

**Final
Site-Specific Work Plan
Ordnance and Explosives Disposal Support
Fort McClellan, Alabama**

**Delivery Order 0009
Contract Number DACA87-99-D-0010**



**Contracting Agency
U.S. Army Corps of Engineers, Engineering and Support
Center
Huntsville, Alabama**

**Geographical Corps District
U.S. Army Corps of Engineers, Mobile District**

**Prepared by
Foster Wheeler Environmental Corporation
Fort McClellan, Alabama
May 10, 2001**

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10 May 2001**



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Project Manager**

Table of Contents

1.0	INTRODUCTION.....	1.1
1.0.1	Project Authorization	1.1
1.1	General Information	1.1
1.1.3	Project Organization.....	1.2
1.1.4	Project Personnel.....	1.2
1.1.5	Project Communications and Reporting	1.2
1.1.6	Project Deliverables	1.2
1.1.7	Project Schedule.....	1.3
1.1.8	Periodic Reporting.....	1.3
1.1.9	Costing and Billing.....	1.3
1.1.10	Project Public Relations Support	1.4
1.1.11	Management of Field Operations.....	1.4
1.1.11.2	Site Access and Control	1.4
1.1.12	Field Office/Command Post.....	1.5
1.1.13	Traffic Control/Parking	1.5
1.1.14	Field Personnel Organization and Responsibilities.....	1.5
1.1.15	Communications	1.6
1.1.16	Previous Investigations	1.6
1.2	Location.....	1.7
1.3	History.....	1.7
1.4	Topography	1.8
1.5	Climate	1.8
2.0	TECHNICAL MANAGEMENT PLAN	2.1
2.1	General	2.1
2.1.2	CWM Discovery Procedures.....	2.1
2.1.3	Procedures for OE Disposal	2.1
2.1.4	Special UXO Procedures.....	2.1
2.1.4.1	EOD Support.....	2.1
2.1.4.2	OE Identification	2.1
2.1.5	Technical Scope	2.2
2.1.6	Excavations	2.2
2.2	Project Organization	2.2
2.3	Mobilization Plan.....	2.2
2.4	Site Preparation Procedures	2.2
2.5	Statistical Sampling	2.2
2.6	Reporting and Disposition of UXO	2.3
2.7	Reporting and Disposition of OE.....	2.3
2.8	Additional Tasks and Procedures.....	2.3
2.9	References for Additional Plans	2.3
3.0	EXPLOSIVES MANAGEMENT PLAN.....	3.1
4.0	EXPLOSIVES SITING PLAN	4.1
5.0	GEOPHYSICAL INVESTIGATION PLAN.....	5.1
6.0	SITE-SPECIFIC SAFETY AND HEALTH PLAN.....	6.1

Table of Contents
(Continued)

6.1	General.....	6.1
6.2	Staff Organization, Qualifications, and Responsibilities.....	6.2
6.2.2	Project Manager (PM).....	6.2
6.2.3	Delivery Order Manager.....	6.2
6.2.4	Project Environmental and Safety Manager (PESM).....	6.2
6.2.5	Senior UXO Supervisor (SUXOS).....	6.2
6.2.6	UXO Site Safety and Health Officer (UXOSO).....	6.3
6.2.7	Field Crew Personnel.....	6.3
6.3	Site Description and Contamination Characterization.....	6.3
6.3.4	Source and Nature of Contamination.....	6.3
6.4	Hazard Analysis and Risk Assessment.....	6.3
6.4.2	Chemical Hazards.....	6.3
6.4.3	Working on Sloped Areas.....	6.4
6.5	Training.....	6.4
6.5.2	Mountain Operations.....	6.4
6.6	Personal Protective Equipment.....	6.4
6.7	Medical Surveillance Procedures.....	6.4
6.8	Environmental and Personal Monitoring.....	6.4
6.9	Site Control.....	6.4
6.10	Personal and Equipment Decontamination.....	6.5
6.11	Emergency Response and Contingency Procedures (On-Site and Off-Site).....	6.5
6.12	Confined Space Entry.....	6.5
6.13	Spill Containment.....	6.6
6.14	Heat/Cold Stress Monitoring.....	6.6
6.15	Standard Operating Procedures, Engineering Controls and Work Practices.....	6.6
6.16	Logs, Reports and Record Keeping.....	6.6
6.17	Radiological and Chemical Warfare Material (CWM).....	6.6
7.0	LOCATION SURVEYS AND MAPPING PLAN.....	7.1
8.0	WORK, DATA AND COST MANAGEMENT PLAN.....	8.1
9.0	PROPERTY MANAGEMENT PLAN.....	9.1
10.0	SAMPLING AND ANALYSIS PLAN.....	10.1
11.0	UXOQC Quality Control.....	11.1
11.1	Preparatory Phase.....	11.1
11.2	Initial Phase Inspection.....	11.2
11.3	Follow-up Phase Inspection (Surveillance).....	11.2
11.4	Deficiencies and Nonconformance.....	11.3
11.5	Root Cause Analysis.....	11.3
11.6	Corrective Action.....	11.4
12.0	ENVIRONMENTAL MANAGEMENT PLAN.....	12.1
13.0	INVESTIGATIVE DERIVED WASTE PLAN.....	13.1
14.0	GEOGRAPHIC INFORMATION SYSTEMS (GIS) PLAN.....	14.1

