

WORK PLAN

FOR

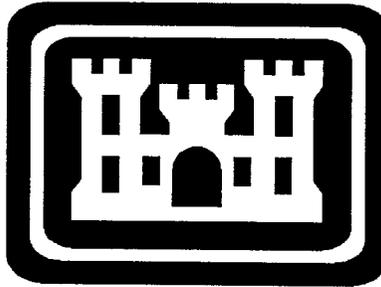
SURFACE TO ONE-FOOT SUBSURFACE ORDNANCE AND EXPLOSIVES CONSTRUCTION SUPPORT

PROPOSED EASTERN BYPASS FORT MCCLELLAN, CALHOUN COUNTY, ALABAMA

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Task Order: 0012

Prepared For:



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Huntsville, Alabama

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ACRONYMS

AR	Army Regulations
ASP	Ammunition Supply Point
ASR	Archive Search Report
BATF	Bureau of Alcohol, Tobacco and Firearms
BCT	BRAC Cleanup Team
bgs	below ground surface
BIP	blow(n)-in-place
BRAC	Base Realignment and Closure
CA	Contract Administrator
CAP	Contractor-acquired property
CEHNC	U. S. Army Engineering and Support Center, Huntsville
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIH	Certified Industrial Hygienist
CTHA	Certification of Task Hazard Assessment Form
CWM	Chemical Warfare Materiel
DID	data item description
DRMO	Defense Reutilization and Marketing Officer
EE/CA	Engineering Evaluation/Cost Analysis
EOD	explosive ordnance disposal
EODT	EOD Technology, Inc.
EPP	Environmental Protection Plan
FAR	Federal Acquisition Regulation
FMC	Fort McClellan
GFE	government furnished equipment
HARC	historic, archeologic and cultural
IAW	in accordance with
KO	Contracting Officer
LS&M	location, survey and mapping
MHS	Material Handling Specialist
MPM	Most Probable Munition
NAD	North American Datum
NCP	National Contingency Plan
NEW	net explosive weight
OD	open detonation
OE	Ordnance and Explosives
OFD	One Foot Depth



ACRONYMS (Continued)

ORS	ordnance related scrap
OSHA	Occupational Safety and Health Administration
OSS	On-site Safety Specialist
PM	Project Manager
PMP	Property Management Plan
PO	Purchase Order
PPE	personal protective equipment
PWD	public withdrawal distance
QA	Quality Assurance
QC	quality control
QCI	QC inspection
QCP	QC Plan
QP	Quality Program
SOP	Standard Operating Procedure
SREP	Site Representative
SSHP	Site Safety Health Plan
SUXOS	Senior UXO Supervisor
TO	Task Order
USACE	U. S. Army Corps of Engineers
UXO	Unexploded Ordnance
UXOT2	UXO Technician II
UXOT3	UXO Technician III
UXOQCS	UXO Quality Control Specialist
UXOSO	UXO Safety Officer
WDCMP	Work Data and Cost Management Plan
WP	Work Plan



CHAPTER 1: GENERAL

1.0 INTRODUCTION

This Work Plan (WP), with its associated Appendices, describes the procedures, operational sequence and resources EOD Technology, Inc. (EODT) will utilize while conducting an Unexploded Ordnance (UXO) One Foot Depth (OFD) Clearance *at specified sites* of Fort McClellan, Alabama. Authorization for performance of this work is contained in Task Order (TO) No 0012 under Contract DACA87-97-D-0005, which was issued to EODT by the U. S. Army Engineering and Support Center, Huntsville (CEHNC), on December 13, 1996.

1.1 OBJECTIVE

The TO objective is to perform a surface and sub-surface clearance to a depth of one foot, of all UXO and inert ordnance and all metallic debris greater than three inches in any dimension, in a known Ordnance and Explosives (OE) impact area within the proposed Eastern Bypass area at the Ft. McClellan Army Depot, Ft. McClellan, Alabama (*FMC*). This clearance is an interim action in support of preliminary construction activities to be conducted in the Eastern Bypass.

1.2 SITE LOCATION

FMC is located northeast of the city of Anniston, Alabama in Calhoun County, in the northeastern portion of the state. Birmingham, Alabama is 62 miles to the west on I-20. State Route 21 borders *FMC* on the west with Jacksonville and I-40 to the north and the Talladega Forest to the east.

1.3 SITE HISTORY

Fort McClellan has been used for the training of artillery and other troops, to include the National Guard, from approximately 1912 until today. The history of Fort McClellan, as described in the Archives Search Report (ASR) indicates that training and demonstrations utilized all mortar, antitank 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. In 1979, the Chemical Corps School was re-established along with a basic training brigade.

1.4 SITE TOPOGRAPHY

The Eastern Bypass is located in terrain which ranges from relatively flat to steep hills bordering on the Blue and Iron mountains. There are numerous ravines and gulleys and most areas are heavily wooded with pine and oak. Some areas are vegetated with vines and brush and most of the area is rocky.



1.5 EASTERN BYPASS

The Eastern Bypass route begins on the western boundary of the *FMC* in the vicinity of Summerall Gate then heads due east approximately one mile, and turns due south for about 3.5 miles to the southern boundary of *FMC*. The bypass route passes through an OE Impact Area in the vicinity of Iron Mountain. *The area north of the impact area extending to Summerall Gate was used as a training area. A variety of OE training items such as 60mm practice mortars, 2.36" practice rockets, smoke grenades, M8 anti-personnel mines, and practice anti-tank mines were used in this area. The portion of this area through which easements for the bypass passes, consists of approximately 30 acres.*

1.6 PREVIOUS OE RELATED ACTIVITIES

An Environmental Evaluation/Cost Analysis (EE/CA) is currently ongoing. *An ASR was conducted in 1996, with ground reconnaissances being conducted by CEHNC in June of 1997 and Zapata Engineering in August of 1998.*

1.7 PURPOSE

The purpose of this plan is to delineate the management structure, operational plan, quality control (QC) procedures, safety requirements and environmental precautions that EODT will utilize during the performance of work associated with TO 0012. The WP encompasses all aspects of the work to be conducted at the *FMC* and includes all applicable requirements stated in DD Form 1664 of the basic contract. All site activities will be conducted in accordance with (IAW) this WP and any deviation from this plan will require the prior approval of both the EODT Project Manager (PM) and the CEHNC.

1.8 WORK PLAN ORGANIZATION

To accommodate the requirements of the SOW and DD Form 1664, the WP has been divided into Chapters and Appendices, with the required topics addressed in separate Chapters, and the Appendices used to organize associated documents and resources. In addition, a Table of Contents and a list of Acronyms have been presented in the front of this document for reference and assistance with the location of pertinent chapters and appendices.

1.9 CHANGES TO THE WORK PLAN

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



- As previously stated, under no circumstances will any change to the approved WP be executed without prior approval of the EODT PM and CEHNC.
- The Senior UXO Supervisor (SUXOS) will notify the on-site CEHNC Site Representative (SREP) and the EODT PM of the required changes and the rationale for the changes.
- Recommended changes will initially be conveyed verbally with written changes to follow.
- Should the recommended changes involve safety or quality issues, the task(s) affected by the changes will be suspended until written procedures are developed by EODT and approved by the CEHNC, unless directed otherwise by the CEHNC.
- The EODT PM, SUXOS, Site Safety and Health Officer (UXOSO), or Quality Control Specialist (UXOQCS), as appropriate, will develop the changes in conjunction with the CEHNC.
- Once approved, the changes(s) will be incorporated into this WP and site personnel briefed prior to their implementation.

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CHAPTER 2: TECHNICAL MANAGEMENT PLAN

2.0 INTRODUCTION

This plan details the approach, methods, and operational procedures to be implemented at *FMC* by EODT. The plan describes team composition; activities to be conducted and outlines and methodologies to be employed. To complete the TO 0012 SOW, EODT on-site personnel will complete planned technical approach identified in activities identified below.

2.1 GENERAL

The work conducted under this SOW will be performed in a manner consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 104, and the National Contingency Plan (NCP) Sections 300.120(c) and 300.400(e). In addition 29 CFR 1910.120 and pertinent CEHNC documents, such as the Safety and Health Requirements Manual, EM385-1-1, and *FMC* regulations 350-2 and 700-1 apply.

2.1.1 Chemical Warfare Materiel Discovery

Even though *FMC* is a known chemical training facility, EODT does not expect to encounter any Chemical Warfare Materiel (CWM). In the event CWM is encountered, EODT will withdraw from the site in an upwind direction and immediately notify the CEHNC On-site Safety Specialist (OSS), who will in turn notify the appropriate military unit. In the interim, EODT personnel will secure the site and place two UXO technicians in an upwind position with an unobstructed view of the suspected CWM. Upon arrival of the military unit, EODT will assist as directed.

2.1.2 UXO Contingencies

In the event a UXO item cannot be destroyed on site, if safe to move, it will be transported to a location to be determined by *FMC* range personnel, CEHNC and EODT. If the item cannot be moved, EODT will request guidance from CEHNC.

If a UXO is recovered which cannot be properly identified, EODT will request pertinent 60 series publications from the OSS. If it still cannot be identified from the 60 series publications, EODT will request assistance from the OSS.

2.1.3 Grid Layout and Search Sequence

The Map in Appendix C shows the approximate location of the 100-acre easement, which is approximately 2.08 miles long and 200' - 600' wide. The 550-100' x 100' grids will generally run east-west. Prior to



the subsurface clearance, the surveyors will mark the boundaries of the easement and place a marker or paint a spot on a tree every 30' on both the east and west boundary.

The two sweep teams will start in the center of the easement as shown in Figure 2-1 and proceed one in a northerly direction and one in a southerly direction, ensuring a 200' separation **which will be accomplished by staggering the start**. The rationale for the center start is EODT is to continue its subsurface sweep until such time as a 100' area is clear of any OE or ordnance related scrap (ORS).

2.1.4 Changed Site Conditions

In the event site conditions change due to weather, fire, etc., EODT will evaluate the situation and submit recommendations for changes to the SOW and WP to the Contracting Officer (KO). EODT will make every effort to avoid any changes which impact price and schedule unless either can be reduced.

2.2 PROJECT ORGANIZATION

The project team consists of the CEHNC PM (David Skridulis), the CEHNC OSS, the CEHNC Engineer, *the FMC Base Realignment and Closure (BRAC) Cleanup Team (BCT)* and EODT. Figure 2-2 depicts the overall project organization, and shows the key EODT personnel and both project and on-site organizational details.

2.3 EODT PERSONNEL RESPONSIBILITIES

The following paragraphs describe the specific responsibilities of the EODT personnel shown on the project organizational chart. All EODT personnel assigned to this project meet the CEHNC training and experience requirements for the position to which they are assigned. In addition to the project management responsibilities presented below, additional QC and safety responsibilities have been given to specific key personnel as defined further in this WP and Site Safety Health Plan (SSHP) presented in Appendix A. Resumes for key EODT personnel are presented in Appendix F of this WP.

2.3.1 Program Manager/Project Manager

Mr. Michael Short is the EODT Program Manager for this project and is responsible for the overall implementation of this project. In this role, Mr. Short will be responsible for the management of the EODT resources needed for the implementation of site operations. Mr Short will also be the EODT PM for this project. He has substantial experience in the management of U. S. Army Corps of Engineers (USACE) projects, including over 30 years of explosive ordnance disposal (EOD) and UXO experience that includes 16 years of experience in project planning, design, implementation and management. As the PM for this project, Mr. Short will have the following management responsibilities:

