APPENDIX A TO THE WORK PLAN

SITE SAFETY AND HEALTH PLAN

FOR THE

SURFACE TO ONE-FOOT SUBSURFACE ORDNANCE AND EXPLOSIVES CONSTRUCTION SUPPORT

PROPOSED EASTERN BYPASS
FORT MCCLELLAN, CALHOUN COUNTY, ALABAMA

Contract Number: DACA87-97-D-0005
Task Order: 0012

Prepared For:

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

Prepared By:

EODT
EOD TECHNOLOGY, INC.

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July 1999

PREFACE

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) in support of the ordnance and explosives (OE) subsurface clearance from the proposed eastern bypass to be constructed at Fort McClellan near Anniston, Alabama.

This OE subsurface clearance will be performed by EODT under CEHNC Contract DACA87-97-D-0005, Task Order 0012. As the prime contractor to the CEHNC, EODT will be responsible for the overall management of the equipment and personnel resources needed to complete the requirements of the Scope of Work (SOW) presented in Appendix C of the project Work Plan (WP). EODT personnel will also be responsible for the initial and continued implementation of the operational, safety and health requirements presented in this SSHP (with attachments), and the WP (with appendices). All site activities will be performed in accordance with (IAW) this SSHP and all applicable USACE, Federal, state, and local regulations. This SSHP has been submitted as a portion of, and will be used in conjunction with, the EODT Fort McClellan WP.

To meet CEHNC requirements for sites contaminated with OE and unexploded ordnance (UXO), this SSHP has been developed IAW the requirements of 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. As required by this document, EODT has tailored the amount of detail presented in this SSHP toward the type of work, degree of hazard, and the complexity of tasks assigned by the CEHNC Fort McClellan SOW. Any topic areas referenced in ER 385-1-92 that are not addressed in this SSHP have been evaluated and found to not be applicable to this project.

The hazard control methods detailed in this SSHP were selected to minimize the potential for personal exposure to site or task hazards; however, this SSHP is to be considered a living document and is subject to change depending upon on-site implementation of assigned tasks. This SSHP may require modification if the degree of task hazard changes significantly, or if an assigned tasks change. Any changes to this SSHP will be made and implemented IAW the requirements of this SSHP and the WP. On-site implementation of changes may commence prior to receipt of the formal written changes if written approval is provided to EODT by the on-site CEHNC On-site Safety Specialist (OSS).

SITE SAFETY AND HEALTH PLAN APPROVAL

Project: Ordnance and Explosives Subsurface Clearance

Site: Proposed Eastern Bypass

Site Location: Fort McClellan, Alabama

Contract Number: DACA87-97-D-0005 **Task Order Number:** 000?

The personnel below have reviewed the attached SSHP for the referenced site and recognize that upon completion of this form, and approval by the CEHNC, the attached SSHP will be approved by EODT for implementation of the SOW tasks at 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 CEHNC prior to their attachment to this SSHP.

Reviewed by: _____ Date: _____
Salvatore Molle
Senior UXO Supervisor

Reviewed by: _____ Date: _____
Michael Short
Director of Operations

Prepared and
Approved by: _____ Date: _____
Andrew Bryson, CIH, MPH
Occupational Safety and Health Manager

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LIST OF ACRONYMS AND ABBREVIATIONS

ABIH	American Board of Industrial Hygienist
ACGIH	American Conference of Governmental Industrial Hygienists
ALS	advanced life support
BATF	Bureau of Alcohol, Tobacco, and Firearms
BBP	bloodborne pathogens
BIP	blow(n)-in-place
CEHNC	U.S. Army Engineering and Support Center, Huntsville
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
COC	chain of command
CPR	cardiopulmonary resuscitation
CSHP	Corporate Safety and Health Program
CTHA	Certification of Task Hazard Assessment
CWM	Chemical Warfare Materiel
DERP	Defense Environmental Restoration Program
DoD	U.S. Department of Defense
DOT	U.S. Department of Transportation
EE/CA	Engineering Evaluation/Cost Analysis
EC	Emergency Coordinator
EM	Engineering Manual
EMT	emergency medical technician
EOD	explosive ordnance disposal
EODT	EOD Technology, Inc.
EPA	U.S. Environmental Protection Agency
ER	Engineering Regulation
EZ	exclusion zone
FMC	Fort McClellan, Alabama
FUDS	formerly used defense sites
HAZCOM	Hazard Communication
HAZWOPER	Hazardous Waste Operations and Emergency Response
HTRW	hazardous, toxic, and radioactive wastes
IAW	in accordance with

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

KO	Contracting Officer
LO/TO	lockout/tagout
MSDS	material safety data sheet
MSP	Medical Surveillance Program
NIOSH	National Institute of Occupational Safety and Health
OE	ordnance and explosives
OEW	ordnance and explosive waste
ORS	ordnance-related scrap
OSHA	Occupational Safety and Health Administration
OSHM	Occupational Safety and Health Manager
OSIC	On-scene Incident Commander
OSS	On-site Safety Specialist
PM	Project Manager
PPE	personal protective equipment
ppm	parts per million
PWD	public withdrawal distance
SMSP	Site-specific Medical Surveillance Plan
SSHP	Site Safety and Health Plan
SOP	Standard Operating Procedure
SOW	Scope of Work
SSHO	Site Safety and Health Officer
SUXOS	Senior UXO Supervisor
SWP	safe work practices
TLV	Threshold Limit Value
USACE	U.S. Army Corps of Engineers
USAESCH	U.S. Army Engineering and Support Center, Huntsville
UXO	unexploded ordnance
UV	ultraviolet
WP	Work Plan
WW	World War
WZ	work zone

CHAPTER 1: GENERAL

1.1 SCOPE AND OBJECTIVE

This SSHP has been prepared by EODT for the CEHNC for the removal of subsurface OE and debris from the proposed eastern bypass located in the southeastern portion of Fort McClellan, Alabama (***FMC***). This SSHP will apply to all site operations conducted by EODT personnel in the performance of the SOW for Task Order (TO) 0012 contained in Appendix B of the WP.

As mandated by its corporate policy, EODT is committed to providing site personnel with a working environment that is free from recognized, uncontrolled safety and health hazards. To comply with this policy statement, EODT personnel have conducted a thorough examination of available site data, and have to the greatest extent possible anticipated, evaluated, and designed controls for the safety and health hazards that may be encountered during the assigned ***FMC*** tasks. To communicate hazard and control information to site personnel, EODT will use this SSHP and on-site training to ensure that all site personnel understand the nature of the hazards they may encounter and the practices and procedures that will be used to eliminate or control the hazards.

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 due to actual on-site implementation of project tasks. Any formal changes or additions to this SSHP will be approved by EODT's Occupational Safety and Health Manager (OSHM) and Project Manager (PM), and the CEHNC Contracting Officer (KO).