List of Acronyms

AA	Anti-aircraft
AEDA	Ammunition, Explosives and Other Dangerous Articles
AHAs	Activity Hazard Analysis
AOC	Area of Concern
AR	Army Regulation
ARARs	Applicable and Relevant and Appropriate Requirements
ASCII	American Standard Code for Information Interchange
ASP	Ammunition Supply Point
ASR	Archives Search Report
BATF	Bureau of Alcohol, Tobacco and Firearms
BCT	BRAC Cleanup Team
BEC	BRAC Environmental Coordinator
bgs	below ground surface
BIP	Blow in Place
BRAC	Base Realignment and Closure
CADD	Computer-Aided Design and Drafting
CBR	Chemical, Biological and Radiological
CDAP	Chemical Data Acquisition Plan
CEHNC	United States Army Engineering and Support Center, Huntsville
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CGI	Combustible Gas Indicator
CIH	Certified Industrial Hygienist
CMC	Corporate Medical Consultant
CPR	Cardiopulmonary Resuscitation
CRZ	Contamination Reduction Zone
CWM	Chemical Warfare Materiel
Dbh	diameter at breast height
DCOs	Data Collection Objectives
DDESB	Department of Defense Explosives Safety Board
DERP	Defense Environmental Restoration Program
DID	Data Item Description
DoD	Department of Defense
DQCs	Data Quality Characteristics
DQOs	Data Quality Objectives
DRMS	Defense Reutilization and Marketing Service
DS	Demolition Supervisor
EE/CA	Engineering Evaluation/Cost Analysis
EHS	Environmental Health and Safety
EIS	Environmental Impact Statement
EM	Electromagnetic
EOD	Explosive Ordnance Disposal
EPP	Environmental Protection Plan
ER	Engineer Regulation
EZ	Exclusion Zone
FAR	Federal Acquisition Regulations
FCR	Field Change Request
FFP	Firm Fixed Price
FG	Field Geologist

List of Acronyms
(Continued)

FID	Flame Ionization Detector
FO	Field Office
FTL	Field Team Leader
FTP	File Transfer Protocol
FUDS	Formerly Used Defense Site
FWENC	Foster Wheeler Environmental Corporation
GIS	Geographic Information System
GPS	Global Positioning System
GTM	Geophysical Task Manager
HARC	Historic Archeological and Cultural
HE	High Explosive
HEI	High Explosive Incendiary
HTRW	Hazardous, Toxic, and Radiological Waste
kya	Thousand Years
I.D.	Intraline Distance
IDW	Investigation Derived Wastes
LOP	Level of Protection
M	Model Number
MCE	Maximum Credible Event
MCX	Mandatory Center of Expertise
mm	Millimeter
MOA	Memorandum of Agreement
MPH	Miles per hour
MPH	Miles Per Hour
MPM	Most Probable Munition
MSD	Minimum Safe Distance
MSDS	Material Safety Data Sheet
MSL	Mean Sea Level
mV	Millivolt
NA	Not Applicable
NAD	North American Datum
NAVD	North American Vertical Datum
NCP	National Contingency Plan
NDAI	No DoD Action Indicated
NEW	Net Explosive Weight
NORS	Non Ordnance Related Scrap
NTCRA	Non-Time Critical Removal Action
OD	Open Detonation
OE	Ordnance and Explosives
OES	Ordnance and Explosive Scrap
OEW	Ordnance and Explosive Waste
OE-KB	OE Knowledge Base
OJT	On the Job Training
OSHA	Occupational Safety and Health Administration
OVA	Organic Vapor Analyzer
PA	Preliminary Assessment
PARCC	Precision, Accuracy, Representativeness, Completeness, and Comparability
PDF	Portable Document Format
PDOP	Position Dilution of Precision

