, or minimize, adverse effects to the identified endangered or protected wildlife species.

7.4.4 Historic, Archeological, Religious or Cultural Resources (HARC)

According to the CEHNC, there are no known HARC resources at the OBG. However, any potential HARC resources found in the course of site activities will be reported to the CO/COR for evaluation by CEHNC and local officials. Work will be diverted to other areas until a determination can be made as to the significance of the item or items found. The CO/COR will be consulted prior to resuming work at the location to ensure that these resources are adequately identified and preserved. Should HARC resources be identified during site activities, all future site operations shall be performed in such a manner as to avoid, or minimize, adverse effects to identified HARC resources. Storage areas and access routes will not be located in the identified HARC resource areas. Should the need to remove OE hazards preclude the avoidance of these areas, EODT will utilize methods for minimizing the disturbance to cultural and historic resources, including limiting the excavation area and depth, and completing in-situ detonation in a manner that minimizes disturbance.

7.4.5 Written Record

If identified on site, a written record of all endangered or threatened plants and animals destroyed during the OE removal activities will be generated, maintained and submitted as part of the removal report. Additionally, if any HARC resources are identified, a written record describing the HARC resources and the actions taken will be generated by the SUXOS and submitted with the final report.

7.5 WETLANDS

While wet areas are located on the site, these areas are not identified as wetlands, as defined by the EPA or the New York State Department of Environmental Conservation (NYSDEC). Therefore, there are no wetland concerns physically on, or immediately adjacent to, the 30-acre OBG site. This fact was also stated by CEHNC personnel during the initial site visit, however, it was also stated that 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 entering. 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.

7.10.3 Emergency Procedures

As part of the Spill Response procedures in the SSHP for this project, EODT will develop emergency response procedures to be implemented in the event of the spillage of hazardous materials. At a minimum, the following emergency procedures shall be performed if a spill occurs:

- Immediately (within one hour) notify the CO/COR;
- Halt site operations in the area and take immediate measures, utilizing properly protected personnel, to control and contain the spill;
- Isolate the hazardous area through the use of flagging, remove or extinguish ignition sources and evacuate all unnecessary personnel out of the area;
- If mandated by the nature of the spill, evacuate personnel upwind to the pre-designated assembly area, and post personnel at access routes to prevent unauthorized personnel from entering the area; and
- Utilize control measures, if needed, to reduce vapors, gases and/or dust emissions.

7.11 ISOLATION AND SECURITY OF THE AREA

7.11.1 General Security

The security of the site is a critical element in the protection of site personnel and equipment. During non-working hours, the site and equipment will be secured in such a manner as to preclude curious or malicious theft/damage.

7.11.2 Site Security

Primary site security will be created at the entrance to the Munitions Destruction Area where a lockable gate is located and where site entry restriction will be established once EODT initiates site activities. During operations, access to work sites on the OBG will be controlled by the use of exclusion zones, signage and a periodic visual survey of the surrounding area to ensure no personnel have wandered onto the site. This will be especially critical during BIP and OB/OD operations. As a result, the entrance gate to the site will be secured and site personnel will be used as sentries during demolition operations. Entry into the various sites will be limited to only those personnel required to safely conduct the task at hand. Visitors will be controlled and escorted, the only exception to this will be the CEHNC SREP, and EODT's SUXOS and SSHO who will have unlimited access to all areas. During non-working periods, the equipment, to include hand tools, will be secured. The government furnished explosive storage magazines will remain locked at all times when explosives are not being issued. Vehicles will be used to transport personnel on a daily basis to and from the job site. During non-work hours, these vehicles will be locked.

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 particularly 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 will only be conducted in an open area.

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. If grading and replanting/reseeding is required by CEHNC, 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 subject to instructions by the CO/COR, 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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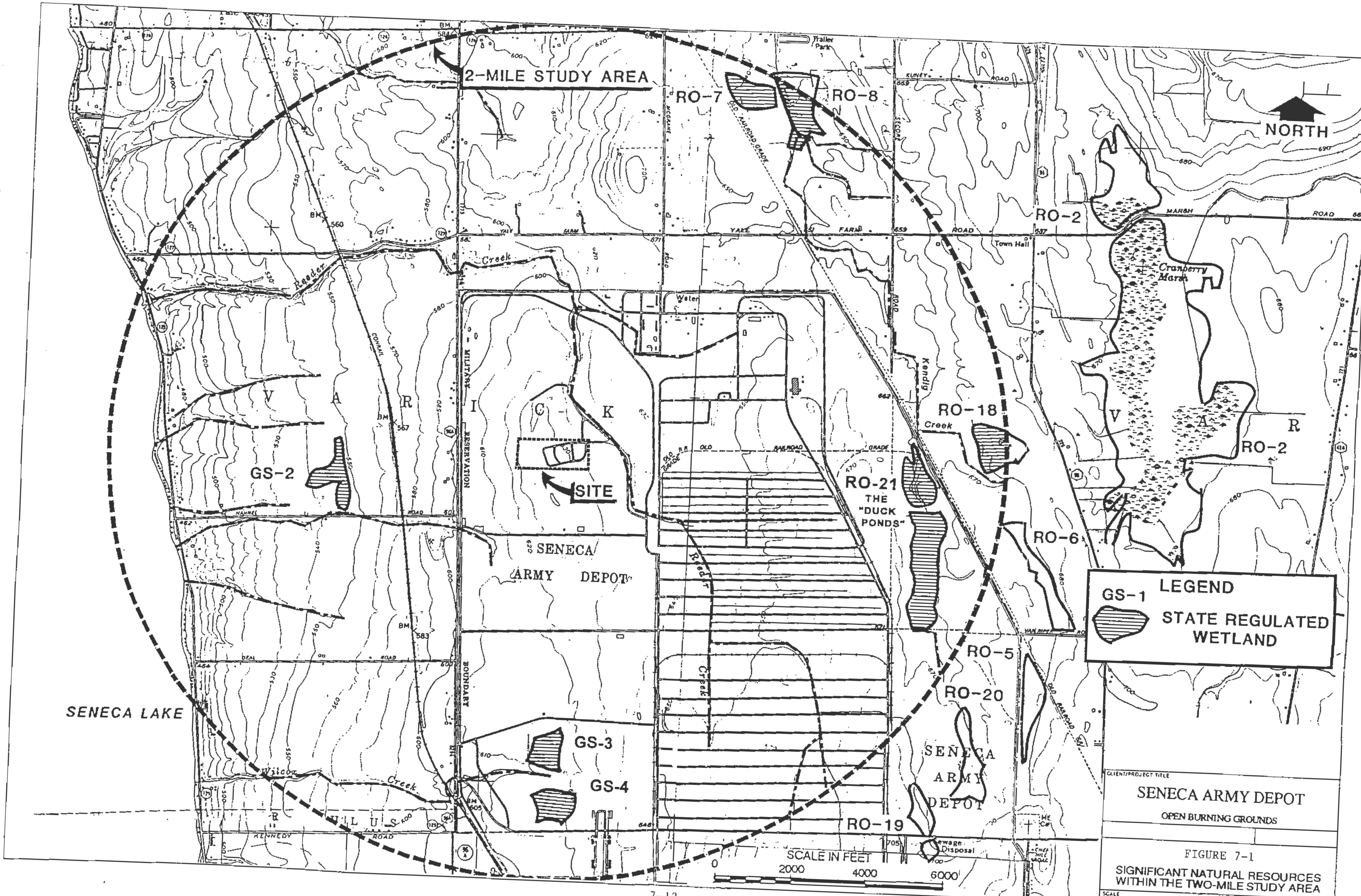


CLIENT/PROJECT TITLE

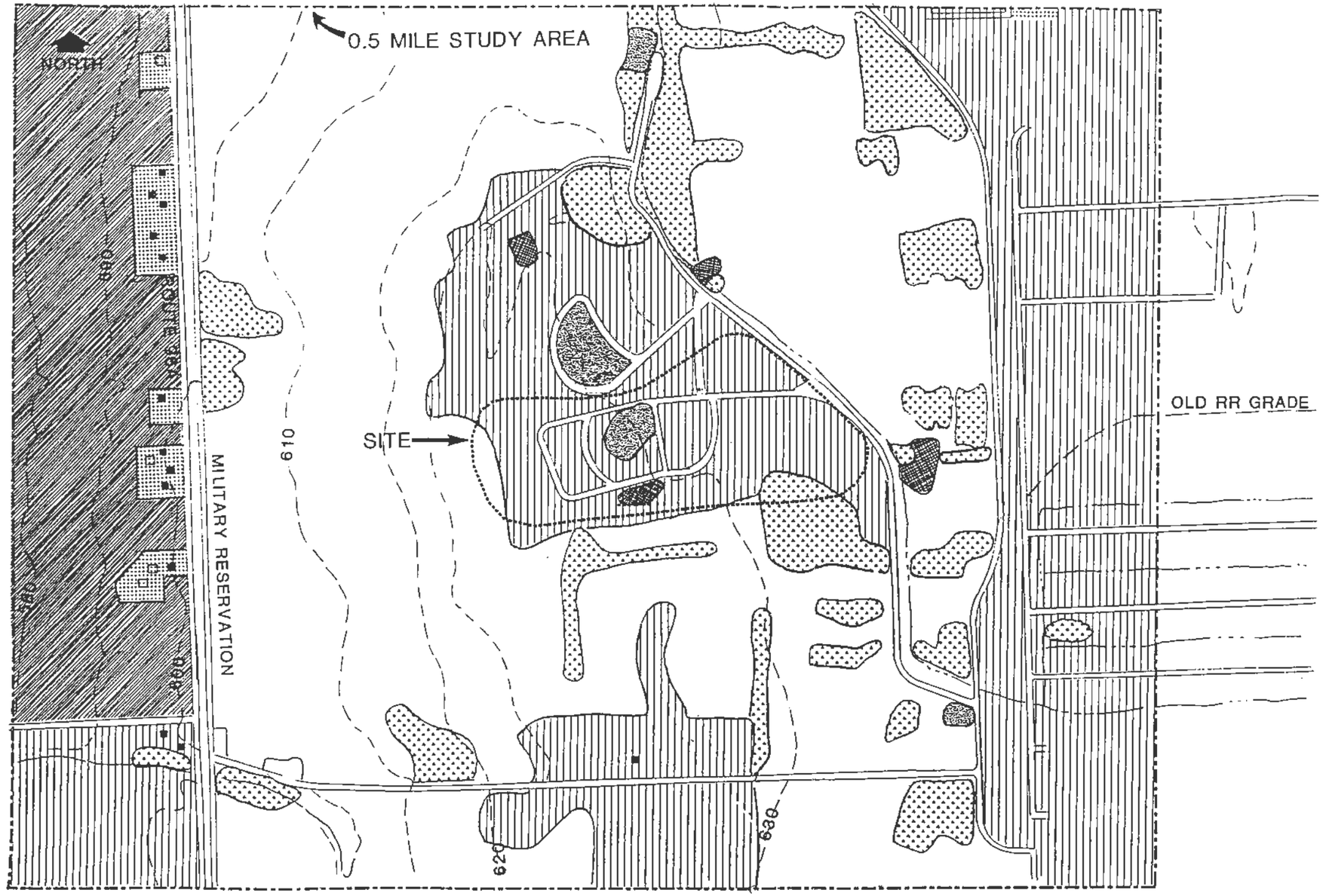
SENECA ARMY DEPOT

OPEN BURNING GROUNDS

FIGURE 7-1

SIGNIFICANT NATURAL RESOURCES WITHIN THE TWO-MILE STUDY AREA

SCALE



LEGEND:

- WETLAND
- AGRICULTURAL FIELD
- DECIDUOUS FOREST/ TREE ROWS
- OLD FIELD/SHRUBLAND
- OLD FIELD TYPE VEGETATION
- OPEN (NONVEGETATED)
- MOWED FIELD/ GRASS/LAWN

CLIENT/PROJECT TITLE

SENECA army DEPOT

OPEN BURNING GROUNDS

FIGURE 7-2

NATURAL RESOURCES WITHIN 0.5 MILE OF THE OB GROUNDS

SCALE 1" = 700'

CHAPTER 8: QUALITY CONTROL PLAN

8.0 GENERAL

This quality control plan (QCP), as a component of the EODT Quality Program (QP), provides the procedures for controlling and measuring quality of all work performed during site activities at the OBG. All quality control (QC) activities will be performed and documented IAW applicable professional and technical standards and the CEHNC requirements. This site specific QCP is designed to provide procedures for:

- Testing, response checking or calibrating equipment used to perform work tasks;
- Determining the effectiveness of work performed;
- Inspecting the maintenance and accuracy of site records; and
- Determining compliance with this plan, and the site safety, environmental, and operational plans.

8.1 DEFINITIONS

8.1.I Accuracy

Accuracy is the degree of agreement of a measurement or the average of several measurements with an accepted reference or "true" value; it is a measure of bias in the system.

8.1.2 Precision

Precision is the degree of mutual agreement among individual measurements of a given parameter under the same conditions.

8.1.3 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected to be obtained under normal conditions.

8.1.4 Representativeness

Representativeness expresses the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition. Careful choice and use of appropriate methods in the field helps to ensure that samples are representative. This is relatively easy with water or air samples, given that the components of these media are homogeneously dispersed. In contrast, soil and sediment contaminants are unlikely to be evenly distributed. It is important for the sampler and analyst to exercise good judgment when collecting and analyzing a sample.

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 Salvatore Molle, who is also the SUXOS, and has 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 para 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.

8.3.3 Publications

EODT has conducted a technical review of the SOW and all pertinent data, and compiled a list of required publications to be maintained at the site. In addition to this list, EODT will make available, in a timely manner, any additional manuals the SUXOS may require. Prior to the start of operations and periodically throughout the project, the QCS will check to ensure that site publications are present and in good repair. Results of this inspection will be recorded and reported. The currently identified publications include:

- Copy of Task Order 0003;
- EODT Corporate Safety and Health Program;
- OSHA, 29 CFR 1910, Occupational Safety and Health Standards;
- OSHA, 29 CFR 1926, Construction Standards;
- Applicable sections of DOT, 49 CFR parts 100 to 199, Transportation;
- CEHNC EM 385-1-1, Safety and Health Requirements Manual;
- CEHNC ER 385-1-92, Safety and Occupational Health Document Requirements for Hazardous Waste Remedial Actions;
- Bureau of Alcohol, Tobacco and Firearms (BATF) P 5400-7; and
- Material Safety Data Sheets (MSDS) for hazardous substance used on site.

Note

The CEHNC SREP will obtain any TM 60-series publications for this project.

8.3.4 Equipment Calibration and Tests

Measurement equipment utilized on site, e.g., sampling pumps, magnetometers, real-time monitors, etc., will be checked for operational reliability and calibration in accordance with the manufacturers specifications. EODT has reviewed the equipment requirements of this delivery order and identified the equipment listed below as requiring daily tests and/or calibration. Calibration/testing of these instruments will be accomplished as follows:

- Communications Equipment: Prior to commencing operations each morning, radios and cellular phones will be checked. Radios will be function checked to ensure batteries are charged and the radio is operational. Cellular phones will be checked to ensure they are operational. If communications are lost, either between teams and the command post or off site to emergency services, work will cease until communications are restored.
- Magnetometers: Prior to use, all handheld magnetometers will be inspected and response checked against a known metallic anomaly. Magnetometers will be checked by planting an inert 60mm mortar or similar magnetic inert item at a depth of two feet, and in a separate location, an inert 105mm projectile or similar inert object to a depth of four feet. Upon the first response check of the instrument, a standard readout will be obtained and recorded.

This standard readout 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. Response checks will be performed daily by the operator prior to placing the instrument into operation. The QCS will monitor the test and complete the Magnetometer Response Check Log (see Appendix E for an example of this form).

- 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 60mm mortar at a depth of two feet and a 105mm projectile at a depth of four feet with the response 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 and duplicate copies of video tapes will be forwarded to the EODT corporate office in Knoxville 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.

8.5 GRID SIZES

All sites to be surveyed, investigated or cleared of OE will be marked off in grids and/or lanes. The size of the grids has been established as 200' x 200' and the lanes will be five feet wide. Determining factors for modifying grid/lane size will be terrain, vegetation density and suspected density of OE contamination.

8.6 QA/QC AUDITS AND SURVEILLANCE

As part of the EODT QP for work performed at specific sites, EODT will conduct both internal and external audits and surveillance at the OBG. This is to ensure that all procedures and protocols are being followed and that the resulting data is accurate and defensible. Field audits will concentrate on both surface and subsurface sweep procedures, removal/clearance operations, proper documentation, and checks of resulting data for completeness and accuracy within established QC limits.

8.7 QC INSPECTIONS

To ensure that quality work is conducted, QC inspections (QCIs) will be conducted according to the criteria specified in the following paragraphs. All inspections will be conducted by the responsible personnel and documented accordingly.

8.7.1 Daily QC Inspections

The QCS will perform random, unscheduled audits of the various site activities to ensure that personnel accomplish all work and record keeping as specified in this WP. The QCS will then submit a report of findings to the SUXOS, QCM and PM. These QCI's shall include property accountability, UXO related tasks, equipment operator maintenance, PPE usage and WP compliance. The EODT QCI and Audit Log Form (see Appendix E of this WP) will be used for these QCI's and maintained on file at the site.

8.7.2 Grid Clearance QC Audits

The QCS will conduct a grid clearance QC audit in the completed grids to ensure the effectiveness of the OE removal operations. EODT policy requires a minimum 10% of a grid be checked, regardless of the stated requirements in the SOW, unless the SOW requires more than 10%, in which case the SOW takes precedence. The QCS will start in one corner of the grid and will proceed on a zig-zag pattern covering at least 10% of the entire grid and will use the pass/fail criteria presented in paragraph 8.7.4 to determine if the OE removal actions have been adequate. Upon completion of the grid clearance audit, the QCS will submit a report of the findings to the SUXOS. If the QCS does not pass the site, it is scheduled by the SUXOS for re-work. In addition, the QCS will conduct an audit of all grid clearance logs and reports as to their completeness.

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 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.

Immediately upon receipt of a notice of non-conformance, the SUXOS will take the following corrective actions:

- Identify the impact the non-conformance may have on other project activities;
- Identify and implement the actions required to bring the project/activity back into compliance; and
- Identify and implement procedures to preclude recurrence of the non-conformance.

8.9 PROJECT CORRESPONDENCE

All written and verbal (i.e., person-to-person or via telephone) correspondence will be documented and routed to the EODT PM. All written communications from the CEHNC or designee must be addressed to the EODT PM. Incoming written communications will be annotated with the date received. Telephone communications to field personnel must be logged by site personnel into the daily activity logs. Telephone communications to office personnel must be recorded on a Telephone Conversation/Correspondence Record Form. Of critical importance is the documentation of activities that stop work or require a communication to, or from, the CEHNC.

8.9.1 Delivery Order Correspondence

Correspondence concerning these delivery orders should be sent to:

- Mailing Address:
  EOD Technology, Inc.
  P. O. Box 24173
  Knoxville, Tennessee 37933-2173
- Federal Express Address:
  EOD Technology, Inc.
  10938 Hardin Valley Road
  Knoxville, Tennessee 37932

8.9.2 Project Manager Address

The EODT PM is John (Jack) Scott. He can be contacted through the following:

- Mailing address
  EOD Technology, Inc.
  P.O. Box 24173
  Knoxville, Tennessee 37933-2173
- Telephone
  423/690-6061
- Facsimile
  423/690-6065
- Electronic mail
  eodtg@aol.com

8.10 PROJECT RECORDS

Project records will be maintained in separate project files for each Task Order. Each project file will be maintained with the following categories:

Category	File Content
A1	Internal correspondence
A2	Outgoing correspondence
A3	Incoming correspondence
A4	Outgoing to CEHNC
A5	Incoming from CEHNC
A6	Chronological communications log
B	Not used
C	Original typed copies of the Removal Report
D	Copies of the Task Order, cost estimates for any additional work to be performed under the Task Order, copy of subcontractor work agreement or contract, copies of cost quotations from suppliers and subcontractors
E	Original Field Activity Daily Logs and subcontractor daily field log bound books, Ordnance Accountability Log, Working Map(s), and equipment status log
F	Not used
G	Not used
H	Copies of Removal Report
I	Original photographic log and negatives (prints need not be maintained)
J	Not used
K	Not used
L	Copies of DD Form 1348-1, if required
M	Not used
N	Not used
O	Check prints of drawings submitted with the Removal Report
P	Not used
Q	QC Audits, Surveillance and Nonconformance Reports
R	Site Specific Safety and Health Records, including Tailgate Safety meeting documents
S	Field administration records including subcontractor and contractor work time hours, expense reports, travel mileage and time
T	Not used
U	Not used
V	Not used

W	Not used
X	Not used
Y	Not used
Z	Not used

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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 9-1 and 9-2 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,

subcontractors will coordinate their operational schedules with the SUXOS, and strictly adhere to all elements of this WP and its associated SSHP.

9.2 PROJECT WORK SCHEDULE AND DAILY SCHEDULE

EODT has prepared an initial project schedule for the work associated with this task order which appears as Figure 9-3. The schedule identifies the individual activities associated with the project, its duration, the sequence in which the work will be performed and a proposed start and finish date for accomplishing the work. This schedule is based on a forty-hour work week, consisting of four 10 hour days. Work schedules may vary depending upon site requirements and the time of year in which the project is performed. A typical daily schedule is outlined below in Table 9-1:

TABLE 9-1: TYPICAL DAILY SCHEDULE

TIME	ACTIVITY	LOCATION
0700-0730	Tailgate Safety and Operations Briefing and Equipment Load Out	Field Office
0730-1030	Conduct Field Operations	Assigned Work Areas
1030-1045	Morning Break	Site Support Zone
1045-1200	Conduct Field Operations	Assigned Work Areas
1200-1230	Lunch	Field Office
1230-1530	Conduct Field Operations	Assigned Work Areas
1530-1545	Afternoon Break	Site Support Zone
1545-1700	Conduct Field Operations	Assigned Work Areas
1700-1715	Stop Operations/Return to Field Office	Assigned Work Areas
1715-1730	Clean and Store Equipment	Field Office

9.2.1 Performance Data

It is anticipated that site operations will require a total field effort of 14 weeks, to include mobilization/site set-up and site closure/demobilization. Table 9-2 illustrates the performance data for the life of the field effort.

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TABLE 9-2: PERFORMANCE DATA

Activity	Acres	Grids	Cubic Yards	Work Days	Calendar Days
Mobilization	NA	NA	NA	1	1
Location, Survey and Mapping	30	33	NA	3	3
Vegetation Removal	30	33	NA	2	5
OE Clearance of Areas Not Covered by the Berms and Low Lying Hill	22	24	NA	12	19
Excavation and Sifting of the Berms, Low Lying Hill and Selected Locations Within the OBG (EODT personnel to escort earth moving/sifting subcontractor)	NA	NA	33,400	22	37
Sort Oversize Materials From Sifting Operations	NA	NA	334	15	28
OE Clearance of Areas Previously Covered by the Berms and Low Lying Hill	8	8.7	NA	2	2
Demobilization	NA	NA	NA	1	1
TOTALS				58	96

9.3 TASK ORDER COST DATA

In developing the Task Order cost estimates, EODT used information obtained during the site visit and data from reviews of documentation on past operations. Due to the lead time between WP preparation and beginning work, price quotes are extremely perishable. Prior to mobilization, EODT will make available for CEHNC three price quotes for equipment and services. This is of particular importance, since EODT plans to supply materials for this program on a time and materials basis. The final price will be negotiated prior to mobilization.

9.3.1 Manpower Requirements

EODT has structured its manpower requirements to meet the operational requirement of this task order. Our structure was designed to minimize associated costs (i.e., travel and per-diem), and provide an effective blend of technical talents and skills for executing the work associated with this task order. Further, EODT chose the listed labor categories to ensure that team flexibility and production rates could be met. A detailed list of manpower requirements and associated costs is contained in Table 9-3.

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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	$8,522.08
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**	**1,74**	**NA**	**$90,652.52**
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**	**$9,469.52**
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	$90,652.52
Material	$325,651.88
Travel	$28,642.00
SUBTOTAL	$444,946.40[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.

9.4.1 Government Furnished Equipment

Any GFE provided will lower the material costs.

9.4.2 Consumable Supplies

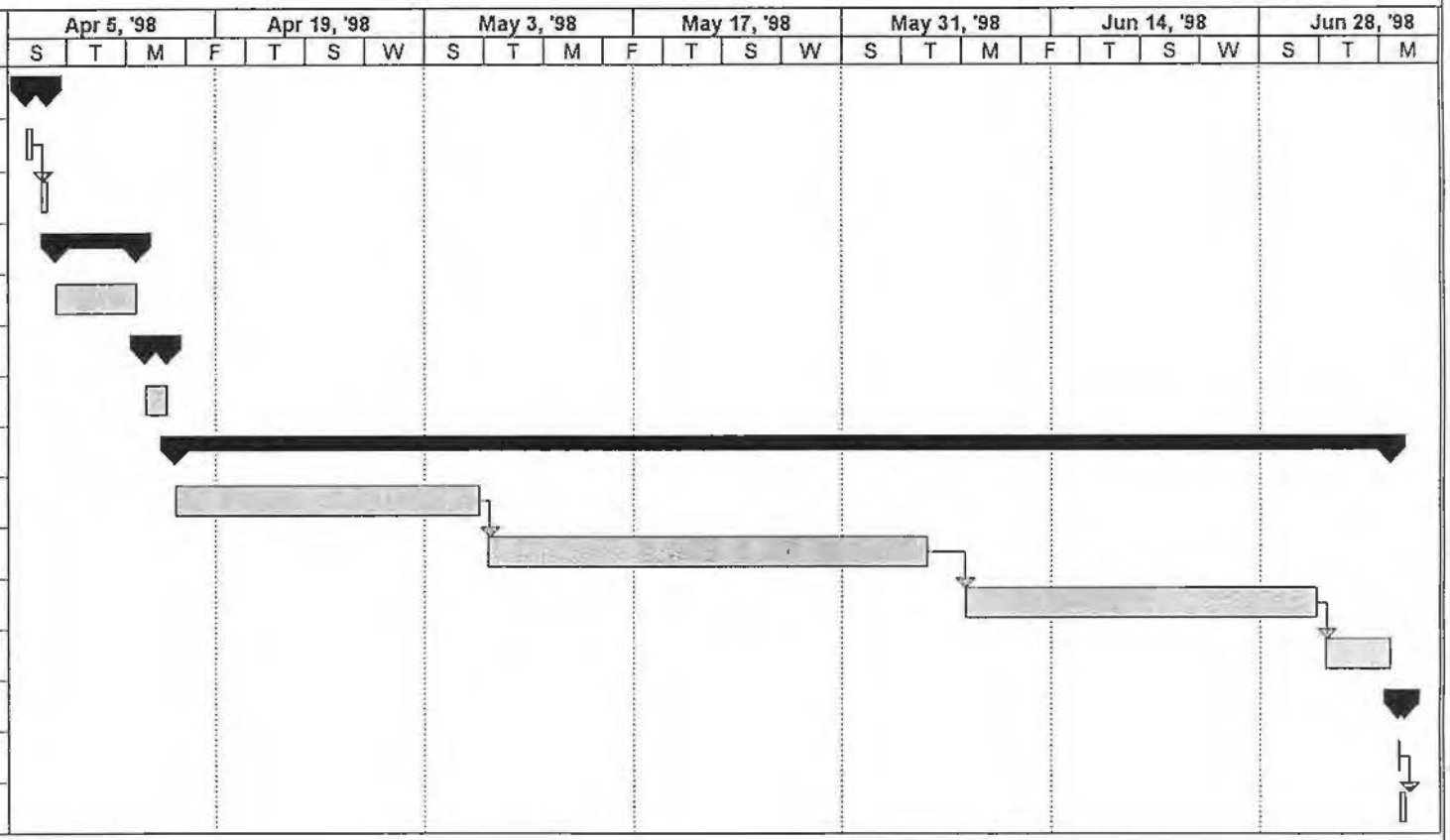
Consumable supplies consist of pin flags, twine, wooden stakes, etc. A list of those items included in EODT's overhead and not directly chargeable to the project, to include exceptions and unallowable charges, are presented in Table 9-5.

TABLE 9-5: CONSUMABLES AND UNALLOWABLE CHARGES

EMPLOYEE CONSUMABLES AND/OR PERSONAL EQUIPMENT	
The following items are considered examples of employee consumables and/or personal equipment, and as such are not allowable direct costs, with the exception noted below:	
Goggles	Clocks
Safety Equipment	Boots
Shoes	Cups
Gloves	Work Uniforms
Bug/Insect Repellant	Office Supplies
Wet Wipes or pre-moistened towelettes	Uniform Maintenance
Paper Towels	Laundry Items
Toilet Paper	Flashlights
Bottled Water	Batteries
Rain Suits	Shovels/Rakes
Whistles/Air Horns	Water Coolers
Sunscreen	Keys
Poison Ivy/Oak Protection & Cleanser	Paint
Exception: Under EODT's approved DCAA accounting system, certain items similar to those listed above may be charged as direct costs. For example, equipment and supplies which are required by the unusual or unique characteristics of a particular task, site, or locale (or which must be purchased in unusual quantities because of the above factors) may be charged as direct costs.	
UNALLOWABLE CHARGES (direct and indirect):	
Coffee	Ice
Tea	Shaving Equipment/Supplies
Gatorade or Sports Beverage	Soft Drinks and Milk
Sugar	Coffee Creamer

Figure 9-3: SEDA Open Burning Ground OE Removal ActionTime Line

ID	Task Name	Duration
1	**Mobilization**	**20h**
2	Mobilization of Main Work Force	10h
3	Site-specific Training	10h
4	**Location Surveying and Mapping**	**30h**
5	Survey Grid Locations	30h
6	**Vegetation Clearance**	**20h**
7	Remove Vegetation	20h
8	**OE Clearance**	**510h**
9	Mag, Flag, Dig & Demo 22.5 Acres	120h
10	Excavate/Sift Berms/low Lying Hill	220h
11	Sort 334 Cubic Yards of Oversize	150h
12	Mag, Flag, Dig & Demo 7.5 Acres	20h
13	**Close-out and Demobilization**	**10h**
14	Scrap/Equipment Turn-in	2h
15	Demobilize Personnel	8h



EOD Technology, Inc.
Volume I - Chapter 8
Work Data Cost Management Plan

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress

APPENDIX A

OF THE

WORK PLAN

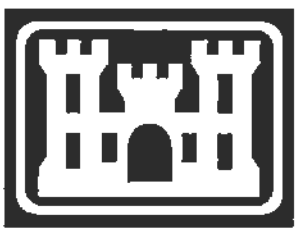
SITE SAFETY AND HEALTH PLAN

FOR THE

ORDNANCE AND EXPLOSIVES REMOVAL ACTION
OPEN BURNING GROUNDS
SENECA ARMY DEPOT ACTIVITY, ROMULUS, NEW YORK

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

Prepared For:



U.S. Army Engineering and Support Center
Huntsville, Alabama

Prepared By:

EOD Technology, Inc.
10938 Hardin Valley Road
Knoxville, Tennessee 37932

November, 1997

PREFACE

This Site Safety and Health Plan (SSHP) has been prepared for the United States Army Engineering and Support Center, Huntsville (CEHNC) in support of the EOD Technology, Inc. (EODT) Ordnance and Explosives Removal Action (OERA) being performed at the Open Burning Grounds at the Seneca Army Depot Activity (SEDA) located near Romulus, New York. This SSHP has been designed to identify the safety and health hazards associated with project activities and specifies the work practices and procedures needed to ensure protection of site personnel, the environment and the local community. All site activities will be performed in accordance with (IAW) this SSHP and applicable U.S. Army Corps of Engineers (USACE), Federal, state, and local regulations. This SSHP has been submitted as a portion of the SEDA OERA Work Plan (WP) and shall be used in conjunction with the SEDA WP.

This SSHP has been developed IAW the requirements of the CEHNC Data Item Description (DID) OT-005 for contract DACA87-97-D-0005, and the USACE Engineering Regulation (ER) 385-1-92, Safety and Occupational Health Document Requirements for Hazardous, Toxic and Radioactive Waste (HTRW) and Ordnance and Explosive Waste (OEW) Activities. Both of these documents contain guidelines for the format and content of an SSHP, and every attempt has been made by EODT to include the information requested by these documents. In all cases where it has been requested that specific information be presented in a given section of the SSHP, EODT has attempted to address those requirements. However, due to differences in formatting between the two documents, and to minimize duplication of effort, EODT has modified the required format of ER 385-1-92, and has adhered as closely as possible to the format of DID OT-005. As required by both documents, EODT has tailored the level and amount of detail presented in this SSHP toward the type of work, degree of hazards anticipated, and the complexity of tasks assigned by the CEHNC Statement of Work (SOW).

In generating this document, attention has been given to identifying site and task specific hazards, and to developing effective hazard control techniques and procedures. The hazard control methods detailed in this SSHP were evaluated and selected to minimize the potential for personal exposure to site or task hazards, and to safeguard the environment and general public. However, this SSHP is to be considered a living document, and is subject to change based on review and site implementation of currently identified, or additional, tasks. Any tasks, and associated documentation, that may be added after final approval of this document must be approved by the personnel on the following signature page and the CEHNC Contracting Officer (CO). Additions to the SSHP will be treated as amendments, and will not, unless otherwise specified, supersede the requirements provided for in the approved WP or SSHP.

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ATTACHMENTS

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LIST OF TABLES

LIST OF FIGURES

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LIST OF ACRONYMS AND ABBREVIATIONS

ABIH	American Board of Industrial Hygienist
ACGIH	American Conference of Governmental Hygienist
ALARA	As Low As Reasonably Achievable
ALS	Advances 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
OEW	ordnance and explosive waste
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

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

PEL	Permissible Exposure Limit
POL	petroleum, oil and lubricants
PM	Project Manager
PPE	personal protection equipment
ppm	parts per million
QC	quality control
QCS	Quality Control Specialist
SEDA	Seneca Army Depot Activity
SMSP	Site-specific Medical Surveillance Plan
SR	State Road
SREP	Site Representative
SSHP	Site Safety and Health Plan
SOP	standard operating procedure
SOW	Statement of Work
SSHO	Site Safety and Health Officer
SUXOS	Senior UXO Supervisor
SWP	Safe Work Practices
SZ	support zone
TCLP	Toxicity Characteristic Leaching Procedure
TEU	Technical Escort Unit
TWA	time-weighted average
UL	Underwriters Laboratory
USACE	U.S. Army Corps of Engineers
UXO	unexploded ordnance
UXOSP	UXO Specialist
UV	ultraviolet
WP	Work Plan
WZ	Work Zone

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1.0 GENERAL

1.1 SCOPE AND OBJECTIVES

This Site Safety and Health Plan (SSHP) has been prepared by EOD Technology, Inc. (EODT) for the U.S. Army Engineering and Support Center, Huntsville (CEHNC) for the Ordnance and Explosives Removal Action (OERA) operations to be performed at the former Open Burning Ground (OBG) site located within the Seneca Army Depot Activity (SEDA) near Romulus, New York. As mandated by its corporate policy, EODT is committed to providing site personnel with the requisite training, information and resources needed to ensure that all on-site operations are conducted in a manner that safeguards site personnel from exposure to recognized, uncontrolled safety and health hazards. To ensure compliance with this policy statement, the primary objective of this SSHP is to provide EODT with a structured vehicle designed to ensure the thorough examination of potential safety and health hazards associated with the tasks specified in the OBG Statement of Work (SOW). In keeping with this objective, this SSHP has been developed by EODT safety and health personnel using available site characterization data in an effort to anticipate, identify, evaluate, and design controls for the safety and health hazards which may be encountered during the various site tasks.