FIGURE 2-1. PROPOSED SWEEP PLAN

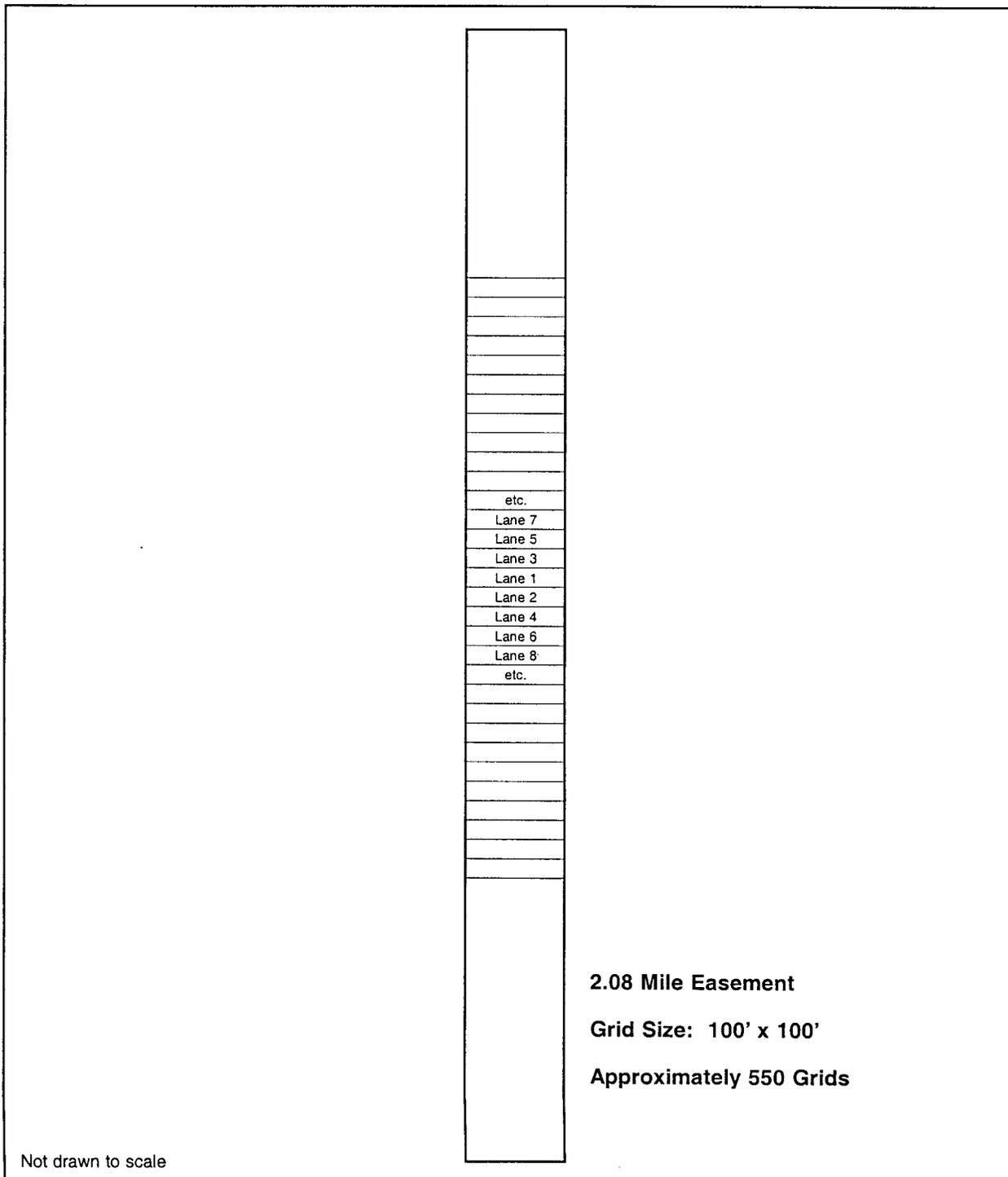
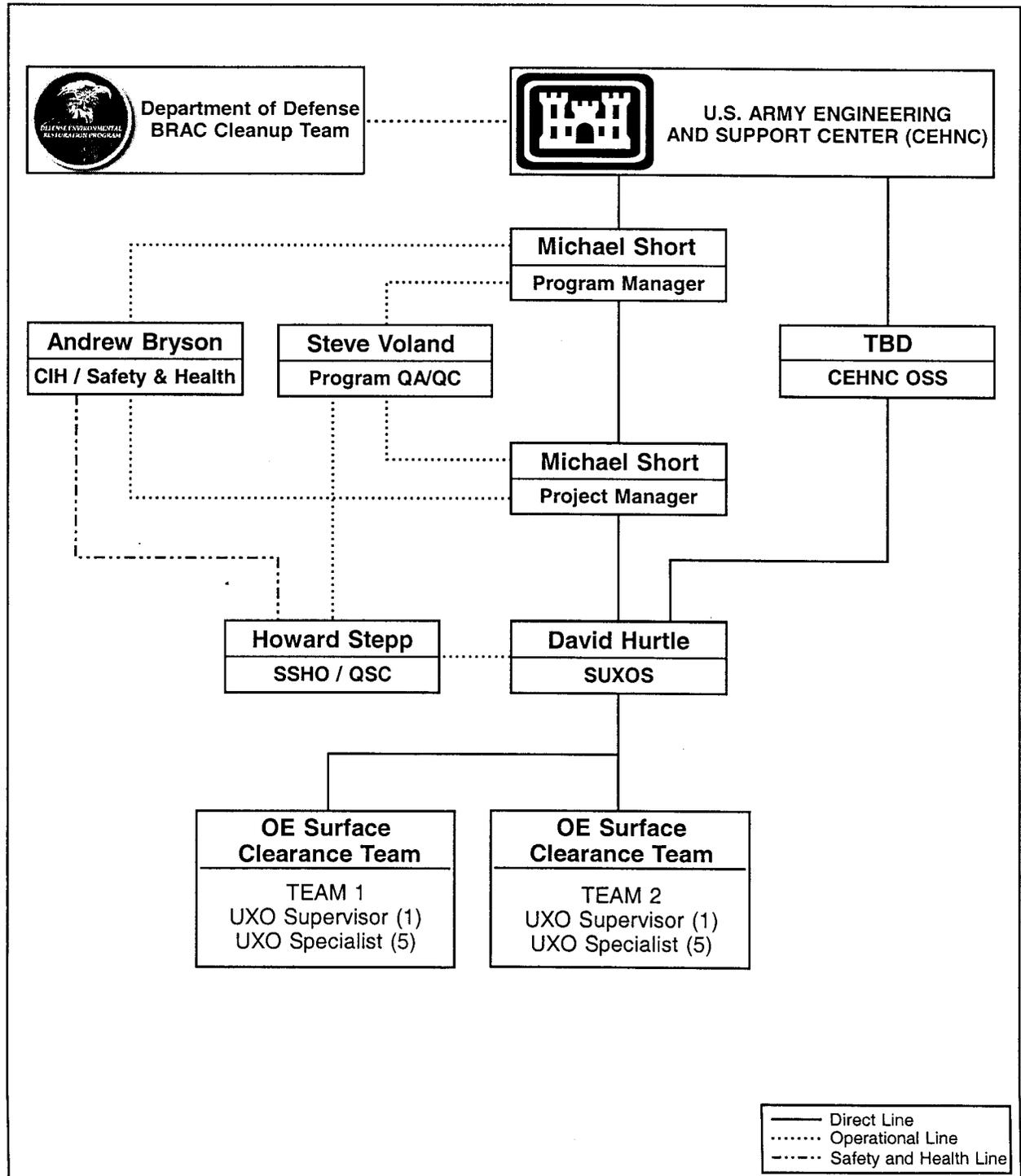


FIGURE 2-2. PROJECT ORGANIZATION



- Managing the funding, manpower, and equipment necessary to conduct site operations;
- Acting as the point of contact for CEHNC project personnel, and communicating with the CEHNC through the CEHNC PM;
- Overseeing the overall performance of all EODT individuals assigned to the project;
- Reviewing the SOW and ensuring that necessary elements are addressed in project plans; and
- Coordinating all contract and subcontract work and controlling contractual costs and schedules.

2.3.2 Senior UXO Supervisor

Mr. David Hurtle, the project SUXOS, is a master EODT technician and a graduate of the Basic and Advanced Naval EOD School, Indian Head, Maryland. Mr. Hurtle has over 16 years combined military and civilian EOD experience. As the SUXOS, Mr. Hurtle will be responsible for the daily supervision of all site activities, to include the following;

1. Managing the EODT on-site manpower and equipment necessary to conduct site operations;
2. Detecting and identifying any problem area, and coordinating with the EODT PM to institute corrective measures;
3. Ensuring that all site activities are conducted according to this WP and relevant CEHNC and *FMC* regulations;
4. Acting as the lead technical consultant for all on-site OE related matters; and
5. Interfacing with, and relaying concerns to, the CEHNC OSS; and
6. Coordinating with range control on a daily basis.

2.3.3 Occupational Safety and Health Manager

Mr. Andrew Bryson is the EODT OSHM. He is a board Certified Industrial Hygienist (CIH) with over eight years of industrial hygiene, safety, and hazardous waste experience, including over five years of experience working on projects with OE contamination. During the performance of this project, Mr. Bryson will provide occupational safety and health management duties performed by Mr. Bryson's **experience is** presented in detail in the SSHP found in Appendix A of this WP.

2.3.4 UXO Site Safety and Health Officer (UXOSO)

Mr. Howard Stepp will be the SSHO for this project. Mr. Stepp has more than 22 years of combined military and civilian EOD/OE experience. He is qualified as a UXO Technician III (UXOT3), is a graduate of the U. S. Navy EOD School, Indian Head, Maryland, and has completed all training required by OT-015 for the position of a UXOSO. In this role, Mr. Stepp will be responsible for the operational items listed below, as well as the safety and health responsibilities listed in Chapter 2 of the SSHP.

1. Issuing and/or approving "STOP WORK" orders for safety and health conditions;

2. Identifying and evaluating any known or potential safety problems that may interfere with or interrupt site operations and endanger site personnel;
3. Consulting with the SUXOS and identifying with the implementing of any necessary safety-related corrective actions;
4. Coordinating with the CIH for the implementation of the safety requirements in the SSHP; and
5. Ensuring that all site activities are conducted IAW this WP and relevant Federal, state and local regulations.

2.3.5 UXO Quality Control Specialist

Mr. Howard Stepp will be the UXOQCS for this project. Mr. Stepp has over 22 years of experience in military EOD and civilian UXO operations. He is qualified as a UXOT3, is a graduate of the U. S. Navy EOD School, Indian Head, Maryland, and has completed all training required by the CEHNC for the position of a UXOQCS. As a project UXOQCS, Mr. Stepp will be responsible for ensuring that all site operations are conducted IAW recognized performance criteria and he will be responsible for checking all field work prior to CEHNC Quality Assurance (QA) inspections. chapter 7 of this WP contains the specific listing of Mr. Stepp's QC responsibilities and the performance criteria which will be met during this project.

2.3.6 Quality Control Manager

Mr. **Steve Volland** will be the QCM for this project. As the QCM, Mr. **Volland** will have the responsibility of ensuring that all site deliverables meet the requirements of the SOW and the QC Plan (QCP) presented in Chapter 11 of this WP.

2.4 METHOD AND PROCEDURE

EODT will accomplish the ordnance work in a systematic manner ensuring the most cost effective use of personnel and equipment. The expeditious and safe conduct of OE operations is the goal which will ensure a cost effective project, meeting or exceeding the requirements of the SOW. Table 2-1 illustrates the daily schedule to be employed. Methods and procedures employed on previous similar projects will be employed.

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TABLE 2-1: TYPICAL DAILY SCHEDULE

TIME	ACTIVITY	LOCATION
0600-0630	Tailgate Safety & Operations Briefing Equipment Load Out	Vehicle Tailgate Iron Mtn. Road
0630-0830	Conduct Field Operations	Assigned Work Areas
0830-0845	Morning Break	Iron Mt. Road
0845-1045	Conduct Field Operations	Assigned Work Areas
1045-1115	Lunch	Iron Mt. Road
1115-1315	Conduct Field Operations	Assigned Work Areas
1315-1330	Afternoon Break	Iron Mt. Road
1330-1600	Conduct Field Operations	Assigned Work Areas
1600-1615	Stop Operations/Return to Iron Mountain Road	Iron Mt. Road
1615-1630	Clean and Store Equipment at Iron Mountain Road	Vehicle Tailgate

2.5 PROJECT APPROACH AND OPERATIONAL SEQUENCE

EODT will perform site operations at *FMC* in a systematic manner using proven operating techniques and methods. Based on EODT's experience with OFD OE removal operations and information obtained during the site visit, the site operations specified in the TO will be executed in four phases. These phases, and the tasks associated with each phase, are listed below and are discussed in detail in paragraphs 2.6 - 2.9.

Phase 1 - Pre-mobilization

- Procure, package, and ship equipment to the site and purchase equipment locally;
- Coordinate with land survey subcontractor to ensure availability of personnel and equipment, and commence survey of area boundaries; and
- Coordinate with local agencies and contacts.

Phase 2 - Mobilization

- Mobilize personnel and remaining EODT equipment to the *FMC* site;
- Conduct site-specific and public relations training; and
- Conduct on-site coordination with local agencies.



Phase 3A - OFD Clearance

- Set up work zones *and remove vegetation if required*;
- Conduct visual, magnetometer assisted surveys of approximately 378 grids measuring 30' by 200' - 600' within the 100-acre site;
- Investigate all OFD items and locate all hazardous OFD OE items; and
- Dispose of all OE via blow-in-place (BIP) or through consolidation of those items found unfuzed and safe to move.

Phase 3B - Range 16 OE Support

- *Conduct any necessary site preparation;*
- *Locate and excavate anomalies; and*
- *Dispose of hazardous OE.*

Phase 4 - Project Close-out

- Break down site;
- Close accounts;
- Remove equipment;
- Demobilize workforce; and
- Generate the Removal Report.

2.6 PRE-MOBILIZATION

EODT will commence pre-mobilization operations upon receipt of the written Notice to Proceed from the KO. During this phase, EODT will systematically build and establish its operational capability for the *FMC* OFD clearance.

During the development of this WP, EODT has assessed equipment, personnel and subcontractor requirements for this project and has arranged for delivery of the same to the site, corresponding with the arrival of the site personnel. Project equipment will come from EODT sources, local leases/purchases, and Government Furnished Equipment (GFE) from *FMC* if available. All equipment, regardless of source, will be checked to ensure its completeness and operational readiness. Coordination of equipment acquisition will include communicating with CEHNC personnel to determine the availability of GFE, and the requisitioning of equipment from commercial sources. During pre-mobilization, the SUXOS will schedule the subcontractor which EODT plans to use to assist in the performance of location, survey and mapping (LS&M).

2.7 MOBILIZATION

EODT will schedule the arrival of the work force in a manner that is most effective and designed to allow for immediate productivity. All EODT and subcontractor personnel mobilized to the site will meet Occupational Safety and Health Administrator (OSHA) hazardous waste operations training and medical surveillance requirements as specified in the SSHP. As part of the mobilization process, EODT will perform site-specific training for all on-site personnel assigned to this project. The purpose of this training is to ensure that all on-site personnel fully understand the operational procedures and methods to be used by EODT at *FMC*, to include individual duties and responsibilities, and all safety and environmental concerns associated with operations. Any personnel arriving at the site after this initial training session will be trained as they arrive. Training will be conducted by the SUXOS/UXOQCS and the UXOSO, and will include the topics identified below.

1. Field equipment operation, to include the safety and health precautions and field inspection and maintenance procedures that will be used.
2. Relevant sections of this WP and the SSHP, as they relate to the tasks being performed.
3. Site-, task-, and hazard-specific training to ensure personnel are aware of potential site and operational hazards.
4. Conduct public relations training, ensuring that personnel will not make any public statements to the media without prior coordination with and approval of the CEHNC Public Affairs Office and *FMC*.
5. Environmental concerns and sensitivity, to include endangered/threatened species and historic, archeologic and cultural (HARC) issues.
6. Additional OSHA or CEHNC required training, as required by the SSHP.
7. UXO refresher training designed to address the ordnance that may be encountered on site, including identification features, hazards, and disposal methods.

2.7.1 Set-up Support Facilities and Assemble Equipment

It is EODT's intention to use, to the maximum extent possible and allowable, any existing facilities whose location logistically supports site operations. During the site visit, EODT, CEHNC, and *FMC* Ammunition Supply Point (ASP) personnel met to discuss the requirement for the use of two magazines in the *FMC* ASP. Ft. McClellan Regulation 700-1 with change 1, ASP operating procedures will apply to the receipt, storage, issue and transport of explosives.

All equipment will be inspected as it arrives to the site to determine if it received any damage during shipping and to ensure it is in proper working order. Any equipment found damaged or defective will be returned to the point of origin and a replacement will be secured. All instruments and equipment that requires routine maintenance and/or calibration will be checked initially upon its arrival and then it will be

checked prior to its use each day. This system of checks ensures that the equipment is functioning properly. If an equipment check indicates that any piece of equipment is not operating correctly, and field repair cannot be made, the equipment will be tagged and removed from service and a request for replacement equipment will be placed immediately. Replacement equipment will meet the same specifications for accuracy and precision as the equipment removed from service. As part of the initial equipment set-up and testing, EODT will also install and test its communication equipment, to include:

- Hand-held five-watt portable radios, with a range of five-to-eight miles that will be used to maintain communications between the SUXOS and the field teams. ***An EODT radio with charger will be provided to the CEHNC OSS.***
- EODT will use a cellular telephone, acquired through a local cellular service (very high frequency band 150-174), as back up communications between the SUXOS and the field teams.