List of Acronyms
(Continued)

PEL	Permissible Exposure Limit
PESM	Project Environmental and Safety Manager
PETN	Pentaerythritol Tetranitrate
PID	Photoionization Detector
PM	Project Manager
PMO	Provost Marshal's Office
PPE	Personal Protective Equipment
PRCS	Permit Required Confined Space
PSD	Personnel Separation Distance
PVC	Polyvinyl chloride
QA	Quality Assurance
QC	Quality Control
RAB	Restoration Advisory Board
RCP	Regulatory Compliance Plan
RCRA	Resource Conservation and Recovery Act
RDX	Cyclotrimethylenetrinitramene
RLS	Registered Land Surveyor
RTK	Real time kinematic
SAA	Small Arms Ammunition
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Office
SI	Site Investigation
SINAs	Special Interest Natural Areas
SOP	Standard Operating Procedure
SSH	Site Safety and Health Plan
SUXOS	Senior UXO Supervisor
SZ	Support Zone
TBC	To Be Considered
TBD	To Be Determined
TCRA	Time-Critical Removal Action
TDEM	Time Domain Electromagnetics
TFO	Transition Force Operations
TLV	Threshold Limit Value
TM	Technical Manual
TNT	Trinitrotoluene
TRADOC	United States Army Training and Doctrine Command
TSSDS	Tri-Service Spatial Data Standards
ttn	topologically triangulated network
UL	Underwriter's Laboratory
UN	United Nations
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USRADS	Ultrasonic Ranging and Data System
UXO	Unexploded Ordnance
UXOQCS	UXO Quality Control Specialist
UXOSO	UXO Site Safety and Health Officer
WDCMP	Work, Data and Cost Management Plan
WP	White Phosphorus

1.0 INTRODUCTION

1.0.1 Project Authorization

1.0.1.1 The United States Army Engineering and Support Center, Huntsville (USAESCH) has contracted Foster Wheeler Environmental Corporation (FWENC) (under Contract DACA 87-99-D-0010, Delivery Order 09), to provide Ordnance and Explosives Disposal support at Fort McClellan. Fort McClellan is a United States Army Training and Doctrine Command (TRADOC) facility that was closed in September 1999 under the Base Realignment and Closure (BRAC) Act. The primary use of Fort McClellan has been for troop training (artillery, small arms, chemical warfare training, etc.) and mobilization activities.

1.0.1.2 This OE Disposal Support Work Plan is being prepared under the Base Realignment and Closure (BRAC) Program. Federal law requires that government facilities, subject to closure and subsequent reuse, be subject to remediation. Activities conducted in support of this project will be conducted in a manner consistent with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the National Contingency Plan (NCP). A detailed description of the steps involved in the remediation process is found in Section 1.1.2 of the FWENC General Site-Wide Work Plan. A brief description of the OE Disposal Support process is described as follows:

1.1 GENERAL INFORMATION

1.1.1 The purpose of OE Disposal Support Work Plan is to provide on-call support as directed by the contracting Officer or representative to identify and dispose of Ordnance and Explosives discovered at any location on the Fort McClellan site. This is described in the 12 March 2001 Statement of Work (SOW), Appendix A-1.

1.1.1.1 This Work Plan provides information to address OE Disposal Support. The potential of hazardous and toxic waste (HTW) contamination of soil and/or groundwater will not be addressed in this work plan. Furthermore, according to the Statement of Work and Archive Search Report (ASR), this site may contain Chemical Warfare Material (CWM). If CWM is encountered, FWENC and subcontractor personnel will immediately withdraw from the work area in an upwind direction and notify the designated USAESCH Safety Specialist and the Fort McClellan Transition Force Operations Office. FWENC UXO/OE personnel will secure the area until relieved by government personnel. Operations will be suspended until further notice, upon the direction of the designated USAESCH Contracting Officer.