The secondary objective of this SSHP is to provide EODT with an effective communication tool for informing site personnel of the site and task hazards, and the methods and procedures that will be used to control personnel exposure to the identified hazards. The effective dissemination of the information in this SSHP to site personnel will significantly reduce the risk of personnel exposure to site hazards and the potential for an on-site emergency. To address the on-site emergencies which could reasonably be expected during site activities, contingency plans and emergency response procedures are also presented in this SSHP. In the event that an emergency does occur, EODT shall re-evaluate and critique the hazard control procedures presented in this SSHP to ensure their effectiveness.

The levels of personal protective equipment (PPE) and the safe work practices (SWPs) specified in this plan are based on the best available information from archival research documents, previous site studies, anticipated site conditions, and professional experience. The PPE and SWP requirements represent the minimum health and safety requirements to be observed by all personnel and may change based upon actual on-site implementation of project tasks. Any changes or additions to this SSHP will have prior approval by the CEHNC Contracting Officer (CO) and EODT's Occupational Safety and Health Manager (OSHM), and Project Manager (PM). Modifications to this SSHP may be required if any of the following occur:

1. Changes occur in the anticipated site conditions or expected levels of exposure;
2. Chemical hazards are identified which were not previously anticipated and addressed;
3. The degree of hazard associated with a required task is greater than anticipated; or
4. The SOW is expanded or changed.

Ordnance and Explosives (OE) pose a serious safety problem that endangers both human and animal life, along with environmental quality. Due to the inherently dangerous nature of the OE removal operations associated with this project, all EODT, subcontractor and USACE personnel involved in this project shall read this document carefully, understand its contents, and complete the SSHP Review and Approval Form presented in Appendix E of the Work Plan (WP). This shall be done prior to personnel participation in any site tasks that involve the potential for personnel exposure to on-site safety or health hazards. By signing the SSHP Review and Approval Form, site personnel are indicating their understanding of the SSHP requirements, and are also verifying their willingness to comply with the requirements outlined in this document. All site personnel will exercise reasonable caution at all times and shall immediately report to the Site Safety and Health Officer (SSHO) any site conditions which may pose safety or health hazards to site personnel. If any site personnel have questions related to the information presented in this SSHP, the question(s) shall be addressed and resolved by the EODT SSHO. Where the word "shall" is used in this SSHP, the provisions specified are mandatory. All on-site project activities to be performed during this OERA shall be managed so as to comply with the provisions of this SSHP and the regulations and guidelines listed in Section 1.2.

1.2 REGULATIONS AND GUIDELINES

The safety and health of on-site personnel and the local community will be ensured by following all applicable requirements and regulations listed in the following publications:

1. Occupational Safety and Health Administration (OSHA) General Industry Standards, 29 Code of Federal Regulations (CFR) 1910;
2. OSHA Construction Standards, 29 CFR 1926;
3. U.S. Army Corps of Engineers (USACE) Engineering Manual (EM) 385-1-1, Safety and Health Requirements Manual;
4. EODT Corporate Safety and Health Program (CSHP);
5. Army Regulation (AR) 385-40 (w/ USACE Supplement 1), Accident Reporting and Records;
6. Environmental Protection Agency (EPA) Hazardous Waste Management, 40 CFR 260-276, latest edition;

7. Engineering Regulation (ER) 385-1-92, Safety and Occupational Health Document Requirements for Hazardous, Toxic and Radioactive Waste (HTRW) and Ordnance and Explosive Waste (OEW) Activities, 18 March 1994; and
8. Department of Defense (DoD) 6055.9, Ammunition and Explosives Safety Standards.

1.3 REFERENCES

In addition to the publications and regulations previously listed, the following documents were used as reference material in the preparation of this document:

1. DoD 4145.26-M, Contractors' Safety Manual for Ammunition and Explosives;
2. Occupational Safety and Health Guidance for Hazardous Waste Site Activities, U.S. Department of Health and Human Services, National Institute of Occupational Safety and Health (NIOSH), October 1985; and
3. Threshold Limit Values and Biological Exposure Indices for 1996-97, American Conference of Governmental Industrial Hygienists (ACGIH), 1993.

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2.0 STAFF ORGANIZATION AND RESPONSIBILITIES

2.1 GENERAL

All personnel having exposure potential to site hazards are subject to the requirements of this SSHP. No site operations/tasks will be performed in a manner that conflicts with the safety, health, or environmental precautions expressed in this SSHP. After due warning, and process, personnel violating safety/health procedures will be dismissed from the site. The requirements listed in this SSHP may change as site work progresses, however, no changes will be made without the approval of the CEHNC CO, and EODT's PM and OSHM. Figure 2-1 depicts the safety and health organizational chain-of-command (COC) that will be used to efficiently and effectively communicate and control safety and health issues related to site operations.

2.2 ROLES AND RESPONSIBILITIES OF EODT PERSONNEL

EODT will provide highly trained and skilled site personnel to identify, handle, and remediate OE and other hazardous wastes. These personnel will have extensive experience in recognizing, evaluating, and handling OE, and will be familiar with the operational controls needed to protect personnel from the hazards associated with this OERA. The personnel listed in this section will be responsible for ensuring the safety and health of all on-site personnel, the environment and the general public. Resumes, containing the qualifications and experience for each of the personnel with specific safety and health responsibilities, are presented in Appendix F of the WP.

2.2.1 Program Manager

Mr. Jeffrey Bleke is the EODT Program Manager for this project and is responsible for the overall implementation of this project. Mr. Bleke is a registered Professional Engineer with extensive experience in the management of multiple project OE programs. Mr. Bleke's qualifications and experience are presented in Appendix F of the WP. In this role, Mr. Bleke will be responsible for the management of the EODT resources needed for the implementation of the safety and health requirements of this SSHP.

2.2.2 Project Manager

Mr. John (Jack) Scott, the EODT PM, is a registered Professional Engineer with substantial experience in the management of USACE and CEHNC projects. Mr. Scott has completed the OSHA general site worker and supervisor training requirements for hazardous waste operations in accordance with (IAW) 29 CFR 1910.120, and has in excess of 20 years of experience in project planning, design, implementation and management. As the PM for this project, Mr. Scott will have the following safety and health responsibilities:

1. Reporting directly to the Program Manager for all project and operational matters;

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/Quality Control Specialist

Mr. Salvatore Molle, the project SUXOS and Quality Control Officer (QCS), 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 and QCS. 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 and QCS, 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;
8. Directly interfacing with, and relaying safety and health concerns to, the on-site CEHNC Safety Representative (SREP); and
9. Implementing the Quality Control (QC) procedures outlined in Chapter 8.0 of the WP.

2.2.5 Site Safety and Health Officer

Mr. Edward Pinson will be the SSHO for this project. Mr. Pinson has over 18 years of combined military and civilian EOD/OE experience. He is qualified as a UXO Supervisor and is a graduate of the U.S. Navy EOD School, Indian Head, Maryland. He has completed the OSHA training requirements for Hazardous Waste Site Workers and Supervisors, IAW 29 CFR 1910.120, and the EODT SSHO/Site Managers training course. In this role, Mr. Pinson 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;

10. Implementing and enforcing the EODT Alcohol/Drug Abuse Policy;
11. Investigating injuries, illnesses, accidents, incidents and near misses;
12. Conducting visitor orientation;
13. Conducting, and documenting, daily safety inspections and weekly safety audits;
14. Coordinating with the EODT OSHM on monitoring and PPE requirements;
15. Conducting monitoring IAW this SSHP; and
16. Ensuring field implementation of the EODT CSHP.

2.3 RESPONSIBILITIES OF ALL SITE PERSONNEL

Even though specific EODT personnel have been identified as having distinct responsibilities for site/project safety, ensuring the safe and healthful conduct of site operations is the responsibility of all personnel assigned to the site. Therefore, all EODT, CEHNC and subcontractor personnel involved in site activities will be responsible for the following:

1. Complying with the SSHP and all other required safety and health guidelines;
2. Taking all necessary precautions to prevent injury to themselves and fellow site personnel;
3. Remaining alert to any potentially harmful situation and immediately informing the SSHO of any such identified conditions;
4. Performing only those tasks that they can do safely and have been trained to do;
5. Notifying the SSHO of any special medical conditions (i.e., allergies, contact lenses, diabetes) which could affect their ability to safely perform site operations;
6. Notifying the SSHO of any prescription and/or over-the-counter medication which they are taking that might cause drowsiness, anxiety or other unfavorable side affects;
7. Preventing, to the greatest extent possible, the spillage and splashing of environmentally hazardous materials;
8. Practicing good housekeeping by keeping the work area neat, clean and orderly;
9. Immediately reporting all injuries, no matter how minor, to the SSHO;
10. Maintaining site equipment in good working order, and reporting defective equipment to the SSHO; and
11. Properly inspecting and using the PPE required by the SSHP or the SSHO.

2.4 SUBCONTRACTOR RESPONSIBILITIES

Any subcontractors operating on site shall be responsible for providing site personnel who have read, understand and will comply with this SSHP. The subcontractor must provide documentation that the personnel assigned to the project have the training and medical surveillance required by this SSHP. The subcontractor shall also be responsible for providing equipment that is in good repair, safe for operations, and free from any obvious hazards.

2.5 CEHNC PROJECT PERSONNEL

The following CEHNC personnel have been assigned to the safety and health coordination and administration of this project. These personnel shall be contacted whenever changes must be made to the SSHP or WP.

CEHNC Personnel	Responsibility	Phone Number
Alicia Allen	CEHNC Project Manager	(205) 895-1552
Kara Hetrick	CEHNC Contracting Specialist	(205) 895-1128
Mary Dowling	CEHNC Contracting Officer	(205) 895-1151
Kellie Williams	CEHNC Industrial Hygienist	(205) 895-1584
TBD	CEHNC OE Safety Specialist	(205) 895-XXXX

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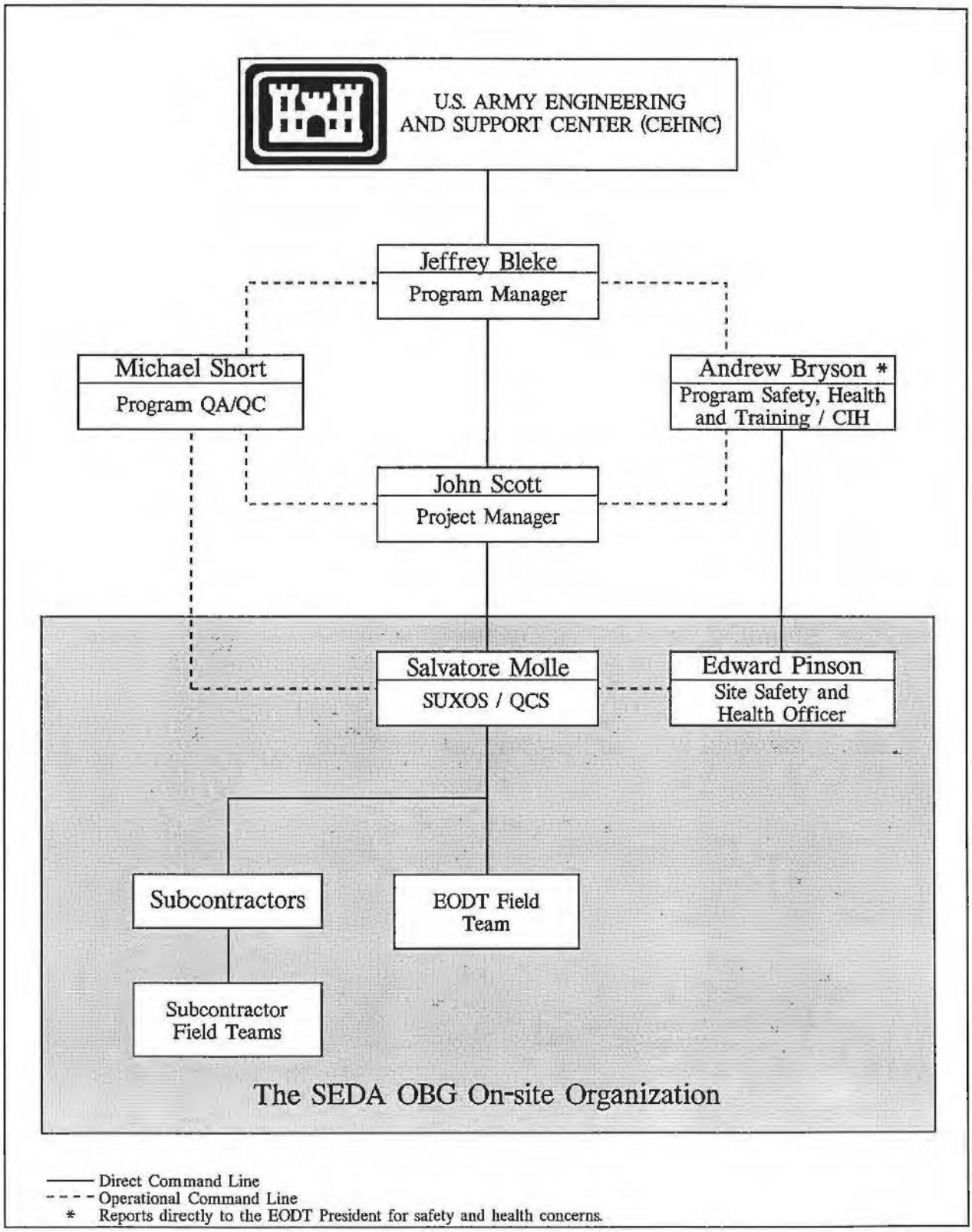
Figure 2-1. Safety and Health Organizational Chain of Command



3.0 SITE DESCRIPTION AND CHARACTERIZATION

3.1 SEDA LOCATION AND DESCRIPTION

3.1.1 General Project Location and Description

SEDA is a government owned facility under the jurisdiction of the U.S. Army Material Command. The SEDA installation consists of approximately 10,600 acres located west of the Township of Romulus, New York in Seneca County. Located between the Seneca and Cayuga Finger Lakes, SEDA is bounded on the west by State Route (SR) 96A and on the east by SR 96. The facility is located on an uplands area, at an elevation of approximately 600 feet Mean Sea Level, that forms an elongated divide separating the two Finger Lakes. The entire installation is approximately eight miles long (north to south) and an average of four to four and a half miles wide (east to west). Out of the nearly 10,600 acres within SEDA, approximately 8,400 acres are designated storage areas for munitions, which include 519 storage igloos, eight above ground magazines, two inert warehouses, and 2 small-arms warehouses. The remaining facility acreage is used for an airfield, housing, and recreational, administrative and community services.

The annual climate at the SEDA is characterized as relatively moderate with four distinct seasons. The winter months of December to March are typically cold, with the low temperatures reaching single digits, with the average highs in the upper 30's to low 40's. The summer months are warm, with high temperatures reaching the low 90's, but with lows that can drop into the 40's and 50's.

3.1.2 Site History

Since its inception in 1941, SEDA's primary mission has been the receipt, storage, maintenance and supply of military ordnance. As a part of this function, SEDA has conducted disposal operations for surplus and off-specification military munitions and explosives by burning and detonation at the munitions destruction area located in the northwestern corner of the SEDA. In early 1995, under the Base Realignment and Closure (BRAC) process, the DoD recommended the closure of SEDA. This recommendation was approved in October 1995, and the depot is scheduled for closure by July 2001.

3.2 DESCRIPTION OF THE OE REMOVAL ACTION SITE

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. Figure 2 presented in Appendix C of the WP shows the relative position of the OBG within the SEDA and Figure 3 shows a closer view 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 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 February 1997 USACE document entitled Record of Decision for the Former Open Burning (OB) Grounds Site, 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 a substantial volume of data related to soil sampling, monitoring well installations, and groundwater sampling at the OBG was produced as a result of these studies. Inclusion of this volume of data is beyond the scope of this SSHP, however, an examination of the 1997 Record of Decision (ROD), and the 1994 Final Remedial Investigation Report, indicates that environmentally significant levels of organic and inorganic chemical contaminants have been detected in the soils and groundwater of the OBG. Further discussion of the contaminants of concern is presented in para 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 [i.e., those that have failed the Toxicity Characteristic Leaching Procedure (TCLP) analysis] 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 (i.e., >500 parts per million (ppm) of lead, but < TCLP limits), 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;

- Collection and turn-in of ordnance related scrap (ORS) - 52 work days; (to be conducted in conjunction with the OE removal);
- Disposal of hazardous OE - 52 work days (in conjunction with the OE removal) ; and
- Performance of QC procedures - 54 work days; (in conjunction with the other project tasks).

3.5 CONTAMINATION CHARACTERIZATION

3.5.1 Chemical Warfare Materials

Archival research of the SEDA has indicated that the area is not a suspect Chemical Warfare Materials (CWM) site. In the unlikely event that a toxic chemical munition, or any potential source of CWM is encountered, site personnel in the area will immediately evacuate the area in an upwind direction to a safe location, and the SUXOS and SSHO will be notified. The SUXOS will in turn notify the CEHNC SREP, who will request assistance from either the U.S. Army Technical Escort Unit (TEU) or other military EOD units. EODT will station two UXO Specialists 50 meters upwind of the suspected CWM to secure the area. Once the site is secure and the CEHNC SREP has been notified, the EODT OSHM will also be contacted, and EODT personnel will continue to secure the site until TEU or military EOD arrives. Confirmation of the presence of CWM will require a halt in site operations until the potential for future exposure can be assessed and the SSHP is modified to address the CWM hazards.

3.5.2 OE Contamination

Historical records indicate that a large variety of OE were burned and/or detonated at the SEDA OBG. While the post-burn/detonation inspections conducted as part of the OB/OD process will have helped reduce the OE hazards, it is believed that there is still a potential for encountering significant amounts of OE at the site. As a part of the September 1994 Remedial Investigation (RI), an OE contractor conducted surveys and anomaly investigations to clear work areas and access lanes where soil was sampled and monitoring wells were installed as part of the RI. During the OE clearance operations, the OE contractor personnel located and identified various sizes and types of OE with both hazardous and explosive characteristics. According to the 1994 RI report, and documentation provided to EODT by the CEHNC, the following OE may be encountered at the OBG: primers; detonators; proximity, point detonating, mechanical, mine and time delay fuzes for rockets, mines, projectiles, mortars and bombs; bulk explosives; shape charges; hand and rifle grenades; small arms up to .50 caliber; 20mm, 35mm, 37mm, 40mm, 75mm, 76mm, 90mm, and 105mm projectiles; various bombs, including fragmentation and cluster bombs; and a large variety of mortars and rockets.

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; spray paints, and nitro-methane and ammonium nitrate (two component explosives). 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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TABLE 3-1: SUMMARY OF EXPOSURE STANDARDS AND PROPERTIES FOR ON-SITE CHEMICAL HAZARDS

HAZARDOUS SUBSTANCE	EXPOSURE LIMITS	PHYSICAL DESCRIPTION	ROUTES OF EXPOSURE	SYMPTOMS OF EXPOSURE	TARGET ORGANS	MEDIA WHERE FOUND	MAX. LEVEL DETECTED
Total Dust	PEL 10 mg/m^3 IDLH NE	Visible dust in the Breathing Zone (BZ).	Inhalation Ingestion	Acute exposures to high concentration may cause irritation of upper respiratory tract, coughing and sneezing.	Lungs, Upper Respiratory Tract.	Soil	NA
Respirable Dust	PEL 5 mg/m^3 IDLH NE	Finely divided particles too small to detect with the human eye.	Inhalation Ingestion	Exposure to high concentrations may result in fibrotic scarring of lung tissue.	Upper Respiratory Tract, Lungs	Soil	NA
Barium (Ba) (soluble)	PEL 0.5 mg/m^3 IDLH 1100 mg/m^3	Metal: Usually found as barium nitrate or barium chloride which are white, odorless solids	Inhalation Ingestion Contact	Irritates skin, eyes, nose and throat; muscle spasms; GI disturbances; dermatitis.	Respiratory System, Heart, CNS, Skin, Eyes	Soil Sediment Surface Water	34,400 mg/kg 1,780 mg/kg 523 ug/L
Copper (Cu)	PEL 1.0 mg/m^3 IDLH NE	Metal: none.	Inhalation Ingestion Contact	Irritation of the nasal mucous membranes and pharynx; eye irritation; metallic taste; dermatitis.	Respiratory System, Liver, Kidneys, Skin, Eyes.	Soil Sediment Surface Water	38,100 mg/kg 3,790 mg/kg 60 ug/L
Lead (Pb)	PEL 0.05 mg/m^3 IDLH 700 mg/m^3	Metal: Heavy ductile, soft gray solid.	Inhalation Ingestion Contact	Weakness; facial pallor; loss of weight; anemia; anorexia; constipation; abdominal pain; hypertension.	GI Tract, Central Nervous System, Kidneys, Blood, Gingival Tissue.	Soil Sediment Surface Water	56,700 mg/kg 7,400 mg/kg 74 ug/L
Zinc (Zn)	PEL 5 mg/m^3 ST 10 mg/m^3	Usually found as zinc oxide which is a fine, white, odorless particulate.	Inhalation	Sweet, metallic taste; dry throat; cough, chills with fever-like symptoms; reduced pulmonary function; nausea; vomiting; fatigue.	Respiratory System.	Soil Sediment Surface Water	127,000 mg/kg 1,200 mg/kg NE
PAH's [B(a)P, B(a)A, and DB(a,h)A]	Benzene soluble fraction PEL 0.2 mg/m^3 Suspect Human Carcinogen	Slightly brown in color in pure form, dark in color in mixture	Inhalation Ingestion Contact Absorption	May cause irritation of the skin, eyes and mucous membranes	Skin, Eyes, Respiratory System	Soil Sediment Ground Water	3,700 ug/kg 500 ug/kg NE

NE - None Established
IDLH - Immediate Danger of Life and Health
C - Ceiling Limit
PEL - Permissible Exposure Limit
NA - Not Applicable
ST - Short Term Exposure Limit

4.0 HAZARD ASSESSMENT AND RISK ANALYSIS

4.1 INTRODUCTION

A preliminary evaluation of the on-site tasks to be conducted at the SEDA has been performed by EODT's safety, health and UXO-qualified personnel. This preliminary evaluation has been conducted using: available information from site characterization data; chemical and task specific hazard information; and the professional knowledge and experience of EODT's highly qualified staff. The chemical, physical and biological hazards anticipated for this site, as well as the risk of potential exposure, are discussed in this Section, and are summarized in the Certification of Task Hazard Assessment (CTHA) forms found in Attachment 2 of this SSHP. The hazard control methods and procedures, to include SWP, are discussed in Section 13.0 of this SSHP.

4.2 TASK HAZARD ASSESSMENT AND EXPOSURE RISK ANALYSIS

4.2.1 Introduction and General Requirements

All known, or potential, chemical, physical, biological and safety hazards that may pose a threat to the well-being of site personnel have, to the extent possible, been identified, and the risk of exposure to each assessed. Emphasis has been placed on identifying situations and tasks that have known, or may create, serious safety and health affects or Immediately Dangerous to Life or Health (IDLH) conditions. Due to the potential for exposure to OE and other chemical, physical and biological hazards, the overall hazard level for this project is high and the risk of exposure to OE, safety, physical and biological hazards is also high.

While this hazard assessment has been made using the best available data, all site personnel must understand that the evaluation of site characteristics and hazards is an ongoing process in which they play a major role, and which will continue throughout the duration of the project. All site personnel shall be vigilant in identifying hazards in the work place and will bring them to the attention of the SSHO, or the SUXOS. If changes occur in the level or types of hazards present for a currently evaluated task, or if a new task is added to the WP, the SSHO will inform the OSHM of the change. If needed, a new CTHA form will be completed which outlines the new hazards, control methods and PPE for the task. Any additions to the approved SSHP will be reviewed and approved by the responsible EODT personnel, submitted to the CEHNC CO, and once approved, will be added as Appendices to the SSHP.

4.2.2 Hazards and Risks Associated with Potential Exposures to Chemicals

In assessing the risks associated with potential exposures to known on-site chemical contaminants, EODT safety and health personnel examined archival data, current land usages, the physical properties of potential site contaminants, the potential exposure routes, and the operational tasks to

be performed to determine what chemical hazards may be encountered during site activities. As a result of this examination, it is believed that none of the environmental contaminants are present in the soil at sufficient quantities that would create a potential for personnel to receive a documentable overexposure to the contaminants of environmental concern. This fact will be especially true since EODT is planning on employing real time dust monitoring, SWP's and operational controls to reduce personnel exposure to contaminant containing dusts. Additional data related to the potential for chemical exposure is presented in para 7.6 of this SSHP. If site activities are modified, or if evidence of additional chemical contamination is found, the potential for chemical exposure will be re-evaluated.

In the event that site personnel find OE, or any other container, which is suspected of containing toxic military chemical agents (i.e., CWM), all site personnel will immediately evacuate the site upwind to a safe location. The procedures outlined in para 3.5.1 will then be followed and the project will continue IAW directions from the CEHNC CO.

4.2.3 Hazards and Risks Associated with OE Hazards

The hazards associated with OE include the possibility of personnel injury or death caused by explosion, fire, fragmentation or over pressurization. These hazards may result if OE are not properly located, identified, handled, transported or disposed. The risk of personnel exposure to OE during this project is high, primarily due to the nature and amount of OE disposed of previously in the OBG, and the fact that explosively configured and hazardous OE were encountered by the UXO contractor during the 1994 RI. While there is no "safe" procedure for dealing with OE, merely procedures which are considered less dangerous, maximum safety in any OE operation can be achieved through adherence to applicable safety precautions, a planned investigation and remediation approach, and intensive supervision. For all site operations with the potential for exposure to OE, only those personnel absolutely essential to the operation shall be allowed in the restricted area/exclusion zone. The safety and health procedures which will be used for reducing the hazards associated with OE are discussed in Section 13.0 of this SSHP.

4.2.4 Physical Hazards

Due to the nature of the planned site operations, the potential and risk for exposure to physical hazards is high for this project. Physical hazards which may be encountered during site operations include:

- Heat and cold stress, resulting from exposure to temperature extremes;
- Flammable/explosive materials used for fueling heavy equipment and power tools;
- Material lifting hazards such as back strain, pulled muscles and tendons, pinched/crushed fingers and toes;

- Cut/laceration of hands and legs resulting from contact with sharp surfaces/objects;
- Hazards associated with the operation of hand and power tools, including cuts/lacerations, noise and flying objects;
- Slip, trip and fall hazards associated with ground cover, exposed tree/brush stumps, uneven or rocky terrain, and vegetation growth;
- Inclement weather such as heavy rain and thunder/lightning storms;
- Sharp objects including OE fragments, nails, broken glass and exposed tree/brush stumps;
- Pinch points associated with sifting and conveying operations; and
- Hazards associated with sifting and heavy equipment operation, including noise and crush hazards from equipment backing and bucket movement.

Site personnel will be instructed to remain alert to the presence of potential physical hazards and to immediately report the observance of any uncontrolled or unanticipated physical hazards to the SUXOS and the SSHO. The EODT SSHO shall be responsible for thoroughly evaluating each day's field operations with respect to potential physical hazards. Any suspect or known physical hazards, and the specific procedures to be used to control them, shall be reviewed during the daily tailgate safety briefing. General procedures for reducing or eliminating the physical hazards are discussed in Section 13.0 of this SSHP.

4.2.5 Biological Hazards

Due to the anticipated schedule, the project will extend into warmer weather periods of the year. As such, there is a probability that site personnel will encounter biological hazards. The biological hazards anticipated for this project include: stinging insects like bees, wasps and hornets; poisonous plants, such as poison ivy, oak and sumac; ticks; mosquitoes; spiders; and poisonous snakes. While encountering hazardous insects and animals during the winter months will be remote, site personnel will remain alert to the presence of hazardous plants since toxic skin reactions are possible from contact with the barren plant stems and branches. Employee awareness and the SWP's outlined in Section 13.0 will be used to reduce, or eliminate, the risks associated with these hazards.

4.3 TASK DESCRIPTIONS AND HAZARDS

4.3.1 Task Descriptions

To accomplish the SOW for the OBG, EODT personnel shall perform the general tasks outlined in para 3.4 of this SSHP. To complete those general tasks, EODT personnel will be required to perform several sub-tasks within some of the tasks described previously. A full listing of the tasks and sub-tasks is provided below:

1. Mobilize and set-up site operational areas.
2. Establish the soil stockpile areas and deploy the soil pile liners and covers.

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. 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

munitions destruction area. The task hazards that may be encountered during mobilization and site set-up include:

- Inclement weather and cold stress;
- Use of flammable/combustible materials (i.e., fuels);
- Hand tools and power tools;
- Physical exertion; and
- Slips, trips and falls.

4.3.3 Establish the Soil Stockpile Areas

Through consultation with the CEHNC SREP, EODT personnel shall establish the soil stockpile areas where the various excavated soils will be stockpiled. This task will involve the deployment of the under liners for the lead contaminated soils and the positioning of the soil pile covers so that they may be used to cover the stockpiled soils after they are excavated and sifted. The hazards that may be encountered during this task are:

- Inclement weather and cold stress;
- Hand tools and power tools;
- Use of EMM to move the liners/covers;
- Use of flammable/combustible materials (i.e., fuels);
- Physical exertion and lifting; and
- Slips, trips and falls.

4.3.4 Conduct Location Surveying and Mapping

Location surveying and mapping (LS&M) will be conducted over the entire 30-acre site. The areas traveled and accessed by survey and mapping crews will be visually inspected by an EODT UXO Specialist (UXOSP) assigned to the surveying team. Survey personnel will utilize surveying equipment and procedures to stake the four corners of each grid to be investigated. A magnetometer check will be performed at all points where survey stakes, posts, markers, or monuments are to be installed. If suspect OE or a subsurface anomaly is located during the visual or magnetometer sweeps, the survey team UXOSP will report the encounter to the EODT SUXOS, and will mark the item/anomaly with a pin flag. Items/anomalies located during this task will be investigated and disposed of during the initial phase of the OE removal task which will be performed immediately upon completion of the LS&M. The task hazards that may be encountered during LS&M include:

- Surface and sub-surface OE;
- Inclement weather and temperature extremes;
- Hand tools;
- Physical exertion; and
- Slips, trips and falls.

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 cannot be positively identified or it 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;

- Physical exertion; and
- Slips, trips and falls.

4.3.8 Excavate Soil

To facilitate the removal of the berms and low-lying hill, and to allow for the segregation of the soils contaminated with various levels of lead, EODT shall excavate the soils contained in the berms and low-lying hill, and any other locations within the site, as required by the CEHNC SREP. To protect the EMM operator and other site personnel, each one foot EMM bucket lift shall be swept with a magnetometer by an EODT UXOSP prior to removal. In the event that a positive reading is obtained when conducting the survey, the UXOSP shall hand excavate the anomaly to determine its identity. If OE is found, the SUXOS or SSHO shall provide the second inspection to verify its identity. For those items that are unfuzed and determined safe to move, the UXOSP shall remove the item and place it in a temporary storage area for future transportation to a holding area where it will be stored until disposal operations are conducted. Once the item has been removed, and the lift cleared, the EMM shall remove the soil. If an OE item is identified by the UXOSP and SUXOS as being fuzed or unsafe to move, the item will be left in place and disposed of by BIP operations at the end of the day. The hazards associated with this task are as follows:

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

4.3.9 Sift Excavated Soil

In order to remove OE hazards from the excavated soil, all soil excavated from the berms, low-lying hill and other areas around the site shall be sifted prior to transportation to the appropriate stockpile. To conduct the sifting, EMM shall be used to load a hopper on top of the sifter and the sifter will then separate the soils according to size. Oversize material greater than one inch in diameter will be screened out of the soil, and the undersize material will be transported from the sifter by a conveyor belt. All sifting operations shall be conducted under the supervision of a UXOSP, who

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. Hazardous 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 SUXOS shall be responsible for the continued compliance of on-site tasks with relevant QC procedures. The SUXOS 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;

- Material lifting;
- Physical exertion; and
- Slips, trips and falls.

4.4 COMMUNICATION OF TASK HAZARD INFORMATION

Prior to personnel participation in a given task, the OSHM and/or SSHO will communicate to all affected site personnel the information related to the hazards and the risks of exposure associated with the particular task. This hazard information will be communicated through several means, including personnel reading this SSHP, initial site training, task specific training and tailgate safety briefings. Details related to the various training required is included in Section 6.0 of this SSHP.

4.5 EMPLOYEE RIGHT-TO-KNOW HAZARD COMMUNICATION

4.5.1 Communication of Hazardous Products to EODT Site Personnel

In order to comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200, EODT will provide site personnel with the hazard communication requirements specified in this paragraph. The requirements of this paragraph are needed to ensure that site personnel are informed of the hazards associated with the products with which they work. Therefore, the following shall apply to all commercial products used on site that contain hazardous substances:

1. A written Hazard Communication Program will be made available to site personnel;
2. A material safety data sheet (MSDS) will be maintained in Volume II, Appendix H of the WP for each product used on site that contains a hazardous substance, and site personnel will be advised of the location and contents of these MSDSs IAW the requirements of this SSHP;
3. All containers not supplied with adequate hazard labeling shall have a hazard communication label affixed to the container that communicates the chemical and physical hazards associated with working with the material;
4. Employees working with hazardous substances shall be trained IAW the requirements of 29 CFR 1910.1200 outlined in paragraph 6.10;
5. An inventory of all hazardous substances used on site will be maintained on site; and
6. Personnel, including subcontractors, affected by hazardous substances use shall be informed of the hazards associated with the commercial products used on site.

4.5.2 Communication of Hazards to EODT Subcontractor Personnel

As part of the EODT Hazard Communication Program, the SUXOS and SSHO will ensure that all subcontractor personnel are informed of the hazards related to the site, site tasks to be performed and hazardous products used on site. EODT will make a copy of this SSHP available to subcontractor personnel and subcontractor personnel will be required to sign the EODT SSHP Team Review form

certifying that they have read and understand the SSHP. Further, subcontractor personnel will be provided the same level of hazard information training provided to EODT site personnel.

4.5.3 Subcontractor Communication of Task/Product Hazards to EODT

EODT subcontractors will be required to provide the SSHO with information related to any task hazards which may be created by the subcontractors performance of assigned tasks. The subcontractor will also provide the SSHO with MSDSs for any commercial products they bring on site that contain hazardous materials, and will provide documentation of hazard communication training conducted by the subcontractor for those personnel using the identified products.

4.6 CERTIFICATION OF TASK HAZARD ASSESSMENT

During development of this SSHP, a CTHA form was completed for each task (or group of similar tasks) to be conducted under this SSHP (see Attachment 2 of this SSHP). These assessments were conducted to comply with the OSHA PPE standard (29 CFR 1910.132), and to ensure that all tasks were assessed to determine the PPE and control procedures needed to protect site personnel from the task hazards. The hazard assessments were conducted using the best available information related to the site and the task itself. If site conditions or tasks change, the SSHO will evaluate the new conditions or task, and complete a new CTHA form. The SSHO will then forward the form to the OSHM for submission to, and approval by, the CO prior to resuming or initiating the task. The CTHA forms will be used on a daily basis by the SSHO and SUXOS to inform site personnel of the hazards expected during the day's activities. The completed CTHA forms also outline the engineering and administrative controls, and EODT SOPs or programs which will be implemented for the safe conduct of each task in the SOW.

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5.0 ACCIDENT PREVENTION

5.1 GENERAL

This purpose of this section is to address all content requirements of the Accident Prevention Plan, as specified in EM 385-1-1, that are not otherwise addressed in this SSHP. Included in this Section are: EODT's statement of safety and health policy; EODT's safety program and accident prevention goals; EODT's policies and procedures for safety violations and SSHP non-compliance; and EODT's plan for the prevention of alcohol and drug abuse.