Due to the inherently dangerous nature of the OE operations associated with this project, all on-site EODT personnel shall carefully read this document prior to participation in any tasks that involve potential exposure to on-site hazards. If any site personnel have questions related to this SSHP, the question(s) shall be resolved by the EODT Site Safety and Health Officer (SSHO). After reading this document, site personnel will complete the SSHP Review and Approval Form presented in Appendix E of the WP. By signing this form, site personnel verify their understanding of, and willingness to comply with, the requirements in this SSHP. All site personnel will exercise reasonable caution at all times and shall remain alert to the presence of on-site hazards. Acutely hazardous items or conditions shall immediately be reported to the SSHO. All on-site project activities shall be managed so as to comply with the provisions of this SSHP and the regulations and guidelines listed below 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 (latest edition);
2. OSHA Construction Standards, 29 CFR 1926 (latest edition);
3. USACE Engineering Manual (EM) 385-1-1, Safety and Health Requirements Manual;
4. EODT Corporate Safety and Health Program (CSHP);
5. Army Regulation 385-40 (with Supplement 1), Accident Reporting and Records;
6. U.S. 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 Wastes (HTRW) and Ordnance and Explosives Waste (OEW) Activities, 18 March 1994; and
8. U.S. 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 1998-99, American Conference of Governmental Industrial Hygienists (ACGIH), 1998.

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CHAPTER 2: STAFF ORGANIZATION AND RESPONSIBILITIES

2.1 GENERAL

This SSHP applies to all site personnel having a potential for exposure to site hazards, and at no time will site tasks be performed in a manner that conflicts with the safety, health, or environmental precautions expressed in this SSHP. Ensuring site safety and health is a joint effort by all site personnel, however, to effectively manage project safety, several personnel have been given direct responsibilities related to site safety. Figure 2-1, located on page A-6, 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 assigns highly trained and skilled personnel to all phases of each OE project. The EODT UXO specialists (UXOSPs) assigned to this subsurface removal project have extensive OE remediation experience and are familiar with the operational procedures and controls used in the recognition , evaluation, and handling of OE. The personnel listed in this paragraph are those with specific responsibilities and roles related to on-site safety and health.

2.2.1 Project Manager

Mr. Michael Short, the EODT PM, is a master EOD technician with over 30 years of UXO, OE, and explosive ordnance disposal (EOD) related experience. He is a graduate of the U.S. Army Ammunition Officers Course, Aberdeen Proving Ground, Maryland, and the Basic and Advanced Naval EOD School, Indian Head, Maryland. Mr. Short has completed the OSHA General Site Worker and Supervisor Training Requirements for Hazardous Waste Operations IAW 29 CFR 1910.120 and has in excess of 16 years of experience in the planning, design, implementation, and management of site operations for the remediation of OE hazards. As the PM for this project, Mr. Short will:

1. Report directly to the Program Manager for all project and operational matters;
2. Manage the funding, manpower, and equipment necessary to safely conduct site operations;
3. Review this SSHP and have a thorough understanding of its requirements;
4. Furnish copies of the WP and SSHP to site personnel for their review;
5. Coordinate with the OSHM to ensure that all anticipated project-specific safety and health issues have been addressed in this SSHP;
6. Coordinate the assignment of subcontractors and ensuring that subcontractor personnel and equipment meet the requirements of the WP and SSHP;
7. Relay safety and health concerns to the CEHNC OSS; and
8. Coordinate with the OSHM to ensure site compliance with the SSHP and the CSHP.

2.2.2 Occupational Safety and Health Manager

Mr. Andrew Bryson, the EODT OSHM, is an American Board of Industrial Hygienists (ABIH) Certified Industrial Hygienist (CIH) with over eight years of industrial hygiene, safety, and hazardous waste experience, including over six years of experience with sites contaminated with OE. Mr. Bryson has completed the OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) site worker and supervisor training requirements IAW 29 CFR 1910.120, and will provide technical support to the SSHO and other project personnel. As the OSHM, he will:

1. Report directly to the EODT President regarding safety and health issues;
2. Develop, approve, and seal this SSHP;
3. Coordinate with the EODT SSHO for field implementation of this SSHP;
4. Communicate and consult with the PM, Senior UXO Supervisor (SUXOS), and SSHO;
5. Evaluate and authorize any changes to this SSHP;
6. Conduct, or assist in the presentation of, site-, task- and hazard-specific training;
7. Directly interface with, and relay safety and health concerns to, the CEHNC;
8. Conduct periodic site safety and health audits; and
9. Ensure site and personnel compliance with the EODT CSHP.

2.2.3 Senior UXO Supervisor

Mr. David Hurtle will fill the role of the SUXOS for this project. He is a master EOD technician and a graduate of the Basic and Advanced Naval EOD School, Indian Head, Maryland. He has over 15 years combined military and civilian EOD experience, with extensive experience as a SUXOS. Mr. Hurtle has completed the OSHA HAZWOPER 40-hour and refresher training requirements, and he has also completed the EODT Site Manager training course. Mr. Hurtle will be responsible for the on-site management of all EODT site operations, and will:

1. Conduct on-site management of the resources needed to safely conduct site operations;
2. Fully understand the WP, this SSHP, and any other relevant documents;
3. Provide copies of the WP to project personnel for their review;
4. Review the SOW and ensure that the safety and health issues have been addressed;
5. Act as the lead technical consultant for all on-site OE-related matters;
6. Schedule and present the operational portion of the daily tailgate safety briefing;
7. Enforce compliance with this SSHP and the WP; and
8. Directly interface with, and relaying safety concerns to, the CEHNC OSS.

2.2.4 Site Safety and Health Officer

Mr. Howard Stepp will act as the SSHO for this project. As the SSHO, Mr. Stepp will be responsible for the overall safety of all on-site personnel. M. Stepp is a master EOD technician and a graduate of the Basic and Advanced Naval EOD School, Indian Head, Maryland. He has over 21 years combined military/civilian EOD experience and has completed the OSHA HAZWOPER site

worker and supervisor training requirements IAW 29 CFR 1910.120. As required by CEHNC DID OT-0025, Mr. Stepp has received specific training and possesses the specific knowledge and experience needed to implement this SSHP and other applicable Federal, state and local safety and health regulation. As the SSHO, Mr. Stepp will:

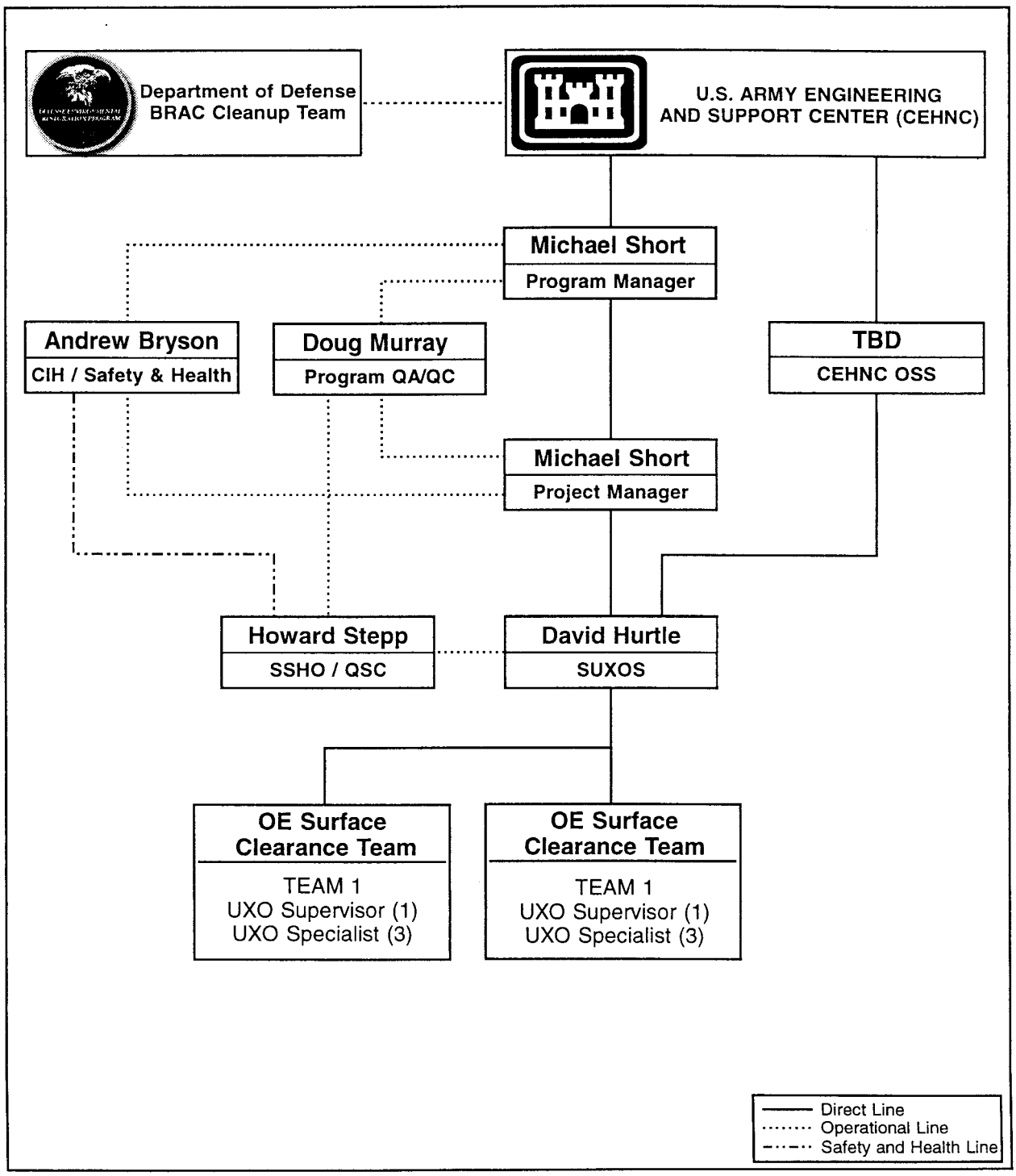
1. Initiate and authorize a "Stop Work" order for any imminent safety or health concerns;
2. Implement and enforce the requirements outlined in this SSHP;
3. Conduct the safety portion of the daily tailgate briefings;
4. Conduct and document site training related to site-specific hazards;
5. Specify proper levels of PPE IAW the requirements of this SSHP;
6. Implement and enforce the EODT Alcohol/Drug Abuse Policy;
7. Investigate injuries, illnesses, accidents, incidents, and near misses;
8. Conduct visitor orientation, daily safety inspections, and weekly safety audits; and
10. Ensure field implementation of the EODT CSHP.

2.3 RESPONSIBILITIES OF ALL SITE PERSONNEL

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

1. Complying with this 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) or medications which could affect their ability to safely perform site operations;
6. Preventing the spillage and splashing of environmentally hazardous materials;
7. Practicing good housekeeping by keeping the work area neat, clean, and orderly;
8. Immediately reporting all injuries, no matter how minor, to the SSHO;
9. Maintaining equipment in working order, and reporting defects to the SSHO; and
10. Properly inspecting and using the PPE required by the SSHP or the SSHO.

FIGURE 2-1. GENERAL SAFETY AND HEALTH ORGANIZATION



CHAPTER 3: SITE DESCRIPTION AND CHARACTERIZATION

3.1 *FMC* SITE LOCATION AND DESCRIPTION

3.1.1 General Project Location

FMC is located in Calhoun County, Alabama, with the main post bounded on the south and east by the city of Anniston, and on the northwest by the city of Weaver. Jacksonville is located north of Fort McClellan, and the Talladega Forest is located to the east.

The project site for this clearance is an approximate ***100*** acre site within an old impact range fan in the vicinity of Iron Mountain. This ***100***-acre site is located within the proposed easement for the proposed eastern bypass route. The proposed bypass begins in the vicinity of Summerall Gate and heads due east from this area for approximately one mile then turns due south for approximately 3.5 miles toward the southern boundary The area to be cleared under this SSHP is located in the southwestern region of the Fort McClellan Military Reservation south of Summerall Gate Road and East of Quintard Boulevard, **extending 2.1 of the 3.5 miles** (see the area map, Appendix C of the WP).

3.1.2 Site History and Description

FMC has been used since 1912 for the training of U.S. Army combat troops, to include the National Guard. The history of Fort McClellan indicates that the facility has been used for artillery training of active duty and National Guard troops from as early as 1912 to present day. This training included demonstrations that utilized all mortar, anti-tank and artillery pieces. In 1941, Fort McClellan became the site of the Chemical Corps Training Command, and in 1962, the U.S. Army Combat Developments Command Chemical Biological-Radiological Agency moved to Fort McClellan but was closed in 1973. Both the U.S. Army Chemical and Military Police Corps are stationed at Fort McClellan and are actively engaging in the training of chemical and military police soldiers. The ***100***-acre area of concern located within the easement of the proposed eastern bypass route runs through the former target and impact area for 60 millimeter (mm) high explosive mortars and 2.36 inch rockets. No chemical warfare materiels (CWM) are expected to be found in the impact area. The topography of ***100***-acre site varies from open grass lands to dense forest with steep slopes and numerous ravines and gullies.

3.2 PREVIOUS SITE INVESTIGATIONS

An Engineering Evaluation/Cost Analysis is currently being conducted by a USACE contractor. Additionally, an Archival Search Report was conducted in 1996, and a non-intrusive ground reconnaissance was conducted in 1998.