1.1.2 This Work Plan describes FWENC's technical approach management structure for the OE Disposal Support on Fort McClellan.

1.1.3 Project Organization

1.1.3.1 The project management organization for all delivery orders under this contract is described in the General Site-Wide Work Plan, Section 2.2.

1.1.4 Project Personnel

1.1.4.1 The specific responsibilities associated with the FWENC project management personnel are described in the General Site Wide Work Plan, Section 2.2.1.

1.1.5 Project Communications and Reporting

1.1.5.1 The FWENC Project Manager and Delivery Order Manager will work together with the United States Army Engineering and Support Center, Huntsville (USAESCH) Project Manager and the designated USAESCH Safety Specialist to ensure that all of USAESCH's project requirements are met, and to keep the USAESCH Project Manager informed of any technical or administrative issues that may impact the project schedule or budget. Any communication that has the potential to impact the project scope of work, schedule, or budget will be confirmed via written correspondence between the Foster Wheeler Delivery Order Manager and the USAESCH Project Manager.

1.1.5.2 FWENC will provide monthly progress reports to USAESCH for this delivery order. These reports will document activities completed during the previous month, activities in progress, and activities scheduled for the upcoming month. Work Breakdown Structure, Cost Account, and Manpower Spread Reports will also be included in the monthly progress report. Reports will reveal any actual or potential variances in the project schedule or budget. The monthly progress reports will also discuss what actions, if any will be needed to correct or address such variations.

1.1.6 Project Deliverables

1.1.6.1 The major project deliverables for the OE Disposal Support at Fort McClellan include the following:

1.1.6.1.1 Draft and Final Project Work Plan

1.1.6.1.2 OE Location Maps and associated database,

1.1.6.1.3 Field Books, Sketches, Computation Sheets, Tabulation Sheets

1.1.6.1.4 Meeting Minutes

1.1.6.1.5 Monthly, Weekly, Daily Reports

1.1.6.1.6 Draft and Final Action Memorandum

1.1.6.1.7 Final Report

1.1.7 Project Schedule

1.1.7.1 The FWENC approach to project control includes the use of multi-level schedules and establishment of targets or milestones to measure progress. Additional detailed subtask schedules will be prepared throughout the project for use in management of individual tasks. A schedule, normally required, is not applicable, since OE Disposal Support is on an on call basis.

1.1.7.2 The schedule is based upon 100 responses per year on an on-call basis. Schedule impacts will be immediately discussed with the USAESCH Project Manager along with proposed resolutions, which may include additional staffing requirements, i.e., Security. This schedule is based on a forty-hour workweek, consisting of four 10-hour days or five 8-hour days, Monday through Friday. FWENC UXO personnel shall not perform OE related tasks more than 10 hours per day.

1.1.8 Periodic Reporting

1.1.8.1 Section 8.5 of the FWENC General Site Wide Work Plan describes the details of the Monthly, Weekly, and Daily Reports to be delivered during the execution of individual Delivery Orders at Fort McClellan.

1.1.9 Costing and Billing

1.1.9.1 The Delivery Order specific schedule discussed in Section 1.1.7 of this work plan will be prepared using Microsoft Project or similar cost-schedule software that is capable of tracking both cost and schedule.

1.1.9.2 The Delivery Order Manager will approve all hours charged to the project by assigned field and office personnel to ensure no unauthorized hours are charged. FWENC's accounting system provides weekly updates of all charges posted to a specific Delivery Order. The on-site management team will use these data to compare cost and schedule performance to the baseline cost-schedule data at least once weekly. Any significant variation will immediately be brought to the attention of the FWENC Project Manager and, if appropriate, the USAESCH Project Manager. On a weekly basis, within the weekly report to USAESCH, FWENC will report cost (for time and materials tasks

only) and schedule performance, identifying any actual or anticipated variances and proposing corrective action.

1.1.9.3 Billing for services provided during the performance of OE Disposal Support will be done in accordance with the provisions contained in Contract DACA 87-99-D-0010.