2.7.2 Coordinate with Local Agencies

During mobilization, the SUXOS and UXOSO/QCS will coordinate with local services and agencies to ensure the availability of resources that may be needed during the course of the project. At a minimum, coordination will be made with the following agencies and services:

- CEHNC, to reconfirm priorities/schedules, and to identify any changes in the SOW;
- Local vendors and suppliers;
- ***The Northeast Regional Medical Center;***
- The ***FMC*** Range Control Officer;
- ***FMC*** ASP and Provost Marshal's Office (PMO);
- ***FMC*** fire, and police agencies; and
- ***FMC BRAC Environmental Coordinator (BEC).***

2.8 GENERAL OE REMOVAL ACTIVITIES

2.8.1 Introduction

Upon completion of mobilization activities, EODT will commence the OE activities as specified in the SOW and coordinated by the SUXOS and the CEHNC OSS. The subparagraphs presented below describe the general work practices that EODT will employ during all operations with the potential for personnel exposure to OE hazards. The task-specific procedures for the subsurface clearance are presented in paragraph 2.9 of this Chapter.

2.8.2 Compliance with Plans and Procedure Changes

All personnel will strictly adhere to approved plans and established procedures. If operational parameters change and there is a corresponding requirement to change procedures or routines, careful evaluation of such changes will be conducted by on-site supervisory personnel in close liaison with the CEHNC OSS.

Any new course of action, or desired change in procedures, will be submitted in writing, with justification, for approval. Approved written changes will be implemented in a manner that will ensure procedural uniformity and end-product quality on the part of EODT. If approved by the OSS, EODT personnel may initiate changes in the field prior to formal approval of the written changes if verbal approval is given by the CEHNC PM and OSS, and the SUXOS documents the verbal approval in the site log, with the OSS initialing the log entry.

2.8.3 General Site Practices

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

1. **Work Hours:** Operations will be conducted only during daylight hours, which is defined as 30-minutes after sunrise until 30-minutes prior to sunset. EODT intends to work four 10-hour days with five 8-hour days as an option. In no case will personnel work more than ten hours in any day, or more than forty hours in any week, and a minimum 48-hour rest period will be provided before the start of the next work week.
2. **Basic UXO Procedures and EODT Standard Operating Procedures (SOPs):** During all operations with the potential for encountering UXO/OE, EODT personnel will strictly adhere to the general UXO procedures outlined in the CEHNC Safety Concepts and Basic Considerations for Unexploded Ordnance (UXO) Operations, found in **Appendix G** of this WP.
3. **Site Access:** EODT will control access into all work areas, with access limited to only those personnel required to accomplish the specific operations or to those personnel who have a specific purpose and authorization to be on the site. No hazardous OE operations will be conducted when non-UXO or unauthorized personnel are inside the defined work zone.
4. **Handling of OE:** OE items will be handled by qualified UXO personnel only. Non-UXO site personnel will be instructed and closely supervised to ensure they do not handle any OE. ORS may be handled by non-UXO personnel only after it has been inspected by UXO personnel and been classified as safe to handle. In the event an item is encountered that precludes on-site detonation, the on-site CEHNC OSS will be notified.
5. **Visitor Safety:** All visitors entering the site will report to the SUXOS and sign the visitor's log. All site visitors shall also receive a safety briefing, as outlined in the SSHP, and visitors will be escorted at all times by UXO personnel when inside a UXO/OE area.

2.8.4 Safety and Operational Training and Briefings

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

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

2.8.5 Manpower Requirements

EODT has structured its manpower requirements to meet the operational needs of this Task Order and has specifically designed the manpower structure to minimize associated costs while providing an effective blend of technical talents and skills for executing the Task Order. Further, EODT chose the presented labor distribution to allow for maximum team flexibility which will enhance EODT's ability to meet the projected

production rates. The overall labor category requirements for the full-time on-site personnel are presented in Table 2-2. Table 2-3 shows the composition of the sweep teams.

TABLE 2-2: FULL-TIME EODT ON-SITE PERSONNEL

LABOR CATEGORY	QUANTITY
SUXOS	1
UXOSO/QCS	1
UXOT3	2
UXOT2	10
TOTAL	14

TABLE 2-3: SWEEP TEAMS

	TEAMS 1 & 2
	UXOT3 - 1
	UXOT2 - 5
TOTAL	6
The UXOSO/QCS will alternate between the teams - observing and conducting audits.	

2.8.6 Ordnance Locator to be Used

EODT UXO personnel will use the Whites Spectrum XLT to assist them in the location of subsurface ferrous anomalies. The instrument was field tested during the site visit and found to be capable of discriminating ferrous rock from ordnance. Iron Mountain is aptly named.

2.8.7 Magnetometer Response Checks

According to the SOW, magnetometers used on site must be able to, as a minimum, detect a MKII hand grenade at a depth of one foot below ground surface (bgs). To ensure this, the UXOQCS will establish a geophysical test plot where several inert MKII grenades (or similar inert items) will be buried to a depth of one foot bgs. Prior to use, EODT magnetometer personnel will first adjust their magnetometers IAW manufacturer's guidelines and then the magnetometers will be response checked against the known sources to determine their standard indication and ensure they are capable of detecting the sources. This type of

response check will be conducted and documented each day for each magnetometer prior to their use in the field. If an instrument does not respond correctly, and field maintenance fails to correct the problem, that instrument will be tagged as inoperable and removed from service. Replacement equipment will be tested in the same manner as outlined above.

2.8.8 Location, Surveying and Mapping of the Site Boundary and Grid Corners

The LS&M team will consist of two survey teams, with each team consisting of a surveyor, rodman, and a UXO technician. The LS&M teams will survey and map the boundaries of the 100-acre project site and the corners of the approximate 550 grids measuring 100' x 100'. The LS&M team will report directly to the SUXOS and will keep the SUXOS apprised of their progress. The teams will use instrumentation with a horizontal measurement accuracy to within one foot. The site boundary and the grid corners will be marked at the corners using wooden stakes or other visible temporary marker, and each grid corner will be given a unique identifier to be used for future mapping. A magnetometer check will be made at each location where a stake, or other marker, is to be set to ensure the location is free of anomalies. Any surface OE encountered by the LS&M team will be flagged, the general location noted, and the OE reported to the SUXOS at the close of operations daily.

2.8.9 Vegetation Removal

Significant vegetation removal within a majority of the 100 acres will be required for site personnel to successfully complete the subsurface clearance. In these areas, the use of machetes may be needed to clear a path or search lane. Only machetes with wrist lanyards will be used and caution will be exercised when swinging a machete to ensure there is no one in the "line of fire."

For the remaining areas, it is anticipated that vegetation clearing will be conducted using weed eaters with blades, chain saws, and machetes. All vegetation removal activities will be conducted IAW the EPP in Chapter 12 of this WP, and the SSHP found in Appendix A of this WP. The only vegetation to be removed will be that necessary to conduct the magnetometer surveys and allow access to the site. Grass and brush will be removed to within at least six inches of the surface and tree limbs will be removed to a height of six feet. No trees greater than three inches in diameter will be cut down without the prior approval of the CEHNC. UXO encountered during vegetation removal will be flagged with two crossed pin flags, and reported to the SUXOS.

2.8.10 Site Control During OE Operations

Prior to initiation of on-site OE operations, all nonessential personnel will be removed to a location outside the public withdrawal distance (PWD) which is equal to the safe blast and fragmentation distance for the Most Probable Munition (MPM). For the purpose of this WP, an OE operation is defined as any activity conducted where personnel are excavating, investigating, inspecting or handling any OE or explosive materials. Additionally, the MPM is the OE item with the greatest PWD based upon the blast and fragmentation distances and which is most reasonably expected to be found in the *FMC* bypass. For the *FMC* subsurface clearance, a 60mm high explosive mortar has been chosen as the MPM, based upon the data contained in the SOW. In the event that an item with a larger PWD is located during on-site activities, the CEHNC OSS will be notified and the CEHNC-ED-CS will be contacted to calculate the new PWD.

During OE operations, the PWD will also be the boundary for the exclusion zone (EZ). Once an OE operation commences in an area, only those UXO-qualified personnel involved in the on-site activities will be permitted into the PWD. Prior to commencing demolition operations, access roads to the site(s) will be physically blocked using road blocks and hazard signs. The SUXOS will coordinate the blocking of Iron Mountain Road with Range Control, if required. Avenues of ingress will not be opened without the express permission of the SUXOS. A constant state of vigilance will be maintained by all personnel to detect any intrusion into the PWD. Only those personnel authorized to be within the PWD will be permitted in the area during excavation and anomaly investigation operations.

2.9 SUBSURFACE OE REMOVAL OPERATIONS

2.9.1 Subsurface Clearance Survey

For the purpose of this project, the term subsurface will include those items that are up to one foot bgs. *Each of the approximate 550 grids within the 100-acre FMC site, and the Range 16 grid, will be surveyed using magnetometers and the procedures listed below. Once vegetation removal has been completed within a grid, and all other preparations have been made, each team will conduct a magnetometer survey to locate anomalies within the grid. Each grid within the 100 acres shall be surveyed using the procedures listed in this paragraph. Each OE removal team will have a Team Leader who will report directly to the SUXOS and will maintain a log of the team's activities.*

- 1) *Search Lanes. Each grid will be subdivided into individual search lanes. These lanes will be five foot wide paths adjacent to, and parallel to, each other. The team personnel will use a system of lines and cones to establish and mark the search lanes.*

- 2) *Grid Search. This activity will be performed using a sweep line comprised of five magnetometer operators supported and supervised by the UXO Tech III. After the individual search lanes have been established, the UXO Tech III will direct personnel to begin searching each lane with a magnetometer. During the forward movement, the searcher will move the magnetometer from one side of the lane to the other, with both the forward movement and the swing of the magnetometer performed at a pace that sweeps the width of the lane and allows the instrument to respond appropriately to subsurface anomalies. Whenever an anomaly is encountered, its location will be marked with a pin flag, or the item may be investigated at the time of discovery. This decision will be made by the UXO Tech III and will be based upon grid conditions, and anomaly density. Throughout this survey operation, the UXO Tech III will closely monitor individual performance to ensure that these procedures are being performed with due diligence and attention to detail.*

- 3) *Excavation of Flagged Items. All anomalies will be excavated to allow for a determination of their identity. Surface and near-surface anomalies may be excavated using hand tools such as a hand shovel /trowel or heavy equipment (e.g., backhoe) may be necessary. This will be especially true in the Range 16 area where anomalies may be excavated to four feet or more. If heavy equipment is needed for these excavations, the SUXOS will coordinate its acquisition and use by each investigation team. When using heavy equipment (operated by a qualified UXO Technician II) the earth overburden will be removed in one-foot lifts. The location of the anomaly will be redefined with the magnetometer after each one foot lift. When the excavation is believed to be within one foot of the source, explorative excavation will be conducted using hand tools only. This process will continue until the source of the anomaly has been uncovered and identified. In the event that a backhoe is used for anomaly excavation, the EODT SOP for heavy equipment operation located in Appendix G of this WP will be used.*

- 4) *Anomaly Identification. For all inspections, the initial anomaly inspection where the type and condition of the item is established will be followed by an inspection conducted by a UXOT2. In the event that both UXOT's have identified the item as being a UXO, the UXOT3 will confirm and record the items identity. Those items that are identified as being OE will be further inspected to determine if they are fuzed and/or safe to move. Those items that are fuzed will be marked with red, crossed pin flags and disposed of by BIP only, as will any item that is identified as unsafe to move. Only those items that are positively identified as being unfuzed and safe to move may be removed from their location and consolidated for disposal. The BIPs or consolidated shots for each grid*

will be conducted before the team leaves the grid, or at the end of each day. *The location, as well as the description of each hazardous OE item will be noted during anomaly investigations using the EODT OE operations grid map presented in Appendix E of this WP. The location of each hazardous OE item will be measured (X, Y) to within one foot from one of the grid corners, with the location and measurements recorded as outlined below.*

- 5) Recording. The UXOT3 will record the following data for each UXO item encountered.
 - The location of the item (X, Y, Z) using the EODT OE operations grid map presented in Appendix E of this WP.
 - A description of the anomaly (i.e., 2.36" rocket, 60mm mortar, etc.); and
 - The condition of the item (i.e., fused, damaged, inert, etc.).

- 5) Equipment. The equipment to be utilized for this activity include:
 - Magnetometers to be used by sweep personnel;
 - Paint or tape for delineating the sweep lane's outer limit;
 - Colored pin flags that will be used to mark surface items and OE;
 - Miscellaneous common hand tools; and
 - Forms and logbooks to record activities.

2.9.2 Disposal Operations

All hazardous ORS containing explosives will be disposed of by detonation utilizing standard demolition procedures as outlined in TM 60A-1-1-31 and the EODT SOP for Disposal/Demolition Operations, found in Appendix G of this WP. The range limit has been established as **25 lbs tamped**. This limit will be strictly observed and in fact lowered if the shot is within close proximity to a roadway or the size of the shot could cause damage to the facilities in the area. The following paragraphs describe in general the procedures EODT will use to detonate OE related items at **FMC**.

- 1) Procedures. EODT will dispose of OE on a daily basis or as needed between the hours of 1500 and 1600. Demolition operations will begin in a grid site when all nonessential personnel are out of the fragmentation zone of the ordnance being detonated. UXO that is unfused and safe to move may be consolidated within the grid to reduce the number of shots. The operation will be performed under the direction and supervision of the SUXOS, who is charged with the responsibility of ensuring that the procedures contained in this WP and the referenced documents are followed. The UXOSO will monitor compliance with the requisite safety measures and in the event of a noncompliance, the UXOSO is vested with the authority to stop or suspend operations. Disposal activities are inherently hazardous and require strict adherence to approved safety and operational procedures. IAW

Appendix A, Site Safety and Health Plan, violations of procedures will typically result in immediate removal from this project and termination of employment or a reprimand, as appropriate.