5.2 STATEMENT OF SAFETY AND HEALTH POLICY

It is the policy of EODT to maintain personnel exposures to hazardous OE and chemical, physical or biological hazards at levels that are As Low As Reasonably Achievable (ALARA). This ALARA policy is considered from the project planning phase through to the project's completion, and will apply to all phases of site operation. For each project and task, ALARA procedures will be developed by the OSHM, PM and SUXOS, written into the site plans, approved by the client, and implemented during site operations. All site personnel will be required to adhere to the established ALARA procedures, and the ALARA procedures shall be re-evaluated and updated if the anticipated site conditions change during the course of the project. ALARA procedures include: the SOPs, SWPs and engineering controls presented in Section 13.0; EODT's procedures used to ensure proper training of personnel; use of good personal hygiene practices; and, when required, use of PPE.

5.3 EODT'S CSHP AND ACCIDENT PREVENTION GOALS

The goal of EODT's CSHP is to provide the safety and health guidelines needed to ensure that EODT personnel are provided with a work environment that is free of uncontrolled, recognized safety and health hazards. It is also the goal of the EODT CSHP to comply with all Federal, state and local regulations, and client-specific safety and health requirements. During its ten years, and over 500,000 man-hours of operation, EODT has never experienced an OE related accident, and has never been cited for a regulatory non-compliance. This enviable safety and health record has been achieved through: 1) EODT's meticulous attention to identifying project safety and health hazards; 2) EODT's careful design, and effective implementation, of appropriate hazard control measures and procedures; and 3) the thorough knowledge and extensive experience of EODT's field personnel. For this project, the OSHM, PM and SUXOS will be responsible for working closely with the CEHNC safety and health representatives, and for ensuring the project-wide implementation of EODT's CSHP requirements to assure the continuance of EODT's safety record and the achievement of the safety and health policies stated previously.

5.4 NON-COMPLIANCE POLICIES AND PROCEDURES

5.4.1 General Requirements

As outlined previously in Section 2.0 of this SSHP, designated corporate and on-site personnel have been tasked with the overall responsibility of ensuring the safe and healthful conduct of site operations. Additionally, EODT has expended significant energy and resources toward the development and design of written programs and procedures to be utilized to safe guard site personnel from the hazards associated with this project. It is imperative that all site personnel realize that their compliance with the established safety and health procedures is of paramount importance in the prevention of accidents and emergencies that could compromise not only their own safety and health, but also the well-being of other site personnel, the environment and the public. Since violations of the safety and health procedures and programs outlined in this SSHP can result in serious personal injury or illness, or environmental insult, EODT has developed the policies and procedures presented below to resolve and remedy any occurrences of non-compliance with the safety and health requirements presented in this SSHP.

5.4.2 Safety and Health Violations

It is the general policy of EODT that no personnel engage in any activity for which they are not properly trained, nor may personnel engage in any activity where the consequences of the activity are uncertain, or where the hazards associated with the activity have not been assessed. The additional prohibitions presented below are to be considered supplementary to the requirements outlined in this SSHP and are strictly forbidden at any time, during any phase of site operation. The SSHO may also impose, and will communicate to all site personnel, other prohibitions as deemed necessary to ensure the safe conduct of site operations.

- Horseplay or fighting;
- Use of alcohol on site or during the period from mobilization to the site each day, until demobilization from the site each work day;
- Illegal use drugs (as defined in paragraph 5.5 of this SSHP);
- Use of prescription or over-the-counter medications without prior approval of the SSHO;
- Eating, drinking or smoking in a Work Zone (as defined by this SSHP in Section 11.2), without prior approval of the SSHO;
- Unnecessary sitting or kneeling on potentially contaminated surfaces;
- Climbing on/over obstacles, unless such activity has been approved by the SSHP or SSHO;
- Starting or maintaining an open flame of any type unless authorized by the SSHO;
- Use of equipment that has not been inspected and deemed safe for operation;
- Entry into a work site, under any circumstances, by any employee or visitor without prior approval of the SUXOS; and
- Initiation of work without the presence of a buddy.

5.4.3 Disciplinary Actions

If a safety rule violation occurs, or a non-compliance with the SSHP is identified, appropriate positive disciplinary action will be taken. In all cases where a potential violation or non-compliance has been noted, the SSHO will conduct an investigation into the validity of the allegation, and to determine the known or potential severity of the violation/non-compliance. Both violations and non-compliance actions, may be divided into two categories: "Major" and "Minor". An example of a minor violation is reporting to, or conducting, work without the prescribed Level D PPE. A major violation is any violation of the SSHP that could have resulted, or did result, in an accident involving personal injury or property damage. Table 5-1 outlines the disciplinary actions and procedures to be followed in the event that a violation or non-compliance issue results from personnel actions:

TABLE 5-1: DISCIPLINARY ACTIONS FOR MINOR AND MAJOR VIOLATIONS

MINOR VIOLATIONS OR NON-COMPLIANCE ISSUES	
First Offense:	A verbal warning will be given to the individual; the offense to be noted in individual's file and supervisor's project file; a discussion with the individual's supervisor or Team Leader will be conducted.
Second Offense:	Written reprimand by the SUXOS will be entered in individual's file; discussion with individual and individual's supervisor.
Third Offense:	Termination of employment by the SUXOS and notification to the PM.
MAJOR VIOLATIONS OR NON-COMPLIANCE ISSUES	
Any Offense:	Minimum penalty for a Major violation will consist of a written reprimand to be entered in individual's file and a discussion between the individual and the SUXOS will be conducted. Depending upon the severity of the violation, the SUXOS may temporarily dismiss the individual from the job site pending further investigation of the offense. If this occurs, the incident will immediately be reported to the PM and OSHM by the SSHO or SUXOS. Upon completion of a full investigation, the individual's employment may be terminated, if deemed appropriate through a joint decision of the OSHM, PM and/or SUXOS.

5.4.4 Violation and Disciplinary Action Procedures

When a violation or a non-compliance occurs, the procedures listed below, and those listed in Figure 5-1, the Disciplinary Action Flow Chart, will be used to ensure impartial implementation of these actions.

1. An investigation of the incident will be carried out by the SSHO to determine if a violation has in fact occurred.
2. If the SSHO determines that a violation has occurred, the following actions will be accomplished:
   - A report of the violation will be submitted to the SUXOS and OSHM by the SSHO;
   - The SSHO, in conjunction with the OSHM and SUXOS will determine if the violation is "major" or "minor"; and

- The SUXOS, in conjunction with the OSHM and the PM, will determine and implement the appropriate disciplinary action.

5.5 SUBSTANCE USE AND ABUSE

5.5.1 Introduction

The Drug-Free Workplace Act of 1988 set as a goal the elimination of the effects of illegal drugs in the workplace. Due to the inherently hazardous nature of the work that EODT performs, the importance of creating and maintaining a safe, drug free working environment for all employees cannot be overemphasized. The performance of every employee must, at all times, support the company's mission to conduct site operations with a high level of productivity, reliability, judgment and safety.

The management of EODT is thoroughly committed to providing a "Drug-Free Workplace" for all employees at each project site. Drug and/or alcohol use and abuse are incompatible with the maintenance of EODT's high standards of performance, safety, and quality. Since maintenance of these standards is expected of all employees at all times, and as a term and condition of employment, all employees will refrain from the illegal use, distribution, possession, manufacture, or dispensing of a controlled substance, and drug and/or alcohol abuse. Violation of this policy will result in administrative action, to include the possible termination of employment.

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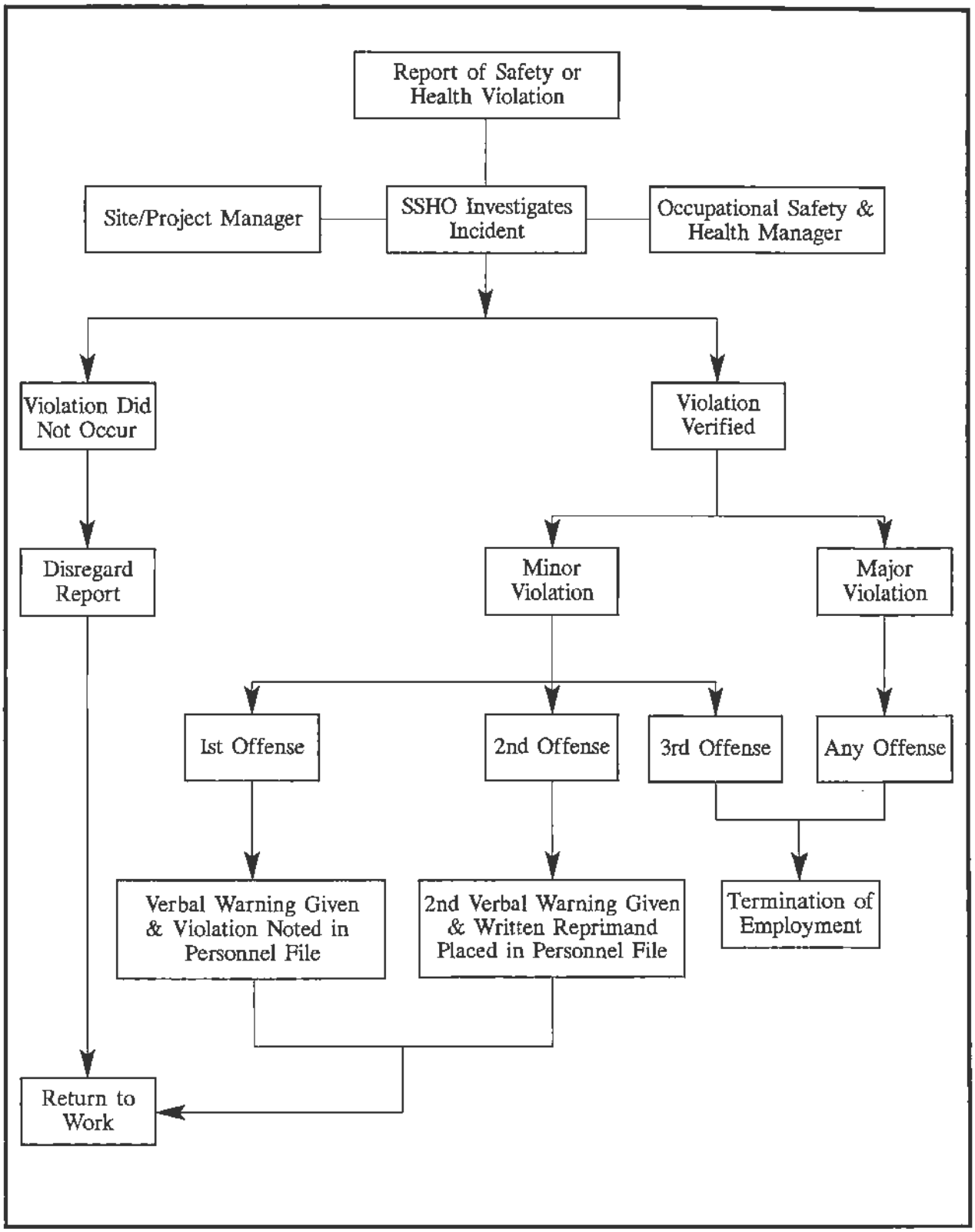
Figure 5-1: EODT Violation and Disciplinary Action Flow Chart



5.5.2 Substance Use and Abuse Policy

Employee drug or substance use or abuse testing/screening conducted by EODT in support of this policy will be conducted at no expense to the employee, and, except for drug/substance use testing conducted for pre-employment, employees will receive reasonable compensation for the time required for participation in any drug or substance testing/screening. The drug or substance use for which EODT may conduct testing include, but are not limited to: amphetamines, barbiturates; cocaine metabolites, methadone; opiates; phencyclidine (PCP); and ethyl alcohol. As a matter of policy, EODT will strictly implement and enforce the policies listed below.

1. No employee will report for work, or will work, impaired by any authorized or controlled substance, except with management's prior approval. Such approval will be limited to lawful medications and based strictly on an assessment of the employee's ability to perform their regular or other assigned duties safely and efficiently.
2. No employee will possess any controlled substance or alcohol which could result in impaired performance, except with knowledge and approval of the OSHM, SUXOS, and SSHO.
3. Applicants for employment are subject to substance abuse screening as part of their baseline or pre-assignment physical examinations. Refusal to submit to such screening will disqualify an applicant from employment.
4. All EODT employees are subject to substance abuse screening at any time as directed by the OSHM, or on a random, nondiscriminatory basis. Refusal to submit to such screening will result in removal from the project site and/or termination of employment. Substance use or abuse screening may be conducted in those circumstances listed below:
   - Whenever there is reasonable evidence to suspect any employee has reported to work in an impaired condition or is working impaired; and
   - When an employee is involved in either a job-related accident or job-related incident involving the apparent use or abuse of any substance listed in this Section.

5.5.3 Prescription Medications

EODT project personnel may possess and use prescription medications and "over-the-counter" medications provided that all of the following apply:

1. The prescription medication has been prescribed by an authorized medical practitioner for the current use (within the past 12 months) of the employee in possession of the medication, and the medication is in its original container with a valid pharmacy label which includes the employee's name and the physician's name.
2. The employee does not consume the prescribed, or over-the-counter, medication in quantities greater than, or more frequently than that prescribed by the employee's physician, or as noted on the container label.

3. Employees in possession of prescribed medications shall not allow any other person to consume any amount of their prescribed medication.
4. In the event that the prescribed medication could cause adverse side effects, or where the medication indicates warnings relevant to side effects affecting the operation of equipment or machinery, the employee shall inform the SUXOS and/or SSHO prior to engaging in project operations while under the influence of the medication (i.e., having taken the medication within the past 12 hours).

While the on-site use of prescription and over-the-counter medications is authorized, under the requirements listed above, EODT reserves the right to have a licensed physician determine if the employee's use of the medication could adversely affect the individual or could increase the potential for injury or illness to the employee or other site personnel. If consumption of the medication could lead to adverse safety or health effects, the OSHM may, on the advice of the licensed physician, limit or suspend the employee's work activities for as long as the licensed physician indicates that the medication may adversely affect the employee. Any employee who has been limited or suspended from work activities may seek from the prescribing physician a substitute medication which will not adversely effect the potential for injury or illness to the employee or other site personnel. If a suitable substitute can be prescribed, and is approved, the OSHM may lift the work activity suspension or limitation.

5.5.4 Suspicion Inspections and Testing

For the purposes of ensuring compliance with the prohibition against the unauthorized possession of controlled substances, employees will be subject to random and reasonable suspicion inspections and testing. An employee's company clothing, locker, closet, work area, desk files, company motor vehicle, and similar areas are subject to inspection. Similarly, an employee's privately owned vehicle, lunch box, and like containers, are subject to such inspections when brought to any work site. At no time will an employee be physically touched during an inspection, and only outer clothing will be required to be removed for inspection or search. No person or property search (except for searches of EODT owned, rented or leased properties), urine drug test or breathalyser test will be conducted without the employee's consent. Refusal to submit to a legal inspection, or request for testing, will result in employee removal from participation in site activities until further inspection or testing can determine the potential for prohibited drug or substance use or abuse.

5.5.5 Drug Convictions

Any employee convicted of violating a criminal drug or alcohol statute will report the facts surrounding the conviction and sentence, in writing, to their immediate supervisor within five calendar days of the conviction. The supervisor will forward the written results immediately to the

OSHM and PM, via the supervisory chain and a written report of the conviction will be made within ten calendar days to all government agencies with which the company has contracts. Upon notification of conviction, the OSHM, PM and SUXOS will review the report and will within thirty days after being informed, determine the disciplinary action to be taken. The disciplinary action taken may range from termination of employment to mandatory assignment to a rehabilitation program.

5.5.6 Treatment for Drug and Substance Use

EODT will encourage affected individuals to seek medical help voluntarily at an early stage and will assist supervisors in dealing with associated problems related to work performance. Additionally, supervisors and fellow employees will be discouraged from "covering up" for the affected individual and may face disciplinary action for doing so. Medical treatment, in the form of rehabilitation therapy, may be obtained by any employee, at their expense, who feels that they may have an alcohol or other drug problem, and voluntarily seeks the advice and help of a private physician or any agency in this field. An employee may be mandatorily referred by EODT to a regional health center, or other type of medical facility, for medical help because of deteriorating job performance or excessive absenteeism associated with abuse of alcohol or drugs. Failure to follow prescribed medical treatment or to improve performance to an acceptable level will be justification for termination of employment on the same basis as any other employee whose work performance is unsatisfactory.

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6.0 TRAINING PLAN

6.1 GENERAL

All personnel assigned to, or regularly entering the project site, shall receive the training required by this Section prior to participation in assigned site activities which pose a potential for exposure to safety or health hazards. In accordance with OSHA 29 CFR 1910.120, site personnel shall receive the training outlined in this Section as applicable to their assigned duties. Additionally, all personnel entering the site unescorted, or involved in OE investigation, handling, transportation, or disposal operations shall meet one of the pre-requisites listed below:

1. Graduate of the Naval Explosive Ordnance School, Indian Head, Maryland;
2. Graduate of the US Army Bomb Disposal School, Aberdeen Proving Grounds, Maryland;
3. Graduate of the EOD Assistant's Course, Redstone Arsenal, Alabama, with a minimum of five years of military EOD and/or commercial OE experience; or
4. Graduate of the EOD Assistant's Course, Eglin Air Force Base, Florida, with a minimum of five years of military EOD and/or commercial OE experience.

6.2 OSHA HAZARDOUS WASTE OPERATIONS TRAINING

6.2.1 Basic 40-Hour Training

All EODT and subcontractor personnel who have the potential for exposure to CWM, hazardous substances or other safety and health hazards must attend and successfully complete 40-hours of off-site Hazardous Waste Operations and Emergency Response (HAZWOPER) training. This training requirement also applies to supervisory and management personnel responsible for site operations. This training must be completed, and documentation presented, before personnel are allowed to participate in site activities.

6.2.2 Three Day On-site Training

All EODT site and subcontractor personnel shall be given a minimum of three days of actual on-site field experience under the direct supervision of a trained, experienced supervisor. This training will be used to familiarize site personnel with the site-specific organization, PPE, decontamination, monitoring and emergency response procedures. The three day on-site training is site-specific and three day training on another site does not count toward the training for the SEDA site. This training shall be documented using the Three Day On-site Training Form.

6.2.3 Management and Supervisor Training

Managers and other personnel who are directly responsible for the performance of hazardous waste operations (Team leaders, site manager and SSHO), or who directly supervise on-site personnel, shall have eight additional hours of specialized supervisory training. This training shall include such

topics as the EODT CSHP, training and medical surveillance requirements, the EODT PPE Program, spill containment, emergency response, and site monitoring procedures and techniques.

6.2.4 Eight-Hour Annual Refresher

All EODT and subcontractor personnel, to include management/supervisory personnel, shall receive a minimum of eight-hours of refresher training annually. This training will cover relevant topics from the 40-hour HAZWOPER and the eight-hour management/supervisor courses, as well as critiques of any incidents that have occurred in the past year and any other related topics.

6.2.5 Documentation of OSHA Training

All on-site and management/supervisory personnel shall present documentation or certification of training completion prior to participating in site activities. This shall include, documentation of successful completion of the Basic OSHA 40-hour course, as presented in paragraph 6.1 of this Section, and documentation of completion of the 8-hour Refresher course, if applicable. Personnel who do not provide appropriate documentation shall be prohibited from engaging in site activities where a potential for exposure to safety or health hazards exist.

6.3 SITE-SPECIFIC AND HAZARD INFORMATION TRAINING

6.3.1 Site-specific Information Training

Site-specific Information Training shall be used to provide EODT, USACE and subcontractor personnel with important information related to site operations, as outlined in the SSHP and WP. The time on-site personnel spend in this training shall apply to the Three-day On-site Training requirements outlined in paragraph 6.2.2 of this SSHP. The site-specific training topics to be covered shall include:

1. Site history and background;
2. Site organization and chain-of-command;
3. Use of PPE and decontamination procedures;
4. Training and medical surveillance requirements;
5. Emergency response procedures and assignments; and
6. Spill and emergency response procedures.

6.3.2 Hazard Information Training

Hazard information training shall be presented utilizing the EODT Hazard Information Program, which meets the requirements specified in 29 CFR 1910.120(I). This training shall be presented to all EODT, USACE and subcontractor personnel who will be involved in the conduct of site operations, and shall be used to inform on-site personnel of the nature, level and degree of exposure

likely to occur as a result of participation in site activities. As a minimum, the Hazard Information Training will cover the following topics:

1. A description of the chemical hazards expected to be found on site, including a description of the physical properties, symptoms of exposure, routes of acute exposure, methods of monitoring and detection, exposure limits, and fire and explosion hazards;
2. The physical hazards associated with conducting site operations, including temperature extremes, heavy equipment; power and hand tool hazards, electrical hazards, high noise operations, and any other applicable general safety and health hazards;
3. The biological hazards which may be encountered on site, to include the hazardous plants, animals and insects anticipated, the methods to reduce or eliminate exposure, and the procedures to follow if exposure occurs; and
4. The engineering controls, SWPs, and other hazard control techniques and procedures that will be used to either minimize exposure, or reduce the effects of exposure.

6.4 OE RECOGNITION TRAINING

All non UXO-qualified personnel who will be involved in on-site operations will be given OE Recognition Training. This training will be used to familiarize non UXO-qualified personnel with the appearance and components associated with the ordnance which may be found on site. This training will include EODT's "No Touch" policy which states that non UXO-qualified personnel will not touch any ordnance related items, unless they have been inspected by UXO-qualified personnel and deemed to be ORS or inert ordnance.

6.5 OE REFRESHER TRAINING

All UXO-qualified site personnel shall receive site-specific OE training which covers the ordnance which is known or expected to be on site. The topics to be covered in the OE refresher training shall include: type of ordnance, fuzing, fillers, hazards, and handling and disposal procedures.

6.6 FIRST AID AND CPR TRAINING

At least two full time EODT site employees shall be trained and certified in first aid and CPR. Whenever possible, the SSHO will be one of the two site personnel. The training provided shall be equivalent to that provided by the American Red Cross. Once trained, these employees will then be tasked with the responsibility of providing initial first-aid response to injured employees whenever other medical support personnel are not immediately available on site.

6.7 BLOODBORNE PATHOGEN TRAINING

The EODT first aid trained personnel will primarily be responsible for rendering aid in the event of an injury or accident. As required by OSHA 29 CFR 1910.1030(g)(2), all personnel with a potential

for occupational exposure to blood or other potentially infectious body fluids shall receive training as outlined in the EODT Bloodborne Pathogens (BBP) Exposure Control Plan. This training shall consist of the following:

1. Review of the BBP standard;
2. Requirements of the Exposure Control Plan;
3. Description of the risks of exposure and how BBP are transmitted;
4. Management and Employee responsibilities;
5. Methods of protection against exposure and procedures for decontamination;
6. Post-exposure procedures; and
7. Labeling, color coding and disposal of infectious waste.

Due to the hazards inherent to working on sites contaminated with OE, the potential exists for on-site injuries to be traumatic and extensive in nature. In this unlikely event, the treatment of these injuries by the first aid trained personnel may require the assistance of additional site personnel. Therefore, whenever feasible, all on-site EODT personnel will receive the same level of BBP training as specified above.

6.8 PERSONAL PROTECTIVE EQUIPMENT TRAINING

As specified by 29 CFR 1910.132, all site personnel who are required to use PPE shall be given training in the use, care, and limitations of the PPE they are to use. Prior to using the designated PPE on site, all affected personnel shall demonstrate an understanding of the training, and their ability to properly use the assigned PPE. Upon completion of this training, EODT will verify the training through the issuance of a certificate that identifies the name of the personnel trained, the training date(s) and the subject of the certification. Affected personnel will be re-trained if site conditions change which effect the level or type of PPE being used. PPE training shall address the following topics:

1. PPE selection decisions;
2. When PPE is needed;
3. What PPE is needed;
4. How to properly don, doff, adjust and wear PPE;
5. The limitations of specific pieces/types of PPE; and
6. The proper care, maintenance, useful life and disposal of PPE.

6.9 HEARING CONSERVATION TRAINING

As specified by 29 CFR 1910.95, all site personnel exposed to noise levels exceeding an eight-hour time-weighted average (TWA) of 85 decibels on the A-weighted scale shall be provided with training which addresses the following topics:

1. Physical and psychological effects of high noise exposure;
2. Noise exposure limits;
3. The purpose and procedures for audiometric hearing tests;
4. Elements of the EODT Hearing Conservation Program; and
5. Selection, fitting, use and limitations of hearing protection devices.

6.10 HAZARD COMMUNICATION TRAINING

In order to comply with the requirements of the OSHA Hazard Communication (HAZCOM) Standard, 29 CFR 1910.1200, HAZCOM training shall be provided for all site personnel who will use products which contain hazardous substances. This training shall be provided upon initial assignment to the site and prior to use of the product containing the hazardous substance. Supplemental HAZCOM training shall be scheduled and presented whenever a new hazardous substance is introduced into the work area or an employee changes job locations where new products are encountered.

6.10.1 Required Information

6.10.1.1 General Information Provided

To ensure site personnel are knowledgeable of the general requirements of the OSHA HAZCOM standard, the following shall be maintained on site and the site personnel shall be familiarized with the relevant information presented in the following:

1. The basic OSHA Hazard Communication Standard, including employee rights under the regulation;
2. A listing of the operations/processes where hazardous chemicals are used and the potential for exposure exists; and
3. The location and basic elements of the EODT HAZCOM Program, an inventory of the hazardous substances used on site, and the location and availability of the MSDSs.

6.10.1.2 Product Specific Information Provided

To ensure that site personnel are knowledgeable of the chemical and physical hazards associated with hazardous substances used on site, all personnel shall be trained to recall, in simple language, the following basic information about each hazardous substance to which they are exposed:

1. Chemical hazards, including the toxic effects a chemical has on the body (long and short term) and the routes of exposure;
2. Physical hazards (i.e., flammability, reactivity);
3. How chemicals may be detected/monitored (instrumentation, color, odor, state);
4. How workers can protect themselves from overexposure or emergency situations (engineering controls, work practices, PPE and emergency procedures);

5. Steps that have been taken to lessen or prevent exposure to hazardous substances;
6. Spill response procedures for chemical emergencies;
7. Emergency and first aid procedures to follow if employees are over exposed to any hazardous chemicals; and
8. How to generate and read hazard warning labels and review MSDS's.

6.10.2 Documentation of HAZCOM Training

HAZCOM training shall be documented by the SSHO using the EODT Hazard Communication Training Form. This documentation shall be maintained on site for the duration of the project, and later incorporated into the employees personal training file.

6.11 FIRE EXTINGUISHER TRAINING

All EODT site personnel will be trained in the general principles of fire extinguisher selection, use and the hazards associated with incipient stage fire fighting (i.e. fighting a fire that has just begun). This training will be provided initially and annually thereafter.

6.12 EXCAVATION AND TRENCHING TRAINING

All site personnel involved in excavation and trenching operations shall receive on-site training in the proper excavation and trenching procedures IAW 29 CFR 1926.650 and the EODT CSHP. This training shall cover the safety and health hazards and control procedures related to excavation and trenching.

6.13 CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)

All site personnel involved in the use of lockout/tagout (LO/TO) devices for the control of hazardous energy, as specified in paragraph 13.15, will receive on-site training in the proper implementation of the EODT LO/TO Program. All training shall comply with 29 CFR 1910.147 and EM 385-1-1, Section 12.

6.13.1 Training of Affected Personnel

Each person working in an area where lockout/tagout (LO/TO) procedures must be implemented shall be instructed in the purpose and use of the LO/TO procedure, and about the prohibitions related to attempts to re-start or re-energize equipment or machinery which are locked or tagged out.

6.13.2 Lockout Training for Authorized LO/TO Personnel

Each person who will be authorized to conduct LO/TO procedures shall receive training in the following areas prior to using this procedure:

1. The function and purpose of this SOP;

2. Recognition of hazardous energy sources;
3. Types and magnitude of the hazardous energy which may be encountered on site;
4. The means necessary for energy isolation and control;
5. Hands-on practice training with locks and tags prior to implementing LO/TO activities; and
6. Where tags may be used, training will include procedures for affixing tags and a discussion of the limitations of tagout.

6.13.3 Tagout Training for Authorized Employees

In the event that only tagout procedures and techniques are used on site, authorized personnel shall be trained in the following limitations of tags:

1. Tags are essentially warning devices affixed to energy isolating devices and do not provide the physical restraint on those devices that is provided by a lock;
2. When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated;
3. Tags must be legible and understandable by all authorized and affected personnel whose work operations are, or may be, in the area;
4. Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use; and
5. The importance of the fact that tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered on site.

6.13.4 Employee Re-training

Re-training of authorized and affected personnel shall be conducted at least annually to reestablish employee proficiency and to introduce new or revised control methods and procedures. Retraining will also be conducted whenever periodic inspections reveal inadequacies in the authorized person's knowledge or use of the LO/TO SOP. Also, retraining may be necessary due to changes in job assignments, equipment, machinery, or processes that introduce a new hazard.

6.14 ADDITIONALLY REQUIRED OSHA TRAINING

Additional OSHA required training as deemed necessary by the OSHM or SSHO shall be provided as needed. This may include training related to specific chemical contaminants (such as lead, arsenic, etc.) or task specific hazards such as confined space, heavy equipment, hand tool operation, specialized PPE, etc.

6.15 BUDDY SYSTEM TRAINING

All work at this site shall be performed using the buddy system. Team members shall be trained to keep in visual contact with each other at all times. Buddy system training shall also stress the need for buddy team members to remain constantly aware of slip, trip, and fall hazards, lifting hazards, symptoms associated with exposure to chemical substances, location of areas on site with restricted access, temperature extremes, and other general safety and health hazards within their work area that could adversely affect their buddy.

6.16 VISITOR TRAINING

Site visitors are defined as persons who: (1) are not employed at the project site; (2) do not routinely enter restricted work areas; and (3) spend short periods at the site (i.e., 1 to 2 days per visit). Site visitors may include client personnel, EODT personnel, commercial vendors, auditors or inspectors from Federal, state or local regulatory agencies, or political representatives. It is the responsibility of all site personnel to, whenever possible, maintain a watch for visitors approaching the site, and to immediately notify the SUXOS or SSHO of the presence of the visitor. Visitors shall be required to comply with the general requirements listed in paragraph 6.16.1, and shall be given site and hazard information training IAW the applicable provisions of paragraph 6.16.2 listed below.

6.16.1 General Requirements for All Site Visitors

Regardless of the purpose of the site visit, or the control zones to be entered, the following requirements shall apply to all site visitors:

1. The EODT SUXOS and SSHO shall be notified of the nature and duration of the visit before visitors are permitted to enter the site;
2. The visitor shall sign the Visitor Log and shall record their name, date of visit, and the name of the company or agency represented;
3. The site visitor shall be escorted by a UXO-qualified EODT representative at all times while in the area; and
4. Visitors shall comply with the specific safety and health requirements described below, as applicable.

6.16.2 Hazard Information Training for Site Visitors

6.16.2.1 Visitors Entering the Support Zone Only

Visitors wishing to observe site activities from the support zone (SZ) only, without entering the exclusion zone (EZ), shall receive general hazard information training which incorporates the following topics:

1. Location and description of potential hazards and risks;
2. A short briefing about the chemical hazards found on site;

3. Areas of the site that are closed to visitors;
4. The site evacuation plan and emergency procedures; and
5. Other topics as deemed appropriate.

6.16.2.2 Visitors Entering the EZ

Site visitors wishing to enter an EZ WZ during site operations shall be subject to the same site-specific and hazard information training as specified in paragraph 6.3 of this Section. This training shall be conducted prior to the visitor entering an EZ. At no time will a visitor be allowed to enter the WZ without having first received this training. In the event of a visitor entering the EZ, all OE-related operations shall cease, unless the visitor is EOD qualified.

NOTE: Visitors requesting entry to an EZ shall also be required to present documentation of OSHA hazardous waste training and medical surveillance, consistent with the requirements of the general site employees.

6.17 DAILY TAILGATE SAFETY MEETINGS

Prior to commencing operations each day, all EODT, contractor and subcontractor personnel shall be given a safety briefing by the SSHO. This briefing shall identify the anticipated site activities and the potential hazards that may be encountered during that day's activities. The tailgate safety briefings shall also be used to review the following: anticipated weather conditions and weather related hazards; use of safety equipment and procedures; emergency evacuation and medical procedures; emergency notification signals; accident prevention; and relevant sections of the SSHP and WP. These topics will be reviewed daily to ensure that site operations are carried out in a safe and healthful manner. Records of all Tailgate Safety Meetings documenting date, attendance, and topics covered shall be maintained using the EODT Documentation of Training Form.

6.18 WEEKLY SAFETY TRAINING

At the start of each work period, which is normally Monday, a site-specific safety topic will be selected by the SSHO and discussed in detail by either the SSHO or a speaker selected by the SSHO. All site personnel are required to attend the training and the SSHO shall document this training on the EODT Documentation of Training Form. The training will consist of site-specific hazards such as the known chemicals, ordnance, temperature extremes, etc. This training will be conducted in conjunction with the tailgate safety briefing.

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7.0 PPE PROGRAM

7.1 INTRODUCTION

All personnel performing operations on site shall be required to use the appropriate level of protection, as specified in the CTHA forms found in Attachment 2 of this SSHP. This SSHP makes provisions for use of Level "D", Modified Level "D", Level "C" and Modified Level "C", IAW the hazards associated with a given task or operation. All PPE requirements for site operations, activities, or zones are based on available site characterization and historical data and represent the initial PPE levels that will be used during the start of specific site operations. It is anticipated that the levels of PPE will be down-graded based upon the site monitoring results obtained IAW the Site Monitoring Plan presented in Section 9.0 of this SSHP. The PPE levels presented in this Section will be reassessed if any of the following occur:

1. The results obtained from the on-site monitoring are below the action levels specified for the initial/current PPE levels;
2. The results obtained from the on-site monitoring are above the action levels specified for the initial/current PPE levels;
3. Appearance of previously unidentified chemicals or conditions;
4. Significant changes in ambient weather conditions which impact the use of assigned PPE;
5. A new task is introduced to the SOW or a previously assigned and evaluated task is expanded in scope; and
6. Discovery and confirmation of CWM.

For project tasks assigned after the approval of this SSHP, the EODT OSHM, in conjunction with the SSHO, will assess the task hazards, assign the appropriate PPE level, complete a Certification of Task Hazard Assessment form and forward it to the CO/COR. Upon approval by the CO/COR, the new form will be incorporated into Attachment 2 of this SSHP. Any changes in PPE levels involving the downgrading of PPE levels will be allowed only after review and approval by the EODT OSHM.

7.2 SPECIAL CONSIDERATIONS

The following special considerations shall be observed in the selection and use of PPE for the levels discussed below.

1. Hard hats are required only when working around heavy equipment or when an overhead or impact hazard exists.
2. Steel toe/shank boots are not required during surface/subsurface location of anomalies unless a serious toe hazard exists, whereupon a fiber safety toe will be used.

3. Safety glasses will be required only when an eye hazard exists and will provide personnel with protection from impact hazards, and, if necessary, UV radiation.
4. The OSHA standards for PPE, 29 CFR 1910.132 - 138 will be incorporated into all phases of PPE selection, use and training.
5. Personnel using or dispensing products that contain hazardous materials that present a skin contact hazard, will wear chemical resistant gloves as defined in the CTHA forms contained in Attachment 2 of this SSHP.

7.3 TASK SPECIFIC ASSIGNMENT OF PPE

Table 7-1 presents a listing of the anticipated site tasks and the initial level of PPE that will be worn during the performance of each task. Modifications to Table 7-1 may be required and levels of PPE may be upgraded or downgraded according to the results of on-site air sampling and monitoring. Revisions to this table will only be made upon approval of the EODT OSHM.