1.1.10 Project Public Relations Support

1.1.10.1 FWENC will provide public relations support by attending public meetings with DOD, regulatory agencies, civilian agencies, other stakeholders, and members of the general public as directed by the USAESCH Contracting Officer. Additional public relations support will be provided by assisting the USAESCH Public Affairs Office (PAO) and the U.S. Army Corps of Engineers with executing a Public Affairs program, including preparation and distribution of Fact Sheets or other informational and presentation materials for meetings as needed.

1.1.11 Management of Field Operations

1.1.11.1 This section describes the management of field operations during OE Disposal operations at Fort McClellan, including site access and control; traffic control and parking; field team organization and responsibilities; and scheduling.

1.1.11.2 Site Access and Control

1.1.11.2.1 Fort McClellan is open to the public. Areas with ongoing work are closed to the public and all other personnel not essential to the task being conducted in that area. All personnel engaged in off-road activities are required to attend a safety briefing by the Fort McClellan Safety Officer. All FWENC personnel will also undergo site specific training. Unescorted access is restricted to several areas of the site. Personnel must have approval from Transition Force Operations (TFO) prior to entering undeveloped areas. Only FWENC UXO personnel will conduct OE Disposal Support operations.

1.1.11.2.2 Any areas determined to pose an immediate risk of OE exposure as a result of reconnaissance and identification will have access restricted using temporary barricades until the immediate risk has been eliminated.

1.1.11.2.3 The exclusion zone may restrict access to other areas of the site. If this should occur, security measures may have to be established to keep pedestrians out of the affected areas.

1.1.11.2.4 Exclusion zones will be established based on the identification of the suspect OE item during FWENC reconnaissance. The exclusion zone will be established using the approved USAESCH distances listed in Attachment 2-1. Whenever OE is encountered that is not listed in Attachment 2-1, exclusion zones will be established using the default distances listed in DOD 6055.9 STD, Tables C5.T1 and C5.T2.

1.1.11.2.5 Establishment of exclusion zones, and if necessary, personnel evaluations will be coordinated through the USAESCH Safety Representative and the Fort McClellan TFO. It will be necessary to restrict traffic on roads that are within the exclusion zone during OE Disposal operations. FWENC UXO personnel will erect tape barricades and close roads as required. All road closures will be coordinated through the Fort McClellan TFO. All barricades will be removed immediately after completion of UXO operations. Caution tape that is not considered usable will be disposed of through normal trash disposal.

1.1.12 Field Office/Command Post

1.1.12.1 FWENC will maintain a modular office complex and a storage facility on site outside any potential exclusion zone for the duration of the OE Disposal operation.

1.1.13 Traffic Control/Parking

1.1.13.1 Vehicle traffic and parking will generally be limited to roads and parking areas on the site. In addition, there will be a designated parking area near the office complex. Only existing parking areas will be utilized. As needed, vehicles may need to travel off existing roads to move equipment and/or personnel to the disposal areas.

1.1.14 Field Personnel Organization and Responsibilities

1.1.14.1 Detailed descriptions of field personnel responsibilities are contained within Section 6.0 of the FWENC General Site Wide Safety and Health Plan.

1.1.15 Communications

1.1.15.1 Telephone, fax, and Internet services are available at the FWENC modular office complex. Field communication systems include cellular telephones, Nextel cellular telephones and radios. One radio is also available that is part of the Fort McClellan TFO radio network.

1.1.16 Previous Investigations

1.1.16.1 A number of previous investigations have been conducted at Fort McClellan that provide useful information regarding the potential presence of OE at the site. The discussion below summarizes those previous investigations.

1.1.16.2 Archives Search Report (ASR), US Army Corps of Engineers – An ASR was prepared by the US Army Corps of Engineers, St. Louis District in 1997. The ASR describes known historical OE-related activities at Fort McClellan. The document includes maps with the locations of known range safety fans, as well as ordnance firing points, types of ordnance reportedly used at the various ranges, and dates of operation of ranges, firing fans, and training areas. FWENC has revised the ASR to include more complete information concerning training areas on the Installation.

1.1.16.3 Environmental Baseline Survey (EBS), Environmental Science and Engineering, Inc. (ESE) – The EBS for Fort McClellan was completed by ESE in January 1998. Through the use of record reviews, interviews, and site inspections, the report documented the status of HTRW and OE issues at Fort McClellan and Pelham Range. The report provides a summary of known OE sites at Fort McClellan, and was useful in confirming and/or supplementing the information contained in the ASR.