3.3 ON-SITE TASKS TO BE PERFORMED

According to 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, this document also requires a detailed discussion of the tasks and their 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 a more detailed description of each task is presented in Chapter 4 of this SSHP, along with the requisite hazard analysis and risk assessment.

As presented in the SOW, the objective of this project is to perform a clearance of the ***100***-acre site to remove all OE hazards and metallic debris that is greater than three inches in any dimension down to a depth of one foot. To meet the SOW requirements of TO 0012, EODT will perform the operations listed below:

1. Develop a WP IAW DID OT-005 for the subsurface clearance operations.
2. Mobilize all necessary personnel and equipment to the site and establish an operational control area for the staging of supplies and equipment.
3. Conduct necessary location surveying and mapping to establish site boundaries and grids.
4. Perform a metal detector subsurface sweep of the ***100*** acres to located and remove metallic scrap and hazardous OE.
5. Use explosive demolition materials to render safe any explosively configured UXO or other hazardous OE.
6. Collect and turn-in inert ordnance and metallic debris.
7. Perform on-site quality control procedures to ensure the complete removal of all subsurface OE and relevant metallic debris.
8. Prepare a report describing all work performed.

The general on-site tasks to be performed by EODT personnel for this project will include those tasks necessary to perform the SOW as listed above. A detailed description of the operational procedures EODT will use to accomplish the required tasks is presented in Chapter 2 of the WP, and the hazards associated with these tasks are presented in section 4.3 of this SSHP. **Field operations for the 100-acres are expected to start in early fall to winter 1999, and continue for 11 weeks.**

3.4 CONTAMINATION AND HAZARD CHARACTERIZATION

3.4.1 Chemical Warfare Materiels

Archival research of ***FMC*** has indicated that there are major areas of the facility where CWM may be encountered due to past training exercises. However, the archival research data also indicates that the ***100***-acre site was not utilized for any form of CWM training and the potential for site personnel to encounter CWM is extremely remote. However, in the highly unlikely event that a toxic chemical munition,

or any potential source of CWM is encountered, EODT personnel will evacuate the area in an upwind direction to a safe location. The SUXOS will notify the CEHNC OSS, who will request assistance from military EOD. The military EOD will then investigate and, if required, notify the appropriate agency if a response is needed from the U.S. Army Technical Escort Unit. EODT will station two UXO specialists 50 meters upwind of the suspected CWM to secure and observe the area. Once the site is visually secured, EODT personnel will continue to secure the site until relieved by military EOD. Confirmation of CWM will require a halt in site operations until the potential for future exposure can be assessed and the SSHP is modified.

3.4.2 OE Contamination

As stated previously, the *100*-acre site was used as a impact area for 60mm mortars and 2.36 inch rockets. A site visit by EODT personnel also identified slap flare bodies, pistol flares, smoke grenades and small arms.

3.4.3 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. Previous site operations dictate that some areas of the site (i.e., the former target zones) may possibly contain elevated (above background) levels of heavy metals and explosives in the soil. However, EODT's professional experiences with sites of this nature has shown that while the metals or explosives contamination levels may exceed environmental limits , no exposure hazard exists for site personnel involved with the OE removal activities.

As a function of site operations, some site personnel will 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; demolition materials, including perforators, green stick, detonator cord, time fuze; and spray paints. It is anticipated that personnel exposure to the hazardous materials will be minimal due to the limited quantities that will be used at any one time and the ventilation provided by using the materials in an outdoor setting.

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CHAPTER 4: HAZARD ASSESSMENT AND RISK ANALYSIS

4.1 INTRODUCTION

During the development of this SSHP, a preliminary evaluation of the on-site tasks to be conducted at ***FMC*** was performed by EODT's safety, health, and UXO-qualified personnel. This preliminary evaluation was conducted using: available information from site characterization data, 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/procedures, to include SWPs, are discussed in greater detail in Chapter 13 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 greatest extent possible, been identified, and the risk of exposure to each hazard has been assessed during the development of this SSHP. For this subsurface sweep, exposure to hazardous OE may occur, but is not expected to occur with great frequency. However, since the potential exists for exposure to OE and the potentially catastrophic results of OE exposure, the hazard level associated with the subsurface removal activities on ***FMC*** will be high.

4.2.2 Hazards and Risks Associated with Potential Exposures to Chemicals

In assessing the risks associated with exposure to potential on-site chemical contaminants, EODT safety and health personnel examined available sources to determine what chemical hazards may be encountered during site activities. As a result of this examination, no evidence exists indicating that any chemical materials were ever used on, or brought into, the impact areas. Therefore it can be safely assumed that the potential for personnel to receive a any form of exposure to metals, volatile organic compounds, or explosives is non-existent. If site activities are modified, or site conditions indicate the presence of hazardous chemicals, the potential for chemical exposure and the levels of PPE will be reevaluated by the EODT OSHM.

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 of. While there is no "safe" procedure for dealing with OE, only procedures which are considered less dangerous, maximum safety in any OE operation can be achieved through strict adherence to operational plans, application of relevant safety precautions, and intensive supervision. The general operational procedures to be used to safely

excavate, identify, and dispose of OE found in the anomaly areas are outlined in Chapter 2 of the WP. The safety and health procedures to be used for reducing the hazards associated with anomaly excavations and OE disposal are discussed in Chapter 13 of this SSHP.

4.2.4 Physical Hazards

Due to the nature of the planned site operations, the potential and risk for personnel exposure to physical hazards will be high for this project. Physical hazards anticipated are:

- Heat stress;
- Flammable/explosive materials and fuels;
- Material lifting hazards;
- Slip, trip, and fall hazards associated with the steep slopes and ground cover;
- Sudden, potentially heavy rain, thunder/lightning storms; and
- Sharp objects.

Site personnel will be instructed to remain alert to the presence of physical hazards and to report 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 Chapter 13 of this SSHP.

4.2.5 Biological Hazards

Since this project is scheduled for mid summer, the potential for contact with biological hazards will be extremely high. The biological hazards anticipated for this project include: stinging insects like scorpions, bees, wasps and hornets; biting arthropods such as spiders, ticks and chiggers; poisonous plants, such as poison ivy, oak and sumac; mosquitoes; and poisonous snakes such as the eastern diamondback, timber and pigmy rattlesnakes, copperhead, cottonmouth, and coral snakes. Site personnel will receive on-site training related to biological hazard identification and control and will remain alert to the presence of biological hazards at all times. This personnel awareness and the safe work practices 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 ***FMC***, EODT personnel shall perform the general tasks outlined in section 3.4 of this SSHP. To ensure that site personnel are fully informed of the hazards associated with each task, descriptions of the required tasks are presented in the following paragraphs. In addition to these descriptions, CTHA forms for each task or each group of similar tasks are presented

in Attachment 2 of this SSHP. For each task hazard listed, site personnel will utilize the procedures and SWPs outlined in Chapter 13 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 establishing an operational area. As part of this task, EODT personnel will establish EODT's operational status at ***FMC*** and will arrange for the delivery and storage of site supplies and equipment. The task hazards that may be encountered during mobilization and site setup include:

- Inclement weather and heat stress;
- Use of flammable/combustible materials (i.e., fuels);
- Hand tools and power tools;
- Physical exertion; and
- Uneven/unstable footing resulting in slips, trips, and falls.