7.4 LEVEL D PPE

The following PPE will be worn during general site activities IAW Table 7-1:

1. Work clothes or coveralls (cotton);
2. Leather work gloves;
3. Boots - all leather work boots;
4. Hard hat (as required, see paragraph 7.2);
5. Snake leggings (required when working in wooded/vegetated areas during warm weather conditions where snakes may be present on site);
6. Rubber over boots;
7. Safety glasses (as required for eye impact and UV protection); and
8. One two-way radio per team.

7.5 MODIFIED LEVEL D PPE

The following PPE will be worn for those tasks requiring Modified Level D PPE:

1. Same as Level "D", but with the following additions;
2. Hard hat with face shield (wire or nylon mesh);
3. Leather anti-vibration work gloves;
4. Kevlar chaps (for use with chain saw);
5. Rubber over boots;
6. Toe guards or steel-toed boots; and
7. Ear plugs and muffs.

TABLE 7-1: TASK SPECIFIC ASSIGNMENT OF PPE LEVELS

Task to be performed	Level of PPE
Mobilization and site set-up / Demobilization and site closure	D
Visual sweep prior to vegetation grubbing and clearing	D
Vegetation clearing with bladed gas powered weed cutters or chain saws	Modified D
Location surveying and mapping	D
Site sweep using the towed magnet	D
Magnetometer surveys	D
Investigation of Anomalies in high lead contaminated areas	Modified C
Investigation of Anomalies in low lead contaminated areas	D
OE disposal operations	D
EMM operation (areas of high level lead contamination)	Level C
EMM operation (areas of low level lead contamination)	D
Soil sifting operations (during the sifting of soil with high levels of lead)	Level C
Soil sifting operations (during the sifting of soil with low levels of lead)	D
Sorting of oversize materials from high lead contaminated areas	Modified C
Sorting of oversize materials from low lead contaminated areas	D
Handling Scrap Metal and ORS	D
Refueling of Powered and Heavy Equipment	D (with chemical resistant gloves)

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7.6 LEVEL C PPE

The assignment of Level C PPE to those potential dust producing tasks conducted in the areas of high lead contamination has been done as a precautionary measure only, due to the presence of lead in the soil. As stated previously, EODT anticipates that Level C PPE will not actually be needed for the site operations due to the following:

1. The maximum concentration of lead in the soil presented in Section 3.0 represents the worst case scenario;
2. While the maximum concentration previously detected is 56,700 mg/kg, the average concentration of lead in the soil, as presented in the ROD, is only 1,888 mg/kg, which indicates that most of the soil samples were substantially below the maximum concentration, and therefore the potential for an over exposure is significantly less than that associated with the maximum level.
3. EODT will conduct real-time monitoring of dust concentrations in the breathing zone (BZ) to ensure that dust levels are maintained below an action level that would produce a potential for over exposure (see Table 9-1).
4. It is anticipated that the wet, cool weather conditions that will be present at the time of soil excavation and sifting will naturally produce dust suppression, and if necessary, EODT will apply dust suppression techniques to minimize the production of dusts.

Level C PPE will be used until personal BZ sampling can document that there is no potential for personnel receiving an exposure to lead above the action level presented in Section 9.0. Level C PPE will be discontinued when sampling results are obtained indicating that the lead exposure is below the action level. During the initial conduct of potential dust producing activities in the areas of high lead contamination, the following PPE shall be worn for those tasks requiring Level C PPE:

1. Level D PPE;
2. Tyvek suit with attached hood and boots;
3. Nitrile outer gloves;
4. Rubber over boots; and
5. Fullface respiratory protection with HEPA filters.

7.7 MODIFIED LEVEL C PPE

Modified C PPE will be worn for those activities where personnel will be digging or coming in contact with soils in the high lead contaminated areas. The following PPE shall be worn for those tasks requiring Modified Level C PPE:

1. Level D PPE;
2. Nitrile outer gloves; and
3. Tyvek coveralls.

7.8 RESPIRATOR ISSUE

The following respiratory requirements have been designed to comply with applicable OSHA and USACE regulations found in 29 CFR 1910.134 and EM 385-1-1 Section 5.E. These requirements also comply with the requirements of the EODT Respiratory Protection Program, and shall not be changed without prior approval from the OSHM.

7.8.1 Respirator Selection

The OSHM has utilized available site archival and characterization data, and information related to the physical and toxic properties of site contaminants, to select the respiratory protective equipment for each task. At no time will respirators or their components be altered or combined in a manner that is not NIOSH/~~MSHA~~ approved. Doing so may void the NIOSH/MSHA respirator approval and significantly affect the performance of the respirator.
(Mine Safety + Health Association (MSHA))

7.8.2 Selection Criteria

The selection of the proper type of respiratory protection has been and shall continue to be based upon the following:

1. The type of contaminant(s) expected or known to present a potential for exposure;
2. The physical properties, toxicological effects, and anticipated exposure concentrations;
3. The warning properties and initial signs and symptoms of exposure;
4. The nature of the operation where exposure may occur;
5. The location of the work area in relation to the nearest area having respirable air;
6. The period of time for which respiratory protection is needed; and
7. The characteristics and limitations of the respirator.

7.8.3 Task-Specific Respiratory Assignment

A fullface respirator with High Efficiency Particulate Air filters (HEPA) has been selected for those project tasks where an initial determination of the lead exposure levels must be made to ensure that personnel do not receive an unprotected overexposure. Any modifications to the type of respiratory protection specified by this section will be made in writing, approved by the OSHM and CEHNC CO and amended to this SSHP. Respiratory protection will only be issued to those personnel who have been medically cleared to wear respiratory protection and who have a current fit test for the type of respirator being used.

7.8.4 Respirator Training

Training in the use of respiratory protective equipment shall be conducted by the SSHO prior to the on-site use of respiratory protection. The respiratory training shall be conducted IAW with the provisions outlined in Section 6.0 of this SSHP and shall be documented by the SSHO.

7.9 PPE INSPECTION, MAINTENANCE AND STORAGE

Site personnel using PPE will keep the equipment clean, and in good working condition. EODT shall establish and maintain a PPE storage area where field personnel may store their PPE during non use times. Respirators used on site will be allowed to dry after decontamination in an area that is free of site contaminants and other hazards. All site personnel will be responsible for daily inspections of their PPE to ensure that it is maintained in safe working order. PPE that is worn out or defective will be brought to the attention of the SSHO and replaced as needed.

8.0 MEDICAL SURVEILLANCE

8.1 INTRODUCTION

To comply with the requirements of 29 CFR 1910.120(f), EODT has established, as part of its CSHP, a comprehensive Medical Surveillance Program (MSP). This program was designed to assist in the prevention, diagnosis and treatment of occupational illnesses and injuries sustained during operations on hazardous waste sites. This Section contains the Site-specific Medical Surveillance Plan (SMSP), which was derived from the MSP, and modified for use on sites contaminated with OE. This SMSP contains the medical surveillance requirements and shall be implemented for EODT personnel involved in operations conducted under this SSHP. Site personnel to be included in the SMSP will be those who have a potential for occupational exposure to hazardous substances; wear respiratory protection or perform operations where they are exposed to other significant safety and health threats (such as extreme physical exertion, noise and temperature extremes). EODT subcontractors shall provide site personnel who meet the medical surveillance requirements of this Section.

8.2 PURPOSE AND SCOPE

The purpose of the SMSP is: (1) to assess the individual's health status prior to participation in site operations; (2) to determine the individual's ability to perform work assignments in the levels of PPE required by this SSHP; (3) to establish baseline data for comparison to future medical surveillance data in order to monitor any changes in the health status of site personnel; and (4) to establish site specific facilities and procedures for emergency and non-emergency medical treatment of personnel injured while participating in site activities. Physical assessments conducted for this SMSP are designed to identify any physical conditions that could predispose personnel to illness or injury resulting from exposure to chemical, physical or biological hazards, or the physical demands of using PPE.

Prior to participating in site operations, personnel meeting one of the criteria outlined in paragraph 8.1 shall have received an occupational physical within the past 12 months, and shall provide EODT with a copy of the physician's statement indicating their approval for participation in site activities similar to those planned for the SEDA project. Those personnel who have not had an occupational physical in the past 12 months shall be given a baseline physical. This examination shall be conducted IAW the provisions outlined in this Section, and will be used to determine the worker's ability to safely perform the tasks assigned to this project.

8.3 GENERAL REQUIREMENTS OF THE SMSP

Examinations of personnel required by this SMSP shall be conducted by, or under the supervision of, a licensed physician, who is board-certified in occupational medicine or has had extensive experience in the recognition, evaluation and treatment of occupational diseases. The physician designated by EODT to administer the SMSP will be:

Dr. Robert Paret
Occupational Health Services
123 W. Tennessee, Suite 401
Oak Ridge, Tennessee 37830
(423) 481-0991

If, due to logistical restrictions, it is not feasible for the above mentioned physician to examine some or any of the site personnel, the OSHM may locate and designate an alternate physician to conduct the health assessments. The alternate physician must meet the qualification requirements of the above mentioned designated physician. The alternate physician shall be responsible for performing examinations equivalent to those outlined in this SMSP, and shall be provided the information required in paragraph 8.4 of this Section.

8.4 INFORMATION PROVIDED TO THE EXAMINING PHYSICIAN

Prior to conducting health assessments, the OSHM shall provide the examining physician with the following information as it relates to each employee:

1. Anticipated site activities in which the employee will be involved;
2. The degree and nature of HTRW and CWM exposure, including any information related to the chemicals which are anticipated to be on site;
3. The degree and nature of physical hazards to which the employee may be exposed;
4. The levels and types of PPE to be used during the anticipated tasks;
5. Information from previous medical examinations which is not readily available to the physician; and
6. A copy of the Hazardous Waste Operations and Emergency Response Standard 29 CFR 1910.120, including its appendices.

8.5 PHYSICIANS STATEMENT

Upon completion of a health assessment, the results of the examination shall be provided to the employee by the physician and a written physician's statement shall be sent to EODT. The physician's statement shall, as a minimum, include the following: 1) the employee's name and social security number; 2) the physician's opinion regarding any conditions which would place the employee at an increased risk as a result of participation in site activities; 3) a statement indicating

if the employee is qualified to wear a respirator; 4) a statement that the employee is qualified to participate in CWM and HTRW related site activities; 5) the physician's recommended limitations upon the employee's assigned work, if any; 6) any supplemental or follow-up examinations or tests which the physician believes are required to complete the assessment; and 7) a statement that the employee has been informed by the physician of the results of the examination and any conditions which may require further examination or treatment.

8.6 MEDICAL SURVEILLANCE EXAMINATIONS

In order to provide the means for accurately assessing each employee's health status, medical surveillance examinations shall be conducted IAW the specifications listed in this paragraph. The OSHM shall ensure that all EODT and subcontractor personnel receive the medical examinations as required in this Section.

8.6.1 Pre-assignment Health Assessment

The pre-assignment health assessment shall be conducted prior to personnel participation in site activities involving potential exposure to chemical or physical hazards. The pre-assignment health assessment shall have been conducted within the past 12 months and will, as a minimum, include the following elements and medical tests:

1. A complete medical and occupational history;
2. A complete physical examination;
3. Laboratory studies, including a complete blood count with differential and liver and kidney function tests;
4. Urinalysis;
5. Chemistry panel;
6. PPE evaluation and pulmonary function testing;
7. Audiometric and vision testing;
8. Chest X-ray;
9. Electrocardiogram (as determined by the physician); and
10. Drug testing.

8.6.2 Project Specific Testing

Prior to, and upon completion of site operations, those site personnel with a potential for exposure to lead contaminated soils will have a blood test for lead and zinc polyporphorin levels. These tests shall be conducted prior to site personnel participating in dust producing activities and prior to site personnel leaving the project.

8.6.3 Supplemental Examination

Any site worker who has: been injured; received a health impairment; developed signs or symptoms from possible over-exposure; or received a documentable over-exposure without the use of respiratory protection, shall undergo a supplemental examination. The contents of this examination will be based upon the type of injury, illness, signs, symptoms or exposure involved and will be determined by the physician. Prior to reassignment to site activities, the physician shall certify that the employee is fit to return to work. If necessary, the physician shall specify in writing any restrictions or follow-up tests which may be required.

8.6.4 Follow-up Health Assessments

The physician will notify EODT, and the employee, if an occupationally related condition is detected during any pre-assignment or supplemental examination which requires additional testing and assessment. The physician will also inform EODT and the employee as to the nature and extent of the recommended follow-up health assessment. A statement outlining the employee's fitness for work shall be provided to the employee and EODT upon conclusion of the follow-up health assessment.

8.7 HEALTH CARE ADMINISTRATIVE SERVICES

In support of this SMSP, EODT has designated Dr. Paret for the establishment and maintenance of any medical records related to this project. These records will be treated as private and confidential information, and will be complete enough to provide data for use in health maintenance, treatment, and epidemiologic studies and in helping the government and EODT with program evaluation and improvement. The medical records will contain sufficient information to identify the employee, support the diagnosis, justify the treatment, and document an additional follow-up case or referral.

8.8 INDUSTRIAL HYGIENE SERVICES

EODT will maintain an industrial hygiene surveillance program administered by the OSHM who will ensure the following services:

1. Implementation of the SSHP;
2. Establishment of record keeping for all qualitative and quantitative exposure measurements and will ensure a minimum annual review of these results by the designated physicians;
3. Establish a respiratory protection requirements for personnel protection from on-site chemical/industrial hazards; and
4. Provide technical expertise for the support and implementation of the hazard communication program.

8.9 EMERGENCY AND NON-EMERGENCY MEDICAL TREATMENT

Provisions have been made with the hospital and ambulance services listed below to ensure prompt and effective medical treatment for personnel who are injured or become ill as a result of site operations. On-site basic first aid will be provided by the EODT first aid/CPR personnel. In the event of an on-site injury or illness, the SSHO will be contacted immediately and informed of the nature and degree of the injury/illness. While responding to the incident, the SSHO will determine the course of action to be taken and will contact appropriate medical support and transportation services, as needed.

8.9.1 Treatment of Minor Injuries

For minor injuries, the two EODT personnel with first aid/CPR training will provide the initial first aid response. If additional/advanced attention is required, the SSHO will determine the course of action to transport the injured person to the designated medical facility. If the SSHO determines that a site vehicle may be used for transportation, a first aid trained attendant will accompany the driver and injured person. If ambulance service is required, the SSHO will contact the SEDA ambulance service specified in Section 14.0 of this SSHP. Those personnel receiving minor injuries will be transported to the Geneva General Hospital located in Geneva, New York. This hospital is located approximately 15 miles north of the site. Geneva General Hospital will not be used for the treatment of trauma injuries since it does not have a trauma center.

8.9.2 Treatment of Serious Injuries

For serious injuries, the EODT first aid/CPR personnel shall initiate appropriate emergency first aid. The SSHO shall contact the SEDA Fire Department who will provide on-site medical support response with Emergency Medical Technician (EMT) and Advanced Life Support (ALS) personnel. The SEDA ambulance service will also provide transportation of the injured person, or will contact Mercy Flight air ambulance service out of Canandaigua, New York. Based upon the determination of the SEDA EMT or ALS personnel, Mercy Flight will then transport the injured person to the trauma center at either the University Hospital located in Syracuse, New York, or Strong Memorial in Rochester, New York. Advanced medical support services will be available during transportation by Mercy Flight

8.10 ON-SITE MEDICAL SUPPLIES

Portable first aid kits for the treatment of injuries and burns shall be provided in the SZ, CRZ and each site within the EZ. Additionally, a large first aid cabinet will be maintained in the project office for responding to serious injuries. All first aid supplies shall be inspected by the SSHO at least weekly to ensure adequate supplies are available and in proper condition. The contents and number of first aid kits shall be approved by the EODT designated physician prior to the start of site

activities. Attachment 3 of this SSHP contains the physician approval of the first aid kits and supplies that EODT will use during this project.

8.11 MEDICAL SUPPORT POLICIES

EODT site personnel will be provided routine occupational medical surveillance services by either Dr. Paret, or another occupational physician, at no cost to the employee. As stated previously, the scope of the SMSP provided by EODT includes efforts to prevent, diagnose, or treat occupational illnesses and injuries. EODT shall not provide definitive diagnosis or treatment for non-occupational injuries or illnesses, with the only exception to this policy being an emergency situation where immediate medical attention is necessary to prevent loss of life, relieve suffering, or to preclude permanent injury which would result if treatment were delayed.

8.12 DESIGNATED HOSPITAL

Primary treatment for minor illnesses or injuries which could occur on site will be provided by the Geneva General Hospital. This hospital is located in Geneva, New York, approximately 15 miles from the site and is equipped to provide general hospital assistance, to include treatment of common injuries and stabilization of patients with more serious injuries. Personnel with serious or life threatening injuries, which are greater than the level of care available at Geneva General Hospital, will be attended to and transported as described in para 8.9.2 of this Section. A map to the Geneva General Hospital is presented in Figure 14-1, and written instructions are located in paragraph 14.6.2 of this SSHP. No maps for Strong Memorial or University Hospital are provided since EODT personnel will not be involved in the transportation of personnel to these facilities.

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9.0 MONITORING PLAN

On-site sampling and monitoring will be conducted during specified site activities to evaluate potential chemical and physical hazards that may be encountered during site activities. The on-site monitoring will assist in determining the effectiveness of control measures, the need for upgrading or downgrading PPE requirements, and the effectiveness of safe work practices. Direct reading, real-time instruments will be used whenever possible, or required, during site operations to detect and qualify the hazards. If a reading is achieved which exceeds the action levels specified in Table 9-1, the EODT SSHO will take the steps outlined in this Section to correct the situation or minimize the exposure.

9.1 MONITORING RESPONSIBILITIES

Sampling and monitoring will be conducted by the EODT SSHO, or other site personnel trained by the SSHO in the proper calibration and operation of monitoring equipment. All monitoring equipment will be provided and operated by EODT. Any readings at or above the action levels, as specified in Table 9-1, will be reported to the OSHM. The sampling and monitoring equipment to be used during operations will include the instruments listed below.

1. Sound level meter - A sound level meter will be used as a screening device to measure sound power being emitted by a source. This instrument helps identify operations where hearing protection and noise dosimetry monitoring may be needed.
2. Noise dosimeter - To be used to calculate the 8-hr time-weighted average (TWA) noise exposure.
3. Real-time dust monitor - This instrument will be used to assess the levels of respirable dust in the worker's BZ, and shall be used for all potential dust producing activities.
4. Direct reading thermometer - The thermometer will be used to assess cold stress IAW Section 10.0 of this SSHP.
5. Personal air sampling pumps - The personal air sampling pumps will be used to collect BZ samples from personnel during dust producing activities performed on soils removed from the high lead contaminated areas.

9.2 MONITORING SCHEDULE

Exposure sampling and monitoring will focus on the potential exposure to chemical and physical hazards generated during high noise activities and dust producing activities conducted for soils from areas of high lead contamination. Table 9-1 identifies the type of monitoring equipment to be used, the frequency at which the monitoring will be conducted, assignment of monitoring responsibility, monitoring method to be employed, action level, and resultant action to be taken.

TABLE 9-1: SITE MONITORING SCHEDULE AND ACTION LEVELS

Hazard to be Monitored	Monitoring Equipment	Monitoring Responsibility	Monitoring Frequency/Location	Action Level	Action to be Taken
Dust	Real-time, direct reading respirable and total dust monitor.	EODT SSHO	Conducted continuously in the BZ and work area of personnel with the greatest potential for exposure during dust producing activities with soils from high lead contaminated areas.	1. Average of <0.5 mg/m^3 in the BZ 2. Average of 0.5 mg/m^3 in the BZ 3. Average of 1.0 mg/m^3 in the BZ	1. Reduce PPE to Level D if supporting data available from integrated sampling. 2. Increase dust suppression techniques if using Level D PPE. 3. Halt operations, apply dust suppression and upgrade to Level C PPE.
Lead	Integrated sampling pump and collection media	EODT SSHO	Conduct two days of integrated sampling of personnel with the highest exposure potential for during the start of each dust producing task with soils from high lead contamination areas.	1. > .025 mg/m^3 8 hr TWA 2. > .015 but < .025 mg/m^3 8 hr TWA 3. < .015 mg/m^3 TWA	1. Remain at Level C and attempt to reduce exposure, continue sampling. 2. Downgrade to Level D but maintain dust suppression and real-time monitoring. 3. Downgrade to Level D
Heat Stress	Digital Oral Thermometer	EODT SSHO	As required by the SSHO, based upon site conditions and the requirements of Para 10.5 of this SSHP.	1. Oral Temperature greater than 99.6°F. 2. Oral Temperature greater than 100.4°F.	1. Reduce next work cycle to two thirds of last cycle. 2. Halt operations involving impermeable and semi-permeable clothing.
Cold Stress	Digital Thermometer	EODT SSHO	Every four hours once ambient temperature becomes less than 60.8 °F.	See Table 10-4 to determine the temperatures where specific controls must be taken.	See Table 10-4 for appropriate control measures.
Noise	Sound Level Meter	EODT SSHO	Conducted initially during the operation of potential high noise operations, and periodically thereafter, according to the recommendations of the EODT OSHM, and for each demolition shot.	Sound levels greater than 85 dBA.	Conduct noise dosimetry reading to determine the 8-hour noise TWA. Effected personnel will be issued and use hearing protection devices during the monitoring.
	Noise Dosimeter	EODT SSHO	Whenever noise levels in the hearing zone exceed 85 dBA.	None set, follow directions in Action to be Taken column.	Report dosimeter readings to the EODT OSHM to ensure hearing protection is adequate for the level of noise experienced.

The guidelines presented in Table 9-1 represent the minimum requirements. Monitoring frequency will be escalated or reduced based on the results of previous monitoring and/or other signs of potential exposures (odors, etc.). Monitoring for airborne hazards with the direct reading instruments will be conducted in the BZ, in the work area, and on the perimeter of the exclusion zone whenever possible. Monitoring for high noise will be conducted in the worker's hearing zone.

9.3 NOISE MONITORING

High noise levels associated with vegetation clearing equipment, the EMM and the sifter, will be monitored to determine if hearing protection devices will be required, and to ensure that the level of hearing protection being used is adequate. At the start of potential high noise operations, sound level readings will be taken in the hearing zone of the effected personnel. Noise dosimetry will be conducted for any operation where sound level readings indicate a potential for exposures above 85 dBA. Table 8-1 will be consulted to determine the type, amount and frequency of noise monitoring.

9.4 COLD AND HEAT STRESS MONITORING

Cold and heat stress monitoring will be conducted IAW the guidelines presented in Section 10.0. This monitoring will be conducted by the SSHO, and will be used to adjust personnel work schedules and rates in the event that temperature extremes are experienced during site operations. The action levels presented in Table 9-1 will be used by the SSHO to determine when, and what type of, adjustment to site operations will be required to minimize the potential for heat or cold stress.

9.5 REAL-TIME MONITORING OF RESPIRABLE DUST LEVELS

Due to the known potential for heavy metals to be present in the soil, monitoring for respirable dust will be conducted in the BZ of the workers involved with potentially high dust level activities during the processing of soils with high lead levels. The action levels for real-time respirable dust levels are specified in Table 9-1. Monitored levels in excess of this action level will require increasing methods of dust control and/or upgrading of PPE, as determined by the OSHM.

9.6 PERSONAL BZ SAMPLING FOR LEAD CONTAINING DUST

To assess 8-hour TWA exposures to lead containing dust, full shift, integrated air sampling will be conducted for soil excavation and sifting tasks conducted on the soils from the high lead areas designated by the CEHNC SREP. Due to probable wetness of the soil to be excavated, or through the use of dust suppression techniques, it is anticipated that dust levels can be maintained at low concentrations. However, to ensure compliance with OSHA's Lead standard, 29 CFR 1910.1025, personal breathing zone samples will be collected to determine the potential for lead exposure at the soil excavation and sifting operations during the processing of soils with high lead contents. The air samples will be collected IAW approved NIOSH or OSHA sampling techniques using a personal

sampling pump calibrated to 2.0 liters per minute, connected to a mixed cellulose ester filter. The SSHO will begin sampling of site personnel conducting dust producing activities when operations are initiated in the areas identified as high lead contamination areas. After collection of the air samples, the samples will be sent to an American Industrial Hygiene Association (AIHA) accredited lab capable of rapidly reporting the results. The OSHM will be responsible for evaluating the sample results and determining a need for further sampling and/or the down grading of PPE.

9.7 MONITORING EQUIPMENT CALIBRATION AND MAINTENANCE

All sampling and monitoring instrumentation used on site will be calibrated and/or response checked IAW the manufacturer's specifications, before and after use each day. If an instrument fails to calibrate or respond correctly, it will be removed from service until it can be repaired IAW manufacturer's specifications. Instruments used in the EZ during operations related to soils with high lead levels will be cleaned with wet wipes after each day of use to remove any gross amounts of dust or debris.

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 (i.e., 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.

1. Symptoms: Acute, painful spasms of voluntary muscles such as the back, abdomen and extremities.
2. Treatment: Remove victim to a cool area and loosen restrictive clothing. Stretch and massage affected muscles to increase blood flow to the area. Have patient drink one to two cups of liquids immediately, and every twenty minutes thereafter. Consult with physician if condition does not improve. If available, an electrolyte replacement solution should be taken along with water. Consumption of soft drinks will not be adequate and may aggravate the condition.

10.3.3 Heat Exhaustion

Heat exhaustion is a state of very definite weakness or exhaustion caused by excessive loss of fluids from the body. This condition leads to inadequate blood supply and cardiac insufficiency. Heat exhaustion is less dangerous than heat stroke, but nonetheless must be treated. If allowed to go untreated, heat exhaustion can quickly develop into heat stroke.

1. Symptoms: Pale or flushed, clammy, moist skin, profuse perspiration, and extreme weakness. Body temperature is basically normal or slightly elevated, the pulse is weak and rapid, and breathing is shallow. The individual may have a headache, be dizzy or nauseated.
2. Treatment: Remove the individual to a cool, air-conditioned place, loosen clothing, elevate feet and allow individual to rest. Consult physician, especially in severe cases. Have patient drink one to two cups of liquids immediately, and every twenty minutes thereafter. If the signs and symptoms of heat exhaustion do not subside, or become more severe, immediate medical attention will be required.

10.3.4 Heat Stroke

Heat stroke is an acute, dangerous reaction to heat stress caused by a failure of the body's heat regulating mechanisms. The failure of the individual's temperature control mechanism causes the perspiration system to stop working correctly, causing the body core temperature to rise very rapidly to a point (105+°F) where brain damage and death will result if the person is not cooled quickly.

1. Symptoms: The victim's skin is hot, and may or may not be red and dry, due to the fact that the individual may still be wet from sweat due to physical exertion or having worn protective clothing; nausea; dizziness; confusion; extremely high body temperatures, rapid respiratory and pulse rate; delirium; convulsions; unconsciousness or coma.
2. Treatment: Cool the victim immediately. If the body temperature is not brought down quickly, permanent brain damage or death may result. Cool the victim by either sponging or immersing the victim in very cool water to reduce the core temperature to a safe level (<102° F). If conscious, give the victim cool liquids to drink. Observe the victim and obtain immediate medical help. Do not give the victim caffeine or alcoholic beverages.

10.4 PREVENTATIVE MEASURES

10.4.1 Minimal Preventative Measures

In order to avoid heat related illnesses, proper preventative measures shall be implemented whenever environmental conditions dictate the need. The preventative measures listed in this paragraph represent the minimal steps to be taken and shall include the following procedures:

1. The SSHO shall examine each site worker prior to the start of daily operations in order to determine the individuals susceptibility to heat stress. Workers exhibiting factors which make them susceptible to heat stress will be closely monitored by the SSHO.
2. Site workers shall be trained to recognize and treat heat related illnesses. This training shall include the signs, symptoms and treatment of heat stress disorders as outlined in paragraph 10.2.1 of this Section.
3. Workers will be encouraged to drink a minimum of sixteen ounces of liquids prior to start of work in the morning, after lunch and prior to leaving the site at the conclusion of the days activities. Disposable four to twelve ounce cups and liquids shall be provided on site. Acceptable liquids will include water and an electrolyte replacement solution, with the intake of each being equally divided. Liquids containing caffeine are to be avoided.
4. When ambient conditions and site workload requirements dictate, as determined by the SSHO, workers will be encouraged to drink a minimum of 16 to 32 ounces of liquids during each rest cycle.
5. A shelter or shaded area will be provided where workers may be protected from direct sunlight during rest periods.
6. Monitoring of ambient or physiological heat stress indices shall be conducted to allow prevention and/or early detection of heat induced stress. Monitoring shall be conducted IAW paragraph 10.2.4 of this Section.
7. Site workers will be given time to acclimatize to working in hot environments. Acclimatization usually takes two to six days and allows the worker's body to become adjusted to working in hot environments. This process involves a gradual increase of the workload over the two to six day period. The recommended acclimatization schedule suggests starting workers at fifty percent of the anticipated work load and increasing each day by ten percent. For fit or trained individuals, the acclimatization period may be shortened to two or three days.

10.4.2 Additional Preventative Measures

When possible and/or feasible, the following measures will also be implemented to aid in prevention or reduce the effects of heat induced stress:

1. As needed, cooling devices will be provided to aid in body heat exchange. Cooling devices may include cooling jackets, vests or suits and field showers or hose-down areas.

Depending on the severity of the heat exposure, some form of artificial cooling may be required to ensure protection of the workers.

2. Workers will be encouraged to achieve and maintain an optimum level of physical fitness. Increased physical fitness will allow workers to better tolerate and respond to heat and heavy work loads. In comparison to an unfit person, a fit person will have: less physiological strain; a lower heart rate and body temperature; and a more efficient sweating mechanism.

10.5 PHYSIOLOGICAL HEAT STRESS MONITORING

When site personnel are engaged in site activities with ambient air temperatures greater than 75°F, physiological heat stress monitoring shall be conducted to allow for the near real-time surveillance of the physiological affects caused by personnel exposure to heat. The physiological monitoring methods listed in this para are to be implemented based upon the severity of the heat and the work load. As a minimum, the SSHO shall monitor the worker's heart rate, as outlined in para 10.5.1, as an indication of the physiological stress induced by the work load and exposure to heat. However, if monitoring with the heart rate method indicates the need for closer, more direct monitoring, the oral temperature method outlined in para 10.5.2 will be implemented. The need for monitoring body water loss will be determined by the SSHO, and will be based upon observation of the sweat loss experienced by site personnel during their work cycle. The frequency of physiological monitoring shall be determined using the information presented in Table 10-1.

10.5.1 Heart Rate Monitoring

The worker's baseline heart rate should be recorded prior to initiation of site activities by measuring the radial pulse rate for thirty seconds. After each work cycle, the heart rate should be measured by taking the pulse rate (PR) as early as possible into the resting period. Taking the radial (wrist) pulse rate is the preferred method, however the carotid (neck) pulse rate may be taken if a worker has difficulty finding the radial pulse. The PR at the beginning of the rest period should not exceed one hundred and ten (110) beats per minute (bpm). If the PR is higher than 110 bpm, the next work period should be shortened by thirty-three percent, while the length of the rest period stays the same. If the PR exceeds 110 bpm at the beginning of the next rest period, the work cycle should be further shortened by thirty-three percent. This procedure is continued until the PR at the beginning of the rest cycle is maintained below 110 bpm.

10.5.2 Oral Temperature Monitoring

If deemed necessary by the SSHO, oral temperature (OT) monitoring will be conducted. The worker's OT will be taken and recorded prior to initiation of site activities using a clinical thermometer placed under the tongue. The OT must be taken prior to consumption of cool liquids and will be done at the end of each work period or at a frequency determined by Table 10-1.

Whenever the OT exceeds 99.6°F, the work cycle must be shortened by one third, without changing the length of the rest period. If a worker's OT has exceeded 99.6°F, test the OT again at the end of the rest cycle, and do not allow the worker to return to work until the OT drops below 99.6°F. If a worker's OT exceeds 100.4°F the worker shall not be allowed to work in impermeable or semi-permeable PPE for the remainder of that work day.

10.5.3 Body Weight Loss

If expected site conditions and work requirements have the potential for causing excessive fluid loss, the SSHO shall monitor the workers fluid loss by weighing each worker prior to and again at the conclusion of each days' site activities. This will be needed to ensure that proper hydration is being maintained and that the total amount of water weight loss throughout the day does not exceed 1.5% of the employee's body weight. Body weights will be taken with the workers wearing undergarments only. If, as determined by the SSHO, site conditions and work requirements cause an extreme amount of fluid loss, body weights will also be taken prior to the lunch break. Calculation of the water weight loss, and assessing the effectiveness of hydration shall be conducted as follows:

1. Subtract the ending weight (W_{ending}) from the daily starting weight (W_{start}) to obtain the weight lost (W_{lost}) for a given work period: (W_{start}) - (W_{ending}) = (W_{lost}).
2. Multiply the starting weight by 1.5% to obtain permissible weight loss (W_{perm}): (W_{start}) x 0.015 = (W_{perm}).
3. Compare (W_{lost}) to the (W_{perm}), if (W_{lost}) is less than or equal to (W_{perm}), then hydration during the measured period has been adequate, but if (W_{lost}) is greater than (W_{perm}), then hydration should be increased during the next work period.

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Table 10-1:
SUGGESTED FREQUENCY OF PHYSIOLOGICAL MONITORING FOR FIT AND ACCLIMATIZED WORKERS [a, d]

ADJUSTED TEMPERATURE [b]	NORMAL WORK ENSEMBLE [c]	IMPERMEABLE ENSEMBLE
90°F (32.2°C) or above	After each 45 minutes of work	After each 15 minutes of work
87.5°-90°F (30.8°-32.2°C)	After each 60 minutes of work	After each 30 minutes of work
82.5°-87.5°F (28.1°-28.1°C)	After each 90 minutes of work	After each 60 minutes of work
77.5°-82.5°F (25.3°-28.1°C)	After each 120 minutes of work	After each 90 minutes of work
72.5°-77.5°F (22.5°-25.3°C)	After each 150 minutes of work	After each 120 minutes of work

a For work levels of 250 kilo calories/hour.

b Calculate the adjusted air temperature (ta adj) by using this equation: ta adj °F = ta °F + (13 x % sunshine). Measure air temperature (ta) with a standard mercury-in-glass thermometer, with the bulb shielded from radiant heat. Estimate percent sunshine by judging what percent time the sun is not covered by clouds that are thick enough to produce a shadow. (100 percent sunshine = no cloud cover and a sharp, distinct shadow; 0 percent sunshine = no shadows. Use decimal expression of % sunshine)

c A normal work ensemble consists of cotton coveralls or other cotton clothing with long sleeves and pants.

d Source: NIOSH/OSHA/USCG/EPA. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities. DHHS (NIOSH) 85-115. Cincinnati, OH.

10.6 REQUIREMENT FOR ADDITIONAL MONITORING

The SSHO will report to the EODT OSHM in the event that one or more EODT personnel experience adverse heat related effects even though the physiological monitoring and work period reduction requirements found in para 10.5 are followed. The EODT OSHM will then determine what other monitoring or control methods will be used to further control the effects of heat exposure.

10.7 HEAT STRESS DOCUMENTATION

The SSHO shall be responsible for recording all heat stress related information. This will include training sessions and physiological monitoring data. Training session shall be documented using the EODT Training Roster. Pulse rate monitoring data will be recorded on the Heat Stress Monitoring Log, with the OT and/or water loss calculations being recorded in the Site Safety Log, and/or Site Monitoring Log.

10.8 INTRODUCTION TO COLD STRESS

The effects experienced by site personnel when working in cold environments depend upon many environmental and personal factors, such as ambient air temperature, wind speed, duration of exposure, type of protective clothing and equipment worn, type of work conducted, level of physical effort, and health status of the worker. In cold environments, overexposure can cause significant stress on the body which can lead to serious, and potentially permanent injury. Cold may affect exposed body surfaces and extremities, or may affect the deeper body tissues and body core. Presented below is information about the most common cold stress disorders, their signs, symptoms, effects, and control techniques.