1.1.16.4 Historical Aerial Photograph Investigation, Oak Ridge National Laboratories (ORNL)– This investigation was completed in August 1999 by ORNL for USAESCH. The purpose of the study was to conduct digital photographic interpretation of historical photographs, and anomaly resolution and tracking of ten sites within Fort McClellan. Portions of the Bravo Area were covered by this study, and fall within the areas designated by ORNL as Range Sites 4,5,6,7,8, and 10. The study included an analysis of photographs from the period 1937 to 1994, and a number of anomalies were identified which are associated with known ranges in the area. Anomalies were classified as unidentified objects, unidentified structures, ammunition ranges, skeet and trap range, training areas, bivouac sites, areas of trails and clearings, a trail with no outlet, areas cleared of scrub and ground cover, and a road in a cleared area.

1.1.16.5 EPIC aerial photograph investigation, US Environmental Protection Agency – This study was conducted by the EPA in 1990 to help determine the history and locations of potential environmental issues at Fort McClellan. Numerous photographic anomalies were identified. The study was useful as a separate source for locating potential OE related sites within the EE/CA study area, and supplemented the other documents containing historical information and photographs. 1.14.5 There are no indications in the historical records or in FWENC's reconnaissance findings that aerial bombing training was ever conducted at Fort McClellan, or that bombing ranges ever existed at this facility. Inert bombs (1000 lb., 750 lb., 500 lb., cluster and concrete practice) and Nike Ajax Missiles were used as part of this sites' chemical decontamination training. As part of the training curriculum, these inert rounds were placed not dropped. The ASR indicates that these inert rounds were decontaminated and disposed of.

1.2 LOCATION

1.2.1 Details regarding the site description and history of Fort McClellan were obtained through previously prepared documents and FWENC's reconnaissance activities at the site.

1.2.2 Fort McClellan is located northeast of the City of Anniston, Calhoun County, and Alabama. To the west of the Fort are the area known as Weaver and Blue Mountain. To the north is the City of Jacksonville. The Talladega Forest is located east of the Fort. Fort McClellan occupies 18,929 acres adjacent to the city of Anniston, Alabama.

1.3 HISTORY

1.3.1 Fort McClellan has documented use as a military training area since 1912, when the Alabama National Guard used it for artillery training. As early as 1898 (Spanish American War) the Choccolocco Mountains may have been used for artillery training. The 29th Infantry Division used areas of Fort McClellan for training prior to being ordered to France during World War I. Prior to World War II, the 27th Infantry Division assembled at Fort McClellan for training, and during the war many other units used the site for various training purposes. After World War II the site was used for National Guard training, and was also selected as the site for the Army's Chemical Corps school.

1.3.2 Fort McClellan was recommended for closure in BRAC 95, and the Base was closed in September 1999. At this time, local, state, and federal interests are deciding the future use of Fort McClellan. A Transition Team is now in place to facilitate disposition of Fort McClellan properties to private ownership and/or transfer to other government entities.

1.3.3 A summary of historical activities in the area can be found in the ASR for Fort McClellan, and in the Reconnaissance Findings.

1.4 TOPOGRAPHY

1.4.1 The topographic gradient at Fort McClellan generally increases toward the south and east of the main installation. Local relief on Fort McClellan is in excess of 1,320 feet. The lower elevations (700 feet above mean sea level [msl]) occur along Cane Creek, near Baltzell Gate Road, while the maximum elevations (2,063 feet above msl) occur in the Choccolocco Mountains, which traverse the area in a north/south direction, with the steep easterly slopes grading abruptly into Choccolocco Valley. The western slopes are more continuous, with the southern extension maintaining elevations up to 900 feet above msl near the western reservation boundary. The northern extension decreases in elevation in the vicinity of Reilly Airfield. The central portion of Fort McClellan, in the vicinity of the Main Cantonment Area, is characterized by flat to gently sloping land.

1.5 CLIMATE

1.5.1 Climatology information in this section has been excerpted from the Final Environmental Baseline Survey for Fort McClellan (January, 1998). Climatic data will be used to determine appropriate timeframes for investigations and any future removal actions.