4.3.3 Conduct LS&M

Using information provided by the CEHNC OSS, the east/west boundaries of the easement and the north/south boundaries of the site will be surveyed to locate the site within the state plane coordinates. Each site will be demarcated using stakes, surveyor tape, spray paint, or any combination thereof. A magnetometer check will be performed at all points where survey stakes, posts, markers, etc. are to be installed. Items/anomalies located during this task will be investigated and disposed of during the initial phases of the subsurface clearance. The task hazards that may be encountered during this task include:

- Hazardous plants or animals;
- Surface and Subsurface OE;
- Inclement weather and heat stress;
- Hand tools;
- Physical exertion; and
- Slips, trips, and falls.

4.3.5 Conduct a Subsurface OE Clearance

To clear the top one foot of the ***100***-acre site of hazardous OE and metallic debris, EODT UXOSPs will use the Whites Spectrum XLS (Whites) to locate the subsurface anomalies and those surface items that may be hidden by the layer of vegetative debris blanketing the wooded areas of the site. The boundaries of each sweep lane will be maintained through the use of flags or cones to ensure the complete coverage of the site. Each item or anomaly will be accessed and inspected to determine its identity and all suspect OE items will be further inspected to determine the hazards associated with the as the item. Scrap that is greater than three inches in any dimension will be collected and

moved to a central storage area. Those items requiring explosive disposal will be marked with two crossed pin flags and disposed of through demolition prior to the end of the day, or as directed by the CEHNC OSS. Task specific procedures related to the conduct of the sweep are discussed in detail within Chapter 2 of the WP. The hazards associated with the OE clearance sweep include:

- Hazardous plants;
- Sharp objects;
- Lifting heavy objects;
- Inclement weather and heat stress;
- Hand tools;
- Physical exertion; and
- Steep, uneven, slippery, and unstable footing resulting in slips, trips, and falls.

4.3.6 Investigate Suspect OE Items

Subsurface anomalies and surface items suspected of being hazardous OE/UXO will be investigated by EODT UXO-qualified personnel. Access to subsurface or partially buried items will be conducted using hand tools. The procedures outlined for this task, are presented in Chapter 2 of the WP and Chapter 13 of this SSHP. Any item identified as potential OE will be hand-excavated and inspected to determine the nature and hazard level associated with the item(s). All OE investigations will be conducted by a minimum of two UXO-qualified technicians, with the first technician being the one who initially identifies the item and the second technician providing confirmation. Any items identified as being known or potentially hazardous OE will be examined to determine if they can be safely moved. Those items that are unfuzed and determined safe to move, but require disposal, will be removed from the area and placed in a temporary holding area until they can be disposed of according to the requirements of paragraph **2.9.2** of the WP. Items that are fuzed or determined to be unsafe to move will be blown-in-place (BIP). The hazards associated with this task are as follows:

- Hazardous surface/subsurface OE;
- Hand-tool operation;
- Sharp objects, including OE fragments;
- Inclement weather and heat stress;
- Material lifting;
- Physical exertion; and
- Steep, uneven, slippery, and unstable footing resulting in slips, trips, and falls.

4.3.6 Perform Explosive Disposal of Hazardous OE

One of the most hazardous tasks associated with this project will be the explosive disposal of any hazardous OE located on site. This task is inherently hazardous due to the need to handle explosive materials and the connecting of these materials to initiating devices. The primary hazard associated

with this task is the premature initiation of demolition materials or OE items due to improper handling of demolition materials or improper sequencing when UXO personnel are "tying in" the demolition charge and initiator to the OE item. To minimize these hazards, EODT has selected, and uses, disposal materials designed to reduce handling and tying-in hazards. Additionally, all personnel involved in OE disposal operations must follow very defined, precise safety procedures that are clearly outlined in the EODT Demolition/Disposal Operations SOP found in Appendix G of the WP. Demolition operations are always performed under the direct supervision of the SUXOS who has the authority to immediately stop or suspend operations if unsafe conditions arise or if a noncompliance occurs.

To protect the public, an initial public withdrawal distance (PWD) has been initially established as **1,080** feet, based upon a most probable munition (MPM) of a 60mm high-explosive mortar. Depending on the type and number of OE items being destroyed during a given demolition shot, the PWD may be increased or decreased (with the approval of the CEHNC OSS) based on data contained in HNC-ED-CS-S-98-1, January 1998. Prior to the initiation of disposal operations, all nonessential personnel will be evacuated to a safe location outside the PWD. Personnel remaining on-site will be limited to those needed to safely and efficiently prepare the item(s) for destruction. Prior to the initiation of demolition operations, the SUXOS will communicate and coordinate the closing of any roads with the ***FMC*** Range Control office. Upon completion of the demolition shot, the SUXOS will visually inspect each disposal shot and site security will be maintained until confirmation of proper disposal has been obtained by the SUXOS. The procedures referenced above, and the operational procedures in Chapter 2 of the WP will be followed at all times. Along with the hazards discussed above, disposal personnel may by exposed to the following hazards:

- Explosively configured OE;
- Demolition materials;
- Hand-tool operation;
- Inclement weather and heat stress;
- Material lifting;
- Excessive noise;
- Physical exertion; and
- Steep, uneven, slippery, and unstable footing resulting in slips, trips, and falls.

4.3.7 Perform Project Safety Inspections and Quality Control

Due to the small crew size for this project (i.e. less than 21 persons), the EODT SSHO will also fill the role of the Quality Control Specialist (QCS). As such, the SSHO will be responsible for the continued compliance of on-site tasks with both relevant safety and QC procedures. To verify implementation of proper safety, health and QC procedures , the SSHO/QCS will conduct daily

inspections of the site operations, site work areas, and equipment. The task hazards that may be encountered during the safety/QC inspections include the following:

- Surface and subsurface OE;
- Biological hazards;
- Sharp objects, including OE fragments;
- Inclement weather and heat stress;
- Steep, uneven, slippery, and unstable footing resulting in slips, trips, and falls.

4.3.8 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 secure the site prior to final departure. The hazards associated with this task include:

- 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
- Steep, uneven, slippery, and unstable footing resulting in slips, trips, and falls.

4.4 COMMUNICATION OF TASK HAZARD INFORMATION

Prior to personnel participation in a given task, the SSHO will communicate to all effected 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 Chapter 6 of this SSHP.