10.9 COLD STRESS DISORDERS

10.9.1 Immersion Foot or Trench Foot

These two cold injuries occur as a result of exposure to cool or cold weather and persistent dampness or immersion in water. Immersion foot usually results from prolonged exposure when air temperatures are above freezing, whereas trench foot normally occurs from shorter exposure at temperatures near freezing. The symptoms for each disorder are similar and include tingling, itching, swelling, pain and/or numbness, lack of sweating, and blisters.

10.9.2 Frostbite

Frostbite occurs when there is actual freezing of the water contained in the body tissues. This usually occurs when temperatures are below freezing, but excessive wind can result in frostbite even when ambient temperatures are above freezing. Frostbite can occur from several types of cold exposure, such as: exposure of bare skin to cold and wind; exposure to extremely cold ambient temperatures; skin contact with rapidly evaporative liquids (gasoline, alcohol or cleaning solvents) at temperatures below 39.2°F; or from skin contact with metallic objects whose temperatures are below freezing. The extremities are usually affected first since the body's initial response to cold stress involves decreasing the blood flow to the extremities, thereby reducing heat loss. The tissue damage caused by frostbite can be superficial, near the surface of the skin, or extend deep into body tissues which can cause severe tissue damage. During the initial stages of frostbite, the skin may have a prickly or tingling sensation and will later become numb with cold. The appearance of the affected skin may range from superficial redness of the skin to white, hard, frozen-looking tissues.

10.9.3 Hypothermia

Hypothermia results when the body looses heat faster than it can be produced. When this occurs, the blood vessels in the skin and extremities constrict, reducing the flow of warm blood to those areas which have a high surface area to volume relation. This reduction in blood flow reduces heat loss and usually affects the peripheral extremities first. Ears, fingers and toes begin to experience

chilling, pain and then numbness due to loss of both blood flow and heat. Shivering begins as the body's core temperature begins to drop, and the body uses the shivering to compensate and create metabolic heat. Shivering is often the first sign of hypothermia. The pain and numbness in the extremities is an indication that the heat loss is increasing, but when shivering becomes severe and uncontrollable, the heat loss in the body core has become extreme. Further heat loss produces speech difficulty, reduced mental alertness, forgetfulness, loss of manual dexterity, collapse, unconsciousness and finally death.

10.10 TREATMENT OF COLD STRESS DISORDERS

The intent of all cold stress treatment is to bring the deep body core temperature back to its normal temperature of about 98.6°F. Work performed in cold environments should be discontinued for any worker who exhibits the signs or symptoms associated with hypothermia or frostbite. Workers exhibiting those symptoms should be brought to a warm area and allowed to rest and warm-up. If a worker's clothing becomes wet, which reduces its insulation effect, it should be removed and replaced by dry clothing, or allowed to dry before resuming work. Warm, non-alcoholic, de-caffeinated drinks (not coffee) or soup should be given to increase the body core temperature, and re-warming should be gradual.

For frostbite, the victim should be sheltered from the wind and cold and given warm drinks. If the frostbite is superficial, the frozen area(s) should be covered with extra clothing or blankets or warmed against the body. **Do not use direct heat, and do not pour hot water over or rub the affected area.** Warming should be gentle and gradual. Failure to do this could lead to bleeding in the tissues and increase the possibility of infection. If the frostbite is deep, (i.e. the affected area is frozen and hard to the touch), immediate medical attention should be obtained. The safe thawing of deep frostbite is beyond the expertise and facilities found onsite.

10.11 PREVENTION OF COLD STRESS DISORDERS

10.11.1 Cold Stress Monitoring

Guidance for the monitoring of cold stress is provided by the ACGIH in the Threshold Limit Values and Biological Exposure Indices booklet. In order to comply with the cold stress TLV, EODT shall implement the following monitoring schedule:

1. A suitable thermometer for measuring ambient temperatures shall be available on sites when the air temperature is below 60.8°F;
2. Whenever the air temperature on site falls below 30.2°F, the temperature shall be measured and recorded at least once every two hours;
3. Whenever the air temperature on site falls below 30.2°F, the wind speed shall be measured and recorded together with the air temperature;

4. The equivalent wind chill temperature shall be obtained from Table 10-3, and recorded, in all cases when air speed measurements are required; and
5. The SSHO shall utilize the applicable TLV limits listed in Table 10-4 to determine if elevated control measures must be implemented during site activities.

10.11.2 Controls Implemented by Site Personnel

During work in cold environments, the SSHO will use the tailgate safety briefing to inform site personnel of the temperature and wind conditions anticipated for the day's site activities. The SSHO will also advise site personnel of the general practices, listed below, which will be utilized in the prevention and control of cold stress.

Table 10-3: EQUIVALENT CHILL TEMPERATURE

EST. WIND SPEED (in mph)	ACTUAL TEMPERATURE READING (° F)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
	EQUIVALENT WIND CHILL TEMPERATURE (° F)											
CALM	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-24	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-121
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-51	-67	-82	-98	-113	-129	-145
40 *	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
	LITTLE DANGER In < 1 hr with dry skin. Maximum danger of false sense of security				INCREASING DANGER Danger from freezing of exposed flesh within one minute				GREAT DANGER Flesh may freeze within 30 seconds			
	Trench foot and immersion foot may occur at any point on this chart.											

* - Wind speeds greater than 40 mph have little additional effect

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Table 10-4: ACGIH COLD STRESS TLVs

TLV Temp.	Working Conditions or Task to be Performed	Required Control Measures
< 60.8°F	Any site or work condition.	Thermometer required on site.
	Fine work performed continuously for more than 10-20 min.	Special provisions for keeping the hands warm, i.e., radiant heaters, warm air jets, etc.
	Tasks with sedentary workload.	Gloves are to be used by workers.
< 39.2°F	Site with windy conditions.	Reduce cooling effect of wind by using shields or an easily removable wind breaker.
	Task where exposed areas of the body cannot be protected from cold or frostbite.	Auxiliary heating units are to be supplied.
	Tasks where clothing may become wet with either perspiration or water.	Provisions shall be made to allow site personnel to change into dry clothes.
	Workers handling evaporative liquids.	Special precautions needed to ensure clothing does not become soaked with liquid.
	Tasks with light workload.	Gloves are to be used by workers.
≤ 35.6°F	Workers who become emersed in water or whose clothing becomes wet.	Treatment for hypothermia and immediate change of dry clothing provided.
< 30.2°F	Any task.	Air temperature and wind speed (if over 5 mph) recorded at least every 4 hours. Cover metal handles with insulating material.
< 19.4°F Air	Tasks with moderate work.	Gloves to be used by workers.
< 19.4°F ECT	Any task.	Heated warming shelters with warm drinks will be made available for breaks. Record ECT along with air temperature readings. Warn personnel not to contact unprotected metal parts with bare skin.
< 10.4°F ECT	Any task.	Buddy system enforced, protect from wind to greatest extent possible, acclimatize workers, moderate workload to prevent perspiration, and conduct worker cold stress training.
< -11.2°F or < 0°F with 5 mph wind	Personnel who routinely work at this temperature.	Personnel are to be medically certified as suitable for this level of exposure.
< -25.6 ECT	Any level of work or type of task.	No unprotected skin exposure.

ECT - Equivalent Chill Temperature.
Air - Ambient air temperature

1. Wear adequate, appropriately layered clothing, including a water repellant outer layer if precipitation is forecasted;
2. Use layered clothing which should include, an inner-most layer (such as cotton or silk) to trap heat and absorb perspiration, an insulating layer of wool or synthetic fiberfill (such as polypropylene), a layer of work weight clothing, and an outer protective layer designed to retain heat and be wind/water proof (such as nylon, or Gortex™);
3. Wear gloves, socks and a hat that are synthetic or wool insulated;
4. Remove outer layers of clothing during breaks in heated shelters to prevent inner layers from getting wet with perspiration;
5. Cover all exposed skin and use a wind breaker in windy, cold conditions;
6. Eat well-balanced meals and maintain an adequate intake of non-alcoholic, de-caffeinated fluids;
7. Seek shelter in a warm protected area when signs and symptoms of cold stress become evident; and
8. Protect clothing from getting wet with perspiration during site activities by monitoring and moderating the level of physical activity, and if necessary, remove excessive layers of clothing.

10.11.3 Work/Rest Cycles

To date, there are no Federally mandated regulations related to work/rest schedules for cold stress. The ACGIH has published a work/rest schedule, which is provided in Table 10-5 of this Section. However, this table only applies to, and should be implemented for, temperatures below 0°F. Therefore, for temperatures above 0°F, site personnel will take a minimum of one break every hour for temperatures between 0°F and 30°F, and for temperatures above 30 °F, workers shall take at least one rest period every two hours or whenever they exhibit signs or symptoms of cold stress.

Table 10-5: TLV WORK/REST SCHEDULE FOR 4 HOUR WORK SHIFT *

Air Temp.	No Wind		5 MPH Wind		10 MPH Wind		15 MPH Wind		20 MPH Wind	
°F Approx.	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks
-4° to -8°	Normal	1	Normal	1	Normal	1	Normal	1	Normal	1
-9° to -13°	Normal	1	Normal	1	Normal	1	Normal	1	75 min.	2
-14° to -18°	Normal	1	Normal	1	Normal	1	75 min.	2	55 min.	3
-15° to -19°	Normal	1	Normal	1	75 min.	2	55 min.	3	40 min.	4
-20° to -24°	Normal	1	75 min.	2	55 min.	3	40 min.	4	30 min.	5
-25° to -29°	75 min.	2	55 min.	3	40 min.	4	30 min.	5	Non-emergency work should cease	
-30° to -34°	55 min.	3	40 min.	4	30 min.	5	Non-emergency work should cease			
-35° to -39°	40 min.	4	30 min.	5	Non-emergency work should cease					
-40° to -44°	30 min.	5	Non-emergency work should cease							
-45 & Below	Non-emergency work should cease									

1. Schedule applies to any 4-hour work period with moderate to heavy work activity, with warm-up cycle in a warm location and with an extended break in a warm location (e.g. lunch) at the end of the 4-hours. For light-to-moderate work: apply the schedule one step lower.

2. The following is suggested as a guide for estimating wind velocity if other, more accurate means are not available: 5 mph - light flag moves; 10 mph - light flag fully extended; 15 mph - raises newspaper sheet; 20 mph - blowing and drifting snow.

3. This table applies only to acclimatized workers with appropriate dry clothing for winter work.

* Adapted from the "1993-1994 Threshold Limit Values and Biological Exposure Indices, American Conference of Governmental Industrial Hygienist, Cincinnati, OH.

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11.0 SITE CONTROL

11.1 CENTER OF OPERATIONS

The EODT field office and storage areas for the SEDA OERA project will be located at the main office facility located at the entrance to the Munitions Destruction Area where the OBG is located. This facility will allow EODT to store project documents, files, materials and supplies in a lockable area that will be secured at the end of each day's operations. Both SEDA and off-facility phone communications will be available at the EODT center of operations.

11.2 PROJECT SITE ACCESS

Since only one road leads into the Munitions Destruction Area, and since the area is fenced, project site access will be controlled at the lockable gate located on the main access road near the offices. Once EODT initiates site activities with the potential for generating site hazards, EODT will establish a control point at this location directing visiting personnel to check in at the site office. In addition, the gate will be locked and visitors will be denied access during any on-site demolition operations.

11.3 WORK ZONE ACCESS CONTROL AND SECURITY

For the purpose of this project, a WZ is defined as any location where EODT or subcontractor personnel are conducting any of the site tasks specified in Section 4.0 of this SSHP. Authorized entry into the various WZs will be given to only those personnel required to safely conduct the task at hand, and visitors will be controlled and escorted as described in this Section. Ensuring that a WZ is secure will be the primary duty of the SUXOS and SSHO, but all site personnel will take an active role in ensuring that the site is not accessed by unauthorized personnel. For this project, EODT shall utilize a system of rope, engineering tape, flags or signs to establish the following WZ's according to the requirements presented below:

1. Support Zone (SZ) - Upon arrival at the site, EODT personnel shall establish and maintain a SZ which shall encompass the entire 30-acre site and the locations of the soil stockpile areas. Once on-site operations beyond the mobilization/site set-up task are initiated, access to the support zone will be restricted to only approved EODT, subcontractor and CEHNC personnel. All other personnel entering the site shall be considered visitors and will be treated according to the requirements of this Section. The SZ shall be the location where EODT shall stage site support equipment and facilities. This area will be positioned, if feasible, in a location up wind of the OBG.
2. Contamination Reduction Zone (CRZ) - The CRZ shall be established prior to site personnel entering the site to conduct any on-site tasks. This zone shall contain the Personal

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 future disposal. 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. 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 items 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

without another qualified worker present to provide assistance if needed. At all times buddies should be able to:

1. Observe their buddy for signs of exposure to chemical, physical or biological hazards, with special emphasis to symptoms of heat/cold stress;
2. Periodically check the integrity of their buddy's protective clothing;
3. Observe the site area in which they are working for hazards;
4. Remain within verbal or visual contact with their buddy at all times; and
5. Notify the team leader and or field office if emergency assistance is needed.

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SITE MAP

(To be generated by the SSHO prior to site operations.)

12.0 PERSONNEL AND EQUIPMENT DECONTAMINATION

12.1 PERSONNEL HYGIENE AND SANITATION FACILITIES

Personnel hygiene and sanitation facilities will be established on site IAW 29 CFR 1910.120(n) and EM 385-1-1, Section 2, to ensure that personnel maintain good personal hygiene. These facilities shall include a personal washing area, toilet facilities, and a lunch/break area for all site personnel. In the office area, sanitary facilities are provided as part of the site office complex. However, under field conditions where a project site is not provided with a sanitary sewer system, temporary chemical toilet facilities will be used by EODT to fulfill the sanitary toilet requirement. Each temporary toilet shall be naturally lighted, have ventilation, be lockable from the inside, and shall be serviced weekly. The minimum requirements for toilet facilities can be found in the OSHA standard 29 CFR 1910.120(n), however, EODT will provide a minimum of two temporary toilets in the SZ.

Hand and face washing facilities will be utilized by all personnel exiting the EZ prior to eating, drinking, tobacco use, or other hand-to-face activities. Due to the remoteness of the SZ, and the lack of immediately available water resources, handi-wipes and rinse water will be provided for on-site hand and face washing. When site personnel are returning to the office area at lunch and prior to leaving the site, the running water facilities in the office area will be used to conduct a final washing. This washing at the office facility will be preceded by hand and face washing at the CRZ/SZ line.

12.2 POTABLE AND NONPOTABLE WATER SUPPLIES

An adequate supply of potable (drinkable) water shall be provided on site at all times, and will be supplied IAW the following provisions:

1. Containers used for potable water shall be capable of being tightly closed, equipped with a tap, maintained in a sanitary manner, and cleaned at least weekly;
2. A container used for distribution of drinking water shall be clearly labeled as to its contents and not used for any other purpose;
3. Where single service cups are provided, separate sanitary containers will be provided for the storage of the unused cups and for the disposal of the used cups; and
4. Water shall not be dipped from the container and use of a common cup shall not be allowed.

Outlets and storage containers for nonpotable water, such as water for fire fighting or decontamination will be conspicuously labeled "Caution - Water unfit for drinking, washing or cooking". At no time will there be a cross connection or open potential between a system furnishing potable water and a system furnishing nonpotable water.

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 contaminated 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.

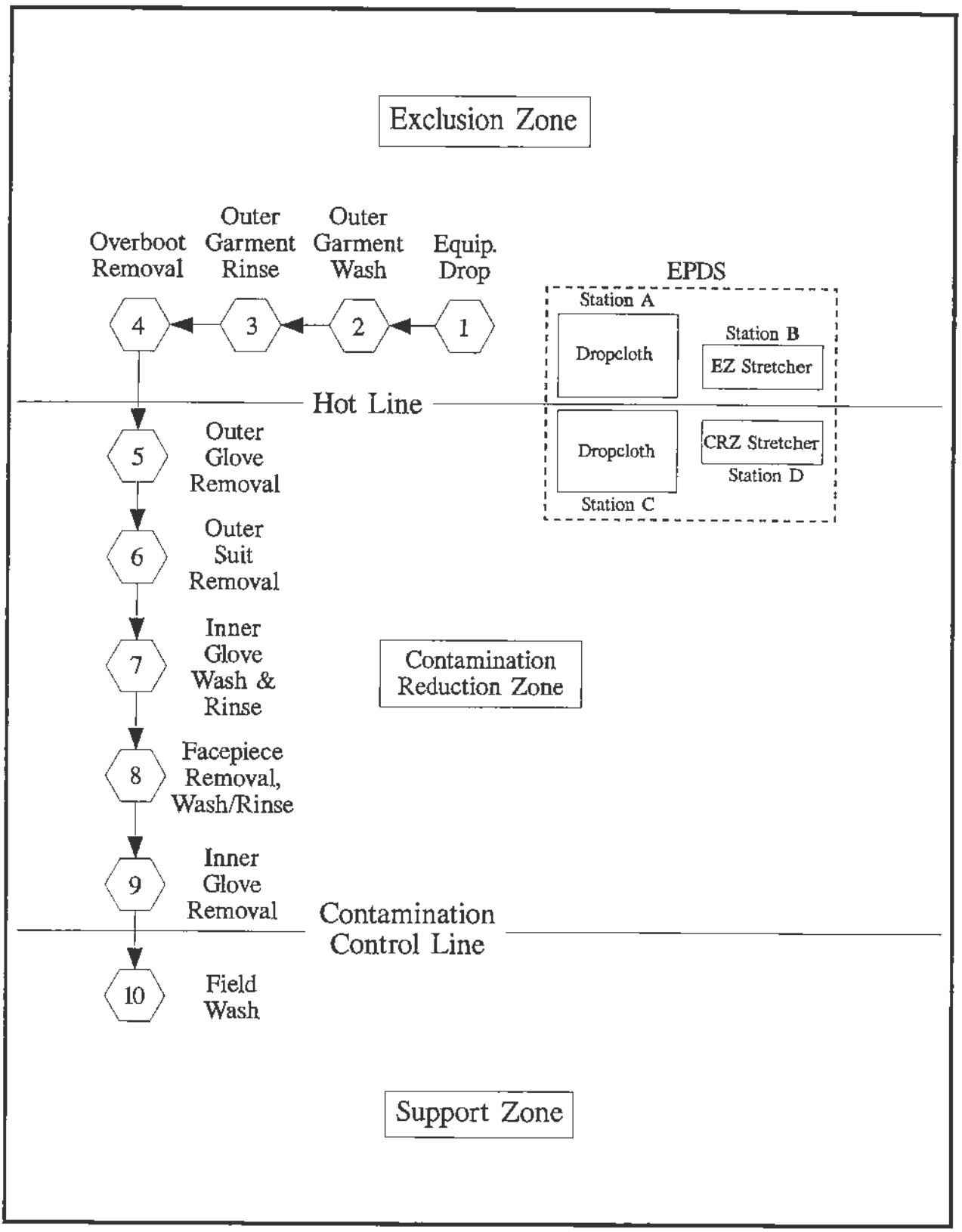
12.4.1 Emergency PDS

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 5% bleach solution, five gallons of water, blunt-nosed scissors and first aid supplies.

Figure 12-1: PDS for Level C PPE



Station B

Porous stretcher for EZ side of the Hot Line.

Station C

Drop cloth for location of: first aid kit, eye wash kit, burn blanket, bloodborne pathogen universal controls kit, and fire extinguisher.

Station D

Stretcher for the PDS side of the Hot Line.

12.4.2 Level C PPE Decontamination

Station 1: Equipment Drop

Enter PDS at Station 1 and deposit all reusable equipment on the drop cloth.

Station 2: Outer Garment Decontamination (Chemical Suit, Gloves, and Boots)

Using the sprayer with soap solution, and starting at the head and working down, spray the entire surface of outer garments and scrub the bottoms of the overboots.

Station 3: Outer Garments Rinse

Using the sprayer with clean water and starting at the head and working down, remove all soap residue from the outer garment.

Station 4: Boot Removal (Boot Rack)

Remove boots and place in plastic-lined container. Do not place unbooted feet back across the Hot Line. A chair or bench and boot jack will be provided at this station to assist boot removal.

Station 5: Outer Glove Removal

Remove outer gloves and place in plastic-lined container. Personnel should exercise extreme caution, and make every effort not to touch the inner gloves with the outside of the outer gloves during their removal.

Station 6: Outer Suit Removal

Remove outer suit and place in plastic lined container. Buddy will assist in removal of the suit in an inside-out fashion, using caution to touch the outer part of the suit with the inner gloves as little as possible.

Station 7: Inner Glove Wash and Rinse

Wash inner gloves in soap solution and rinse in clean water.

Station 8: Respirator Removal and Wash/Rinse
Remove respirator and place in plastic bag.

Station 9: Inner Glove Removal
Remove inner gloves and place into plastic-lined waste container, using caution not to touch the outside of the inner gloves with the hands.

Station 10: Conduct Field Wash
Using soap and water, or handi-wipes, wash hands, face and neck immediately upon exiting CRZ.

12.4.3 Modified Level C PPE Decontamination

For those personnel working in Modified Level C PPE, decontamination will involve going through Stations 1 through 7, 9 and 10. These decontamination steps will allow for the effective decontamination of the tyvek coveralls and outer gloves and boots.

12.4.4 Level D and Modified Level D PPE Decontamination

For those personnel working in Level D and Modified Level D PPE, decontamination will involve Stations 1 through 4 and 10, which will allow for the washing, rinsing and removal of the outer over boots.

12.5 EQUIPMENT DECONTAMINATION

Tools and equipment used on site will be kept free of accumulations of soil and other debris and will be washed prior to removal from the EZ. Equipment used in the field, to include PPE, shall be cleaned and inspected at the end of each work day to ensure that the equipment is maintained in safe operating condition. Any equipment found to be defective will be brought to the attention of the SUXOS. Prior to leaving the EZ, and once the high lead contamination soil has been excavated, sifted and transported, site equipment and vehicles, to include EMM, will be washed to remove visible soil and dirt. Washing of hand-held equipment and supplies will occur at the PDS, and the washing of large equipment, vehicles and EMM will occur at the soil stockpile area, where EODT will establish a poly-lined wash facility designed to capture run-off water from the washing process. Personnel involved in this form of washing shall wear Modified Level C PPE when washing equipment/vehicles after use in areas of high lead contamination. Personnel involved in the spray washing after equipment use only in the areas of low lead contamination shall wear Level D PPE.

Water collected as a result of equipment washing will be segregated according to the level of contamination (high lead or low lead) in the areas where the equipment was used. Washing solutions shall be stored in approved, labeled DOT containers and handled according to guidance from the CEHNC SREP.

13.0 ENGINEERING CONTROLS, SWP'S AND STANDING ORDERS

13.1 GENERAL

This section outlines the engineering controls, SWPs, and site Standing Orders which will be followed by all site personnel to eliminate or reduce the risk of exposure to the anticipated site hazards. These control measures are presented as a guide for site personnel and do not cover all OSHA or USACE compliance issues. The SSHO will utilize the EODT CSHP, and the SOPs located in Appendix G of the WP to ensure full compliance with applicable regulatory requirements. All personnel on site shall immediately report to the SSHO any conditions which do not comply with, or are not addressed by, this Section. As a general rule, all site personnel will comply with the following guidelines:

1. The applicable regulatory requirements of 29 CFR 1910, 29 CFR 1926, and EM 385-1-1 shall be followed during all site activities.
2. All site personnel will wear, as a minimum, OSHA Level D PPE, as specified in Section 7.0 of this SSHP.
3. All investigation, handling, transportation, and demolition of OE found on site will be conducted IAW the CEHNC Safety Concepts and Basic Considerations for Unexploded Ordnance (UXO), revised February 16, 1996 (see Appendix G of the WP).
4. Personnel will, to the greatest extent possible, avoid contact with any indigenous wildlife. Any bites or stings received from wildlife will be reported to the SSHO, who will then determine the appropriate course of action to be taken to treat the bite.
5. During warm weather, personnel working in vegetated or wooded areas are cautioned to use insect repellants and check themselves for ticks and insect bites upon leaving the work area.
6. Personnel in vegetated or wooded areas will wear long sleeve shirts with the sleeves rolled down to reduce contact with, and injury from, insects and hazardous or poisonous plants.
7. Site personnel shall inform the SSHO of any known medical conditions which may cause, or result in, an adverse health condition. This shall include hypersensitive allergic reactions to stinging and biting insects or contact with poisonous plants; diabetes; high blood pressure; skin or eye sensitivity to sunlight and ultraviolet radiation (UV); chronic illness; and acute illnesses, such as a cold, the flu, or stomach/intestinal disorders. Persons with known hypersensitive allergic reactions to stinging/biting insects or toxic plants shall carry appropriate emergency medical antidotes on their person at all times when on site.
8. Site personnel shall not participate in horseplay or other prohibited acts that could cause harm or injury to site personnel, property or the environment.

13.2 ENGINEERING CONTROLS

When personnel exposure to site hazards is unavoidable, sound safety and health practice recommends the development and use of engineering controls that remove the potential for personnel exposure. This form of hazard control is the preferred controlled method, and in 29 CFR 1910.134 (a) and 1910.120(g), OSHA mandates that engineering controls be used, whenever feasible, to control personnel exposures to chemical and physical hazards which exceed the OSHA Permissible Exposure Limit (PEL), or other published exposure limits. However, due to the nature of site operations, and the hazards usually encountered on an OE site, the design and implementation of engineering controls is typically not feasible for most site operations and hazards. Therefore, during SEDA project activities, the feasible engineering controls listed below will be used.

1. During demolition of OE, EODT shall utilize sand bags and earth tamping to minimize and control the noise and fragmentation associated with the explosive disposal of OE.
2. All powered hand tools and equipment will be operated with the manufacturer's guards in place.
3. Non-sparking tools will be used for hand digging of OE and for demolition operations.

13.3 HEAVY EQUIPMENT OPERATION

Heavy equipment utilized on site shall be operated under strict adherence to the applicable OSHA regulations found in 29 CFR 1910, 29 CFR 1926, the requirements of EM 385-1-1, Section 16, and the guidelines listed below:

1. The operation of heavy equipment shall be limited to authorized personnel specifically trained in its operation;
2. A competent person shall visually inspect heavy equipment daily prior to operation, and report any abnormalities/deficiencies to the SSHO;
3. The operator shall ensure the proper operation of, and shall use, the safety devices provided with the vehicle, including seat belts, backup warning indicators, and horns;
4. While in operation, all personnel not directly required in the area shall keep a safe distance from the equipment;
5. The operator cab shall be kept free of non-essential items, and loose items shall be secured;
6. Personnel shall avoid moving into the path of operating equipment, especially areas blinded from the operator's vision;
7. When heavy equipment must negotiate in tight quarters, or if the operator cannot see the path of the bucket, a secondary person shall be stationed to guide the operator; and
8. Additional riders shall not be allowed on equipment unless it is specifically designed for that purpose (i.e., there is an additional seat with a seat belt).

13.4 POWER AND HAND TOOL OPERATION

13.4.1 Power Tools

Power tools have great capability for inflicting serious injury upon personnel if they are not used and maintained properly. To control the hazards associated with power tool operation, the requirements outlined in 29 CFR 1910, Subpart P, 1926, Subpart I, and EM 385-1-1, Section 13 and the safe work practices listed below shall be observed when using power tools:

1. Operation of power tools shall be conducted by personnel trained in the use of the tool, its operation, and safety precautions;
2. Power tools shall be inspected prior to use, and defective equipment shall be removed from service until repaired;
3. Power tools designed to accommodate guards for moving parts shall have such guards properly in place prior to and during use;
4. Loose fitting clothing or long hair shall be secured away from moving parts;
5. Hands, feet, etc., shall be kept away from all moving parts;
6. Maintenance and/or adjustments to equipment shall not be conducted while it is in operation or connected to a power source, and maintenance on gasoline powered tools shall be conducted only after the spark plug has been removed and secured;
7. An adequate operating area shall be provided, allowing sufficient clearance and access for operation;
8. Electrical tools shall be operated IAW the applicable specifications outlined in paragraph 13.7 of this Section; and
9. Good housekeeping practices shall be followed at all times.

13.4.2 Hand Tools

Use of improper or defective tools can contribute significantly to the occurrence of accidents on site. Therefore, the requirements outlined in EM 385-1-1, Section 13 and the safe work practices listed below shall be observed when using hand tools:

1. Hand tools shall be inspected for defects prior to each use;
2. Defective hand tools shall be removed from service and repaired or properly discarded;
3. Tools shall be selected and used in the manner for which they were designed;
4. Be sure of footing and grip before using any tool;
5. Do not use tools that have split handles, mushroom heads, worn jaws, or other defects;
6. Leather work gloves shall be worn to increase gripping ability and to protect the hand if a cut, laceration or puncture hazard exists during the use of the tool;
7. Safety glasses or a face shield shall be used if use of tools presents an eye/face hazard;
8. Do not use makeshift tools or other improper tools;

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 four feet, the potential exists for excavations to be conducted deeper than four 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;

13. Excavations 4 ft. or more in depth shall have a means of egress at a frequency such that lateral travel to the egress point does not exceed 25 ft.;
14. Walkways or bridges with standard guardrail shall be provided where employees are required or permitted to cross over excavations;
15. If the depth of an excavation is greater than 4 feet, it shall be inspected by the SSHO to determine if it meets the criteria for a confined space; and
16. If an excavation is determined to be a Confined Space, the requirements set forth in the Confined Space Program found in the EODT CSHP shall apply.

13.6 MATERIAL HANDLING AND LIFTING

Many types of objects are handled in normal day to day operations. Care should be taken in lifting and handling heavy or bulky items since the manual or mechanical lifting of such items may cause hazards to site personnel. Materials being lifted either mechanically or manually will not be moved, or suspended, over personnel unless positive precautions have been made to protect the personnel from falling objects. Whenever heavy or bulky material is to be moved, the size, shape, and weight of the object, and the distance and path of movement, must be considered to prevent joint and back injuries. The following hierarchy shall be followed in selecting a means for material handling:

1. Elimination of material handling through engineering design;
2. Movement of the material by mechanical device (i.e., lift truck, crane etc.);
3. Movement by manual means using mechanical aid (i.e., dolly or cart); and
4. Movement by manual means with protective equipment (i.e.,lifting belt or lifting monitor).

The lifting fundamentals listed below address the proper manual material lifting procedures. These lifting procedures will be followed whenever personnel are required to lift objects.

1. A firm grip on the object is essential, therefore the hands and object shall be free of oil, grease and water, which might prevent a firm grip;
2. The hands, and especially the fingers, shall be kept away from any points that cause them to be pinched or crushed, especially when setting the object down;
3. The item shall be inspected for metal slivers, jagged edges, burrs, rough or slippery surfaces and pinch points, and gloves shall be used, if necessary, to protect the hands;
4. The feet shall be placed FAR enough apart for good balance and stability;
5. Personnel shall ensure that solid footing is available prior to lifting the object;
6. When lifting, personnel shall get as close to the load as possible, bend their legs at the knees, keep their back as straight as possible, and lift the object with the legs, as they are straightening from their bending position;
7. Never carry a load that cannot be seen over or around;

8. When placing an object down, the stance and position are identical to that for lifting, with the back kept straight and the legs bent at the knees, while the object is lowered; and
9. If needed, EODT shall provide back support devices to aid in preventing back injury during lifting activities.

When two or more people are required to handle an object, coordination is essential to ensure that the load is lifted uniformly and that the weight is equally divided between the individuals carrying the load. When carrying the object, each person, if possible, shall face the direction in which the object is being carried.

13.7 ELECTRICAL HAZARDS

Electrical wiring and apparatus safety procedures shall be conducted in accordance with OSHA Standard 29 CFR 1910.137(2), and EM 385-1-1, Section 11. These requirements include, but are not limited to:

1. All electrical wiring and equipment shall be of a type listed by Underwriters Laboratories (UL) or Factory Mutual Engineering Corp. (FM) for the specific application;
2. All installations shall comply with the National Electrical Safety Code (NESC) or the NEC regulations;
3. All work shall be accomplished by personnel familiar with and qualified for the class of work to be performed;
4. Live parts of wiring or equipment shall be guarded to protect individuals from harm;
5. Electric wire or flexible cord passing through work areas shall be covered or elevated to protect it from damage by foot traffic, vehicles, sharp corners, or pinching;
6. Temporary power lines, switch boxes, receptacle boxes, metal cabinets, and enclosures around equipment shall be marked to indicate the maximum operating voltage;
7. Patched, oil-soaked, worn, or frayed electric cords or cables will not be used;
8. Portable hand lamps shall be of composition approved for the purpose, and hand lamps shall be equipped with a handle and a bulb guard that is attached to the lamp holder or the handle;
9. Extension cords shall not be fastened with staples, hung from nails, or suspended by wire;
10. All electrical circuits shall be grounded in accordance with the NEC and the NESC unless otherwise noted in the reference manuals;
11. Portable and semi-portable electrical tools and equipment shall be grounded by a multi-conductor cord having an identified grounding conductor and a multi-contact polarized plug-in receptacle;
12. Semi-portable equipment, floodlights, and work lights shall be grounded, and the protective ground shall be maintained during moving unless supply circuits are de-energized;
13. Tools protected by approved double insulation, or its equivalent, need not be grounded;

14. UL listed ground fault circuit interrupters (GFCIs), calibrated to trip within the threshold values of 5 ma ± 1 ma, are required on all circuits used for portable electric tools;
15. In instances where the GFCI is sensitive to equipment vibration, the SSHO shall ensure proper equipment grounding prior to the equipment being used;
16. Flexible cord sets shall be UL listed, contain the number of conductors required for the service, including an equipment ground wire, and shall be classified as hard usage or extra hard usage (identified by "outdoor" or "WA" printed on the jacket); and
17. Bulbs attached to festoon lighting strings and extension cords shall be protected by wire guards or equivalent unless deeply recessed in a reflector.

13.8 MACHINE AND EQUIPMENT GUARDING

In order to protect site personnel from unguarded moving machinery and equipment surfaces, the requirements found in OSHA 29 CFR 1910, Subpart O, USACE EM 385-1-1, Section 16B and the general provisions below will be followed:

1. All belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains or other reciprocating, rotating or moving parts of machinery or equipment shall be guarded IAW manufacturer's specifications if they create a hazard through contact with personnel;
2. All hot surfaces of equipment, including exhaust pipes or other lines, shall be guarded or insulated to prevent injury and fire;
3. No guard, safety appliance or device shall be removed from machinery or equipment, or made ineffective except when making immediate repairs, lubrication or adjustments, and then only after the power has been shut off; and
4. All guards or safety appliances or devices removed for repair, lubrication or adjustments will be replaced immediately upon completion of said activity and before the power is turned on.

13.9 FIRE AND EXPLOSION HAZARDS

13.9.1 Causes of Fires and Explosions

Although fires and explosions may arise spontaneously, they are more commonly the result of carelessness during the conduct of site activities, such as during refueling of heavy or hand held equipment. Some potential causes of explosions and fires include:

1. Ignition of explosive or flammable chemical gases or vapors by external ignition sources;
2. Agitation of shock or friction-sensitive compounds; and
3. Sudden release of materials under pressure.

13.9.2 Fire Prevention

Explosions and fires not only pose the obvious hazards of intense heat, open flames, smoke inhalation, and flying objects, but may also cause the release of toxic chemicals into the

environment. Site personnel involved with potentially flammable material or operations shall follow the guidelines listed below and EM 385-1-1, Section 9, to prevent fires and explosions:

1. Prior to initiation of site activities involving explosive/flammable materials, all potential ignition sources shall be removed or extinguished;
2. Non-sparking and explosion-proof equipment shall be used whenever the potential for ignition of flammable/explosive gases/vapors/liquids exists;
3. Smoking shall be prohibited at, or in the vicinity of, operations which may present a fire hazard, and the area shall be conspicuously posted with signs stating "No Smoking or Open Flame Within 50 Feet";
4. Flammable and/or combustible liquids must be handled only in approved, properly labeled metal safety cans equipped with flash arresters and self-closing lids;
5. Transfer of flammable liquids from one metal container to another shall be done only when the containers are electrically interconnected (bonded);
6. The motors of all equipment being fueled shall be shut off during the fueling operations; and
7. Outdoor flammable/combustible materials storage areas will be: lined and contained; located fifty feet from buildings; and kept free of weeds, debris and other combustible materials.