Prior to the start of any explosive disposal activities, the UXOSO will verify that the exclusion zone, which is the PWD as defined in paragraph 2.8.11, is clear of all non-UXO personnel and that other UXO Supervisors have been notified of the impending disposal shot. A PWD of **1,080** feet has been established for this site and this distance will be used as a guide to separate removal teams to ensure adjacent teams are well clear of each other's demolition operations.

- 2) **Equipment.** Standard demolition equipment will be used. Procedures will follow the guidelines dictated by TM 60A-1-1-31, this WP and Appendix G of this WP. EODT will utilize Class 1.4 explosives and electric detonators connected to detonating cord in its shots. Multiple shots within a grid will be connected using detonating cord.
- 3) **Explosive, Storage, Accountability, and Transportation.** EODT will draw explosives and maintain total control of explosives while on site IAW the company SOP's, and **FMC** Regulation 700-1 found in Appendix G of this WP. Explosives will be removed from the **FMC** ASP by the UXOSO as required. Only the explosives required for the day's operation will be issued. EODT will comply with the requirements listed below:
 - Strict accountability of explosives will be maintained at all times. EODT will maintain an explosives accountability record (Magazine Data Card), found in Appendix E of this WP, and will reconcile amounts upon receipt, withdrawal, and weekly;
 - Only UXO personnel will be issued explosives and allowed to transport explosive materials;
 - All vehicles transporting explosives will be properly inspected, equipped, and placarded prior to the loading of explosives onto the vehicle, and DD Form 626 completed; and
- EODT will comply with the applicable sections of **FMC** Regulation 700-1 w/c-1.

Since the explosive storage magazines will be located at the northern end of the **FMC** and the site is in the southern section, the **FMC** ASP will establish a safe route for the transport of explosives.

- 4) **Disposal Shots.** While preparing OE for detonation, the UXOT3, in coordination with the UXOSO or SUXOS, will ensure that the number of personnel on site is kept to the minimum required to safely accomplish the disposal mission. Authority to initiate demolition operations will rest solely with the SUXOS or his appointed designee. This individual will be responsible for ensuring all personnel have been accounted for, and that the area is secure prior to authorizing the detonation of explosive

charges. The SUXOS will ensure all pertinent parties, *to include Range Control and the PMO*, have been notified of an impending demolition shot.

Prior to priming the demolition shots, the team UXOT3 will: 1) direct all personnel not involved in the priming process to evacuate the area and assemble at the designated assembly point; 2) ensure that any necessary road blocks have been established; and 3) ensure that a minimum of three feet of *clean tamping soil (with no rocks or clods)*, if possible, have been placed on the demolition shot (when applicable, and with the exception of items such as a 2.36" Rocket and all HEAT rounds). For all HEAT rounds, an attempt will be made to place a solid dense object in front of the round's nose to reduce travel distance of the jet, in the event the cone does not collapse in the shot. If this is unsafe, it will not be attempted and additional means to ensure proper disposal will be utilized and approved by the CEHNC OSS. The three feet of soil requirement will be applicable when there is a potential for fragmentation to reach Iron Mountain Road. The SUXOS, in coordination with the CEHNC OSS, will dictate the precautions and the PWD based upon the nature, type and number of OE being disposed of in the demolition shot. The SUXOS will then sound the required warning as indicated in Appendix G, of this submittal.

Upon shot completion, the UXOT3, with assistance from the UXOSO/QCS or SUXOS, will visually inspect the disposal shot. While one of these individuals performs a visual inspection of the disposal site(s), the second one will stand by at a safe distance and be prepared to render assistance in the event of an emergency. Upon completion of this inspection and providing there are no residual hazards, the SUXOS will authorize the resumption of site operations of any teams affected by the operation. The team will then fill in any holes. In the event an additional shot is required, the team will again conduct demolition operations as described above.

2.9.3 Records

Each UXOT3 will maintain a detailed accounting of activities performed at each grid using log books with sequentially numbered pages, which will include information pertaining to the following:

- The date and time operations began;
- Team composition and personnel names and positions;
- The date and time operations were completed;
- Any event which impacted on the day's operations; and
- Amounts of UXO, with its identification, condition, disposition and location.



2.9.4 Quality Control Inspections

EODT will utilize the QC procedures outlined in Chapter 11 of this WP for controlling and measuring the quality of all work performed during site activities. All QC activities will be performed and documented IAW applicable professional and technical standards, USACE requirements, and project goals and objectives. All site activities will be monitored and documented for precision, accuracy and completeness IAW Chapter 11 of this WP. *The SUXOS will provide the CEHNC OSS daily, written notification of which grids are ready for QA inspection.*

2.9.5 Draft & Final Removal Reports

At the conclusion of the OFD clearance action at *FMC*, EODT will submit a Draft Removal Report to the CEHNC for comment. Once EODT receives, reviews and incorporates the CEHNC comments into the draft report, EODT will submit the Final Removal Report for approval as stipulated in para 3.6 of the SOW. The Final Removal Report will contain, as a minimum:

- All original survey and mapping data IAW Task 2 of the SOW;
- A financial breakdown by task of all costs and labor hours used to perform SOW;
- Daily journals of all activities associated with the job site;
- A recapitulation of exposure data, including the total number of man-hours worked on site, the total motor vehicle mileage, the total number of flying hours, and total number of flights;
- A minimum of 20 original 3" x 5" color photographs depicting major action items and OE discoveries;
- A written record of all endangered or threatened plants and animals destroyed during the OFD clearance activities; and
- Scrap turn-in documentation.

2.10 PROJECT CLOSE-OUT

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

2.10.1 Scrap Turn-In

Upon completion of the project, all non-ORS and ORS in excess of three inches in any dimension, shall be turned into DRMO or a local scrap dealer. In all cases, a DD Form *1348-1A* shall be completed as turn-in documentation. In the event there are inert ordnance items which require venting, they will be vented IAW DoD 4160.21-M-1, Defense Demilitarization Manual.

A roll-off container will be placed in an area just off Iron Mountain Road for the collection of scrap. *If the FMC DRMO office is closed, a local scrap dealer will be used.*

2.10.2 Break Down Site

This paragraph and the EPP found in Chapter 12 of this WP will be followed in the breakdown of the site. All temporary facilities will be removed and the site returned, as nearly as feasible, to its original condition. All holes and excavations will be filled in and graded.

2.10.3 Removal of the Workforce

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

2.10.4 Close Out Accounts

Following the completion of operations, EODT's SUXOS will take action to close all accounts with local vendors and suppliers. Final billing for these accounts will be forwarded to the EODT Knoxville office for payment.

2.10.5 Removal of Facilities and Equipment

During demobilization, EODT will remove and return all facilities and equipment used to support this project IAW Chapter 12 of this WP. The SUXOS will follow the procedures in Chapter 9 of this WP for documenting equipment transfers. Equipment will be removed as specified below.

- 1) **EODT Equipment:** EODT will remove all of its operating equipment from *FMC*. The equipment, which will be in a clean and operable condition, will either be returned to the EODT corporate office in Knoxville or shipped to another project.
- 2) **GFE:** The GFE which has been utilized will be turned-in according to guidance provided by the *FMC* ASP.
- 3) **Termination of Services:** As part of its demobilization activities, EODT will close all accounts and terminate its cellular telephone service.

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CHAPTER 3: EXPLOSIVES MANAGEMENT PLAN (Incorporates Explosive Siting Plan)

3.0 INTRODUCTION

EODT developed this plan to safeguard and account for demolition materials in the conduct of OE OFD Clearance at *FMC*. This plan addresses issues associated with the requisition, receipt, storage, transportation, inventory and use of demolition material and incorporates local, state and Federal laws and regulations to include Bureau of Alcohol, Tobacco and Firearms (BATF) Pamphlet ATF P5400-7, which is an excerpt from 27 CFR Part 55; DOD 6055.9-STD Ammunition and Explosives Safety Standards; Department of Transportation (DOT) Regulations, Army Regulations (AR) 190-11, EM 385-1-1 and EODT Policies and Procedures, and *FMC* Regulation 700-1

3.1 RESPONSIBILITIES

EODT is responsible for ensuring the *FMC* project is provided with the required demolition material in a timely manner and in the appropriate quantities. In addition, the EODT personnel assigned to *FMC* have specific responsibilities in the use and secure storage of demolition material.

3.1.1 Senior UXO Supervisor

The SUXOS maintains overall responsibility for ensuring that demolition material requirements are projected in sufficient time for EODT to process and requisition the required materials. The SUXOS is also ultimately responsible for maintaining accountability of demolition materials and reporting any unaccounted for losses/discrepancies to BATF, CEHNC, and EODT immediately upon discovery.

3.1.2 Individual Responsibilities

All EODT employees are responsible for ensuring the proper and safe handling, use and control of demolition materials. In addition, these personnel are responsible for the return and correct inventory/annotation of the magazine data cards, found in Appendix G, the Explosives Acquisition, Storage, and Accountability SOP.

3.2 ACQUISITION

CEHNC has stated that some demolition materials will be provided by the government for the FMC project, with the details to be determined by the SUXOS, the CEHNC OSS, and the ASP at FMC. To supplement the Government provided demolition materials, EODT may have to purchase demolition materials from a commercial source. The acquisition will be IAW the EODT SOP Explosives Acquisition, Storage, and Accountability which appears in Appendix G to this WP.



3.2.1 Demolition Material Description

Demolition material: EODT will utilize either jet perforators or two component and electric or non-electric detonators connected to detonating cord, in its shots to control the operation and reduce the net explosive weight (NEW) to be used. EODT uses DOT Class 1.4 explosives whenever possible, which are safer to handle, easier and less expensive to ship and store and more readily available. The demolition materials anticipated for use at *FMC* are:

Description	Quantity	DOT Hazard Class	UN NO.	DOT EX NO.
Det Cord, 80 grain	1,000 ft.	1.4 D	UN0289	9302035
Shape Charge, 19 grain	100 ea.	1.4 S	UN0441	9405290
Detonator, electric	100 ea.	1.4 B	UN0244	9104118
T100 Solid	1 case	5.1 Oxidizer	UN1942	N/A
T100 Liquid	1 case	3 Flammable Liquid	UN1261	N/A

3.3 INITIAL RECEIPT

Initial receipt of demolition material will be conducted IAW the SOP Explosives Acquisition, Storage, and Accountability which can be found in Appendix G to this WP and *FMC* Regulation 700-1.

3.4 EXPLOSIVE STORAGE

EODT will utilize an igloo type, earthen-covered magazine to be provided by the *FMC* ASP for the storage of demolition materials and a concrete detonator magazine. These structures are constructed to Department of Defense Explosive Safety Board (DDESB) and AR specifications and are complete with lightning protection, fire fighting equipment, and lighting. The NEW of the demolition material will not exceed 50 pounds. In addition, as stated above, EODT will utilize Class 1.4 explosives, further reducing the explosive hazard.

3.5 TRANSPORTATION

Transportation is to be conducted IAW the SOP Explosives Transport, which can be found in Appendix G of this WP. The roads to be traveled are paved secondary roads maintained by the *FMC*. In addition, the EODT team will utilize two BATF-approved day boxes for the transport of demolition material to the grids on a daily basis. The first box will contain the electric detonators and the second, the perforators and detonating cord. The two component material can be transported in the truck bed without special packaging or containment. Vehicles transporting explosives shall have a completed DD Form 626 and travel only on the designated route. David Hurtle and Howard Stepp are the only EODT personnel



authorized to receive, issue, use, and transport explosives on the *FMC* project. The *FMC* ASP will designate a route for explosive transport.

3.6 RECEIPT/ISSUING PROCEDURES

The SOP Explosives Acquisition, Storage, and Accountability and *FMC* Regulation 700-1 found in Appendix G lists the procedures for receipt and issue of demolition materials. Demolition materials will be issued in day boxes as needed and returned at the end of the day. At no time will the day boxes remain outside the magazine overnight. The day boxes will be placed in the *FMC* ASP magazines and locked up overnight.

3.7 INVENTORY

The SOP Explosives Acquisition, Storage, and Accountability, found in Appendix G lists the procedures to be followed for the inventory, notification of loss/theft, return of unused materials at day's end and disposition of demolition material at the conclusion of the project. If the boxes were not opened during the day, they need not be inventoried except on the first and last work day of the week. If any demolition materials were used during the day, the boxes will be inventoried upon completion of the day's activities.

3.8 FORMS

All forms associated with the receipt, storage, inventory and use of demolition material are found in Appendix E, Sample Forms, of this WP.

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CHAPTER 4: EXPLOSIVE SITING PLAN

(This plan has been included in Chapter 3 of this Work Plan.)



CHAPTER 5: GEOPHYSICAL INVESTIGATION PLAN

(Site-specific elements of this plan applicable to the SOW have been included in Chapter 2 of this WP)

CHAPTER 6: SAFETY PROGRAM

6.0 INTRODUCTION

To ensure the continued health and safety of site personnel, the general public, and the environment, EODT's Corporate Policy mandates that all feasible, cost effective, hazard control techniques be utilized whenever site operations have the potential for personnel exposure to chemical, physical or biological hazards. To ensure the implementation of this policy, and to comply with Federal regulatory requirements, EODT has developed, and successfully implements, a comprehensive, proactive Corporate Safety and Health Program (CSHP). The EODT CSHP was designed and written by EODT's full time OSHM, with the support and consultation of senior EODT-UXO qualified personnel. The EODT OSHM is an ABIH CIH with over seven years experience in the development and implementation of safety and health programs in support of UXO/OE and other hazardous waste projects and site operations.

6.1 DEVELOPMENT AND CONTENT OF THE CSHP

The EODT CSHP has been specifically developed to comply with the requirements of the OSHA HAZWOPER standards found in 29 CFR 1910.120 and 29 CFR 1926.65. As required by these standards, the EODT CSHP makes provisions for, and specifies the procedures to be used, in the anticipation, recognition, evaluation and control of on-site safety and health hazards. It was not, however, the intent of EODT to design the CSHP to merely meet the minimum OSHA requirements, but rather to far exceed them. Therefore, the CSHP has been designed to also comply with the applicable standards and regulations found in the following:

- 29 CFR 1910, OSHA's General Industry Standards;
- 29 CFR 1926, OSHA's Construction Industry Standards;
- EM 385-1-1, the USACE Safety and Health Requirements Manual;
- The CEHNC Safety Concepts and Basic Considerations for UXO (latest revision);
- ER 385-1-92, Safety and Occupational Health Document Requirements for Hazardous, Toxic and Radioactive Waste (HTRW) and Ordnance and Explosive Waste (OEW) Activities.