4.5 EMPLOYEE RIGHT-TO-KNOW HAZARD COMMUNICATION

In order to comply with OSHA's Hazard Communication Standard, and to ensure that site personnel are informed of the hazardous products with which they work, EODT will provide site personnel with the hazard communication requirements specified in this paragraph. 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 Appendix H of the WP for each product used on site that contains a hazardous substance;
3. All containers shall have either adequate hazard labeling or a hazard communication label will be affixed to the container that communicates the hazards associated with the material;
4. Hazard communications training will meed the requirements of 29 CFR 1910.1200;

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.

4.6 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. 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, CEHNC. The CTHA forms will be used on a daily basis to inform site personnel of the hazards expected during the day's activities.

CHAPTER 5: ACCIDENT PREVENTION

5.1 GENERAL

This purpose of this Chapter 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 Chapter 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 noncompliance; 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 reassessed 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 Chapter 13; 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 with 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 noncompliance. 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 ensure 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 Chapter 2 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 design and development of written programs and procedures used to safe guard site personnel from the hazards associated with this project. It is imperative that site personnel realize that their compliance with established safety and health procedures is of paramount importance in the prevention of accidents and emergencies that could compromise their safety and health, and 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 noncompliance 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: 1) they are not properly trained, 2) the consequences of the activity are uncertain; or 3) the activity hazards have not been assessed. As deemed necessary, the SSHO may impose other prohibitions to ensure the safe conduct of operations. Additionally, prohibitions presented below are strictly forbidden at any time, during any phase of site operation and violation of these may result in immediate termination of employment.

- 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 workday;
- Illegal use of drugs (as defined in section 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 (WZ) (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 CSHP or SSHP safety or health nonconformance occurs appropriate positive disciplinary action will be taken. In all cases where a potential violation has been reported, the SSHO will conduct an investigation to validate the report and to determine the severity of the violation. Violations 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 non-compliance issue results from personnel actions.

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

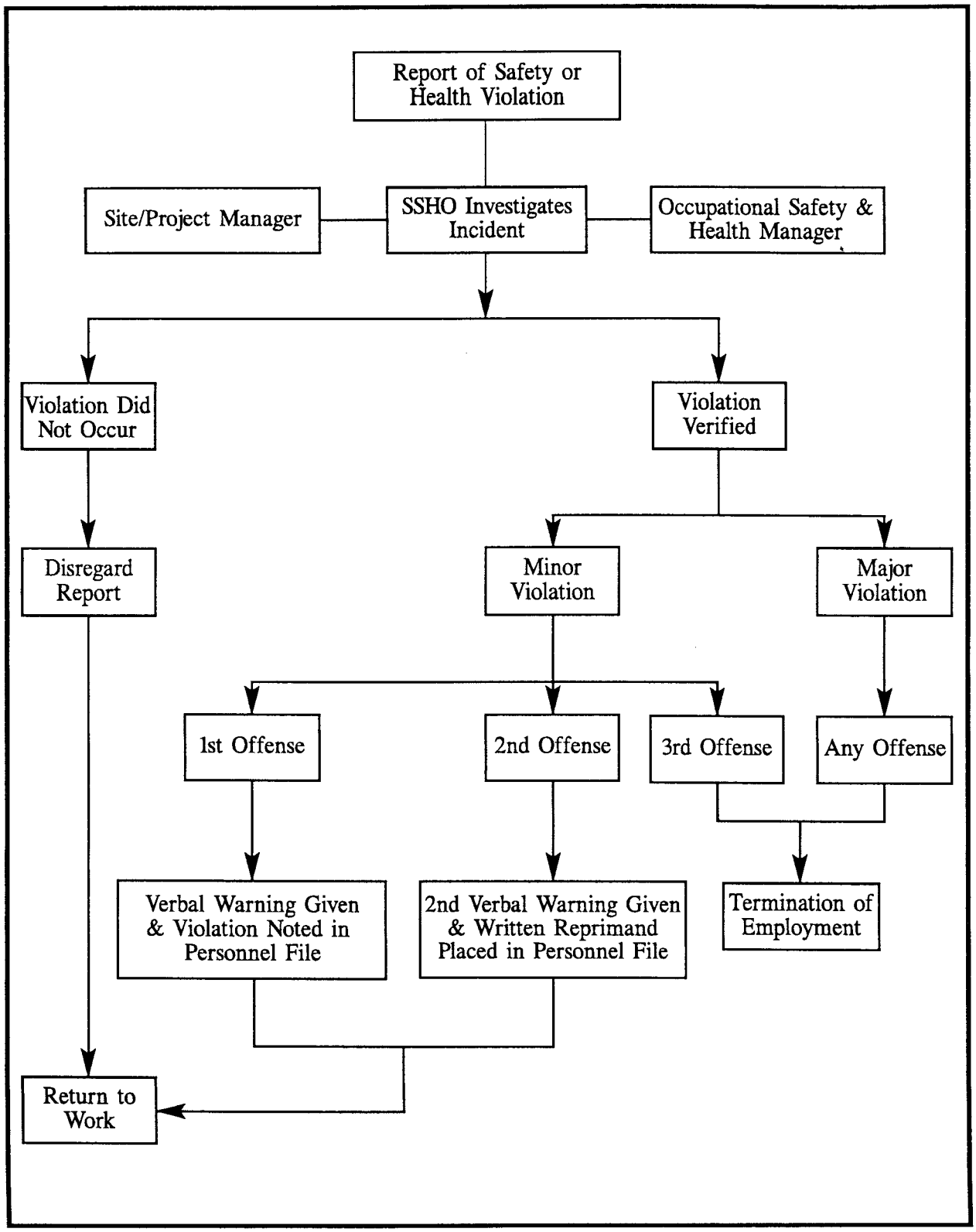
MINOR VIOLATION ISSUES	
First Offense:	A verbal warning will be given to the individual; the offense to be noted in individual's file and supervisor's project file; a discussion with the individual's supervisor or Team Leader will be conducted.
Second Offense:	Written reprimand by the SUXOS will be entered 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 VIOLATION ISSUES	
Any Offense:	Minimum penalty for a major violation will consist of a written reprimand being entered in individual's file and a discussion between the individual and the SUXOS being 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 known or potential violation/noncompliance occurs, the procedures listed below, and those listed in Figure 5-1, the Disciplinary Action Flowchart, 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

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



- 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.

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 uses 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, 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 use any alcohol or controlled substance which could result in impaired performance, except with the knowledge and approval of the OSHM, SUXOS, or 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 Chapter.

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 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 in writing the facts surrounding the conviction and sentence 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.

CHAPTER 6: TRAINING PLAN

6.1 GENERAL

All personnel assigned to, or regularly entering the project site, shall receive the training required by this Chapter prior to participation in assigned site activities which pose a potential for exposure to safety or health hazards. Site personnel shall also receive the training outlined in this Chapter as applicable to their assigned duties. All personnel involved in OE investigation, handling, transportation, or disposal operations shall meet one of the prerequisites listed below:

1. Graduate of the Naval Explosive Ordnance School, Indian Head, Maryland;
2. Graduate of the U.S. 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 hazardous substances or other safety and health hazards must attend and successfully complete 40-hours of off-site HAZWOPER training. This training must be completed, and documentation presented, before personnel will be 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, and emergency response procedures. The three-day on-site training is site-specific and shall be documented using the Three-day On-site Training Form presented in Appendix E of the WP.