13.9.3 Fire Protection

To ensure adequate fire protection, the SSHO will inspect the site to ensure that all flammable and combustible materials are being safely stored in appropriately configured storage areas and containers. The SSHO will also ensure that no flammable/combustible materials are stored near any sources of ignition, and that sources of ignition are removed a safe distance from storage areas. If needed, storage areas will be segregated from the remainder of the site through the use of flagging and signs. Portable fire extinguishers shall be located on site IAW the requirements of Section 14.0.

13.10 SIGNS AND LABELS

An important element of site safety involves providing site personnel with information related to hazardous operations, areas and materials. To ensure effective, consistent communication of these hazards, the requirements of OSHA 29 CFR 1910.145 and USACE EM 385-1-1, Section 8, will be implemented whenever signs, tags or labels are used on site. For all signs, labels and tags, (except piping systems) the following color scheme will apply:

1. Red - Identifies dangerous conditions, emergency stop controls, fire detection and suppression equipment and containers of flammable liquids;
2. Orange - Designates dangerous parts of machinery or energized equipment;
3. Yellow - Designates conditions requiring caution, marking dangerous chemicals, marking physical hazards, and markings for ionizing radiation;

4. Blue - Designates information of a non-safety nature; and
5. Green - Designates safety equipment and operator devices, and location of first aid and safety equipment (other than firefighting equipment).

In addition to the requirements listed above, the following guidelines will be incorporated in the selection and display of signs, labels and tags:

1. Signs, tags or labels shall be provided to give site personnel and the public adequate warning and caution of hazards, and to give instructions and directions;
2. Signs, tags and labels shall be visible at all times when the hazard or problem exists, and shall be removed or covered when the hazard or problem no longer exists;
3. In the event that radio frequencies present a hazard to personnel, appropriately colored and configured signs will be posted;
4. Products containing hazardous materials will be labeled IAW the hazard communication requirements found in paragraph 4.5 of this SSHP;
5. All site personnel shall be informed as to the meaning of the various signs, tags and labels used throughout the site;
6. Danger signs shall have the word "DANGER" in white on a black oval background and shall indicate a specific immediate danger, capable of causing irreversible damage or injury and indicates that specific precautions be taken to avoid the danger;
7. Caution signs shall have the word "CAUTION" in yellow on a black background and shall be used to call attention to a specific potential hazard, capable of causing severe but not irreversible damage or injury, against which proper precautions should be taken;
8. General safety signs shall have key words in white on a green background and shall indicate notices of general practice and rules related to health, first aid, medical equipment, sanitation, housekeeping and general safety; and
9. General information signs shall have the word "NOTICE" in white on a blue background and shall provide general information required to avoid confusion or misunderstanding.

13.11 BIOLOGICAL HAZARDS

As this project is currently planned, it is not anticipated that site personnel will have substantial contact with biological hazards for most of the project duration. However, the potential exists for this project to extend into the warmer months, and therefore, information related to biological hazards is being included in this SSHP. The biological hazards which may be found on site include: hazardous plants and animals; bees, hornets, wasps, ticks and other biting or stinging insects. Employee awareness and the safe work practices outlined here and in Appendix G, Tab 2 should reduce the risk associated with these hazards.

13.11.1 Hazardous Plants

During the conduct of site activities, a variety of hazardous plants may be encountered. The ailments associated with these plants range from mild allergic reactions, to contact dermatitis. However the plants which present the greatest degree of risk to site personnel (i.e., potential for contact vs. effect produced) are those which produce tissue injury and skin reactions.

13.11.1.1 Plants Causing Skin and Tissue Injury

Contact with splinters, thorns and sharp leaf edges is of special concern to site personnel. This concern stems from the fact that punctures, cuts and even minor scrapes caused by accidental contact may result in non-infectious skin lesions, and the introduction of fungi or bacteria through the skin or eye. This is especially important in light of the fact that the warm moist environment created inside impermeable protective clothing is ideal for the propagation of fungal and bacterial infection. Personnel receiving any of the injuries listed above, even minor scrapes, should report immediately to the SSHO for initial care, and continued observation, of the injury.

13.11.1.2 Plants Causing Skin Reactions

The hazardous plants of concern on this site that cause allergic skin reactions are poison oak, poison ivy and poison sumac. The skin reaction associated with contacting these plants is caused by the body's allergic reaction to toxins contained in oils produced by the plant. Becoming contaminated with the oils does not require contact with only the leaves. Contamination can be achieved through contact with other parts of the plant such as the branches, stems or berries, or contact with contaminated items such as tools and clothing. The allergic reaction associated with exposure to these plants may include: blistering at the site of contact; reddening, swelling, itching and/or burning at the site of contact; pain, if the reaction is severe; and conjunctivitis, asthma, and other allergic reactions if the person is extremely sensitive to the poisonous plant toxin. If the rash is scratched, secondary infections can occur. The rash usually disappears in 1 to 2 weeks in cases of mild exposure and up to 3 weeks when exposure is severe.

To aide site personnel in avoiding the hazardous plants listed previously, the SSHO shall provide either pictures or examples of poison oak, ivy and sumac during the initial site hazard information training, as specified in paragraph 6.3.2 of this SSHP. In addition, the preventative measures listed below will prove effective for most site personnel:

1. Avoid contact with any poisonous plants on site, and keep a steady watch to identify, report and mark poisonous plants found on site;
2. Wash hands, face or other exposed areas at the beginning of each break period and at the end of each work day;

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, the copperhead and the cottonmouth. 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.

The cottonmouth, also called a water moccasin, has an average adult length of 20-48 inches with a dark-colored, heavy body. Juveniles are brightly colored with reddish-brown cross bands on a brown background. On the juvenile, the dark cross bands contain many dark spots and speckles. This pattern darkens with age so adults retain only a hint of the former banding, or are uniform black.

As stated previously, EODT will issue snake leggings during warm weather conditions for all personnel entering an area where snakes may be encountered. However it will also necessary for site personnel to exercise extreme caution when working in wooded and grassy areas. At no time should personnel place their hands in areas they cannot see, such as under rocks, fallen trees, dense brush, etc. All site personnel will immediately report to their team leader and the SSHO any sighting or encounter with venomous snakes. The procedures to be followed in the event someone is bitten by a snake are:

1. Do not cut "Xs" over the bite area as this will intensify the effect of the venom;
2. Do not apply suction to the wound since this has a minimal effect in removing venom;
3. Do not apply a tourniquet since this will concentrate the venom and increase the amount of tissue damage in the immediate area;
4. If possible, and safe to do so, kill the snake, bag it and transport it with the victim;
5. If killing the snake cannot be done without risking further bites to other site personnel, get an accurate description of the snake so it can be identified for selection of anti-venom;
6. Do not allow the victim to run for help since running increases the heart rate and will increase the spread of the venom throughout the body;
7. Keep the victim calm and immobile;
8. Have the victim hold the affected extremity lower than the body while waiting for medical assistance; and
9. Transport the victim to medical attention immediately.

13.11.3 Stinging Insects

Contact with stinging insects like bees, hornets and wasps may result in site personnel experiencing adverse health effects that range from being mildly uncomfortable to being life threatening. Therefore, stinging insects present a serious hazard to site personnel, and extreme caution must be exercised whenever site conditions increase the risk of encountering stinging insects. Some of the factors related to stinging insects that increase the degree of risk associated with accidental contact are as follows:

1. The nests for these insects are frequently found in the type of remote areas where many waste sites are located;
2. The nests can be situated in trees, rocks, bushes or in the ground, and are usually difficult to see;
3. Accidental contact with these insects is highly probable, especially during warm weather conditions when the insects are most active;
4. If a site worker accidentally disturbs a nest, the worker may be inflicted with multiple stings, causing extreme pain and swelling which can leave the worker incapacitated and in need of medical attention;

5. Some people are hypersensitive to the toxins injected by a sting, and when stung, experience a violent and immediate allergic reaction resulting in a life-threatening condition known as anaphylactic shock;
6. Anaphylactic shock manifests itself very rapidly and is characterized by extreme swelling of the body, eyes, face, mouth and respiratory passages; and
7. The hypersensitivity needed to cause anaphylactic shock, can in some people, accumulate over time and exposure; therefore, even if someone has been stung previously, and has not experienced an allergic reaction, there is no guarantee that they will not have an allergic reaction upon receipt of another sting.

With these things in mind and with the probability of contact with stinging insects, all site personnel shall comply with the following safe work practices:

1. If a worker knows that he is hypersensitive to bee, wasp or hornet stings, they must inform the SSHO of this condition prior to participation in site activities;
2. All site personnel will be watchful for the presence of stinging insects and their nests, and shall advise the SSHO if a stinging insect nest is located or suspected in the area;
3. Any nests located on site shall be flagged off and site personnel notified of its presence;
4. If stung, site personnel shall immediately report to the SSHO to obtain treatment and to allow the SSHO to observe them for signs of allergic reaction; and
5. Site personnel with a known hypersensitivity to stinging insects shall keep required emergency medication on or near their person at all times.

13.11.4 Biting Insects

Many types of biting insects such as mosquitos, flies and fleas may be encountered on site. The use of insect repellents will be encouraged by the SSHO if deemed necessary. The biting insects of greatest concern are the Black Widow and Brown Recluse spiders, due to the significant adverse health effects caused by their bite. As with stinging insects, site personnel should report to the SSHO if they locate either of these spiders on site or notice any type of bite while involved in site activities. The SSHO shall brief the site personnel as to the identification and avoidance of the these spiders, and additional information related to the Black Widow and Brown Recluse is presented in the EODT SOP found in Appendix G, Tab 2 of the WP.

13.11.5 Ticks

Due to the anticipated climate during the planned start and duration of the project, the potential for site personnel to encounter ticks is low for this project. However, since the project may extend into the warmer spring months, the potential exists for site personnel to encounter ticks. In the United States, three groups of ticks can transmit to humans diseases caused by bacteria, viruses and other

microbial vectors. The diseases which may be associated with personnel exposure to ticks indigenous to the project site may include: ehrlichiosis, often called rashless (or spotless) Rocky Mountain spotted fever; lyme disease; Rocky Mountain spotted fever (RMSF); and tularemia, which is most frequently contracted by human contact with infected animals such as rabbits. All of these diseases start with the affected person developing a flu-like illness including fever. Aside from the use of insect repellants, the major factor in preventing the transmission of disease through tick bites is the early detection of the tick on the skin. According to the Center for Disease Control, ticks are most likely to transmit infection after approximately two or more days of feeding. Additionally, ticks typically transmit infection during the nymph stage (juvenile) since the nymphs are small in size (less than two millimeters) and are rarely noticed. Adult ticks can transmit disease, but due to their larger size, they are more likely to be noticed and removed before having sufficient time to transmit infection. Another key factor in the prevention of infection is the proper removal of the tick. To remove an imbedded tick, use fine point tweezers, grasp the tick close to the skin and pull the tick straight out. Do not twist the tick, and do not squeeze the ticks body. Wash the affected area with soap and water after removal and apply an antibiotic to the area for several days to prevent infection at the bite site. Any ticks removed from site personnel should be kept in a labeled container and the affected person shall notify the SSHO of the bite occurrence. Additional details regarding preventative measures and signs/symptoms of tick borne infections is presented in Appendix G, Tab 2 of the WP.

13.12 ILLUMINATION

In order to control the potential for injury or illness involved with situations where site personnel have limited visibility, EODT personnel will, as a general rule, work from thirty minutes after sunrise to thirty minutes before sunset. To ensure that site personnel have the minimum level of lighting needed to perform their tasks, the OSHA illumination levels in Table 13-1 shall be used as the minimum lighting allowed for each listed area.

TABLE 13-1: MINIMUM ILLUMINATION LEVELS

Foot-candles	Area of Operation
5	General site areas.
3	Excavation and waste areas, field maintenance, active storage and fueling areas.
5	Tunnels, shaft and underground work areas. Inside facilities, such as warehouses, hallways, and exit ways.
10	General shops, storerooms, dressing and eating areas, maintenance areas.
30	First aid stations, infirmaries and offices.

13.13 OE HAZARDS

13.13.1 General SWPs

For all site activities, the OE procedures and practices listed below shall be strictly enforced:

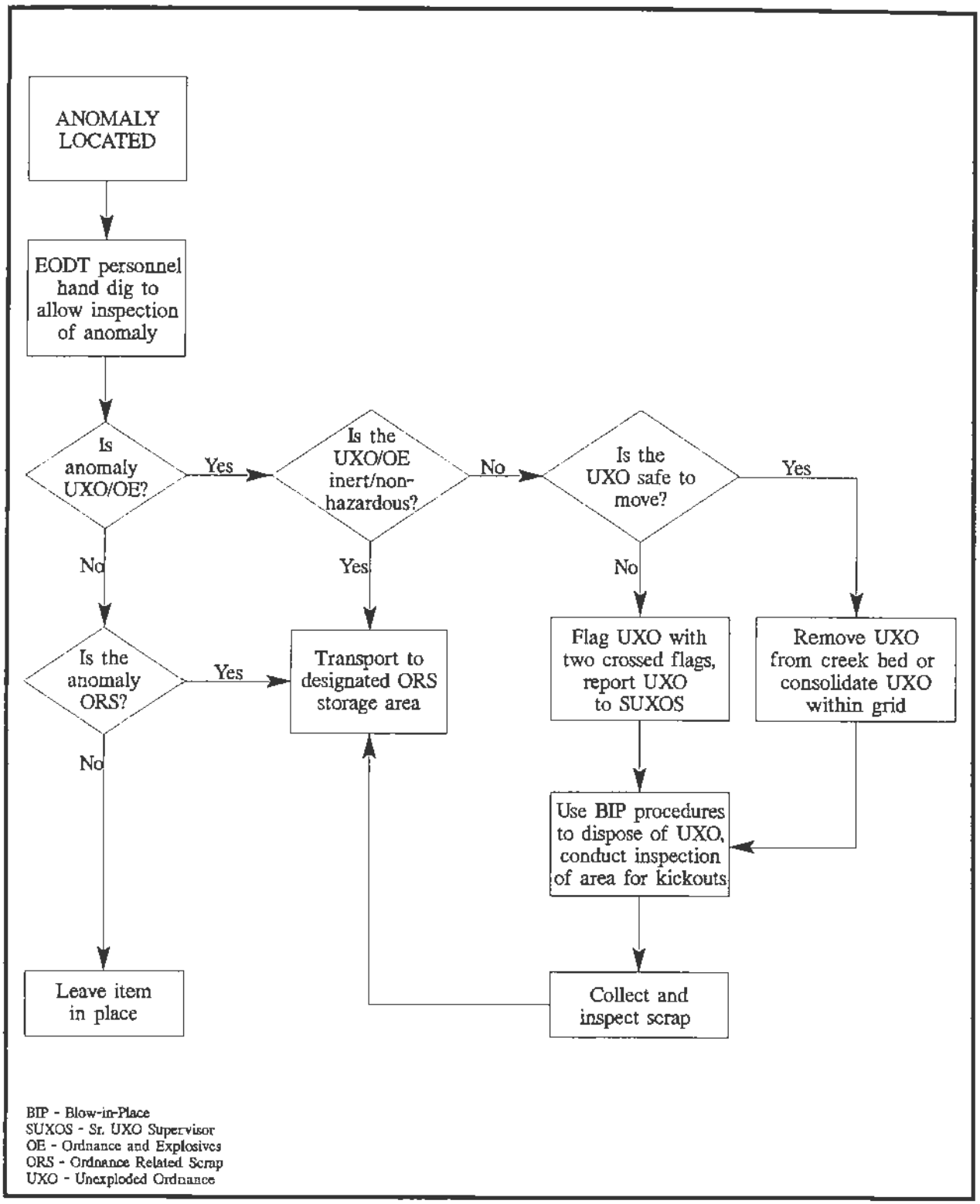
1. All OE related activities shall be conducted IAW applicable sections of the CEHNC Safety Concepts and Basic Considerations for Unexploded Ordnance (UXO).
2. All OE items will be independently identified by two UXO-qualified technicians.
3. Only the minimum number of personnel required to perform a given OE related activity will be involved in the operation.
4. Movement and handling of OE will be kept to a minimum at all times.
5. Only EODT UXO-qualified personnel will be involved in the investigation, identification movement and handling of known or potential OE items and explosive materials.
6. ORS and inert training ordnance may be handled by non-UXO-qualified personnel only after it has been deemed to be inert, and free of explosive residues, by UXO-qualified personnel.
7. The preferred method of OE disposal is BIP, however, to reduce the number of times personnel must handle explosive demolition materials, those items identified as being unfuzed and safe to move may be collected, stored and consolidated for disposal.
8. No soil penetrating activities shall be allowed without the area first being surveyed for anomalies by UXO-qualified personnel.
9. No smoking, or possession or use of open flame or spark sources, will be allowed in the EZ.

13.13.2 Investigation of Anomalies

EODT UXO-qualified personnel will use the procedures listed below, and the flow chart in Figure 13-1 for the subsurface investigation of anomalies.

1. Only EODT UXO-qualified personnel will conduct an investigation of an anomaly.
2. To gain access to a subsurface anomaly, EODT UXO-qualified personnel shall use hand tools and shovels to excavate and anomaly. Initially, a shovel may be used to dig to within approximately 12 inches of the item. At that time, EODT personnel will use aluminum hand shovels and rakes to expose the anomaly.
3. Once the anomaly has been uncovered to the extent that it can be identified, EODT personnel will inspect the item to determine if it is scrap metal, ORS, or OE.
4. Non-ordnance scrap and ORS will be collected by UXO-qualified personnel, removed from the grid, separated and stock piled in an approved storage location for future disposal.
5. If the item is identified as being OE, EODT UXO-qualified personnel will then determine if the item is safe to remove from the grid. An OE will be deemed safe to move only if the item is unfuzed and after two UXO-qualified personnel have inspected the item, positively identified the item, and both personnel have deemed it safe to move.

Figure 13-1: Anomaly Investigation and Disposal Flow Chart



6. ORS, inert training ordnance, and those OE that have been deemed safe to move, will be removed from the grid and transported to designated storage areas.
7. OE that are identified as being fuzed or unsafe to move, or any items that cannot be positively identified as being safe to move, will be marked for future disposal by BIP.

13.13.3 OE SWPs for Non-UXO-Qualified Personnel

Non-UXO qualified personnel on site shall follow the SWPs listed below during all site activities:

1. Non-UXO qualified personnel shall receive site-specific OE recognition training prior to participation in site activities;
2. Non-UXO qualified personnel shall be escorted on site by UXO-qualified personnel, until such time as an area is cleared of all OE and a QC check of the area has verified the OE clearance;
3. Once an area has been cleared, non-UXO qualified personnel may perform duties in the area unescorted, but shall not enter an uncleared area unescorted; and
4. Non-UXO qualified personnel shall not touch or disturb any object which could potentially be OE related, and shall immediately notify the nearest UXO-qualified person of the presence of the object.

13.14 USE OF PRODUCTS CONTAINING HAZARDOUS MATERIALS

Due to the nature of the products to be used on site, and the manner in which they will be used, it is not anticipated that there will be a potential for personnel airborne exposure to the hazardous materials used on site. To help ensure this, and to avoid skin contact with any hazardous materials, EODT personnel will follow the SWPs listed below.

1. To determine the chemical properties of the hazardous materials and the protective measures to be used, all site personnel who use products containing hazardous materials shall personally review the MSDS for each product used.
2. All products containing a hazardous material with a potential for airborne exposure (i.e., gasoline and other fuels, spray paints, etc.) will be used outdoors or in well ventilated areas, and personnel will stand upwind of the dispensing point when dispensing the product.
3. Personnel using or dispensing a product with a skin contact hazard, will utilize protective gloves, as identified in Section 7.0 of this SSHP, when dispensing the material.
4. Only those personnel who have received appropriate Hazard Communication training, as outlined in paragraph 6.10 of this SSHP, shall use a product containing hazardous materials.
5. Personnel shall immediately wash any affected area of the skin that accidentally comes in contact with a hazardous material identified as being a skin contact hazard.

13.15 CONTROL OF HAZARDOUS ENERGY SOURCES (LO/TO)

While LO/TO procedures are not typically needed for OERA operations, there is a potential that some maintenance operations on equipment and facilities will require the control of energized systems. Energized systems are defined as those systems that contain residual or stored energy, or are connected to an energy source. Site operations involving the construction, installation, set up, adjustment, modification, inspection, maintenance or servicing of machines or equipment may require the use of LO/TO procedures to ensure the protection of site personnel. These activities may include the lubrication, cleaning or unjamming of machines or equipment, and making adjustments where site personnel are exposed to the unexpected energization or startup of the equipment or the release of hazardous energy. During the initial startup of site operations, the OSHM and SSHO will determine what potential site operations may require the use of LO/TO procedures to control energized systems. It will then be the responsibility of the SSHO to ensure the application of the LO/TO SOP found in Appendix G, Tab 8 of the WP.

13.16 SITE STANDING ORDERS

To maintain safety and health awareness, a list of standing orders has been developed which outlines the practices that must be followed at all times. These standing orders will be enforced by the SSHO, and personnel violating these orders may be subject to disciplinary action. The general standing orders for the site and the standing orders for the WZ are listed in tables 13-2 and 13-3. As a reminder to site personnel, these tables will be posted in the office trailers and equipment storage areas, and will be reviewed periodically during the tailgate safety briefings.

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TABLE 13-2: GENERAL SITE STANDING ORDERS

1. Running and horseplay are prohibited in all areas of the site.
2. Ignition of flammable materials in any work zone is prohibited, unless directed by the SSHO.
3. Buddy System procedures will be enforced during all site operations.
4. The number of personnel in any work area will be the minimum number necessary to perform work tasks in a safe and efficient manner.
5. Site personnel will check in with the SSHO prior to leaving the site, and again upon returning to the site.
6. Site visitors are to be escorted by UXO-qualified EODT personnel at all times.
7. Site personnel will perform only those tasks which they are qualified to perform.
8. Site personnel will remain aware of site conditions at all times and will alert the SSHO to any changes which could pose a hazard to site personnel, the environment or the public.
9. Remember, "When in doubt. Don't". Ask questions first.

TABLE 13-3: WORK ZONE STANDING ORDERS

1. No matches, lighters or other spark sources are allowed in any designated EZ.
2. No personnel will enter a designated EZ without authorization from the SUXOS, SSHO or Team Leader.
3. No eating, drinking, smoking, or use of chewing gum, tobacco or cosmetics will be permitted in any WZ within the EZ.
3. Always have your buddy with you in this zone, and follow the buddy system procedures.
4. No personnel allowed in this area without appropriate training, medical surveillance and PPE as specified by the SSHP.
5. Remain alert to site conditions and report any changes or unusual occurrences to the SSHO.
6. Verbal communication shall be immediately available at all times between the EZ personnel and the SZ.
7. Remember -- **Site Safety and Health is Everyone's Responsibility** -- Do your part.

14.0 EMERGENCY RESPONSE / CONTINGENCY PROCEDURES

14.1 INTRODUCTION

The frequency and severity of emergency situations can be dramatically reduced through proper implementation of the SSHP. However, if an emergency does occur, quick, decisive action will be required since delays in minutes can create or escalate life-threatening situations. In an emergency situation, site personnel involved in emergency response and rescue must be prepared to respond immediately and all required equipment must be on hand, in proper working order and ready to use. To ensure rapid, effective response to a site emergency, the procedures and contingency plans outlined in this Section, shall be implemented prior to and during the conduct of any site activities involving exposure to safety and health hazards.

14.2 PRE-EMERGENCY PLANNING

14.2.1 Identification of Local Emergency Services

Prior to the conduct of site operations, EODT site personnel will have contacted and met with appropriate local authorities. The purpose of these meetings will be to inform local authorities of the nature of the site activities to be performed under this SSHP, and the potential hazards that these activities pose to site personnel, the environment, and the general public. EODT personnel shall obtain from the local authorities information related to the type of emergency services available, including any contact phone numbers or procedures needed to summon the services. The SSHO will be responsible for ensuring that the telephone numbers and procedures for contacting local emergency services are posted IAW the requirements of this Section.

14.2.2 Identification of Potential Emergencies

During the development of this SSHP, great attention has been given to identifying potential safety and health hazards associated with the conduct of site activities. Once identified, these hazards were assessed to determine the risk that these hazards could result in an emergency situation. Contingency plans for responding to the potential emergency situations have been developed and are included in this section. The potential emergencies which may result during the conduct of site activities are as follows:

1. Personal injury from the unintentional detonation of OE;
2. Injury or illness associated with contact with physical or biological hazards;
3. Fire;
4. Inclement weather; and
5. Spill of hazardous materials.

14.2.3 Identification/Coordination of Emergency Transportation Services

Prior to the initiation of site activities involving the potential for exposure to the site hazards identified in this SSHP, the SSHO will coordinate with the SEDA Fire Department, which is responsible for the dispatching of the SEDA ambulance service, to determine the most effective and efficient procedures for transporting site personnel that may become seriously injured or ill as a result of site activities. This coordination is required due to the relative remoteness of the site length of time it may take to transport an injured/ill person to an appropriate medical facility.

14.3 EMERGENCY RESPONSE CHAIN OF COMMAND/CONTACTS

14.3.1 On-scene Incident Commander

In the event of an emergency, the SSHO will assume the responsibility of the On-scene Incident Commander (OSIC), and will be assisted by the SUXOS. The alternate person to assume this role, in the event that the SSHO is unavailable or incapacitated, will be the SUXOS. The OSIC will have the responsibility of directing all on-site and off-site emergency response personnel, and shall, as soon as possible, advise the CEHNC SREP of the emergency situation.

14.3.2 CEHNC Emergency Coordinator

Upon notification of an on-site emergency, the CEHNC SREP may be directed by CEHNC to assume the role of Emergency Coordinator (EC). The EC will then have overall responsibility for coordinating the efforts of the OSIC, and off-site emergency response agencies. The EC shall ensure that required off-site emergency services have been summoned and will also be responsible for notifying and coordinating all relevant Federal, state and local regulatory and response agencies.

14.3.3 On-site Emergency Response Personnel

During site activities EODT personnel will, to the greatest extent possible, act in the role of on-site emergency response personnel. The personnel assigned to these tasks will be designated by the EODT SUXOS and SSHO prior to initiation of site activities involving the potential for an on-site emergency. EODT on-site emergency response personnel will receive training in the response actions that they will be authorized to, and may be directed to, perform during a site emergency.

14.3.4 Off-site Emergency Response Services

The off-site emergency response services which may be needed in the event of a site emergency include: land and air ambulance personnel and transportation; medical facilities for the treatment of physical injuries; local fire and law enforcement support; and spill response support. These resources will, in the event of an emergency, be contacted by the OSIC or EC through the SEDA Fire Department.

14.4 OFF-SITE COMMUNICATIONS

It will be the responsibility of the SUXOS to ensure that off-site communications are available at all times. Site operations shall not be conducted unless means of off-site communications are established. Off-site communication will be accomplished through the use of telephone service to the responsible support agencies. The telephone numbers for all emergency services and contacts are listed in Table 14-1. These phone numbers shall be posted in the office/break area and all site personnel shall be aware of the procedures for obtaining off-site emergency services.

Table 14-1: EMERGENCY TELEPHONE NUMBERS

Service / Contact	Agency / Position	Telephone Number
Police	SEDA Police	(607) 869-0448
Fire	SEDA Fire Department	(607) 869-1316
Ambulance	SEDA Ambulance Service	(607) 869-1243
Hospital	Geneva General Hospital	(315) 798-4222
USEPA (24 Hours)		(205) 655-2222
Poison Control Center		(800) 962-1253
CEHNC Safety Office		(205) 895-1582 or 1598
Ms. Alicia Allen	CEHNC Project Manager	(205) 895-1552
Kevin Healy	CEHNC Project Engineer	(205) 895-1627
Kara Hetrick	CEHNC Contracting Specialist	(205) 895-1128
Mary Dowling	CEHNC Contracting Officer	(205) 895-1151
TBD	On-site CEHNC OE SREP	TBD
725th Ordnance Company (EOD)	Local EOD Support	(315) 772-5408 / 09
Jeffrey Bleke	Program Manager	(423) 690-6061
John Scott	Project Manager	(423) 690-6061
Andrew Bryson, CIH	Occup. Safety and Health Mgr.	(423) 690-6061

14.5 ON-SITE COMMUNICATIONS

14.5.1 General Requirements and Procedures

Evacuation routes, assembly points, emergency and site control procedures, hospital routes , and emergency numbers will be discussed each day at the tailgate safety briefing to ensure all site personnel are familiar with this information. Hospital route maps, and the list of emergency contacts presented in Table 14-1, will be posted in all EODT office and storage areas and maintained in all site vehicles. All site personnel will be familiar with the location of these lists and maps, and will be aware of the location of the closest telephone and/or radio communications.

14.5.2 Communication Between the EZ and the SZ to the Field Office

Communication between personnel at the field office and personnel in each WZ of the EZ shall be established and maintained at all times via radio, with a cellular phone as an emergency back-up. Prior to starting EZ activities each day, and hourly throughout the day, field teams will contact the field office to ensure effective contact with personnel in the office.

14.5.3 EZ Alarm System

To alert EZ team members, the SSHO will have an air horn which will be sounded to inform EZ personnel of the occurrence of an emergency. The effectiveness of the air horn will be tested during initiation of site activities in each WZ within the EZ to ensure that all site personnel can clearly perceive the alarm above operational noise levels. If operational noise levels prevent site personnel from detecting the air horn alarm, other means of notification will be implemented.

To alert EZ personnel of the occurrence of an emergency, one long blast on the air horn will be the signal to evacuate the site immediately. The initial assembly point for each EZ will be located in a safe area, as identified during the tailgate safety briefing each morning. Once EZ personnel are assembled, the SUXOS will conduct a head count of all team personnel. Once accounted for, EZ personnel will communicate with the OSIC and await the arrival and/or instructions from the OSIC, which may include: further evacuation to the Field Office; emergency response instructions; or any other instructions deemed necessary by the OSIC. Once the OSIC arrives at the emergency site, the OSIC will assess the situation and communicate the actions to be taken.

14.6 HOSPITAL ROUTES

14.6.1 Area Specific Instructions

Prior to the start of site activities each day, the SSHO will review the specific instructions for obtaining medical attention and transporting site personnel to the hospital. All site vehicles shall be provided with copies of the instructions/maps generated by the SSHO and the instructions/map provided in this Section. Prior to the initiation of site activities, and periodically thereafter, the

hospital routes outlined in this Section will be driven by the SSHO to ensure that the route to the hospital is free of construction or other unanticipated delays. If unanticipated delays occur along the specified hospital route, the SSHO shall identify the next best route, generate a map with the new route highlighted, and communicate the route change to all site personnel.

14.6.2 Directions to the Geneva General Hospital

Route 1: From Post #3, take a right on SR 96A and follow it north to Highway 20. Take Highway 20 heading west into downtown Geneva and follow signs to Geneva General Hospital.

Route 2: From Post #1, take a left onto SR 96 and follow it north to Highway 20. Take Highway 20 heading west into downtown Geneva and follow signs to Geneva General Hospital.

14.7 EMERGENCY EQUIPMENT

14.7.1 General Requirements

The emergency equipment listed below in Table 14-2 shall be on site, stored in the location indicated, and available for use during the operation specified. All emergency equipment shall be maintained in proper working order and inspected by the SSHO at least weekly to ensure completeness and proper working order. In the event that any of the disposable items are utilized, the SSHO shall ensure they are replaced immediately. Site operations shall not be conducted if the required emergency equipment is not immediately available on site.

14.7.2 Portable Fire Extinguishers

To ensure that adequate fire fighting equipment is readily available on site, the fire extinguishers listed below will be located at the locations specified. Fire extinguishers will be stored in well marked locations where they can be readily accessed, and will be stored in locations where they are protected from damaging environmental elements. The SSHO shall ensure that all fire extinguishers are visually inspected monthly, and that these inspections are documented. All site personnel will be advised of the location and operation of fire extinguishers, and will be informed of the procedures to be followed in the event of a fire. Emergency procedures for small and large fires and explosions are found in this Section.

1. Flammable/combustible liquid storage areas shall have at least one 4A:20B:C: fire extinguisher located within 25-75 feet;
2. All earth moving equipment (back hoes, bulldozers, drill rigs, etc.) and other vehicles, shall be equipped with a fire extinguisher of not less than 10B units;
3. All vehicles used in the transport of explosives shall be equipped with two fire extinguishers of not less than 10B units or higher, with one fire extinguisher mounted/placed inside the cab of the vehicle and one mounted outside by the drivers side door;

4. Temporary offices shall be equipped with a fire extinguisher of not less than 10B units or higher; and
5. At least one portable fire extinguisher having a rating of not less than 20:B units shall be located at each WZ within the EZ.

TABLE 14-2: EMERGENCY EQUIPMENT REQUIREMENTS

Emergency Equipment	Number per Location	Locations Where Emergency Equipment is to be Stored	Operation Where Emergency Equipment is Required
First Aid/Burn Kit/Burn Blanket	1 ea.	Each WZ within the EZ Support Vehicle and the Field Office	All operations
Portable Eye Wash Kit	1 ea.	Each WZ within the EZ, Support Vehicle and the Field Office	All operations involving the use/handling of hazardous materials
CPR Pocket Mask	1 ea.	Each WZ within the EZ, Support Vehicle and the Field Office	All operations
ANSI Approved 15 minute Eye Wash	1 ea.	Field Office	All operations
Biohazard Kit	1 ea.	Each WZ within the EZ, Support Vehicle and the Field Office	All operations
Air Horn	1 ea.	Each WZ in the EZ, Support Vehicle and the Field Office	All operations
Spill Containment/ Clean-up Supplies	Varies	Field Office area	All operations involving handling/storage of hazardous materials
Stretcher	1 ea.	Designated emergency vehicles, Field Office area	All operations
Fire Extinguisher	1 ea.	Each WZ within the EZ, Vehicle, Flammable Liquid Storage Areas and the Field Office areas	All operations

14.7.3 First Aid Kit Requirements

To ensure that adequate first aid supplies are available, the size and number of first aid kits shall be sufficient to accommodate the maximum number of people (including government personnel and

visitors) on site at any given time. This determination will be made by the EODT designated physician, who must approve the first aid kits used on site. The kits shall be located at each WZ, the location of the WZ first aid kit shall be made known to all WZ personnel. A large, portable first aid kit shall also be maintained in the vehicles assigned to the SSHO and the first aid attendants. Additionally, a large first aid kit will be maintained in the field office trailer, and all first aid kits will be provided with adequate water and other supplies necessary to cleanse burns, wounds or lesions.

14.7.4 Eye Washes

Emergency, portable eye washes will be readily available in each WZ where there is a potential for hazardous materials to come in contact with the eyes. Portable eye wash bottles will be available for immediate use while the injured person is transported to the field office where an ANSI approved 15-minute eye flushing station will be available. After flushing, the affected eyes will be bandaged lightly and the person transported to the appropriate medical facility for further evaluation and treatment.

14.8 GENERAL EMERGENCY PROCEDURES

Emergency response procedures include all steps to be taken for notifying, evaluating, reacting to, documenting and following-up on a given emergency situation. To ensure all necessary elements are covered, the procedural steps outlined in this paragraph will be implemented for each emergency, regardless of its nature.