6.2 HAZARD OR TASK SPECIFIC PROGRAMS AND PROCEDURES

As a supplement to the CSHP, EODT has also generated safety and health programs which are designed to meet the needs and requirements outlined in hazard or task specific OSHA regulations. These programs are aimed at compliance with specific OSHA standards and outline the personnel responsibilities and operational control procedures necessary to ensure compliance with applicable OSHA regulations. Examples of the programs which EODT has developed include:

- Respiratory Protection Program, IAW 29 CFR 1910.134;
- Personal Protective Equipment Program, IAW 29 CFR 1910.132;

- Hearing Conservation Program, IAW 29 CFR 1910.95;
- Control of Hazardous Energy Program (Lockout/Tagout), IAW 29 CFR 1910.145;
- Trenching and Excavation Program, IAW 29 CFR 1926.650;
- Confined Space Entry Program, IAW 29 CFR 1910.146;
- Blood borne Pathogen Exposure Control Program, IAW 29 CFR 1910.1030;
- Hazard Communication Program, IAW 29 CFR 1910.1200; and
- New Technology Program, IAW 29 CFR 1910.120 (n).

6.3 ADDITIONAL PROGRAMS AND STANDARD OPERATING PROCEDURES

Along with the OSHA required programs listed above, EODT has generated additional programs and SOPs designed to ensure the safe conduct of specific site operations. These programs and SOPs are designed to standardize the operational procedures and controls used by EODT personnel each time a relevant operation is conducted, thereby reducing the potential for complications due to unanticipated or uncontrolled hazards. Examples of the non-mandatory programs and SOPs include, but are not limited to, the following:

- Personnel Indoctrination and Training Program;
- UXOSO Training Program;
- Heat and Cold Stress Control;
- Heavy Equipment Operation;
- Demolition/Disposal Operations;
- Hazardous Chemical Sampling and Monitoring Program;
- Motor Vehicle Operation;
- Explosives Acquisition, Accountability, Storage and Transport;
- General Safety Precautions for OE Site Activities;
- UXO/OE Precautions for Drilling Operations;
- UXO/OE Precautions for Soil Sifting Operations; and
- Excavation and Trenching Hazard Control Program.

6.4 STATE AND LOCAL SAFETY AND HEALTH REGULATIONS

In the event that EODT conducts projects in states or localities with safety and health requirements that exceed the OSHA and USACE requirements currently addressed in the EODT CSHP, the OSHM will be responsible for identifying and addressing the additional requirements in the project specific SSHP. Prior to the initiation of site operations, all site personnel will be given additional site-specific training designed to familiarize the personnel with the special state or local requirements.



6.5 CERTIFICATION OF CSHP DEVELOPMENT AND IMPLEMENTATION

Attachment 1 of the *FMC* SSHP, found in Appendix A of this WP, contains a written certification which states that EODT has developed, and currently implements, a written Safety and Health Program, as required by 29 CFR 1910.120 and 29 CFR 1926.65. This certification also specifies that the EODT CSHP will be made available to the CEHNC KO upon request, and is signed by the EODT OSHM/CIH.

6.6 SITE SAFETY AND HEALTH PLAN

The SSHP can be found as Appendix A to this WP.

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CHAPTER 7: LOCATION SURVEY AND MAPPING PLAN

7.0 INTRODUCTION

This Plan outlines the methodology to be used to locate and record the spatial coordinates for the boundaries and search grids of the *FMC 100*-acre area.

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

7.1 SAFETY

All surveying mapping crews will be escorted by an EODT UXOT2. A magnetometer survey will be conducted at the location of any new monuments, control points, or grid stakes. No intrusive activity of any kind will be started until the area has been verified as safe by the UXOT2. All personnel entering the work site will adhere to the CEHNC Safety Concepts and Basic Considerations for UXO Operations, revised February 16, 1996.

7.2 CONTROL POINTS

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

7.2.1 Description Cards

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

described per card, or an 8.5 inch by 11 inch sheet of bond paper may be used to describe two monuments.

7.3 SURVEYING AND MAPPING

This TO stipulates that surveying is to establish boundaries of areas and grids specified in this SOW and as required to support the project. EODT will perform the surface survey and data collection activities associated with this requirement using a qualified surveyor and the following procedures:

- 1) To identify and record the location of work area boundaries, EODT will use an EODT surveyor and a subcontractor to determine the spatial coordinates for the corner locations of the site. The approximate coordinates for corners of the **100**-acre site will be provided or communicated by CEHNC to EODT prior to the initiation of site activities.
- 2) The corners of the approximate **378** OFD search grids within the **100** acres will be surveyed and recorded. Each grid corner will be identified by a uniquely numbered, brightly-painted, wooden stake, to the closest one foot.
 - Individual locations of recovered UXO only shall be tape measured or the “x” and “y” distance estimated to obtain a horizontal accuracy of plus or minus one foot from the established grid corners.
- 4) As part of the Final Report, EODT will prepare individual planimetric and/or topographic maps (at a scale 1:2000). The maps will be standard metric A-1 size drawings which are 841mm by 594mm (33.1 inches by 23.4 inches). These maps will:
 - a) depict the boundary coordinates for the area and the individual grids (which will be located to an accuracy of one foot and will be plotted on a reproducible (Mylar) map);
 - b) depict the location of each survey control point, with all control points being identified on the map by their name or number and their final adjusted coordinates;
 - c) include the following: a standard border, revision block, title block, bar scale, grid north, true north, and a magnetic north arrow with the differences between them shown in minutes and seconds. Grid lines and tic marks at systematic intervals with their grid values shown on the edges of the map;
 - d) contain a legend showing the standard USGS map symbols used. A map index showing the site in relationship to any other sites within the limits of the project area shall be shown; and
 - e) provide a copy of the design files on approved CD-Rom format. The data shall contain the final corrected version of the design file. The CD shall be labeled depicting the project name, number, date, company name, address, telephone number, and the number of files.



7.4 RECORDING AND TURN-IN OF DOCUMENTATION

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

7.5 SITE LAYOUT

The boundaries of the site will be marked using wooden stakes and painted a high visibility color. The stakes will be placed frequently enough to be able to readily identify the **100**-acre site.

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CHAPTER 8: WORK, DATA, AND COST MANAGEMENT PLAN

8.0 INTRODUCTION

The purpose of this Work Data and Cost Management Plan (WDCMP) is to ensure the effective management of allocated funds, manpower, and equipment. All work will be accomplished in order of precedence set forth in Task Order 0012. This plan describes: the organizational structure EODT will use to manage the project; the sequence in which operations will be performed; and the projected cost by operational milestones.

8.1 PROJECT ORGANIZATION

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

8.1.1 Project Management

Effective management is an essential element in the delivery of a quality product. EODT is committed to providing a management structure that meets this goal and is tailored to the operational requirements of the project. Figure 8-1 depicts the overall and on-site management structure that EODT will utilize during the execution of the various tasks associated with this project. This structure provides an appropriate level of management, safety, and quality oversight for the project, and ensures that work performed will be executed in an efficient, safe, and appropriate manner. Figure 8-2 is a Gantt Chart illustrating milestones, chronological position and intervals.

8.2 PROJECT WORK SCHEDULE AND DAILY SCHEDULE

EODT has prepared an initial project schedule for the work associated with this TO. The schedule identifies the individual activities associated with the project, their duration, the sequence in which the work will be performed and a proposed start and finish date for accomplishing the work. This schedule is based on a forty-hour work week, consisting of four 10-hour days. Work schedules may vary depending upon site requirements and the time of year in which the project is performed. A typical daily schedule is outlined in Table 8-1:

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FIGURE 8-1. PROJECT ORGANIZATION

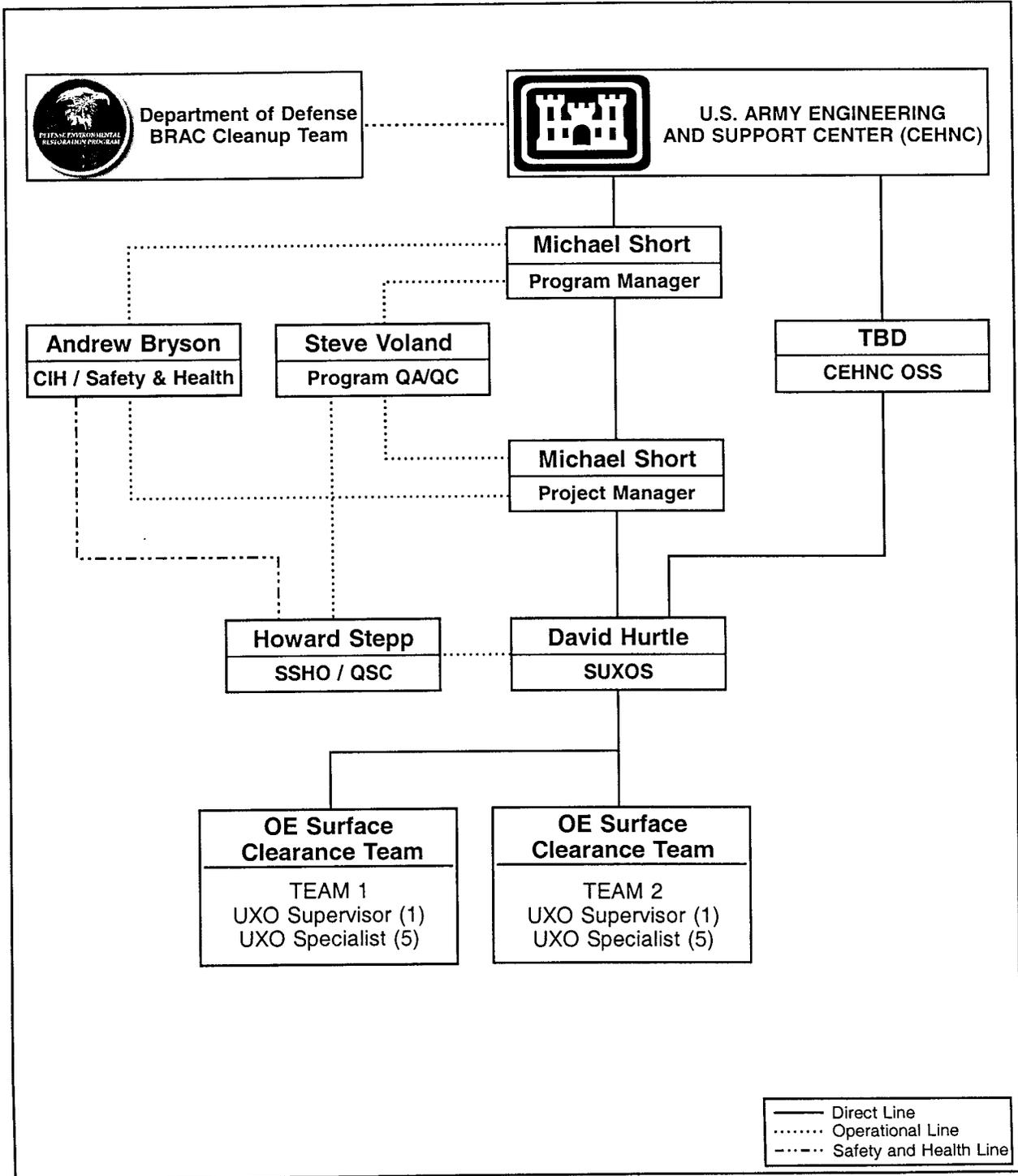


FIGURE 8-2: FORT MCCLELLAN OE CONSTRUCTION SUPPORT WORK SCHEDULE

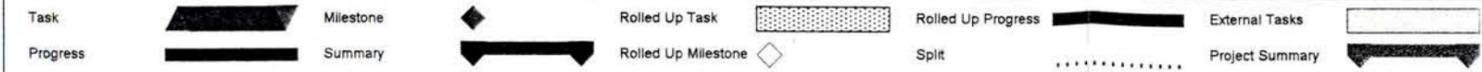
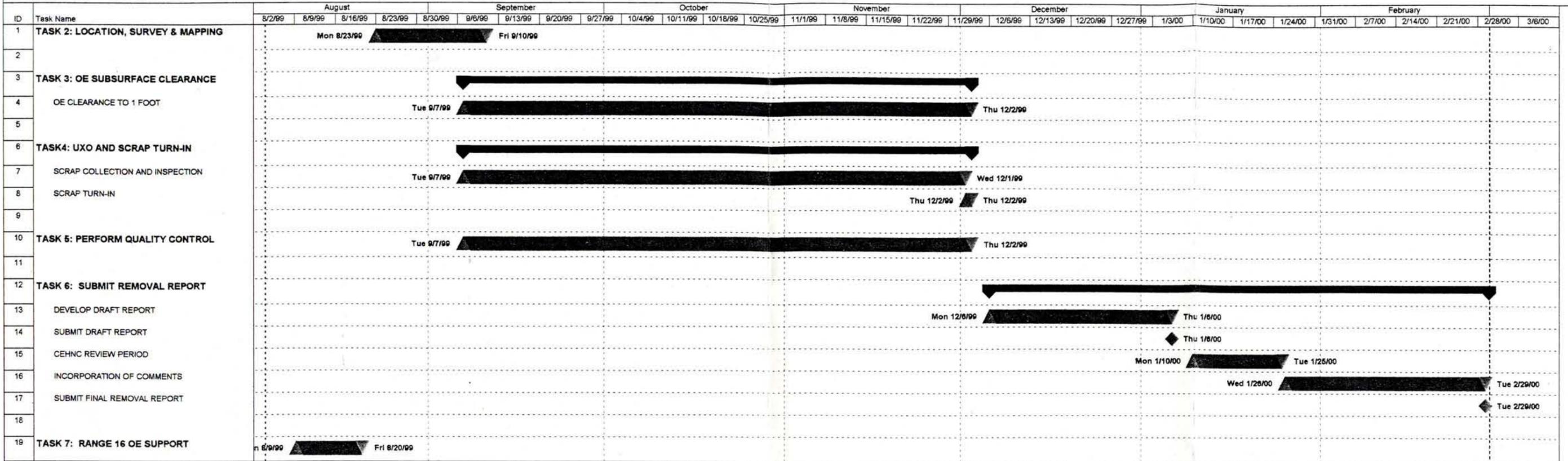




TABLE 8-1: TYPICAL DAILY SCHEDULE

TIME	ACTIVITY	LOCATION
0730-0800	Tailgate Safety and Operations Briefing and Equipment Load Out	Site Support Zone
0800-1000	Conduct Field Operations	Assigned Work Areas
1000-1015	Morning Break	Site Support Zone
1015-1130	Conduct Field Operations	Assigned Work Areas
1130-1200	Lunch	Site Support Zone
1200-1400	Conduct Field Operations	Assigned Work Areas
1400-1415	Afternoon Break	Site Support Zone
1415-1530	Conduct Field Operations	Assigned Work Areas
1530-1545	Stop Operations/Return to Field Office	Assigned Work Areas
1545-1600	Clean and Store Equipment	Site Support Zone

8.2.1 Performance Data

It is anticipated that site operations will require a total field effort of *13* weeks, to include mobilization/site set-up and site closure/demobilization. Table 8-2 illustrates the performance data for the life of the field effort.