6.2.3 Management and Supervisor Training

Managers and other personnel who are directly responsible for the performance of hazardous waste operations, or who directly supervise on-site personnel, shall have eight additional hours of specialized supervisory training as specified in 29 CFR 1910.120(e).

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. Without appropriate documentation, personnel shall be prohibited from entering hazardous areas or engaging in hazardous site activities.

6.3 SITE-SPECIFIC AND HAZARD INFORMATION TRAINING

6.3.1 Site-specific Information Training

Site-specific Information Training shall be used to provide site personnel with important information related to site operations. This training shall apply to the three-day on-site training requirements outlined in section 6.2.2 of this Chapter, and cover site-specific training topics listed below:

1. Site history and background;
2. Site organization and COC;
3. Proper use, maintenance and cleaning of required PPE; and
4. Emergency response procedures, assignments, and contacts.

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) and the training required by EM 385-1-1. This training shall be presented to all personnel involved in site operations and shall be used to inform personnel as to the degree, nature, and level of exposure likely to occur as a result of participation in site activities. This training, as a minimum, the will cover the following topics:

1. A complete description of physical and toxicological properties of any hazardous materials expected to be found on site;
2. A complete description of the physical hazards associated with site operations, including those hazards listed for the site tasks as outlined in Chapter 4 of this SSHP;
3. A description of the biological hazards which may be encountered on site, to include identification and protective methods, and what to do if exposure occurs; and
4. The SWPs or other hazard control techniques that will be used to minimize 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 CARDIOPULMONARY RESUSCITATION TRAINING

At least two full-time EODT site employees shall be trained and certified in first aid and cardiopulmonary resuscitation (CPR). Whenever possible, the SSHO will be one of the two site personnel. The training shall be equivalent to that provided by the American Red Cross. Once trained, these employees will be tasked with the responsibility of 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. All personnel with a potential for occupational exposure to blood or other potentially infectious body fluids shall receive training as outlined in the 29 CFR 1910.1030(g)(2) and EM 385-1-1 and the EODT Bloodborne Pathogens (BBP) Exposure Control Plan. Due to the hazards inherent to sites contaminated with OE, the potential exists for catastrophic injuries. 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 PPE 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 person trained, the training date(s), and the subject of the certification. Affected personnel will be retrained if the level or type of PPE being used changes. PPE training shall address the following topics:

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

6.9 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 containing hazardous substances. This training shall be provided upon initial assignment to the site and prior to use of the product. 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. All HAZCOM training shall comply with the specifications outlined in 29 CFR 1910.1200(h).

6.10 FIRE EXTINGUISHER TRAINING

All EODT site personnel will be trained in the general principles of fire extinguisher selection and 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.

6.11 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 will receive on-site training in the proper implementation of the LO/TO Program. All training shall comply with 29 CFR 1910.147 and Section 12 of EM 385-1-1.

6.11.1 Training of Affected Personnel

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

6.11.2 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 training with locks and tags prior to implementing LO/TO activities; and
6. Procedures for affixing tags and a discussion related to the limitations of tags.

6.11.3 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 using tags that are made of materials which will withstand the environmental conditions encountered on site.

6.11.4 Employee Retraining

Retraining 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.

6.12 ADDITIONALLY REQUIRED OSHA TRAINING

Additional OSHA-required training as deemed necessary by the OSHM or SSHO shall be provided as needed. Such training 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.

6.13 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.

6.14 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 section ***6.14.1,*** and shall be given site and hazard information training IAW the applicable provisions of section ***6.14.2*** listed below.

6.14.1 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 prior to their entry into the site:

1. The EODT SUXOS and SSHO shall be notified of the nature and duration of the visit;
2. Visitors shall sign the Visitor Log and shall record their names, date of visit, and the name of the company or agency represented;
3. Site visitors shall be escorted by an EODT representative at all times while in the area; and
4. Visitors shall comply with the applicable safety and health requirements described below.

6.14.2 Hazard Information Training for Site Visitors

6.14.2.1 Visitors Entering the Support Zone Only

Visitors wishing to observe site activities from the support zone 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.

6.14.2.2 Visitors Entering the EZ

Site visitors wishing to enter an EZ during site operations shall be subject to the same site-specific and hazard information training as specified in section 6.3 of this Chapter. 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. 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 for the general site employees.

6.15 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 and review the following: weather conditions and weather-related hazards; use of safety equipment; emergency notification, evacuation and medical

procedures; accident prevention; and relevant WP/SSHP topics. Records of all Tailgate Safety Meetings documenting date, attendance, and topics covered shall be maintained.

6.16 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.

CHAPTER 7: PPE PROGRAM

7.1 INTRODUCTION

All personnel performing operations on site shall be required to use the appropriate level of PPE, as specified in the CTHA forms found in Attachment 2 of this SSHP. This SSHP makes provisions for use of Level D PPE according to the hazards associated the SOW tasks. In the event that PPE levels must be upgraded due to the detection of airborne chemical hazards, the EODT OSHM will be contacted to determine the PPE that will be used. The PPE levels presented in this Chapter will be reassessed if any of the following occur:

1. Appearance of previously unidentified chemicals or conditions;
2. Significant changes in ambient weather conditions which impact the use of assigned PPE;
3. Introduction of new task or expansion of a previously assigned/evaluated task; and
4. 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 CTHA form, and forward it to the CEHNC KO. Upon approval, the new form will be incorporated as an attachment of this SSHP.

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 head 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, ***for example when around flying dirt/debris, using hand tools, etc.*** The safety glasses selected will provide protection from impact hazards, and, if necessary, ultraviolet (UV) radiation.
4. Personnel using or dispensing products that contain materials that present a skin contact hazard will wear chemical-resistant gloves as defined in the CTHA forms.

7.3 LEVEL D PPE

The PPE listed below will be the initial PPE worn during all site activities. The Level D PPE to be used will consist of the following:

1. Work clothes or coveralls (cotton);
2. Leather work gloves (as needed to protect hands from cuts and abrasions);
3. Work boots;

4. Hard hat (as required, see section 7.2);
5. Safety glasses (as required for eye protection from impact and UV hazards); and
6. Ear plugs and/or muffs (as required by the CTHA forms for protection against high noise hazards).

7.4 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. 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.