14.8.1 Notification

Once an emergency has occurred, the air horn alarm will be sounded to initiate site evacuation and the SSHO/OSIC will be notified of the occurrence and nature of the emergency. Once the OSIC has been informed of the emergency, the OSIC will ensure that all site personnel are alerted to the presence of the emergency. The sounding of the air horn alarm will allow for the following:

1. The notification of personnel as to the presence of an emergency;
2. The cessation of all work activity as required;
3. The reduction of noise levels in order to speed and simplify communication; and
4. The initiation of emergency and/or evacuation procedures.

14.8.2 Assessing the Emergency

If on-site EODT or off-site emergency personnel are to enter the site in response to the emergency, the OSIC shall to the extent possible assess the situation so as to notify the response personnel about the nature of the emergency, to include:

1. What happened:
    a. type of incident;

b. cause of incident;
c. the time the incident occurred;
d. extent of chemical release, including extent and route of migration; and
e. extent of damage to structures, equipment and terrain.

2. Where on the project site the incident has occurred.
3. Personnel/Casualties involved:
   a. victims (number, location and condition) and treatment required; and
   b. missing personnel.
4. What could happen from this point; consider:
   a. types of chemicals on site;
   b. potential for fire or explosion, coupled with release of hazardous materials;
   c. location of all personnel in relation to hazardous areas; and
   d. potential for emergency affecting the general public or the environment.
5. What can be done to resolve the situation; consider:
   a. equipment and personnel needed for rescue and hazard mitigation;
   b. number of uninjured personnel available for response;
   c. resources available on site;
   d. resources available from off-site response groups and agencies;
   e. time needed for off-site response resources to reach the site; and
   f. hazards involved in rescue and response.

14.8.3 Rescue and Response Actions

Based on the information collected during the emergency assessment, the general response and rescue actions listed below will be taken. Depending upon the nature of the emergency, some actions may be conducted concurrently, and some actions may not be required. At no time will site personnel attempt an emergency response or rescue until the situation has been assessed and the appropriate response outlined by the OSIC. Ensuring that the incident has been properly assessed, and that the appropriate actions have been selected, will ensure that further injuries do no occur due to poor response planning.

1. Enforce the Buddy System:
   a. Allow no one to enter a contaminated area or hazardous area without a partner.
   b. Personnel responding should be in line-of-sight, or in communication, with the OSIC.
2. Survey Casualties:
   a. Locate all victims and assess their condition.
   b. Determine the resources needed for casualty stabilization and transportation.
3. Assess Existing and Potential Hazards:
   a. Decide whether and how to respond.

b. Determine the need for evacuation of site personnel and off-site population.
c. Identify the resources needed for evacuation and response.

4. Request Aid:
   a. Contact the required off-site/on-site personnel or facilities, such as ambulance, fire department, police, etc.
5. Allocate Resources:
   a. Allocate on-site personnel and equipment to rescue and initiate incident response operations.
6. Control:
   a. Assist in bringing the hazardous situation under complete or temporary control and use measures to prevent the migration of the emergency from the immediate area.
7. Assign PPE:
   a. In the event of a suspected chemical release, emergency/rescue PPE is required, which will consist of Level "A" PPE. For rescues which do not involve a chemical release, the SSHO will assign the appropriate level of PPE.
8. Extricate:
   a. Remove or assist victims from the area.
9. Decontaminate:
   a. If necessary, and without causing further danger or damage to the effected personnel, decontaminate personnel using a soap and water wash/rinse, or remove contaminated clothing.
10. Stabilize:
    a. Administer any medical procedures that are necessary before the victims can be moved.
    b. Stabilize the hazardous condition to the greatest extent possible;
    c. Attend to anything damaged/endangered by the emergency (e.g., drums, tanks).
11. Transport:
    a. Take measures, if needed, to minimize chemical contamination of the transport vehicle, ambulance and hospital personnel.
12. Casualty Logging:
    a. Record to whom the incident occurred, the time it occurred, and the destination and condition of the casualty at the time of transport.
13. Evacuate:
    a. Move site personnel to a safe distance upwind of the incident.
    b. Monitor the incident for significant changes; the hazards may diminish, permitting personnel to re-enter the site, or hazards may increase and require public evacuation.
14. Casualty Tracking:
    a. Record disposition, condition and location of all personnel affected by the emergency.

14.8.4 Post Emergency Follow-up

Before normal site activities can resume, the site and personnel must be prepared and equipped to handle another emergency. It is also imperative that all Federal, state and local regulatory agencies be notified of the emergency. Therefore, the following activities must be conducted prior to re-start of site activities:

1. Notify all appropriate governmental agencies as required (i.e. OSHA must be notified if there have been any fatalities or five or more personnel hospitalized);
2. Restock and clean all equipment and supplies utilized or damaged in the emergency;
3. The EODT PM and OSHM, in conjunction with the SUXOS, SSHO and CEHNC SREP, shall conduct an accident investigation to determine the cause of the emergency and what preventative measures shall be taken to ensure the emergency does not occur again;
4. The EODT PM and OSHM, in conjunction with the SUXOS, SSHO and CEHNC SREP, shall conduct an emergency response critique to assess the effectiveness of the emergency response procedures, and to identify any areas requiring improvement;
5. Complete the USACE Accident Investigation Report (Eng Form 3394) and any other governmental or EODT accident forms; and
6. Review and revise, as needed, the site operational and emergency response procedures, and if necessary update the SSHP to reflect the new procedures.

14.8.5 Documentation

Documentation related to the emergency shall be recorded in an accurate, authentic and complete fashion. Documentation shall be recorded as soon as possible after the emergency to ensure it is recorded while the events are vivid in the minds of the personnel involved. The information recorded will include:

1. A chronological record of events;
2. A listing of the personnel involved, including personnel on site, site personnel who responded, personnel in charge, and off-site groups or agencies that responded;
3. A listing of the actions taken to minimize the effects of or mitigate the emergency;
4. The results from any air monitoring conducted during the emergency, and if applicable, results of environmental samples;
5. An assessment of the potential exposures received by site personnel and the surrounding public; and
6. A recording of the injuries or illnesses which occurred as a result of the emergency.

14.9 CONTINGENCY PLANS

The following paragraphs contain emergency specific contingency plans. These plans outline the procedures for mitigating each of the potential emergency situations that were identified in the

pre-emergency planning (see paragraph 14.2.2). These contingency plans specify the minimum emergency procedures and may be subject to alteration by the SSHO, based on actual or changing site conditions. Any changes to these contingency plans shall be approved by the EODT OSHM and the CEHNC SREP.

14.9.1 Treatment of Injuries or Illnesses Occurring On Site

In the event of an emergency involving personal injury or illness, immediate, appropriate response will be the key to preventing further injury/illness and providing comfort to the affected party. When possible, each field team will have a First Aid/CPR person assigned to the team. If any site personnel are injured, or overcome by illness, the applicable procedures listed below will be followed:

1. Upon notification of the occurrence and the nature of the injury/illness, the OSIC will respond to the location where the injury/illness has occurred and will request the EODT first aid personnel to also immediately respond to the site.
2. Depending upon the time needed for the OSIC and first aid personnel to reach the affected party, the OSIC may instruct the EZ personnel to initiate first aid actions to stabilize the affected person.
3. If possible, and advised to do so by the OSIC, the EZ personnel will transport the injured/ill victim to the EZ support area using a stretcher.
4. Once in the area, the OSIC and first aid personnel will assess the severity of the injury/illness, provide required first aid support, and the OSIC will initiate the necessary procedures needed to ensure rapid, efficient transportation of the affected person to appropriate medical support, if required.
5. If immediate life support is not required, or once the victim is stabilized, the victims PPE will to the extent possible, be removed, while exercising caution not to exacerbate the injury.
6. If EMT or ALS attention and immediate transportation to a medical facility is required, the OSIC shall immediately notify the SEDA ambulance service, who will provide advanced on-site medical support for the effected party and will determine the most effective route of transportation to an advanced medical support facility. If deemed necessary by the EMT or ALS, Mercy Flight air ambulance may be summoned to transport the effected party to an appropriate trauma center.
7. If additional medical attention is required, but immediate ALS is not required, the SSHO, or a designated person, may transport the affected person to the designated medical facility.

14.9.2 Fires and Explosions

14.9.2.1 Fire Extinguishers

The occurrence of a fire on site can present a serious threat to all site personnel, the environment and the general public. To ensure immediate, aggressive response is possible, dry-chemical-type fire extinguishers shall be available at each individual work site. Dry chemical fire extinguishers, as specified in paragraph 14.2, shall also be provided at any other site location where flammable materials may present a fire risk, such as the petroleum, oil and lubricant (POL) storage area.

14.9.2.2 Small Fires

A small fire is defined as a fire that can be extinguished with a 4A:20B:C type fire extinguisher. In the event of a small fire, site personnel will take the following actions:

1. The SSHO/OSIC, SUXOS and CEHNC SREP will be immediately notified of the occurrence of the fire.
2. All unnecessary personnel shall be evacuated from the immediate area, to an upwind location.
3. EODT personnel will extinguish the fire using portable fire extinguishers from an upwind location.
4. The OSIC will request emergency response assistance (ambulance, fire, police) as needed for any injuries or exposures to smoke or other hazardous chemicals.
5. EODT personnel will not attempt to extinguish a fire, even a small one, involving explosives.
6. Once fire fighting has begun, the OSIC shall notify the SUXOS and CEHNC SREP. After the fire is extinguished, an investigation will be initiated to determine the cause of the fire and to identify any operational changes that may be required to prevent future fires.

14.9.2.3 Large Fires

In the event that a large fire occurs, or if a small fire cannot be extinguished and develops into a large fire, the following actions shall be taken:

1. The SSHO/OSIC, SUXOS and CEHNC SREP will be immediately notified of the occurrence of the fire.
2. All unnecessary personnel shall be evacuated from the site, to an upwind location.
3. The OSIC shall summon the local fire department, and any other emergency response services (police, ambulance, hospital, etc.), as needed for the treatment of injuries or exposures to smoke or other exposures caused by the fire.
4. To the extent that it can be safely conducted, the OSIC will direct site personnel to move vital equipment/supplies from the fire path.

5. To the safest extent possible, and with available resources, EODT personnel will fight the fire from an upwind location.
6. At no time, shall attempts be made to extinguish a fire involving explosives.
7. Once fire fighting has begun, the OSIC shall notify the SUXOS and CEHNC SREP. After the fire is extinguished, an investigation will be initiated to determine the cause of the fire and to identify any operational changes that may be required to prevent future fires.

14.9.2.4 Explosion

In the event of an explosion, all personnel shall evacuate and help secure the site. The OSIC, SUXOS and CEHNC SREP will immediately be notified of the situation and the OSIC shall request the required support equipment and personnel. If personnel injuries have occurred, the OSIC shall direct and coordinate the treatment of the effected personnel IAW para 14.9.1. After an explosion, it is essential that the site be evacuated and that no one is allowed to re-enter the area, except to possibly save a life, for at least 30 minutes after the explosion. The OSIC, in conjunction with the CEHNC SREP will determine what actions will be taken, to resolve the situation, and upon resolution, an investigation will be initiated to determine the cause of the explosion. Any changes to the EODT operational procedures and the SSHP will be made prior to the resumption of site activities.

14.9.3 Inclement Weather

14.9.3.1 General Requirements

In the event of inclement weather, such as heavy precipitation, electrical storms, high winds, dust storms, snow storms, dense fog, or extremely hot or cold weather, it may be necessary to cease site operations and evacuate the site. The SSHO shall be responsible for contacting the U.S. Weather Service on a daily basis and advising the SUXOS of the forecast. If necessary, the weather service will be contacted on a more frequent basis. If inclement weather occurs, the procedures outlined below will be followed until the inclement weather passes.

14.9.3.2 Heavy Precipitation

In the event that heavy precipitation is imminent, or occurs suddenly, site operations shall be halted, equipment will be secured, and site personnel will retreat to shelter in the field office area. The determination to re-start operations will be the responsibility of the SUXOS, who will consult with the SSHO to ensure site conditions are safe for re-entry and continuation of operations.

14.9.3.3 Thunderstorms

Thunderstorms, with their associated lightning, present a significant hazard to site personnel. If a thunderstorm is noticed in the area, the SSHO will observe the storm to determine its direction and

speed. If the storm approaches the site, the SSHO shall determine when the storm becomes a threat to the site and will call for an evacuation of the WZs, and site personnel will assemble in the field office area until the storm passes. If the SSHO determines that it is unsafe to remain on site, the SSHO shall call for the evacuation of the site. A severe thunderstorm watch announcement on the radio or television indicates that a severe thunderstorm is possible. A severe thunderstorm warning signifies that a severe thunderstorm has been sighted, or detected by radar, and may be approaching. Work may continue at the work site during severe thunderstorm watches, however, site work shall cease and the WZs will be evacuated during a thunderstorm or severe thunderstorm warning.

14.9.3.4 High Winds

High winds can create conditions which threaten the safety and health of site personnel. If the SSHO determines that the wind levels on site present a hazard to site personnel, site operations will be halted and site personnel will assemble in the field office area. If wind levels are high enough, the SSHO may even require the evacuation of the entire site until such time as the wind drops to safe levels. The determination to re-start operations will be the responsibility of the SUXOS, who will consult with the SSHO to ensure site conditions are safe for re-entry and continuation of operations. At no time will demolition operations be conducted when the wind speed is greater than 25 miles per hour.

14.10 SPILL RESPONSE

14.10.1 Spill Response Supplies

A portable spill response kit containing oil/solvent absorbent pillows/pads, non-sparking shovel, PPE and disposal supplies shall be maintained in a readily accessible location where fuels, oils, solvents and other environmentally harmful materials are stored on site. Upon notification of a spill, the SSHO, or a party designated by the SSHO, will transport this kit to the spill site for use by EODT personnel in the cleanup of the spilled materials.

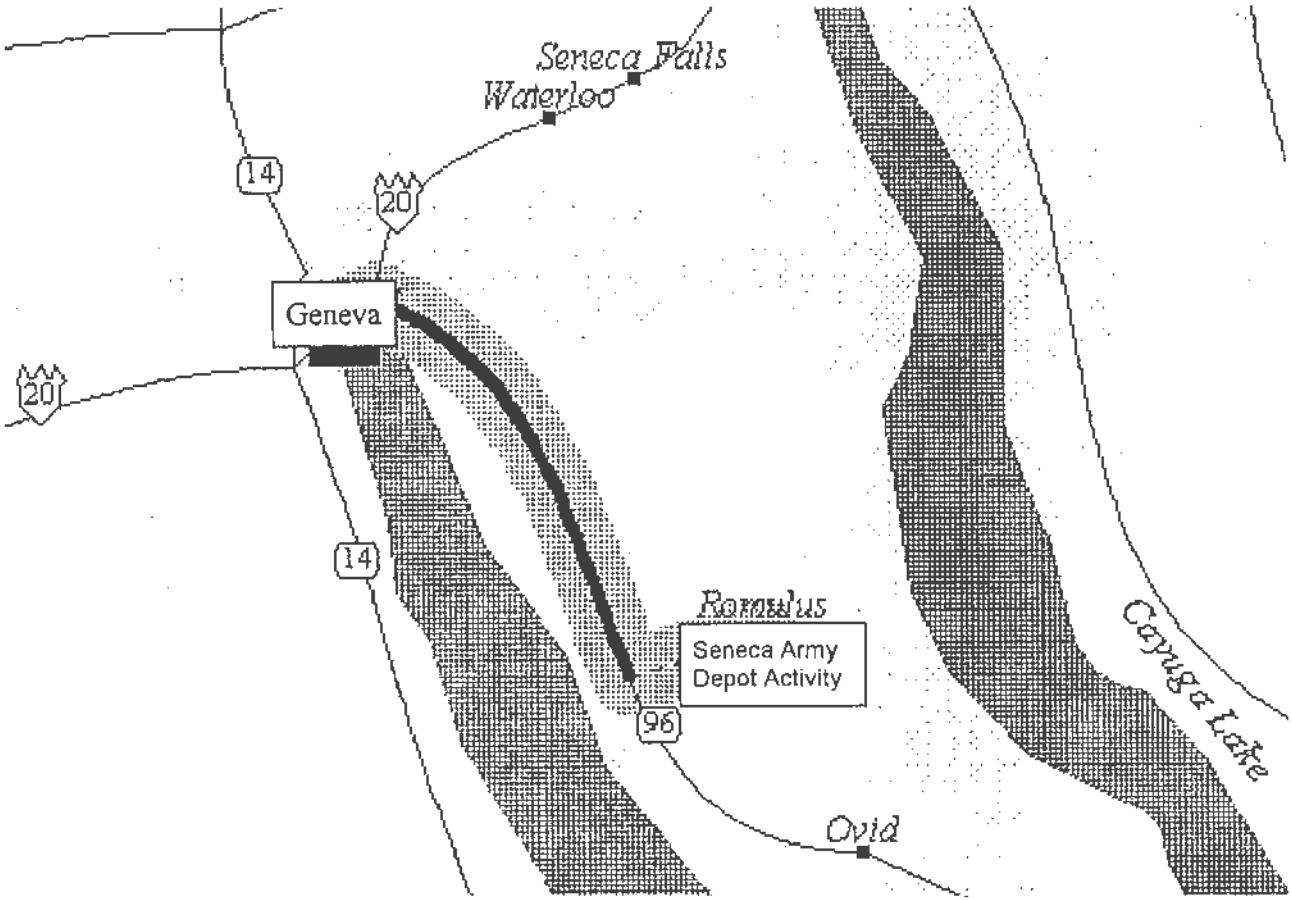
14.10.2 Spill Response

It is not anticipated that site operations will involve handling large containers of hazardous waste which could be easily spilled. However, small containers (5 gallons or less) of gasoline or diesel fuel may be used and stored onsite. If material from these containers is spilled, EODT personnel will follow these steps:

1. The Team Leader will order the evacuation of the immediate area and the extinguishing of ignition sources, and will immediately notify the SUXOS and OSIC of the spill.
2. The EODT OSIC will evaluate the situation to ensure it is safe for personnel to begin cleanup operations.
3. The OSIC will assign the level of protection to be worn by the spill response personnel.

4. All required supplies will be assembled and positioned such that they are readily available to the spill response personnel.
5. Spill response personnel will take measures to stop the spill and will, if applicable, use absorbents or adsorbents to collect the spilled material.
6. Using non-sparking tools, EODT personnel will collect the contaminated soil and place it in a plastic bag, which will then be placed in an approved DOT drum.
7. The SUXOS will notify the CEHNC SREP that the spill occurred and will brief the SREP as to the cleanup actions that were taken by EODT personnel.
8. The CEHNC SREP will then provide the SUXOS guidance on disposal of the drummed contaminants and any other actions that must be taken.

Figure 14-1 Geneva General Hospital Route Map



15.0 LOGS, REPORTS, AUDITS, INSPECTIONS, AND RECORD KEEPING

15.1 SAFETY LOG

The SSHO shall maintain a Safety Log and shall be responsible for ensuring that all safety and health related activities and events are recorded in the log each day. As a minimum the Safety Log should include: a reference to the conduct of the tailgate safety briefing; details of any accidents, injuries, illnesses or near misses; details related to the conduct and outcome of internal and external audits; the reason for, and duration of, safety related "stop work" orders; and any other issues pertaining to site or personnel safety or health.

15.2 INJURY/ILLNESS/ACCIDENT REPORTS

In the event that a reportable accident/incident occurs at the job site, the USACE Eng Form 3394 shall be completed and forwarded within two working days to the OSHM and the CO/COR. In addition, if the OSHA Form 200 needs to be completed, the SSHO will forward the required information to the OSHM so the form may be completed as required. If a near miss occurs, or if an incident occurs that is not reportable to the USACE, but involves personnel injury or property damage, the SSHO shall investigate the incident and report the results of the investigation using the EODT Accident/Injury/Illness/Near Miss Report form. This form will be forwarded to the OSHM to be reviewed by the OSHM and PM.

15.3 TRAINING LOG

The SSHO is responsible for ensuring that all safety and health related training conducted is documented in the Training Log and/or on the appropriate training forms. This log will include the initial site specific training conducted prior to the start of site activities, the Daily Tailgate Safety Briefings, Weekly Safety Training, hazard specific training, OE refresher and recognition training, Hazard Communication training, emergency response exercises, etc. The SSHO shall maintain this log and any associated training forms on site so they will be available for inspection.

15.4 VISITOR LOG

The SSHO shall be responsible for maintaining the visitor log which will be used to record the entry and exit of all visitors, including EODT, USACE visitors, or Federal, state or local officials who visit the site. This log shall utilize the EODT Site Visitors Log and all information required by the form will be completed by the site visitor and the SSHO. No visitors will be allowed to enter the project site or WZs without completing the required information.

15.5 DAILY AND WEEKLY SITE INSPECTIONS

Daily safety and health inspections shall be conducted by the SSHO to ensure that site operations and personnel are complying with this SSHP and other regulatory requirements. The results of these inspections shall be recorded in the Safety Log and documented on the EODT Safety Inspection and Audit Log form. Any site or operational discrepancies identified will be noted on this form, and the results of the daily inspection shall be reported to the SUXOS. On a weekly basis, the SSHO shall conduct a compliance audit of the site. This audit will again be recorded in the Safety Log and documented on the EODT Safety Inspection and Audit Log form. All safety inspection and audit forms shall be maintained on site. A copy of any daily inspection forms where deficiencies are noted and the weekly audit form will be forwarded to the EODT home office, where they will be reviewed by the OSHM and PM.

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ATTACHMENT 1

OF THE

SITE SAFETY AND HEALTH PLAN

CORPORATE SAFETY AND HEALTH PROGRAM CERTIFICATION

FOR THE

OPEN BURNING GROUNDS, SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

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

Prepared For:

The U.S. Army Engineering and Support Center
Huntsville, Alabama

Prepared By:

EOD Technology, Inc.
10938 Hardin Valley Road
Knoxville, Tennessee 37932

November 1997

1.0 STATEMENT

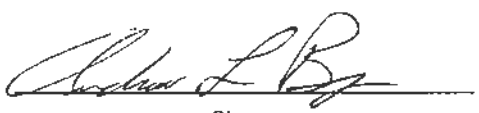
In accordance with the Occupational Safety and Health Administration (OSHA) requirements outlined in paragraph (b) of the Hazardous Waste Operations and Emergency Response standards, found in 29 CFR 1910.120, and 29 CFR 1926.65, EOD Technology, Inc. (EODT) has developed, and actively implements, a comprehensive Corporate Safety and Health Program (CSHP). This program was developed to not only meet regulatory requirements, but more importantly, to provide EODT with the foundation necessary for ensuring the continued health and well being of all EODT, subcontractor, and client personnel involved in the conduct of site operations. To further meet regulatory compliance, and to ensure its continued development and improvement, the CSHP is reviewed on a periodic basis by EODT's Occupational Safety and Health Manager and unexploded ordnance (UXO) qualified Director of Operations. This periodic review allows for the inclusion of new or updated hazard control technology and regulatory requirements. The EODT CSHP will be made available to client personnel for review upon request.

As required by OSHA, the EODT CSHP addresses all necessary and applicable items presented in 29 CFR 1910.120(b)(1)-(4) and 29 CFR 1926.65(b)(1)-(4), and includes the following:

1. The EODT safety and health organizational structure;
2. A comprehensive workplan defining the tasks and objectives for EODT's site operations;
3. An outline and description of the necessary elements to be included in the site specific safety and health plans (SSHP) required for operations on hazardous waste sites, including the use of the SSHP as a tool for pre-entry briefings and hazard information;
4. The specifications for the EODT training and medical surveillance programs;
5. The procedures needed to ensure coordination between EODT and its contractors and subcontractors, including procedures to ensure all affected parties are informed of the known hazards and emergency response procedures associated with site activities;
6. A description of the relationship between the CSHP requirements and the SSHP; and
7. Attachments which contain the EODT standard operating procedures and OSHA required programs to be used for controlling site hazards.

2.0 CERTIFICATION

The signature of the responsible individual below certifies that the statements listed above are true and factual.

Andrew L. Bryson, CIH, MPH		11/26/97
Name (typed)	Signature	Date

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

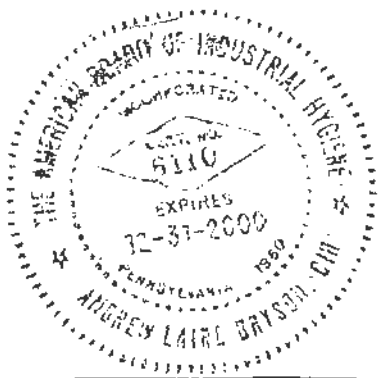
The personnel below have reviewed the attached SSHP for the referenced site, and recognize that upon completion of this form, the attached SSHP will be approved by EODT for application to the assigned tasks for the above referenced project. Changes to this SSHP will be documented in writing, approved 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: 11/25/97
FOR Salvatore Molle
EODT Senior UXO Supervisor

Reviewed by: _____ Date: 11/25/97
FOR John Scott
EODT Project Manager

Reviewed by: _____ Date: 11/26/97
Michael Short
EODT Director of Operations

Prepared and
Approved by: _____ Date: 11/26/97
Andrew Bryson, CIH, MPH
EODT Occupational Safety and Health Manager



ATTACHMENT 2

OF THE

SITE SAFETY AND HEALTH PLAN

CERTIFICATION OF TASK HAZARD ASSESSMENT FORMS

FOR THE

OPEN BURNING GROUNDS, SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

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

Prepared For:

The U.S. Army Engineering and Support Center
Huntsville, Alabama

Prepared By:

EOD Technology, Inc.
10938 Hardin Valley Road
Knoxville, Tennessee 37932

November 1997

TABLE OF CONTENTS

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Field Office, Storage Area and Support Zone Set-up and Close Out **DATE:** 11/26/97

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

(x) Physical exertion	(x) Lifting hazards	( ) Confined space
(x) Heat Stress (during close-out)	(x) Slip, trip or fall	(x) Hazardous plants (spring/summer)
(x) Cold Stress	(x) High noise (>85 dBA)	(x) Hazardous wildlife (spring/summer)
(x) Heavy equipment operations	( ) Overhead utilities	(x) Ultraviolet radiation
(x) Vehicle traffic in work area(s)	( ) Underground utilities	(x) Hand/Power Tool use
(x) Fire hazards (underline)	( ) Intrusive activity (underline)	( ) Airborne chemical exposure
- Gasoline/Diesel use	- Soil drilling	(x) Skin contact w/ hazardous materials
- Explosives handling/storage	- Soil excavation	( ) Ordnance and explosives
- Explosive gases/vapors	- Setting grounding rod	(x) Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	(x) Low	( ) Serious	**Phys./Bio. Hazard:**	(x) Low	( ) Serious
	( ) Moderate	( ) Unknown		( ) Moderate	( ) Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

(x) Tailgate Safety Briefing	(x) Personal protective equipment	(x) Decon - boot wash when exiting EZ
(x) Specialized Training	( ) Air Monitoring	( ) Magnetometer Survey
(x) Safe Work Practices	(x) Site Control Zones	

(x) Engineering Controls: Tools with manufacturer supplied guards will be used with guards in place

(x) Applicable SOPs/Programs: Cold and Heat Stress, Hearing Conservation, the SSHP

( ) Other:

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	( ) A ( ) B	( ) C (x) D	( ) Modified
Respiratory Protection	( ) SCBA ( ) Escape SCBA - Size	( ) Full face respirator ( ) ½ Face respirator	( ) Cartridge - Type (x) No respirator required
Protective Clothing	( ) Fully encapsulating suit ( ) Standard Tyvek	( ) Saranex ( ) PE Tyvek	(x) Company clothing ( ) Other:
Gloves (specify inner/outer)	( ) Nitrile ( ) Butyl	( ) Neoprene ( ) Latex	(x) Leather ( ) Cotton
Head/Face/Eye/Ear Protection	(†) Safety glasses (!) Ear plugs/muffs	( ) Safety goggles ( ) Face shield	(*) Hard hat ( ) Other:
Foot/Leg Protection	(x) Leather boots ‡ ( ) Steel-toed leather boots	( ) Steel foot covers ( ) Kevlar leg chaps	(¿) Chemical over boots

5.0 Modifications Required: † - Safety glasses required if an eye hazard exists, to include UV hazard; ! - Ear plugs, muffs, or a combination of the two, will be used if noise levels exceed 85 dBA, 8-hour TWA; * - Hard hats required if an overhead hazard exists or when working around heavy equipment; ‡ - Leather boots are adequate unless a toe crush hazard exist; ¿ - Required in EZ only.

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH **Signature:**

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Establish Soil Stockpile Areas and Deploy Liner/Covers **DATE:** 11/26/97

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

(x) Physical exertion	(x) Lifting hazards	( ) Confined space
( ) Heat Stress	(x) Slip, trip or fall	( ) Hazardous plants (in Spring)
(x) Cold Stress	(x) High noise (>85 dBA)	( ) Hazardous wildlife (in Spring)
( ) Heavy equipment operations	( ) Overhead utilities	(x) Ultraviolet radiation
(x) Vehicle traffic in work area(s)	(x) Underground utilities	(x) Hand/Power Tool use
( ) Fire hazards (underline)	( ) Intrusive activity (underline)	( ) Airborne chemical exposure
- Gasoline/Diesel use	- Drilling	( ) Skin contact w/ hazardous materials
- Explosive materials	- Soil excavation	( ) Ordnance and explosives
- Explosive gases/vapors	- Setting monuments/stakes	( ) Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	(x) Low	( ) Serious	**Phys./Bio. Hazard:**	(x) Low	( ) Serious
	( ) Moderate	( ) Unknown		( ) Moderate	( ) Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

(x) Tailgate Safety Briefing	(x) Personal protective equipment	( ) Decontamination
(x) Specialized Training	( ) Air Monitoring	( ) Magnetometer
(x) Safe Work Practices	(x) Site Control Zones	

( ) Engineering Controls:

(x) Applicable SOPs/Programs: Cold Stress, the SSHP

( ) Other:

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	( ) A ( ) B	( ) C (x) D	( ) Modified
Respiratory Protection	( ) SCBA ( ) Escape SCBA - Size	( ) Full face respirator ( ) ½ Face respirator	( ) Cartridge - Type (x) No respirator required
Protective Clothing	( ) Fully encapsulating suit ( ) Standard Tyvek	( ) Saranex ( ) PE Tyvek	(x) Company clothing ( ) Other:
Gloves (specify inner/outer)	( ) Nitrile ( ) Butyl	( ) Neoprene ( ) Latex	(x) Leather ( ) Cotton
Head/Face/Eye/Ear Protection	(x) Safety glasses * ( ) Ear plugs/muffs	( ) Safety goggles ( ) Face shield	(x) Hard hat ( ) Other:
Foot/Leg Protection	(x) Leather boots ( ) Steel-toed leather boots	( ) Steel foot covers ( ) Kevlar leg chaps	( ) Snake Leggings

5.0 Modifications Required: * - Tinted safety glasses required for UV protection in bright sunlight.

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH **Signature:**

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Location Surveying and Mapping **DATE:** 11/26/97

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

(x) Physical exertion	(x) Lifting hazards	( ) Confined space
( ) Heat Stress	(x) Slip, trip or fall	( ) Hazardous plants (in Spring)
(x) Cold Stress	( ) High noise (>85 dBA)	( ) Hazardous wildlife (in Spring)
( ) Heavy equipment operations	( ) Overhead utilities	(x) Ultraviolet radiation
( ) Vehicle traffic in work area(s)	( ) Underground utilities	(x) Hand/Power Tool use
(x) Fire hazards (underline)	(x) Intrusive activity (underline)	( ) Airborne chemical exposure
- Gasoline/Diesel use	- Drilling	( ) Skin contact w/ hazardous materials
- Explosive materials	- Soil excavation	(x) Ordnance and explosives
- Explosive gases/vapors	- Setting monuments/stakes	(x) Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	(x) Low	( ) Serious	**Phys./Bio. Hazard:**	( ) Low	( ) Serious
	( ) Moderate	( ) Unknown		(x) Moderate	( ) Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

(x) Tailgate Safety Briefing	(x) Personal protective equipment	(x) Decontamination - Boot wash.
(x) Specialized Training	( ) Air Monitoring	(x) Magnetometer monitoring prior to setting surveyor stakes
(x) Safe Work Practices	(x) Site Control Zones	

( ) Engineering Controls:

x) Applicable SOPs/Programs: Cold Stress, the SSHP

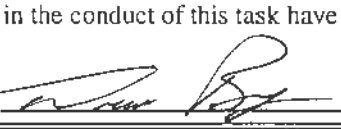
( ) Other:

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	( ) A ( ) B	( ) C (x) D	( ) Modified
Respiratory Protection	( ) SCBA ( ) Escape SCBA - Size	( ) Full face respirator ( ) ½ Face respirator	( ) Cartridge - Type (x) No respirator required
Protective Clothing	( ) Fully encapsulating suit ( ) Standard Tyvek	( ) Saranex ( ) PE Tyvek	(x) Company clothing ( ) Other:
Gloves (specify inner/outer)	( ) Nitrile ( ) Butyl	( ) Neoprene ( ) Latex	(x) Leather ( ) Cotton
Head/Face/Eye/Ear Protection	(x) Safety glasses * ( ) Ear plugs/muffs	( ) Safety goggles ( ) Face shield	( ) Hard hat ( ) Other:
Foot/Leg Protection	(x) Leather boots ( ) Steel-toed leather boots	( ) Steel foot covers ( ) Kevlar leg chaps	(x) Chemical Over boots

5.0 Modifications Required: * - Tinted safety glasses required for UV protection in bright sunlight.

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH **Signature:** 

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Conduct Visual Sweep of the Site **DATE:** 11/26/97

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

(x) Physical exertion	( ) Lifting hazards	( ) Confined space
( ) Heat Stress	(x) Slip, trip or fall	( ) Hazardous plants (in Spring)
(x) Cold Stress	( ) High noise (>85 dBA)	( ) Hazardous wildlife (in Spring)
( ) Heavy equipment operations	( ) Overhead utilities	(x) Ultraviolet radiation
( ) Vehicle traffic in work area(s)	( ) Underground utilities	(x) Hand/Power Tool use
( ) Fire hazards (underline)	( ) Intrusive activity (underline)	( ) Airborne chemical exposure
- Gasoline/Diesel use	- Drilling	( ) Skin contact w/ hazardous materials
- Explosive materials	- Soil excavation	(x) Ordnance and explosives
- Explosive gases/vapors	- Setting monuments/stakes	(x) Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	(x) Low	( ) Serious	**Phys./Bio. Hazard:**	( ) Low	( ) Serious
	( ) Moderate	( ) Unknown		(x) Moderate	( ) Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

(x) Tailgate Safety Briefing	(x) Personal protective equipment	(x) Decontamination - Boot wash.
(x) Specialized Training	( ) Air Monitoring	( ) Magnetometer
(x) Safe Work Practices	(x) Site Control Zones	

( ) Engineering Controls:

(x) Applicable SOPs/Programs: Cold Stress, the SSHP

( ) Other:

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	( ) A ( ) B	( ) C (x) D	( ) Modified
Respiratory Protection	( ) SCBA ( ) Escape SCBA - Size	( ) Full face respirator ( ) ½ Face respirator	( ) Cartridge - Type (x) No respirator required
Protective Clothing	( ) Fully encapsulating suit ( ) Standard Tyvek	( ) Saranex ( ) PE Tyvek	(x) Company clothing ( ) Other:
Gloves (specify inner/outer)	( ) Nitrile ( ) Butyl	( ) Neoprene ( ) Latex	(x) Leather ( ) Cotton
Head/Face/Eye/Ear Protection	(x) Safety glasses * ( ) Ear plugs/muffs	( ) Safety goggles ( ) Face shield	( ) Hard hat ( ) Other:
Foot/Leg Protection	(x) Leather boots ( ) Steel-toed leather boots	( ) Steel foot covers ( ) Kevlar leg chaps	(x) Chemical Over boots

5.0 Modifications Required: * - Tinted safety glasses required for UV protection in bright sunlight.

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH **Signature:**

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Vegetation Grubbing and Clearing **DATE:** 11/26/97

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

(x) Physical exertion	(x) Lifting hazards	( ) Confined space
( ) Heat Stress	(x) Slip, trip or fall	( ) Hazardous plants (in Spring)
(x) Cold Stress	(x) High noise (>85 dBA)	( ) Hazardous wildlife (in Spring)
( ) Heavy equipment operations	( ) Overhead utilities	(x) Ultraviolet radiation
( ) Vehicle traffic in work area(s)	( ) Underground utilities	(x) Hand/Power Tool use
(x) Fire hazards (underline)	( ) Intrusive activity (underline)	( ) Airborne chemical exposure
- Gasoline/Diesel use	- Drilling	(x) Skin contact w/ hazardous materials
- Explosive materials	- Soil excavation	(x) Ordnance and explosives
- Explosive gases/vapors	- Setting monuments/stakes	(x) Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	(x) Low	( ) Serious	**Phys./Bio. Hazard:**	( ) Low	( ) Serious
	( ) Moderate	( ) Unknown		(x) Moderate	( ) Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

(x) Tailgate Safety Briefing	(x) Personal protective equipment	(x) Decontamination - Boot wash.
(x) Specialized Training	( ) Air Monitoring	( ) Magnetometer Survey
(x) Safe Work Practices	(x) Site Control Zones	(x) Visual Survey for UXO/OE

(x) Engineering Controls: Manufacturer supplied equipment guards will be used. Weed cutter shoulder harness will be properly adjusted and used which eliminates the potential for the blade to kick back and strike the operator's feet or legs.