TABLE 8-2: PERFORMANCE DATA

Activity	Acres	Work Days	Calendar Days
Mobilization	NA	2	2
<i>Location Surveying and Mapping</i>	<i>100</i>	<i>12</i>	<i>18</i>
<i>Range 16 Support</i>	<i>~1.5</i>	<i>10*</i>	<i>12</i>
<i>One Foot OE Clearance</i>	<i>100</i>	<i>44</i>	<i>75</i>
Demobilization	NA	1	1
TOTALS		69	108

* - two weeks of five 8-hour days.

8.3 MANPOWER REQUIREMENTS

EODT has structured its manpower requirements to meet the operational requirement of this task order. This structure was designed to minimize associated costs (i.e., travel and per-diem), and to provide an effective blend of technical talents and skills for executing the work associated with this



task order. Further, EODT chose the listed labor categories to ensure that team flexibility and production rates could be met. A detailed list of manpower requirements is contained in Table 8-5 and 8-6.

8.4 EODT PERSONNEL RESPONSIBILITIES

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

8.4.1 Program/Project Manager

Mr. Michael Short is the EODT Program Manager for this project and is responsible for the overall implementation of this project. In this role, Mr. Short will be responsible for the management of the EODT resources needed for the implementation of site operations.

Mr Short will also be the EODT PM for this project. He has substantial experience in the management of U. S. Army Corps of Engineers (USACE) projects, including over 30 years of explosive ordnance disposal (EOD) and UXO experience that includes 16 years of experience in project planning, design, implementation and management. As the PM for this project, Mr. Short will have the following management responsibilities:

- Managing the funding, manpower, and equipment necessary to conduct site operations;
- Acting as the point of contact for CEHNC project personnel, and communicating with the CEHNC through the CEHNC PM;
- Overseeing the overall performance of all EODT individuals assigned to the project;
- Reviewing the SOW and ensuring that necessary elements are addressed in project plans; and
- Coordinating all contract and subcontract work and controlling contractual costs and schedules.

8.4.2 Senior UXO Supervisor

Mr. David Hurtle, the project SUXOS, is a master EOD technician and a graduate of the Basic and Advanced Naval EOD School, Indian Head, Maryland. Mr. Hurtle has over 16 years combined military and civilian EOD experience. As the SUXOS, Mr. Hurtle will be responsible for the daily supervision of all site activities, to include the following;

1. Managing the EODT on-site manpower and equipment necessary to conduct site operations;



2. Detecting and identifying any problem area, and coordinating with the EODT PM to institute corrective measures;
3. Ensuring that all site activities are conducted according to this WP and relevant CEHNC and *FMC* regulations;
4. Acting as the lead technical consultant for all on-site OE related matters;
5. Interfacing with, and relaying concerns to, the CEHNC OSS; and
 - Coordinating with range control on a daily basis.

8.4.3 Occupational Safety and Health Manager

Mr. Andrew Bryson is the EODT OSHM. He is a board Certified Industrial Hygienist (CIH) with over eight years of industrial hygiene, safety, and hazardous waste experience, including over five years of experience working on projects with OE contamination. During the performance of this project, Mr. Bryson will provide occupational safety and health management duties performed by Mr. Bryson are presented in detail in the SSHP found in Appendix A of this WP.

8.4.4 UXO Site Safety and Health Officer (UXOSO)

Mr. Howard Stepp will be the UXOSO for this project. Mr. Stepp has more than 22 years of combined military and civilian EOD/OE experience. He is qualified as a UXO Supervisor (UXOT3), is a graduate of the U. S. Navy EOD School, Indian Head, Maryland, and has completed all training required by OT-025 for the position of a UXOSO. In this role, Mr. Stepp will be responsible for the operational items listed below, as well as the safety and health responsibilities listed in Chapter 2 of the SSHP.

1. Issuing and/or approving "STOP WORK" orders for safety and health conditions;
2. Identifying and evaluating any known or potential safety problems that may interfere with or interrupt site operations and endanger site personnel;
3. Consulting with the SUXOS and identifying with the implementing of any necessary safety-related corrective actions;
4. Coordinating with the SUXOS for the implementation of the safety requirements in the SSHP; and
5. Ensuring that all site activities are conducted IAW this WP and relevant Federal, state and local regulations.

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8.4.5 Occupational Safety and Health Manager

Mr. Andrew Bryson is the EODT OSHM. He is a board Certified Industrial Hygienist (CIH) with over eight years of industrial hygiene, safety, and hazardous waste experience, including over five years of experience working on projects with OE contamination. During the performance of this project, Mr. Bryson will provide occupational safety and health management duties performed by Mr. Bryson are presented in detail in the SSHP found in Appendix A of this WP.

8.4.6 Site Safety and Health Officer/Quality Control Specialist

Mr. Howard Stepp will be the UXOQCS for this project. Mr. Stepp has over 22 years of experience in military EOD and civilian UXO operations. He is qualified as a UXOT3, is a graduate of the U. S. Navy EOD School, Indian Head, Maryland, and has completed all training required by the CEHNC for the position of a UXOQCS. As a project UXOQCS, Mr. Stepp will be responsible for ensuring that all site operations are conducted IAW recognized performance criteria and he will be responsible for checking all field work prior to CEHNC Quality Assurance (QA) inspections. chapter 7 of this WP contains the specific listing of Mr. Stepp's QC responsibilities and the performance criteria which will be met during this project.

8.4.7 Quality Control Manager

Mr. Douglas Murray is the QCM for this project. He is a Master Explosives Ordnance Technician with over 13 years of experience in EOD and UXO projects, to include QC. As the QCM, Mr. Murray will have the responsibility of ensuring that all site deliverables meet the requirements of the SOW and the QC Plan (QCP) presented in Chapter 11 of this WP.

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TABLE 8-5: TEAM COMPOSITION

TEAM	LABOR CATEGORY	QUANTITY
Pre-Mobilization	SUXOS	1
	Surveyors	2
	Rodman	2
	UXOT2	2
<i>TOTAL</i>		<i>7</i>
100-Acre Subsurface Clearance	SUXOS	1
	UXOSO	1
	UXOQCS	1
	UXOT3	3
	UXOT2	10
<i>TOTAL</i>		<i>16</i>
<i>Range 16 OE support</i>	<i>SUXOS</i>	<i>1</i>
	<i>UXOSO/QCS</i>	<i>1</i>
	<i>UXOT3</i>	<i>0</i>
	<i>UXOT2</i>	<i>6</i>
<i>TOTAL</i>		<i>8</i>
Close-out	SUXOS	1
	UXOSO/QCS	1
<i>TOTAL</i>		<i>2</i>

TABLE 8-6: PERMANENT ON-SITE FIELD PERSONNEL

LABOR CATEGORY	QUANTITY
SUXOS	<i>1</i>
UXOSO	<i>1</i>
UXOQCS	<i>1</i>
UXOT3	<i>3</i>
UXOT2	<i>10</i>
TOTAL	<i>16</i>

8.5 COST CONTROL

EODT has an approved Purchase Order (PO) system which requires the SUXOS to submit a PO request for any expenditure for a single item in excess of \$25.00. In addition, the SUXOS is given



a copy of the approved spreadsheet by CLIN and must remain within the line item totals or seek approval to exceed the amount.

8.5.1 Equipment

The Material Handling Specialist (MHS) is responsible for providing the equipment for TO 0012. He cannot provide any item out of inventory or purchase anything without the PM's approval.

8.5.2 Labor Hours

The PM approves all hours charged to the project by all field and corporate office personnel. This ensures no unauthorized hours are charged to TO 0012 and an accurate expenditure can be tracked.

8.6 COST TRACKING

EODT uses Microsoft Project® to track costs on all projects. On a daily basis, the SUXOS forwards the hours expended for the previous day to include any expenditures not costed or anticipated. These figures are entered into Microsoft Project® and compared to the anticipated daily expenditures. An accurate daily cost can be tracked in this manner and the 85% spend threshold accurately anticipated. In addition, any additional costs by task can be identified as they occur and appropriate measures taken to either correct the negatives or incorporate the positives.

8.6.1 Coordination

It is imperative that an open line of communication is implemented and maintained between David Skridulis, the CEHNC PM, Michael Short, the EODT PM, and David Hurtle, the EODT SUXOS. This is essential in the accurate tracking of costs and early implementation of corrective action and notification.

8.7 CONSUMABLE SUPPLIES

Consumable supplies consist of pin flags, twine, wooden stakes, etc. A list of those items included in EODT's overhead and not directly chargeable to the project, to include exceptions and unallowable charges, are presented in Table 8-7.

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TABLE 8-7: CONSUMABLES AND UNALLOWABLE CHARGES

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

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CHAPTER 9: PROPERTY MANAGEMENT PLAN (PMP)

As a requirement of the CEHNC contract DACA87-97-D-0005, EODT generated a Property Management and Control Program IAW FAR 45.5 and DID OT-050. A copy of this program is presented in this WP as Appendix I. In addition, EODT has included as part of PMP its equipment plan.

9.0 GENERAL

EODT is directly responsible and accountable for all GFE and will establish and implement a system to control, protect, preserve, and maintain all GFE utilized in support of this project IAW FAR Part 45.5. This PMP prescribes the procedures EODT will use to maintain accountability of its equipment and any GFE. For purposes of this plan, the term equipment will apply to both EODT owned equipment and the equipment provided by the Government.

9.1 PROPERTY MANAGEMENT OBJECTIVES

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

9.2 RESPONSIBILITIES

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

9.2.1 SUXOS

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

9.2.2 Individual

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



9.2.3 Contract Administrator (CA)

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

9.3 CATEGORIES OF EQUIPMENT

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

9.3.1 Non-expendable Equipment

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

9.3.2 Expendable Equipment

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

9.3.3 Government Equipment

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

9.4 ACCOUNTABILITY

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

9.5 ACQUISITION

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



9.6 RECEIVING AND RECORDS

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

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

9.7 IDENTIFICATION

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

9.8 MOVEMENT

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

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9.9 STORAGE

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

9.10 PHYSICAL INVENTORY

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

9.11 REPORTS

None required due to the short duration of the project.

9.12 UTILIZATION

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

9.13 MAINTENANCE

EODT will maintain all equipment in its possession in functional condition. This includes performance of routine maintenance and service. In the event an equipment item requires maintenance beyond the capability of on-site personnel, EODT will coordinate with CEHNC personnel to determine if the equipment should be sent to a maintenance facility, discarded, or returned to the CEHNC property section. Equipment turned into external agencies for repair or service will be accounted for using shipping invoices and/or repair tags. All equipment will be maintained IAW the quality control procedures outlined in Chapter 11 of this WP.

9.14 DISPOSITION

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



9.15 PROJECT REQUIRED EQUIPMENT AND SUPPLIES

The services, equipment and supplies presented in *Tables 9-1 through 9-4* will be required for the performance of the SOW at the *FMC*.

9.16 CONSUMABLE SUPPLIES

Consumable supplies consist of pin flags, twine, wooden stakes, etc. A list of those items included in EODT's overhead and not directly chargeable to the project, to include exceptions and unallowable charges, are presented previously in *Table 8-7*.

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TABLE 9-1: FIELD EQUIPMENT

DESCRIPTION	QUANTITY	REMARKS
Barricades	2 each	
Battery Charger	1 each	
Blood borne pathogen kit	2 each	
Bronco/Blazer type vehicle	1 each	
Bucket, plastic	8 each	five gallon
Burn kit w/burn blanket	4 each	1/vehicle
Roll-off	4 each	scrap dealer
Cellular telephone	4 each	
Demolition kit	2 each	Blast machine, galvanometer and firing wire
Explosive Day Box	4 each	
Explosive magazines	2 each	GFE
Eye wash kit	4 each	1/Vehicle
Fire extinguisher	4 each	1-10 A:B:C/vehicle
First aid kit	4 each	1/vehicle
Ice chest	2 each	Coleman
Igloo drink cooler	2 each	2.5 gallon for water/gatorade
Magnetometer	11 each	Whites Spectrum XLT
Port-A-John	2 each	
Radio, hand held (<i>with charger</i>)	6 each	<i>one radio/charger for CEHNC OSS</i>
Safety glasses	14 pair	
TOPCON Total Station	2 each	
Siren Banshee	2 each	
Sledge	1 each	5 lb
Sound level meter	1 each	
Snake leggings	14 sets	
Stretcher	1 each	
Tape	2 each	300 foot
Tool kit	4 each	one/vehicle
Trowel/garden	12 each	
Van, mini	2 each	
Video Camera	1 each	



TABLE 9-2: FIELD CONSUMABLES

DESCRIPTION	QUANTITY	REMARKS
Camera	3 each	disposable/35mm
Electrician's tape	1 roll	
Fluorescent Paint	12 cans	
Gloves	14 pairs	work, leather
Log books	4 each	
Paper, towels	3 each package	
Ruler	1 each	
Stakes, Flags	2 bundle each	
Tape - Duct	2 rolls	
Wet/handi wipes	3 containers	

TABLE 9-3: EXPLOSIVES CONSUMABLES

DESCRIPTION	QUANTITY	NOTES
Detonating cord	1,000 feet	80 grain
Electric detonators	100 each	No.8
Green Stick/two component	1 case	solid & liquid
Perforators	100 each	19 gram

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TABLE 9-4: OFFICE EQUIPMENT

DESCRIPTION	QUANTITY	REMARKS
Answering machine	1 ea	
Battery charger	5 ea	handheld radio
Computer	1 ea	
Copier	1 ea	
Facsimile machine	1 ea	dedicated phone line
Filing cabinet	1 ea	lockable 4 drawer
Printer	1 ea	
Radio, base station	1 ea	w/antenna
Typewriter	1 ea	
Battery charger	1 ea	vehicular
Blood borne pathogen kit	1 ea	
Bolt cutters	1 ea	
Bulletin board	1 ea	
Burn kit w/burn blanket	1 ea	
Calculator	1 ea	
Eye wash kit/15 gal	1 ea	
Fire extinguisher	1 ea	20 A.B.C.
First aid kit	1 ea	trailer
Pencil sharpener	1 ea	
Telephone	2 ea	
Thermometer	1 ea	outside

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CHAPTER 10: SAMPLING AND ANALYSIS PLAN

(This plan is not required for this Task Order.)