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CHAPTER 8: MEDICAL SURVEILLANCE

8.1 INTRODUCTION

To comply with the requirements of 29 CFR 1910.120(f), EODT has established 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 Chapter contains the Site Medical Surveillance Plan (SMSP), that has been derived from the MSP and contains the medical surveillance requirements for EODT personnel involved in operations conducted under this SSHP. Personnel with exposure potential to significant safety and health hazards , or who wear respiratory protection, shall be included in this SMSP.

8.2 PURPOSE AND SCOPE

The purpose of the SMSP is: (1) to assess the individual's health status; (2) to determine the individual's ability to perform work in the levels of PPE required; (3) to establish baseline data for comparison to future medical surveillance and detect changes health status, and (4) to establish site-specific facilities and procedures for emergency and non-emergency medical treatment of personnel injured while participating in site activities. Prior to participating in site operations, personnel meeting one of the criteria outlined in section 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 this project. Those personnel who have not had an occupational physical in the past 12 months shall be given a baseline physical.

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 abovementioned 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 abovementioned 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 section 8.4.

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 potential chemical exposure;
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 examinations which is not readily available to the physician; and
6. A copy of the HAZWOPER 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.

8.6 MEDICAL SURVEILLANCE EXAMINATIONS

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

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 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 screening.

8.6.2 Supplemental Examination

Any site worker who has been injured, received a health impairment, developed signs or symptoms from possible overexposure, or received an overexposure without the use of respiratory protection, shall undergo a supplemental examination. The contents of this examination will be determined by the physician, and the physician shall certify the employee's fitness to return to work prior to reassignment. The physician shall specify in writing any work restrictions required.

8.6.3 Follow-up Health Assessments

The physician will notify EODT, and the employee, if a work-related condition is detected during an examination which requires additional testing or assessment. The physician will also inform EODT and the employee of the nature of the follow-up health assessment. Upon conclusion of the follow-up health assessment, a statement regarding the employee's fitness for work will be provided.

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 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 to ensure the following:

1. Implementation of the SSHP;
2. Establishment of record keeping for all exposure measurements; and
3. Provision of technical expertise for the implementation of the MSP.

8.9 EMERGENCY AND NON-EMERGENCY MEDICAL TREATMENT

Prompt and effective medical treatment for personnel who required either non-emergency or emergency medical attention as a result of injuries or illnesses received during site operations. Both

non-emergency and emergency medical services will be available through the Northeast Alabama Regional Medical Center located in Anniston.

8.9.1 Treatment of Minor Injuries

For minor injuries, the two on-site EODT personnel with first aid/CPR training will provide the initial first aid response. If additional/advanced medical treatment is required, the SSHO will determine if the injured person should be transported using a site vehicle or if an ambulance is required. If the SSHO determines that a site vehicle may be used, a first aid-trained attendant will accompany the driver and injured person. If ambulance service is required, the SSHO will contact the FMC Range Control and will summon the necessary emergency ambulance service. For injuries requiring ambulance transportation, and on-board Emergency Medical Technician (EMT) will provide advanced life support (ALS) and other care as required by the nature of the injury. ***Calls for FMC Range Control medical will be limited to life-threatening situations only.***

8.9.2 Treatment of Serious Injuries

In the event that the SSHO requests ALS, the EODT first aid personnel will provide initial support in an effort to stabilize the injured person while Range Control is notified and the ambulance service is summoned. Once on site, the EMT personnel will not only provide ALS services, but will also determine which hospital to use and the method of transportation to be used. Due to restrictions or other logistical problems, EMT personnel may decide to use ground transport or they may elect to summon a helicopter ambulance for transportation to a Level I Trauma Center.

8.10 ON-SITE MEDICAL SUPPLIES

Portable first aid kits for the treatment of injuries and burns shall be stationed at each work area and in the field support area. Prior to the start of site operations, the contents and number of first aid kits will be approved by EODT's designated physician.

8.11 MEDICAL SUPPORT POLICIES

EODT site personnel will be provided routine occupational medical surveillance by either Dr. Paret or another occupational physician at no cost to the employee. The scope of this SMSP includes efforts to prevent, diagnose, or treat illnesses and injuries related to or obtained from site operations. This SMSP is not designed to provide for the diagnosis/treatment of non-occupational injuries or illnesses, unless immediate medical attention is needed to prevent loss of life, relieve suffering, or preclude permanent injury which would result if treatment were delayed.

CHAPTER 9: MONITORING PLAN

9.1 GENERAL

On-site monitoring will be conducted during specified site activities to evaluate potential physical hazards that may be encountered. 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, to detect and qualify site 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 Chapter or other referenced paragraphs to correct the situation or minimize the exposure.

9.2 MONITORING RESPONSIBILITIES

Monitoring will be conducted by the EODT SSHO or by other 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 - Used as a screening device to measure sound power emitted by a source.
2. Noise dosimeter - Used to calculate the 8-hour time-weighted average (TWA) exposure.
3. Oral thermometer - Used to assess heat stress effects IAW Chapter 10 of this SSHP.
4. Metal Detectors - Used to assist in the performance of the OE clearance.

9.3 MONITORING SCHEDULE

Exposure monitoring will focus on the potential for exposure to physical hazards (including OE) during excavation trenching and characterization sampling. Table 9-1 identifies the type of monitoring equipment to be used, the frequency at which the monitoring will be conducted, monitoring method to be employed, action level, and the action to be taken if the action level is exceeded. The guidelines presented in Table 9-1 represent the initial site monitoring requirements, and monitoring frequency may be escalated or reduced based upon the results of previous monitoring or the detection of factors that indicate a potential for exposure (odors, irritating gases/vapors, etc.).

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TABLE 9-1: SITE MONITORING SCHEDULE AND ACTION LEVELS

Hazard	Monitoring Equipment	Monitoring Frequency and Location	Action Level	Action To Be Taken
Heat Stress	Oral Thermometer	Oral temperature taken at the start of break periods, or as determined by the SSHO, based upon conditions.	1. Oral temperature greater than 99.6°F. 2. Oral temperature greater than 100.4°F.	1. Reduce next work cycle by one third. 2. Halt individuals operations in semi-permeable or impermeable clothing.
Anomalies	Magnetometer	Use Magnetometer to locate and delineate anomalous areas and to spot check for approximate proximity to anomaly during hand- or EMM- digging.	Audible signal ("ring-off") indicates that instrument has detected ferrous materials.	Mark and investigate anomaly. Relative strength of ring-off can be used to determine approximate proximity to the item.
Noise	Sound Level Meter	Conducted during each demolition shot and during the conduct of high noise operations, according to the recommendations of the EODT OSHM.	Sound levels greater than 85 dBA.	Conduct noise dosimetry to determine the 8-hour TWA. Personnel will be issued and use hearing protection devices during the noise dosimetry monitoring.
	Noise Dosimeter	Whenever noise levels in the hearing zone exceed 85 dBA.	None set, follow directions in Action to be Taken column.	Report readings to the EODT OSHM to ensure hearing protection is adequate for the level of noise exposure experienced.