(x) Applicable SOPs/Programs: Cold Stress, Hearing Conservation, the SSHP

(x) Other: Safety observer will be stationed to watch vegetation removal personnel during operation of equipment. Personnel will remain at least 25 feet from other personnel, and will visually inspect areas in front of blade to avoid any metal objects.

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	( ) A ( ) B	( ) C (x) D	(x) Modified
Respiratory Protection	( ) SCBA ( ) Escape SCBA - Size	( ) Full face respirator ( ) ½ Face respirator	( ) Cartridge - Type (x) No respirator required
Protective Clothing	( ) Fully encapsulating suit ( ) Standard Tyvek	( ) Saranex ( ) PE Tyvek	(x) Company clothing ( ) Other:
Gloves (specify inner/outer)	(x) Nitrile - during refueling ( ) Butyl	( ) Neoprene ( ) Latex	(x) Leather ( ) Cotton
Head/Face/Eye/Ear Protection	(x) Safety glasses (x) Ear plugs and ear muffs	( ) Safety goggles (x) Wire or nylon face shield	(x) Hard hat ( ) Other:
Foot/Leg Protection	(x) Leather boots ( ) Steel-toed leather boots	(‡) Steel foot covers (¿) Kevlar Chaps	(x) Chemical over boots

5.0 Modifications Required: ¿ - Chaps required for chain saw use. ‡ - Foot covers required if boots not equipped with steel toes.

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH **Signature:**

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Bush Hog and Hydro-axe Operation **DATE:** 11/26/97

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

(x) Physical exertion	(x) Lifting hazards	( ) Confined space
( ) Heat Stress	(x) Slip, trip or fall	( ) Hazardous plants (in Spring)
(x) Cold Stress	(x) High noise (>85 dBA)	( ) Hazardous wildlife (in Spring)
(x) Heavy equipment operations	( ) Overhead utilities	(x) Ultraviolet radiation
( ) Vehicle traffic in work area(s)	( ) Underground utilities	(x) Hand/Power Tool use
(x) Fire hazards (underline)	( ) Intrusive activity (underline)	( ) Airborne chemical exposure
- Gasoline/Diesel use	- Drilling	( ) Skin contact w/ hazardous materials
- Explosive materials	- Soil excavation	(x) Ordnance and explosives
- Explosive gases/vapors	- Setting monuments/stakes	(x) Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	(x) Low	( ) Serious	**Phys./Bio. Hazard:**	( ) Low	( ) Serious
	( ) Moderate	( ) Unknown		(x) Moderate	( ) Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

(x) Tailgate Safety Briefing	(x) Personal protective equipment	(x) Decontamination - Boot wash in CRZ
(x) Specialized Training	( ) Air Monitoring	( ) Magnetometer Survey
(x) Safe Work Practices	(x) Site Control Zones	(x) Safety Observer Required

( ) Engineering Controls:

(x) Applicable SOPs/Programs: Cold Stress, Hearing Conservation, the SSHP

(x) Other: Safety observer will be stationed to watch operator and identify any potential hazards. Personnel will be trained in the proper use of the bush hog, to include general maintenance and safety precautions. Bush hog will be disconnected from tractor or tractor deactivated prior to maintenance under the cutting deck.

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	( ) A ( ) B	( ) C (x) D	( ) Modified
Respiratory Protection	( ) SCBA ( ) Escape SCBA - Size	( ) Full face respirator ( ) ½ Face respirator	( ) Cartridge - Type (x) No respirator required
Protective Clothing	( ) Fully encapsulating suit ( ) Standard Tyvek	( ) Saranex ( ) PE Tyvek	(x) Company clothing ( ) Other:
Gloves (specify inner/outer)	(x) Nitrile - During refueling ( ) Butyl	( ) Neoprene ( ) Latex	(x) Leather ( ) Cotton
Head/Face/Eye/Ear Protection	(x) Safety glasses (x) Ear plugs and ear muffs	( ) Safety goggles (x) Wire or Nylon Face shield	(x) Hard hat ( ) Other:
Foot/Leg Protection	(x) Leather boots ( ) Steel-toed leather boots	( ) Steel Toe covers ( ) Kevlar leg chaps	( ) Snake Leggings

5.0 Modifications Required:

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH **Signature:**

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Site Sweep Using a Towed Magnet **DATE:** 11/26/97

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

(x) Physical exertion	(x) Lifting hazards	( ) Confined space
( ) Heat Stress	(x) Slip, trip or fall	( ) Hazardous plants (in Spring)
(x) Cold Stress	( ) High noise (>85 dBA)	( ) Hazardous wildlife (in Spring)
(x) Heavy equipment operations	( ) Overhead utilities	(x) Ultraviolet radiation
( ) Vehicle traffic in work area(s)	( ) Underground utilities	(x) Hand/Power Tool use
(x) Fire hazards (underline)	( ) Intrusive activity (underline)	( ) Airborne chemical exposure
- Gasoline/Diesel use	- Drilling	( ) Skin contact w/ hazardous materials
- Explosive materials	- Soil excavation	(x) Ordnance and explosives
- Explosive gases/vapors	- Setting monuments/stakes	(x) Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	(x) Low	( ) Serious	**Phys./Bio. Hazard:**	(x) Low	( ) Serious
	( ) Moderate	( ) Unknown		( ) Moderate	( ) Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

(x) Tailgate Safety Briefing	(x) Personal protective equipment	(x) Decontamination - Boot wash
(x) Specialized Training	( ) Air Monitoring	( ) Magnetometer
(x) Safe Work Practices	(x) Site Control Zones	

( ) Engineering Controls:

(x) Applicable SOPs/Programs: Cold Stress, the SSHP

( ) Other: Safety observer will precede the tractor towing the magnet.

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	( ) A ( ) B	( ) C (x) D	( ) Modified
Respiratory Protection	( ) SCBA ( ) Escape SCBA - Size	( ) Full face respirator ( ) ½ Face respirator	( ) Cartridge - Type (x) No respirator required
Protective Clothing	( ) Fully encapsulating suit ( ) Standard Tyvek	( ) Saranex ( ) PE Tyvek	(x) Company clothing ( ) Other:
Gloves (specify inner/outer)	( ) Nitrile ( ) Butyl	( ) Neoprene ( ) Latex	(x) Leather ( ) Cotton
Head/Face/Eye/Ear Protection	(†) Safety glasses ( ) Ear plugs/muffs	( ) Safety goggles ( ) Face shield	(x) Hard hat ( ) Other:
Foot/Leg Protection	(x) Leather boots ( ) Steel-toed leather boots	( ) Steel foot covers ( ) Kevlar leg chaps	(x) Chemical Over boots

5.0 Modifications Required: † - Tinted safety glasses required for UV protection in bright sunlight.

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH **Signature:**

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Magnetometer Survey **DATE:** 11/26/97

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

(x) Physical exertion	( ) Lifting hazards	( ) Confined space
(x) Heat Stress (spring/summer months)	(x) Slip, trip or fall	(x) Hazardous plants (spring/summer)
(x) Cold Stress	( ) High noise (>85 dBA)	(x) Hazardous wildlife (spring/summer)
( ) Heavy equipment operations	( ) Overhead utilities	(x) Ultraviolet radiation
( ) Vehicle traffic in work area(s)	( ) Underground utilities	( ) Hand/Power Tool use
( ) Fire hazards (underline)	( ) Intrusive activity (underline)	( ) Airborne chemical exposure
- Gasoline/Diesel use	- Drilling	( ) Skin contact w/ hazardous materials
- Explosive materials	- Near Surface Soil excavation	(x) Ordnance and explosives
- Explosive gases/vapors	- Setting monuments/stakes	( ) Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	(x) Low	( ) Serious	**Phys./Bio. Hazard:**	( ) Low	( ) Serious
	( ) Moderate	( ) Unknown		(x) Moderate	( ) Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

(x) Tailgate Safety Briefing	(x) Personal protective equipment	(x) Decontamination - Boot wash
(x) Specialized Training	( ) Air Monitoring	(x) Magnetometer Survey
(x) Safe Work Practices	(x) Site Control Zones	

( ) Engineering Controls:

(x) Applicable SOPs/Programs: Heat and Cold Stress, the SSHP

( ) Other:

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	( ) A ( ) B	( ) C (x) D	(x) Modified
Respiratory Protection	( ) SCBA ( ) Escape SCBA - Size	( ) Full face respirator ( ) ½ Face respirator	( ) Cartridge - Type (x) No respirator required
Protective Clothing	( ) Fully encapsulating suit ( ) Standard Tyvek	( ) Saranex ( ) PE Tyvek	(x) Company clothing ( ) Other:
Gloves (specify inner/outer)	( ) Nitrile - During refueling ( ) Butyl	( ) Neoprene ( ) Latex	(x) Leather ( ) Cotton
Head/Face/Eye/Ear Protection	(x) Safety glasses ( ) Ear plugs or ear muffs	( ) Safety goggles ( ) Wire or Nylon Face shield	( ) Hard hat ( ) Other:
Foot/Leg Protection	(x) Leather boots ( ) Steel-toed leather boots	( ) Steel Toe covers ( ) Snake Leggings	( ) Chemical Over boots

5.0 Modifications Required:

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH **Signature:**

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Anomaly Investigation **DATE:** 11/26/97

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

(x) Physical exertion	(x) Lifting hazards	( ) Confined space
(x) Heat Stress (spring/summer months)	(x) Slip, trip or fall	(x) Hazardous plants (spring/summer)
(x) Cold Stress	( ) High noise (>85 dBA)	(x) Hazardous wildlife (spring/summer)
( ) Heavy equipment operations	( ) Overhead utilities	(x) Ultraviolet radiation
( ) Vehicle traffic in work area(s)	( ) Underground utilities	(x) Hand/Power Tool use
( ) Fire hazards (underline)	(x) Intrusive activity (underline)	( ) Airborne chemical exposure
- Gasoline/Diesel use	- Digging with EMM	(x) Skin contact w/ hazardous materials
- Explosive materials	- Hand digging soil	(x) Ordnance and explosives
- Explosive gases/vapors	- Setting monuments/stakes	(x) Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	(x) Low	( ) Serious	**Phys./Bio. Hazard:**	( ) Low	( ) Serious
	( ) Moderate	( ) Unknown		(x) Moderate	( ) Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

(x) Tailgate Safety Briefing	(x) Personal protective equipment	(x) Decontamination
(x) Specialized Training	( ) Air Monitoring	(x) Magnetometer Survey
(x) Safe Work Practices	(x) Site Control Zones	

( ) Engineering Controls:

(x) Applicable SOPs/Programs: Heat and Cold Stress, Hearing Conservation, the SSHP

( ) Other:

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	( ) A ( ) B	(‡) C ( ) D	(‡) Modified
Respiratory Protection	( ) SCBA ( ) Escape SCBA - Size	( ) Full face respirator ( ) ½ Face respirator	( ) Cartridge - Type (x) No respirator required
Protective Clothing	( ) Fully encapsulating suit (‡) Standard Tyvek	( ) Saranex ( ) PE Tyvek	(x) Company clothing ( ) Other:
Gloves (specify inner/outer)	( ) Nitrile (‡) Natural Rubber (outer)	( ) Neoprene (‡) Latex (inner)	( ) Leather ( ) Cotton
Head/Face/Eye/Ear Protection	( ) Safety glasses ( ) Ear plugs/muffs	( ) Safety goggles ( ) Face shield	( ) Hard hat ( ) Other:
Foot/Leg Protection	(x) Leather boots ( ) Steel-toed leather boots	( ) Steel foot covers ( ) Snake Leggings	(‡) Chemical over boots

5.0 Modifications Required: ‡ - Anomaly investigation in low lead contamination areas and areas where lead contamination has been removed will be accomplished in level D PPE as defined in the SSHP.

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH **Signature:**

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Demolition Operations **DATE:** 11/26/97

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

(x) Physical exertion	(x) Lifting hazards	( ) Confined space
(x) Heat Stress (spring/summer months)	(x) Slip, trip or fall	(x) Hazardous plants (spring/summer)
(x) Cold Stress	(x) High noise (>85 dBA)	(x) Hazardous wildlife (spring/summer)
(x) Heavy equipment operations	( ) Overhead utilities	(x) Ultraviolet radiation
( ) Vehicle traffic in work area(s)	( ) Underground utilities	(x) Hand/Power Tool use
(x) Fire hazards (underline)	(x) Intrusive activity (underline)	( ) Airborne chemical exposure
- Gasoline/Diesel use	- Drilling	( ) Skin contact w/ hazardous materials
- Demolition materials	- Soil Tamping	(x) Ordnance and explosives
- Explosive gases/vapors	- Setting monuments/stakes	(x) Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	(x) Low	( ) Serious	**Phys./Bio. Hazard:**	( ) Low	(x) Serious
	( ) Moderate	( ) Unknown		( ) Moderate	( ) Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

(x) Tailgate Safety Briefing	(x) Personal protective equipment	(x) Decontamination - boot wash
(x) Specialized Training	( ) Air Monitoring	(x) Magnetometer Survey - post demo check of area
(x) Safe Work Practices	(x) Site Control Zones	

(x) Engineering Controls: Soil tamping and other controls shall be used to ensure personnel exposure to impulse noise from the demolition shot(s) is less than 140 dBA.

(x) Applicable SOPs/Programs: Heat and Cold Stress, Hearing Conservation, Demolition Operations, the SSHP

(x) Other: Personnel will stay clear of EMM when soil tamping is put in place.

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	( ) A ( ) B	( ) C (x) D	( ) Modified
Respiratory Protection	( ) SCBA ( ) Escape SCBA - Size	( ) Full face respirator ( ) ½ Face respirator	( ) Cartridge - Type (x) No respirator required
Protective Clothing	( ) Fully encapsulating suit ( ) Standard Tyvek	( ) Saranex ( ) PE Tyvek	(x) Company clothing ( ) Other:
Gloves (specify inner/outer)	( ) Nitrile ( ) Butyl	( ) Neoprene ( ) Latex	(x) Leather ( ) Cotton
Head/Face/Eye/Ear Protection	(†) Safety glasses ( ) Ear plugs/muffs	( ) Safety goggles ( ) Face shield	(*) Hard hat ( ) Other:
Foot/Leg Protection	(x) Leather boots ( ) Steel-toed leather boots	( ) Steel foot covers (x) Snake Leggings	( ) Chemical over boots - Material

5.0 Modifications Required: † - Safety glasses required if an eye hazard exists; * - Hard hats required if an overhead hazard exists or when working around EMM. Safety glasses and hard hat, if worn will be secured to prevent them from falling off the face/head.

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH **Signature:**

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Earth Moving Machinery (EMM) Operation (during any task or any location) **DATE:** 11/26/97

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

(x) Physical exertion	( ) Lifting hazards	( ) Confined space
(x) Heat Stress (spring/summer months)	(x) Slip, trip or fall	( ) Hazardous plants
(x) Cold Stress	(x) High noise (>85 dBA)	( ) Hazardous wildlife
(x) Heavy equipment operations	( ) Overhead utilities	(x) Ultraviolet radiation
( ) Vehicle traffic in work area(s)	( ) Underground utilities	(x) Hand/Power Tool use
(x) Fire hazards (underline)	(x) Intrusive activity (underline)	(x) Airborne chemical exposure
- Gasoline/Diesel use	- Drilling	( ) Skin contact w/ hazardous materials
- Explosive materials	- Soil excavation	(x) Ordnance and explosives
- Explosive gases/vapors	- Setting monuments/stakes	( ) Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	(x) Low	( ) Serious	**Phys./Bio. Hazard:**	(x) Low	( ) Serious
	( ) Moderate	( ) Unknown		( ) Moderate	( ) Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

(x) Tailgate Safety Briefing	(x) Personal protective equipment	(x) Decontamination
(x) Specialized Training	(x) Air Monitoring	(x) Magnetometer Survey
(x) Safe Work Practices	(x) Site Control Zones	(x) Visual UXO/OE Survey

( ) Engineering Controls:

(x) Applicable SOPs/Programs: Heat and Cold Stress, EMM Operation, Hearing Conservation, the SSHP

(x) Other: Safety observer will be stationed to watch operator and identify any potential hazards. Personnel will be trained in the proper use of the EMM, to include general maintenance and safety precautions. Magnetometer survey will be conducted prior to the removal of each 12 inch lift.

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	( ) A ( ) B	(‡) C ( ) D	( ) Modified
Respiratory Protection	( ) SCBA ( ) Escape SCBA - Size	(‡) Full face respirator ( ) ½ Face respirator	(‡) Cartridge - HEPA ( ) No respirator required
Protective Clothing	( ) Fully encapsulating suit (‡) Standard Tyvek	( ) Saranex ( ) PE Tyvek	(x) Company clothing ( ) Other:
Gloves (specify inner/outer)	(x) Nitrile - During refueling (‡) Natural rubber (outer)	( ) Neoprene (‡) Latex (inner)	( ) Leather ( ) Cotton
Head/Face/Eye/Ear Protection	( ) Safety glasses (!) Ear plugs or ear muffs	( ) Safety goggles ( ) Wire or Nylon Face shield	(x) Hard hat ( ) Other:
Foot/Leg Protection	( ) Leather boots (x) Steel-toed leather boots	( ) Steel Toe covers ( ) Kevlar leg chaps	(x) Chemical Over boots

5.0 Modifications Required: ‡ - Operators within enclosed cabs, to include dump trucks, may wear Level D PPE; soil excavation from low lead areas will be conducted in Level D PPE.

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH **Signature:**

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Sifting of Excavated Soils **DATE:** 11/26/97

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

(x) Physical exertion	( ) Lifting hazards	( ) Confined space
( ) Heat Stress	(x) Slip, trip or fall	( ) Hazardous plants
(x) Cold Stress	(x) High noise (>85 dBA)	( ) Hazardous wildlife
(x) Heavy equipment operations	( ) Overhead utilities	(x) Ultraviolet radiation
( ) Vehicle traffic in work area(s)	( ) Underground utilities	(x) Hand/Power Tool use
(x) Fire hazards (underline)	( ) Intrusive activity (underline)	(x) Airborne chemical exposure
- Gasoline/Diesel use	- Drilling	( ) Skin contact w/ hazardous materials
- Explosive materials	- Soil excavation	(x) Ordnance and explosives
- Explosive gases/vapors	- Setting monuments/stakes	( ) Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	( ) Low	( ) Serious	**Phys./Bio. Hazard:**	( ) Low	( ) Serious
	(x) Moderate	( ) Unknown		(x) Moderate	( ) Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

(x) Tailgate Safety Briefing	(x) Personal protective equipment	(x) Decontamination
(x) Specialized Training	(x) Air Monitoring	( ) Magnetometer Survey
(x) Safe Work Practices	(x) Site Control Zones	(x) Visual checks for OE

( ) Engineering Controls:

(x) Applicable SOPs/Programs: Cold Stress, Sifter Operation, Hearing Conservation, the SSHP

(x) Other: UXO qualified safety observer will be stationed to watch operation.

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	( ) A ( ) B	(‡) C ( ) D	( ) Modified
Respiratory Protection	( ) SCBA ( ) Escape SCBA - Size	(‡) Full face respirator ( ) ½ Face respirator	(‡) Cartridge - HEPA ( ) No respirator required
Protective Clothing	( ) Fully encapsulating suit (‡) Standard Tyvek	( ) Saranex ( ) PE Tyvek	(x) Company clothing ( ) Other:
Gloves (specify inner/outer)	(x) Nitrile - During refueling (‡) Natural rubber (outer)	( ) Neoprene (‡) Latex (inner)	( ) Leather ( ) Cotton
Head/Face/Eye/Ear Protection	( ) Safety glasses (!) Ear plugs or ear muffs	( ) Safety goggles ( ) Wire or Nylon Face shield	(x) Hard hat ( ) Other:
Foot/Leg Protection	( ) Leather boots (x) Steel-toed leather boots	( ) Steel Toe covers ( ) Kevlar leg chaps	(x) Chemical Over boots

5.0 Modifications Required: ‡ - Sifting of low lead contamination areas will be conducted in Level D PPE.

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH **Signature:**

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Sorting of Oversize Materials **DATE:** 11/26/97

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

(x) Physical exertion	(x) Lifting hazards	( ) Confined space
(x) Heat Stress (spring/summer months)	(x) Slip, trip or fall	( ) Hazardous plants
(x) Cold Stress	(x) High noise (>85 dBA)	( ) Hazardous wildlife
(x) Heavy equipment operations	( ) Overhead utilities	(x) Ultraviolet radiation
( ) Vehicle traffic in work area(s)	( ) Underground utilities	(x) Hand/Power Tool use
(x) Fire hazards (underline)	( ) Intrusive activity (underline)	( ) Airborne chemical exposure
- Gasoline/Diesel use	- Drilling	(x) Skin contact w/ hazardous materials
- Explosive materials	- Soil excavation	(x) Ordnance and explosives
- Explosive gases/vapors	- Setting monuments/stakes	(x) Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	(x) Low	( ) Serious	**Phys./Bio. Hazard:**	( ) Low	( ) Serious
	( ) Moderate	( ) Unknown		(x) Moderate	( ) Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

(x) Tailgate Safety Briefing	(x) Personal protective equipment	(x) Decontamination
(x) Specialized Training	( ) Air Monitoring	( ) Magnetometer Survey
(x) Safe Work Practices	(x) Site Control Zones	(x) Visual UXO/OE Survey

( ) Engineering Controls:

(x) Applicable SOPs/Programs: Heat and Cold Stress, EMM Operation, Hearing Conservation, the SSHP

(x) Other: If hopper becomes clogged, entire line will shut down prior to personnel attempting to clear hopper.

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	( ) A ( ) B	(‡) C ( ) D	(‡) Modified
Respiratory Protection	( ) SCBA ( ) Escape SCBA - Size	( ) Full face respirator ( ) ½ Face respirator	( ) Cartridge - Type (x) No respirator required
Protective Clothing	( ) Fully encapsulating suit (‡) Standard Tyvek	( ) Saranex ( ) PE Tyvek	(x) Company clothing ( ) Other:
Gloves (specify inner/outer)	(x) Nitrile - During refueling (‡) Natural rubber (outer)	( ) Neoprene (‡) Latex (inner)	(†) Leather ( ) Cotton
Head/Face/Eye/Ear Protection	(x) Safety glasses (x) Ear plugs or ear muffs	( ) Safety goggles ( ) Wire or Nylon Face shield	(x) Hard hat ( ) Other:
Foot/Leg Protection	( ) Leather boots (x) Steel-toed leather boots	( ) Steel Toe covers ( ) Kevlar leg chaps	(x) Chemical Over boots

5.0 Modifications Required: ‡ - Sorting of oversize materials from low lead contamination areas may be conducted in Level D PPE. † - Leather gloves will be used when Level D PPE is used

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH **Signature:**

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Non-Hand Held Equipment, Vehicle and EMM Decontamination **DATE:** 11/26/97

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

(x) Physical exertion	( ) Lifting hazards	( ) Confined space
(x) Heat Stress (spring/summer months)	(x) Slip, trip or fall	( ) Hazardous plants
(x) Cold Stress	(x) High noise (>85 dBA)	( ) Hazardous wildlife
(x) Heavy equipment operations	( ) Overhead utilities	(x) Ultraviolet radiation
( ) Vehicle traffic in work aren(s)	( ) Underground utilities	(x) Hand/Power Tool use
(x) Fire hazards (underline)	( ) Intrusive activity (underline)	( ) Airborne chemical exposure
- Gasoline/Diesel use	- Drilling	(x) Skin contact w/ hazardous materials
- Explosive materials	- Soil excavation	( ) Ordnance and explosives
- Explosive gases/vapors	- Setting monuments/stakes	( ) Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	(x) Low	( ) Serious	**Phys./Bio. Hazard:**	(x) Low	( ) Serious
	( ) Moderate	( ) Unknown		( ) Moderate	( ) Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

(x) Tailgate Safety Briefing	(x) Personal protective equipment	(x) Decontamination
(x) Specialized Training	( ) Air Monitoring	( ) Magnetometer Survey
(x) Safe Work Practices	(x) Site Control Zones	

( ) Engineering Controls:

(x) Applicable SOPs/Programs: Heat and Cold Stress, EMM Operation, Hearing Conservation, the SSHP

(x) Other:

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	( ) A ( ) B	(‡) C ( ) D	(‡) Modified
Respiratory Protection	( ) SCBA ( ) Escape SCBA - Size	( ) Full face respirator ( ) ½ Face respirator	( ) Cartridge - Type (x) No respirator required
Protective Clothing	( ) Fully encapsulating suit (‡) Standard Tyvek	( ) Saranex ( ) PE Tyvek	(x) Company clothing ( ) Other:
Gloves (specify inner/outer)	(x) Nitrile - During refueling (‡) Natural rubber (outer)	( ) Neoprene (‡) Latex (inner)	(†) Leather ( ) Cotton
Head/Face/Eye/Ear Protection	(x) Safety glasses (x) Ear plugs or ear muffs	( ) Safety goggles (x) Plastic Face shield	(x) Hard hat ( ) Other:
Foot/Leg Protection	( ) Leather boots (x) Steel-toed leather boots	( ) Steel Toe covers ( ) Kevlar leg chaps	(x) Chemical Over boots

5.0 Modifications Required: ‡ - Equipment decontamination for equipment that has only been in low lead contamination areas may be conducted in Level D PPE. † - For decontamination conducted in Level D PPE, operator will use leather gloves.

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH **Signature:**

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: Maintenance/Service of Machinery/Equipment **DATE:** 11/26/97

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

(x) Physical exertion	(x) Lifting hazards	( ) Confined space
(x) Heat Stress (spring/summer months)	(x) Slip, trip or fall	( ) Hazardous plants
(x) Cold Stress	(x) High noise (>85 dBA)	( ) Hazardous wildlife
(x) Heavy equipment operations	( ) Overhead utilities	(x) Ultraviolet radiation
( ) Vehicle traffic in work area(s)	( ) Underground utilities	(x) Hand/Power Tool use
(x) Fire hazards (underline)	( ) Intrusive activity (underline)	( ) Airborne chemical exposure
- Gasoline/Diesel use	- Drilling	(x) Skin contact w/ hazardous materials
- Explosive materials	- Soil excavation	(x) Hazardous energy sources
- use of solvents	- Setting monuments/stakes	(x) Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	(x) Low	( ) Serious	**Phys./Bio. Hazard:**	( ) Low	( ) Serious
	( ) Moderate	( ) Unknown		(x) Moderate	( ) Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

(x) Tailgate Safety Briefing	(x) Personal protective equipment	( ) Decontamination
(x) Specialized Training	( ) Air Monitoring	( ) Magnetometer Survey
(x) Safe Work Practices	( ) Site Control Zones	

(x) Engineering Controls: All equipment/machinery maintenance and service activities shall be assessed by the SSHO to determine if Lockout/Tagout procedures are to be implemented during the required maintenance/service.

(x) Applicable SOPs/Programs: Heat and Cold Stress, Control of Hazardous Energy, the SSHP.

( ) Other: If possible (i.e., machinery/equipment may be moved) decontaminate equipment prior to maintenance/service.

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	( ) A ( ) B	( ) C (x) D	( ) Modified
Respiratory Protection	( ) SCBA ( ) Escape SCBA - Size	( ) Full face respirator ( ) ½ Face respirator	( ) Cartridge - Type (x) No respirator required
Protective Clothing	( ) Fully encapsulating suit ( ) Standard Tyvek	( ) Saranex ( ) PE Tyvek	(x) Company clothing ( ) Other:
Gloves (specify inner/outer)	( ) Nitrile ( ) Butyl	( ) Neoprene ( ) Latex	(§) Leather ( ) Cotton
Head/Face/Eye/Ear Protection	(x) Safety glasses (!) Ear plugs/muffs	( ) Safety goggles ( ) Face shield	(*) Hard hat ( ) Other:
Foot/Leg Protection	(x) Leather boots ( ) Steel-toed leather boots	( ) Steel foot covers (x) Snake Leggings	(‡) Chemical over boots

5.0 Modifications Required: § - Leather gloves required if hand injury hazard exists. ! - Ear plugs, muffs, or a combination of the two, will be used if noise levels exceed 85 dBA, 8-hour TWA; * - Hard hats required if an overhead hazard exists or when working around heavy equipment; ‡ - Over boots required if working in the EZ.

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH **Signature:**

CERTIFICATION OF TASK HAZARD ASSESSMENT

TASK NAME: All Other Non-specific Site Tasks Not Otherwise Mentioned **DATE:** 11/26/97

1.0 Hazard Identification: Items checked are known or anticipated site hazards, or may occur as a result of site operations.

(x) Physical exertion	( ) Lifting hazards	( ) Confined space
(x) Heat Stress (spring/summer months)	(x) Slip, trip or fall	(x) Hazardous plants (spring/summer)
(x) Cold Stress	( ) High noise (>85 dBA)	(x) Hazardous wildlife (spring/summer)
( ) Heavy equipment operations	( ) Overhead utilities	(x) Ultraviolet radiation
( ) Vehicle traffic in work area(s)	( ) Underground utilities	( ) Hand/Power Tool use
( ) Fire hazards (underline)	( ) Intrusive activity (underline)	( ) Airborne chemical exposure
- Gasoline/Diesel use	- Drilling	( ) Skin contact w/ hazardous materials
- Explosive materials	- Soil excavation	(x) Ordnance and explosives
- Explosive gases/vapors	- Setting monuments/stakes	(x) Cut/Puncture from sharp objects

2.0 Degree of Hazard: Anticipated degree of hazard, based on the hazards associated with this task.

Chemical Hazard:	(x) Low	( ) Serious	**Phys./Bio. Hazard:**	(x) Low	( ) Serious
	( ) Moderate	( ) Unknown		( ) Moderate	( ) Unknown

3.0 Control or Protective Measures: Items checked will be used to control or mitigate the above mentioned hazards.

(x) Tailgate Safety Briefing	(x) Personal protective equipment	(x) Decontamination upon exiting EZ
(x) Specialized Training	( ) Air Monitoring	( ) Magnetometer Survey
(x) Safe Work Practices	(x) Site Control Zones	

( ) Engineering Controls:

(x) Applicable SOPs/Programs: See Appendix G of the Work Plan for applicable SOPs.

(x) Other: All tasks not otherwise covered by the previous CTHA forms will be assessed by the SSHO for potential hazards and the PPE that may be required for the protection of site personnel.

4.0 Task PPE: PPE has been assigned based on the potential for exposure as identified by this hazard assessment.

Level of Protection	( ) A ( ) B	(‡) C (x) D	(‡) Modified
Respiratory Protection	( ) SCBA ( ) Escape SCBA - Size	(‡) Full face respirator ( ) ½ Face respirator	( ) Cartridge - Type (x) No respirator required
Protective Clothing	( ) Fully encapsulating suit (‡) Standard Tyvek	( ) Saranex ( ) PE Tyvek	(x) Company clothing ( ) Other:
Gloves (specify inner/outer)	( ) Nitrile (‡) Natural rubber (outer)	( ) Neoprene (‡) Latex (inner)	(§) Leather ( ) Cotton
Head/Face/Eye/Ear Protection	(†) Safety glasses (!) Ear plugs/muffs	( ) Safety goggles ( ) Face shield	(*) Hard hat ( ) Other:
Foot/Leg Protection	(x) Leather boots ( ) Steel-toed leather boots	( ) Steel foot covers (x) Snake Leggings	( ) Chemical over boots - Material

5.0 Modifications Required: § - Required if hand injury hazard exists. † - Required if an eye hazard exists; ! - Required if noise levels exceed 85 dBA, 8-hour TWA; * - Required if an overhead hazard exists or when working around heavy equipment; ‡ - Tasks performed in high lead contamination areas will require the use of at least Modified Level C PPE.

6.0 Certification: The PPE and other control methods and procedures to be used in the conduct of this task have been selected as a result of a hazard assessment conducted by individual identified below.

Printed Name: Drew Bryson, CIH, MPH **Signature:**

ATTACHMENT 3

OF THE

SITE SAFETY AND HEALTH PLAN

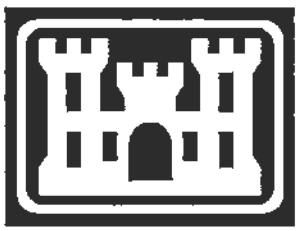
PHYSICIAN APPROVAL OF ON-SITE FIRST AID KITS AND SUPPLIES

FOR THE

OPEN BURNING GROUNDS, SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

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

Prepared For:



The U.S. Army Engineering and Support Center
Huntsville, Alabama

Prepared By:

EOD Technology, Inc.
10938 Hardin Valley Road
Knoxville, Tennessee 37932

November 1997

PHYSICIAN'S APPROVAL OF FIRST AID SUPPLIES OPEN BURNING GROUNDS, SENECA ARMY DEPOT ACTIVITY

1.0 Description of first Aid Supplies

The typical first aid supplies to be located on site during operations will be stationed in several locations, and will be distributed as outlined below.

1. Each field team and operational area will have an initial response first aid kit which will contain the following items:
   a. A combination first aid/burn kit (or one kit of each);
   b. An emergency eye flushing kit;
   c. A CPR mask;
   d. A personal universal biohazard control kit;
   4. A burn blanket; and
   e. A sealed gallon container of drinking water for wound irrigation.

2. The support zone will be supplied with the following first aid items:
   a. A factory stocked first aid response cart;
   b. Two CPR masks;
   c. An ANSI approved 15-minute gravity fed eye wash station;
   d. Two universal biohazard personal and spill control kits; and
   e. A burn blanket.

3. The Contamination Reduction Zone (CRZ) will be supplied with an Emergency Personnel Decontamination Zone (EPDS) which will be supplied with the following:
   a. Two stretchers, iwth one stationed on the hot side of the EPDS and one on the clean side
   b. Two initial response first aid kits, stationed as in (a.) above;
   c. Blunt nosed sissors for the removal of personal protective equipment (PPE); and
   d. Various decontamination solutions and rinses for the cleaning of PPE (time and circumstances allowing).

2.0 Approval Statement

Signature below indicates that I have reviewed site and task related information and the list of first aid supplies to be used during the conduct of the above named project, and I approve of the type, number and contents of the first aid supplies to be used for this project.

Dr. Robert W. Paré, MD _____ Signature _____ 11/26/97 Date