CHAPTER 11: QUALITY CONTROL PLAN

11.0 INTRODUCTION

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

- Testing, response checking or calibrating equipment used to perform work tasks;
- Determining the effectiveness of work performed;
- Inspecting the maintenance and accuracy of site records; and
- Determining compliance with this plan, and all other elements of the WP.

11.1 DEFINITIONS

11.1.1 Accuracy

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

11.1.2 Precision

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

11.1.3 Completeness

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

11.1.4 Representativeness

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

11.1.5 Comparability

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

11.2 QUALITY PROGRAM MANAGEMENT STRUCTURE

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

11.2.1 QC Manager

Mr. Doug Murray is the EODT QCM and has the ultimate responsibility for the EODT QP. Mr. Murray reports directly to Mr. James Burger, the President of EODT. The responsibilities of the QCM include:

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

11.2.2 Site UXOQC Specialist (UXOQCS)

The EODT site UXOQCS will also be the on-site UXOSO, Mr. Howard Stepp, who will have the responsibility and authority to enforce the site-specific QC plans and procedures. His responsibilities include:

- Coordinating with the CEHNC QA representative to ensure that QC objectives appropriate to the project are set and all personnel are aware of these objectives;
- Coordinating with the EODT QCM to ensure that QC procedures are being followed and are appropriate for achieving data quality objectives (DQO);
- Conducting daily QC audits of all site activities and recording the results from these inspections in the QC activity log;
- Recommending and implementing actions to be taken in the event of a QC deviation to include stop work authority;
- Reporting noncompliance with QC criteria to the EODT QCM and PM; and
- Stop work authority.

11.3 CRITICAL ISSUES/ACTIVITIES

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

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

11.3.1 Employee Qualifications

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

11.3.2 Training

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

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

- **Visitor Training:** All site visitors shall receive general and site-specific training as a portion of their in-briefing.

11.3.3 Publications

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

- Copy of Task Order 0012;
- OSHA, 29 CFR 1910, Occupational Safety and Health Standards;
- CEHNC EM 385-1-1, Safety and Health Requirements Manual;
- Applicable EODT SOPs;
- BATF P 5400-7;
- Material Safety Data Sheets (MSDS) for hazardous substance used on site; and
- *FMC* regulations 350-2 and 700-1 with C-1.

Note

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

11.3.4 Equipment Calibration and Tests

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

- **Communications Equipment:** Prior to commencing operations each morning, radios and cellular phone will be checked. Radios will be function checked to ensure batteries are charged and the radio is operational. Cellular phone will be checked to ensure it is operational. If communications are lost, either between teams and the command post or off site to emergency services, work will cease until communications are restored.
- **Sound level meter:** The sound level meter will be calibrated, prior to use, IAW the manufacturer's recommendations and procedures.
- **Galvanometer:** Prior to demolition operations, the galvanometer will be checked by placing a metal object across the two terminal posts and observing the LED readout, which should indicate the number "1". Any other reading may indicate a defective instrument, at which

time the manufacturer's suggested checks will be followed. If there is no reading, the battery must be replaced, after which the continuity check will be repeated.

- **Blasting machine:** Prior to demolition operations, the blasting machine is checked IAW the manufacturer's suggested sequence.
- **Magnetometers:** Prior to use, all handheld magnetometers will be checked and/or calibrated against a known metallic anomaly. Magnetometers will be checked by planting an inert hand grenade or similar magnetic inert item at a depth of one foot and determining the standard indication. The purpose of this test/calibration is to ensure that the instruments are operating properly and to appropriately adjust the sensitivity level of the instruments. EODT's UXOSO/QCS will establish a magnetometer calibration area in the vicinity of Iron Mountain Road. This area will be 10' x 10' and be free of anomalies except for the test items. Magnetometers will be checked against the known source to ensure they are operational and capable of detecting ferrous objects. this test will be performed daily by the operator prior to placing the instrument into operation. The UXOQCS will monitor the test **and enter same in daily log.**

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

11.3.5 Maintenance Program

- 1) **Preventive Maintenance:** The assigned operator of each piece of equipment will perform scheduled, and when necessary, unscheduled, preventative maintenance to ensure the equipment is maintained in a satisfactory operating condition. Preventive maintenance consists of before, during and after operational checks and documentation of these activities, either in the operators log book or in the team leader's field log book.
- 2) **Routine Repair and Adjustment:** Routine repair and adjustment is based on the manufacturer's schedule for adjustment, calibration or replacement. All equipment used on site will be maintained and submitted for routine repair and adjustment IAW the manufacturer's specifications.
- 3) **Emergency Repair:** Emergency repair includes any unscheduled repair. This type of repair will be conducted using manufacturer required replacement parts and procedures to ensure the continued integrity of the equipment.

- 4) Included Equipment: Equipment included in the maintenance program will be checked as follows:
- a. Radios/Cellular Phone: Before-operation checks shall include verification of a complete battery charge and a communications check to ensure the unit is operating properly. During-operation checks shall include periodic checks to ensure battery charge remains adequate and a communications check once an hour for the radios and once a day for the cellular phone. After-operation maintenance shall include a communications check, cleaning, turning off and placing in battery charger.
 - b. Vehicles: Before-operation checks shall include an operator general inspection of the entire unit to include fluid levels, safety equipment operation and tire condition. During-operation shall include frequent checks of the dials and gauges and a tire check at breaks. After-operation checks shall include topping off of any fluids which are low, a general cleaning and a recheck of all safety related equipment.
 - c. Demolition Equipment: Before-operation checks shall include a check of all batteries in the blasting machines and galvanometers. Some blasting machines do not contain batteries, so a check will be made to ensure they operate properly. During-operation checks shall include an inspection of the terminals and condition of the units. After-operation checks shall include a general cleaning and battery removal if applicable.
 - d. Magnetometers: Before-operations checks shall include battery insertion, the location of a MKII hand grenade at a depth of one foot with calibration being conducted as prescribed by the manufacturer. During-operations checks shall include frequent checks to ensure the sensitivity level is on the designated setting. In addition, the operator will check batteries at breaks. After-operation checks shall include battery removal and cleaning.

11.3.6 Logs and Records

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

- 1) **Daily Journal:** The SUXOS will maintain the daily journal. This journal will provide a summary of all operations conducted to include information on weather conditions, problem areas, work plan modifications, injuries, start/stop times, tailgate safety briefs, equipment discrepancies, UXO/OE located, training conducted, visitors, and any additional items deemed appropriate.
- 2) **OE Accountability Log:** The UXOT3 will prepare individual records for each UXO location at *FMC*. The forms can be found in Tab G of this WP. Each OE item will be given a unique identifying number to differentiate it from the others.

- 3) **Safety Log Book:** The UXOSO will maintain this log. The log will be used to record all safety related matters associated with the specific project such as: safety briefings/meetings, including items covered and attendees; safety audits; near-misses/accidents/incidents. It will include cause and corrective action taken; weather conditions; and any other matters encompassing safety.
- 4) **Training Records:** The SUXOS will maintain training records for all site personnel. These records will contain training certificates, licenses and other qualifying data for an individual's duty position.
- 5) **Quality Control Log:** The UXOQCS will maintain this log and will record the performance and results of QC checks and audits, as well as calibrations. This log is kept in the Safety Log.
- 6) **Visitors Sign-in Sheet:** The SUXOS will maintain this log for all personnel that are not directly involved in the project site activities. This log will identify visitors by name, company, date, time in/out and a contact phone number.
- 7) **Photographic Record:** The SUXOS will maintain a photographic record to record all video recording and photographs taken to document work and/or site conditions. Photographs and video tapes will be marked with a unique identifying number relating back to the photographic log, and will be maintained on file until the end of the project. Photographic negatives and duplicate copies of video tapes will be forwarded to the EODT corporate office in Knoxville for safekeeping.
- 8) **Site Maps:** The SUXOS will maintain working maps of the operating areas. These maps will be used to document OE findings, task progression and other pertinent activities and locations.

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

Note

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

11.4 ORDNANCE VERIFICATION, ACCOUNTABILITY AND CONTROL

All OE items located will be positively identified by a qualified UXO specialist and the SUXOS. The specialist and SUXOS will also identify the condition of the item (i.e., misfire, unfired, dud) and associated hazards [high explosives (HE), fragmentation, white phosphorus (W.P.), ejection,

chemical, etc.] The identification, condition, and associated hazards of all items will be verified by the UXOSO/QCS, and the SUXOS will be responsible for maintaining the Ordnance Accountability Log, and the traceability of all ordnance items located. If the item cannot be moved, the SUXOS and the CEHNC SREP will determine an appropriate course of action IAW the WP and SSHP, which will then be recorded by the UXOSO/QCS or SUXOS.

11.5 QA/QC AUDITS AND SURVEILLANCE

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

11.6 QC INSPECTIONS

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

11.6.1 Daily QC Inspections

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

11.7 PASS/FAIL CRITERIA

If a UXO (i.e., an explosively configured ordnance item, or an item with explosive hazards) is located within a grid during the QC or QA check, the grid fails and must be re-swept.

11.8 NON-CONFORMANCE/CORRECTIVE ACTION

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

- Delivery of items or services by EODT that do not meet the contractual requirements;
- Errors made in following work instructions or improper work instructions;
- Unforeseeable or unplanned circumstances that result in items or services that do not meet quality/contractual/technical requirements;



- Technical modifications to the project by individuals that do not have the responsibility and authority; and
- Errors in craftsmanship and trade skills.

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

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

11.9 PROJECT CORRESPONDENCE

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

11.9.1 Task Order Correspondence

Correspondence concerning Task Order 0012 should be sent to:

- Mailing Address:
EOD Technology, Inc.
2229 Old Highway 95
Lenoir City, Tennessee 37771

11.9.2 Project Manager Address

The EODT PM is M.E. Short. He can be contacted through the following:

- Mailing address
EOD Technology, Inc.
2229 Old Highway 95
Lenoir City, Tennessee 37771
- Telephone Facsimile
423/988-6063 423/988-6067
- Electronic mail
EODT@eodt.com



11.10 PROJECT RECORDS

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

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



11.11 PROJECT DELIVERABLES

The deliverables listed in Table 11-1 are to be submitted as indicated on or before the required due date. Status Reports and Telephone/Conversation Reports are due monthly, with the originals of each of these reports sent within 10 days of the end of the reporting period by normal mail to:

- Commander
US Army Engineering and Support Center, Huntsville
ATTN: CEHNC-PM (Mr. David Skridulis)
P. O. Box 1600
4820 University Square
Huntsville, Alabama 35816-1822

TABLE 11-1: DELIVERABLE DUE DATES

Deliverables	Days After NTP
ASSHP	10 days prior to site visit
Disposal Feasibility Letter, if required (DID) OT-040 (Requirement waived by Valerie Clinkenbeard)	5 workdays after site visit
Draft Work Plan, (DID) OT-005 (Modified to 15 days after site visit)	15 workdays after approval of Disposal Letter
Final Work Plan	15 workdays after receipt of draft WP comments
Report/Minutes, Record of Meeting DID OT-045	5 days after event
(1) Cost/Schedule Status Report DID OT-035 (NA for Fixed Price Orders)	Monthly
(1) Telephone Conversation/Correspondence Report (DID OT-055)	Monthly
Draft Site Specific Removal Report DID OT-030	30 calendar days after completion of field work
Final Site Specific Removal Report	30 calendar days after receiving review comments
Accident/Incident Report DID OT-015	Written report within 24 hours after the incident occurrence
Property Management Plan DID OT-005-09	TBD
Accident Exposure Data Report DID SAFT-101	Monthly
Overall Completion Date	TBD



11.11.1 Distribution

EODT shall furnish copies of the plans and reports in the quantities as indicated, to each addressee listed below. EODT shall use express mail services for delivering these plans and reports. Following each submission, comments generated as a result of their review shall be incorporated into the plan/report. All comments will be sent to David Skridulis, the CEHNC Project Manager, for consolidation prior to incorporation, and all comments should be referenced in support of those comments. The following addresses shall be used in mailing submittals:

TABLE 11-2: REPORT DISTRIBUTION

ADDRESSEE	DRAFT SUBMITTALS	DRAFT-FINAL & FINAL SUBMITTALS
Commander US Army Engineering and Support Center, Huntsville ATTN: CEHNC-PM (Mr. David Skridulis) 4820 University Square Huntsville, Alabama 35816-1822	6	6
Commander US Army Engineer District, Mobile ATTN: CESAM-EN-GH (Mr. Ellis Pope) 109 St. Joseph St. Mobile, Alabama 36602-3630	2	2
U. S. Environmental Protection Agency Atlanta Federal Center, ATTN: Mr. Bart Reedy 100 Alabama St. SW Atlanta, GA 30303	2	2
Alabama Department of Environmental Mngt Government Facilities Section, Haz Waste Branch, Land Division ATTN: Mr. Chris Johnson P. O. Box 301463 Montgomery, AL 36130-1463	2	2
U. S. Army Chemical and Military Police Centers Fort McClellan, Directorate of Environment Bldg. 141A, 13 th Avenue ATTN: ATZN-EM Fort McClellan, AL 36205	6	6

11.11.2 Submittals and Correspondence

The report shall consist of 8 1/2" x 11" sheets of paper. The report covers shall consist of durable binders and shall hold pages firmly while allowing easy removal, addition, or replacement of pages. A title shall identify the site, EODT, the Huntsville Center, and date. EODT's identification shall not dominate the title page.



11.11.3 Review Comments

EODT shall review all comments received through Mr. David Skridulis, the CEHNC PM, and evaluate their appropriateness based upon merit. EODT shall incorporate all applicable comments and provide a written response to each no later than 21 days after EODT receives the comments.

11.11.4 Identification of Responsible Personnel

Each submittal shall identify the specific members and title of the subcontractor(s) and EODT's staff, which had significant input into the report.

11.11.5 Presentations

EODT shall make presentations of work performed and as directed by the KO. The presentation shall consist of a summary of the work accomplished and will be followed by an open discussion.

11.11.6 Minutes of Meetings

Following the presentation and the public meeting, the Contractor shall prepare and submit minutes of the meeting within 5 working days to the KO.

11.11.7 Correspondence

EODT shall keep a record of telephone conversations and written correspondence affecting decisions relating to the performance of TO 0012. A summary of the telephone conversations and copies of written correspondence shall be submitted to the KO with the Cost/Schedule Status Report.

11.11.8 Cost/Schedule Status Report

EODT shall prepare and submit monthly reports IAW DOD OT-035. The report shall be submitted to the KO not later than the 10th day of each calendar month.

11.11.9 Computer Files

All final text files generated by EODT under TO 0012 shall be furnished to the KO in WordPerfect 6.0, IBM PC-compatible format. All drawings shall be on reproducible (Mylar) and digitized 3D-design file in Intergraph Corporation format, compatible with CEHNC Graphics system.

11.12 SITE SPECIFIC REMOVAL REPORT

At the conclusion of all field activities, EODT shall submit a Site Specific Removal Report IAW DID OT-030 to the basic contract. In addition, the following information shall be submitted:

11.12.1

All original surveying and mapping data from Task 2.



11.12.2

A daily journal of all activities associated with this SOW.

11.12.3

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

11.12.4

Scrap turn-in documentation.

11.12.5

A minimum of 20 color photographs of major activities and UXO discoveries.

11.12.6

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

11.12.7

A written record of all endangered or threatened plants and animals destroyed during the OE removal activities on-site.

11.13 PUBLIC AFFAIRS

EODT shall not publicly disclose any data generated or reviewed under this contract and shall refer all requests for information concerning the site condition to Mr. David Skridulis, the CEHNC PM. Reports and data generated under this TO are the property of the DOD and distribution to any other sources by EODT, unless authorized by the KO, is prohibited.

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CHAPTER 12: ENVIRONMENTAL PROTECTION PLAN (EPP)

12.0 INTRODUCTION

As specified in Task Order 0012 of Contract DACA87-97-D-0005 for the UXO Clearance at *FMC*, this site-specific EPP has been prepared to ensure site activities are conducted such that potential environmental impacts are minimized consistent with US AR 200-1 & 2. This plan has been prepared based on information obtained from the Internet. All site activities shall be conducted IAW this EPP and shall be performed in such a manner as to: minimize the pollution of air, water or land; control and maintain noise and dust emissions below limits established by applicable Federal, state, or local regulations; and minimize the environmental impact of site activities. Table 12-1 presented at the end of this chapter identifies threatened or endangered species of flora and fauna known to be, or with a potential to be present in the area. There are no known areas of archaeological or ecological significance within the *100*-acre tract to be investigated and cleared. No wetlands or vernal pools will be affected by activities described in this Work Plan. No contaminated waste, run on/off controls or sediment control is anticipated and the use of dust control should not be required. These items are mentioned in this EPP so that in the event they are encountered, the appropriate procedures have been considered and approved negating a cessation of site activities.

12.1 FIELD ACTIVITIES IMPACTING ENVIRONMENTAL RESOURCES

During this project, UXO may be located, identified, removed, and disposed of IAW the procedures outlined in this WP. The primary objective of this project is to locate and remove UXO and metallic debris presently on the site to a depth of one foot. The current WP describes a work area of approximately *100*-acres, all of which will be cleared of UXO. Because of the environmental protection procedures in this EPP that will be followed, EODT's activities are not expected to have any impact upon any potentially sensitive environments on the *FMC* property.

12.2 PRE-REMOVAL ACTION ACTIVITIES

12.2.1 Environmental Survey

In preparation for this project, EODT performed an initial site visit to assess the actual site conditions and to allow for the detailed design and preparation of this submission. During this site visit, EODT made observations concerning the condition of the property and other environs that are located in and around the area that may be affected by site activities. During this survey, no critical or sensitive habitats, such as those necessary to support threatened or endangered species, were noted.

TABLE 12-1

Resource Classification	Type	Comment
Plant	Tennessee yellow-eyed grass	Endangered (Federal)
	Mohr's barbara buttons	Threatened (Federal)
Animal	The gray bat	Endangered (Federal)
	Blue shiner	Threatened (Federal)
	Red-Cockaded woodpecker	Endangered (Federal)

12.2.2 Worker Education

Prior to the start of field activities, EODT shall review all environmental issues associated with the *100*-acre property and the activities described in the WP. Field personnel will be encouraged to ask questions about potential environmental issues they may encounter during site activities.

12.2.3 Required Mitigation Procedures

Because no sensitive ecological or cultural resources associated within the *100*-acre area have been identified, site work is not expected to have any negative environmental impact. For this reason, no specific provisions for environmental mitigation are made herein. However, the following general mitigation procedures will be followed during all field activities:

- If potentially sensitive habitats (e.g., springs, wet areas, etc.) are encountered during site activities, guidance from CEHNC environmental personnel will be obtained.
- If sensitive resources are determined to fall within the site, extra care will be taken to minimize both time spent in the area and the amount of clearing activity.

12.3 ENDANGERED OR PROTECTED SPECIES AND RESOURCES

Work shall be performed in such a manner as to avoid or minimize adverse effects to endangered or protected plant/wildlife species and resources. Table 12-1 lists the resources present on, or adjacent to, *FMC*. There are no critical habitats identified on the *100*-acre site to be cleared. Where it is necessary to disturb sensitive communities, the mitigation procedures outlined in Section 12.2.3 of this EPP will be employed.

12.3.1 Vegetation Removal

The OE remedial actions planned for this project require the clearing of vegetation. This will primarily involve the removal of bushes, vines, and undergrowth within the forested areas, but may include the removal of perennial species three inches in diameter or smaller. Authorization from the CEHNC KO will be obtained if any trees larger than three inches in diameter are determined to impede remedial actions, and thereby require removal.

12.3.2 Protection of Endangered/Protected Species (Flora and Fauna)

According to previous environmental surveys, a number of endangered or sensitive plant and wildlife species have been identified as possible inhabitants of *FMC*. None are known to occur in the *100*-acre site. Any questions about potential endangered or sensitive plant species will be brought to the attention of CEHNC *and the BCT*. All site personnel will be informed of any specific recommendations of the CEHNC *and the BCT*, and in general all operations shall be planned and performed in such a manner as to avoid or minimize adverse effects to the known endangered or protected plant species.

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

There are no known HARC resources on the 100-acre site to be cleared. However, to confirm this, the SUXOS will coordinate and discuss the matter with Mr. Gordon Horsley of FMC.

12.3.4 Written Record

A written record of any issues related to sensitive environmental factors (e.g., threatened or endangered species, HARC resources, etc.) will be maintained and submitted as part of the final report.

12.4 WETLANDS

There are no wetlands on the *100*-acre site to be cleared

12.5 WATER RESOURCES

12.5.1 General Requirements

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

12.5.2 Control of Water Used On-site

All on-site activities will be conducted in a manner so as to prevent the discharge of any known pollutants into reservoirs, and waterways. Temporary chemical toilets will be available at the site.

12.5.3 Run-on Controls

EODT shall take all reasonable precautions to prevent run-on from entering areas of the site where the water may be exposed to contaminated soils, water or waste as a result of EODT site activities. Such precautions may include temporary dikes or by not conducting removal operations during rain storms. These control measures will be monitored and maintained as long as the need exists.

12.5.4 Run-off Controls

Appropriate controls shall be put in place to prevent or minimize rainfall from contact with hazardous or special wastes/materials created by EODT. This would include activities such as covering the roll-off container with plastic coverings, and securing the cover. In those areas where run-off may contain significant levels of contamination such runoff shall be contained and collected to prevent its migration from the site.

12.5.5 Sediment Controls

Sediment which may or may not contain significant levels of contamination shall also be contained to prevent it from migrating off site. Disturbances to loose sediment will be limited during surveys and removal activities. Due to the nature of the site it is not anticipated that soil erosion, and therefore sediment control, will present any significant problems. If needed, fabric silt fences, diversion dikes and ditches will be installed to adequately control erosion problems and control sediment migration. All erosion and sediment control measures will be properly maintained throughout the duration of the project, as needed, and areas of bare soil exposed at any given time during excavation will be kept to a minimum to minimize erosion potential.

12.6 WASTE DISPOSAL

12.6.1 Uncontaminated Waste

Uncontaminated solid wastes, such as trash and general debris, shall be placed in designated trash receptacles and shall be removed from the site and disposed of at a facility authorized by applicable local laws and regulations to receive such waste. No solid or liquid wastes are to be burned, buried or otherwise left on site.

12.6.2 Contaminated Waste

Although it is not anticipated, contaminated hazardous waste consists of a wide variety of materials which may originate on site as a result of on-site activities. Contaminated wastes will be packaged, handled and labeled IAW applicable Federal and local regulations. Manifesting, transportation and disposal of contaminated wastes will be conducted IAW 40 CFR 262 Subpart B and applicable regulations, as directed by the KO.

12.7 OPEN BURNING AND DUST CONTROL

12.7.1 Open Burning

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

12.7.2 Dust Control

EODT shall maintain all staging sites and work areas free from excess dust to such a reasonable degree as to avoid causing a hazard or nuisance, and therefore dust control measures will most likely not be needed. Dust generation will be minimal. The only dust generating activities anticipated at the *FMC* site are vehicular traffic and demolition operations.

12.8 SPILL AND EMERGENCY CONTROL PLAN

12.8.1 Spill Potential

Due to the nature of site activities, the potential for a spill of hazardous materials is extremely low. No vehicular fueling will be conducted on site. EODT shall take all necessary precautions to prevent spills and provide contingency measures for the cleanup of potential spills during performance of this SOW. (See Appendix A for more detailed discussion of spill control procedures.) To minimize the potential for spillage and to minimize the impact of spilled materials, EODT shall:

- As part of the SSHP for this project, EODT will submit Spill Response procedures to the KO for review and approval;
- Utilize work practice controls to prevent spills during refueling involving site vehicles;
- Provide all spill response supplies and equipment necessary to contain spilled materials and to remove and contain materials that become contaminated due to spillage; and
- Develop and implement decontamination procedures which may be necessary for the removal and clean-up of spilled materials.

12.8.2 Decontamination and Disposal

It is not anticipated that EODT personnel or equipment will require decontamination during the daily conduct of site operations. In the event of a spill which causes contamination of site equipment, EODT shall decontaminate all equipment that has been exposed to contaminated material. This decontamination-derived waste shall be contained, and labeled IAW applicable regulations. This waste will be disposed of according to the direction of the KO/KOR.

12.8.3 Emergency Procedures

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

- Immediately (within one hour) notify the KO *and the BCT*;
- Halt site operations in the area and take immediate measures, utilizing properly protected personnel, to control and contain the spill;
- Isolate the hazardous area through the use of flagging, remove or extinguish ignition sources and evacuate all unnecessary personnel out of the area;

- If mandated by the nature of the spill, evacuate personnel upwind to the pre-designated assembly area, and post personnel at access routes to prevent unauthorized personnel from entering the area; and
- Utilize control measures, if needed, to reduce vapors, gases and/or dust emissions.

12.9 ISOLATION AND SECURITY OF THE AREA

12.9.1 General Security

EODT will not require a high degree of security for its personnel and equipment for this task. The **100**-acre site is located within *FMC* and in a relatively remote area which is off limits, except for training. EODT will store its equipment in its site vehicles.

12.9.2 Site Security

During operations, access to work sites will be controlled by the use of exclusion zones, coordination with Range Control, and a periodic visual survey of Iron Mountain Road and the surrounding area to ensure no personnel enter the site. This will be especially critical during incidental blow-in-place (BIP). As a result, the judicious use of site personnel as sentries will be implemented during demolition operations. Entry into the various sites will be limited to only those personnel required to safely conduct the task at hand. Visitors will be controlled and escorted, the only exception to this will be the CEHNC OSS, EODT's SUXOS, and UXOSO/QCS, who will have unlimited access to all areas. During non-working periods, the equipment, to include hand tools, will be secured. The explosive storage magazines will be located in the *FMC* ASP and will remain locked at all times.

12.10 CONSIDERATION OF WIND DIRECTION

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

12.11 REDUCTION OF VAPORS, GASES OR DUST EMISSIONS

EODT designs and plans its work methodically to minimize vapors, gasses and particularly emissions. No vapors or gaseous emissions are anticipated under this SOW from excavation or demolition activities. All



BIP operations will be conducted in trenches or pits, further minimizing transport of any airborne emissions. Any vapors created from fuel transfer will be negligible and will only be conducted in an open area.

12.12 POST-REMEDATION CLEANUP

12.12.1 General Requirements

Except for any work or storage areas and access routes specifically assigned to EODT under this SOW, the land areas outside the limits of the permanent work under this contract shall be preserved in their existing condition. EODT shall confine their site activities to areas defined for work on the plans or specifically assigned for their use. Storage and related areas will be assigned by *FMC* personnel, and no other areas shall be used by EODT without the consent of *FMC* personnel. Upon conclusion of on-site remediation activities, and subject to instructions by the KO, EODT shall remove all work-related equipment and materials, and shall, unless directed otherwise, remove all evidence of removal or remediation activities.

12.12.2 Temporary Facilities

EODT shall, unless otherwise directed in writing by the KO, remove all signs of temporary facilities such as work areas, corner flags and other vestiges of site operations prior to final acceptance of the work by the CEHNC. EODT's goal is to leave the area in better condition than we found it.

12.12.3 Disturbed Areas

All detonation holes shall, to the greatest extent feasible, be returned to their previous state.

12.12.4 Post-excavation Cleanup

Upon project completion and subject to instructions by the KO, the contractor will regrade and reseed disturbed sites as necessary, in an effort to restore the area to near original condition.

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CHAPTER 13: INVESTIGATIVE DERIVED WASTE PLAN

This Chapter was not included as a separate chapter due to its anticipated non-use. However, the requirements of the plan are included in Chapter 12, Environmental Protection Plan.

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