1.5.2 Fort McClellan is situated in a temperate, humid climate. Summers are hot and long, and winters are usually short and mild to moderately cold. The climate is influenced by frontal systems moving from northwest to southeast, and temperatures change rapidly from warm to cool due to the inflow of northern air. The average annual temperature is 63 degrees Fahrenheit (°F). Summer temperatures usually reach 90°F or higher about 70 days per year, but temperatures above 100°F are rare. Freezing temperatures are common but are usually of short duration. The first frost may arrive by late October. At Anniston, the average date of the first 32°F temperature is November 6, and the last is March 30. This provides a growing season of 221 days. Snowfall averages 0.5 to 1 inch. On rare occasions, several inches of snow accumulate from a single storm (ESE, 1997).

1.5.3 The average annual rainfall is approximately 53 inches and is well distributed throughout the year. The more intense rains usually occur during the warmer months, and some flooding occurs nearly every year. Drought conditions are rare. Approximately 80 percent of the flood-producing storms are of the frontal type and occur in the winter and spring, lasting from 2 to 4 days each. Summer storms are usually thunderstorms with intense precipitation over small areas, and these sometimes result in

serious local floods. Occasionally, several wet years or dry years occur in series. Annual rainfall records indicate no characteristic order or pattern (ESE, 1997).

1.5.4 Winds in the Fort McClellan area are seldom strong and frequently blow down the valley from the northeast. However, there is no truly persistent wind direction. Normally, only light breezes or calm prevail, except during passages of cyclonic disturbances, when destructive local wind storms develop, some into tornadoes, with winds of 100 miles per hour or more (ESE, 1997).

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2.0 TECHNICAL MANAGEMENT PLAN

2.0.1 This chapter details the approach, methods and operational procedures to be implemented at Fort McClellan by FWENC and subcontractor personnel. Detailed discussions are contained in the FWENC General Site Wide Work Plan, Section 2.0.

2.1 GENERAL

2.1.1 OE Disposal Support is a site wide operation; refer to the FWENC General Site Wide Work Plan, Section 2.1.

2.1.2 CWM Discovery Procedures

2.1.2.1 In the event of CWM material discovery all personnel will evacuate the area immediately in an upwind direction. The SUXOS will notify FWENC Command Center, the Fort McClellan Transition Force Operations Center and the USAESCH Safety Representative. If deemed necessary by the USAESCH Safety Representative, FWENC UXO personnel will perform area security functions until response elements arrive on scene or until relief is directed by the USAESCH Safety Representative. The FWENC Command Center will notify the Ft. McClellan Transition Force Operations and other personnel listed on Table 6.1 as required.

2.1.3 Procedures for OE Disposal

2.1.3.1 Details are discussed in Addendum 1.0 of this work plan. Upon discovery of OE, FWENC will receive tasking from either BRAC Transition Force or the USAESCH Safety Representative.

2.1.4 Special UXO Procedures

2.1.4.1 EOD Support

2.1.4.1.1 EOD Support will be requested by USAESCH for CWM, for UXO that cannot be identified or in the event a render safe procedure is required.

2.1.4.2 OE Identification

2.1.4.2.1 OE/Unidentified OE identification will be made by trained UXO personnel. Identification will be made based on personal experience and by using appropriate ordnance publications. The Demolition Supervisor will verify all OE items. In the event

that site UXO personnel are unable to identify a suspect OE item, the SUXOS will request assistance from the USAESCH Safety Representative. If site personnel are not able to fully identify a suspect UXO the item will be photographed with a digital camera and electronically transmitted to USAESCH, Huntsville for assistance.

2.1.5 Technical Scope

2.1.5.1 Not applicable to this work plan.

2.1.6 Excavations

2.1.6.1 Not applicable to this work plan.

2.2 PROJECT ORGANIZATION

2.2.1 OE Disposal Support is a site wide operation; refer to the FWENC General Site Wide Work Plan, Section 2.2 and Chapter 6.2 of this work plan.

2.3 MOBILIZATION PLAN

2.3.1 OE Disposal Support is a site wide operation; refer to the FWENC General Site Wide Work Plan, Section 2.3.

2.4 SITE PREPARATION PROCEDURES

2.4.1 OE Disposal Support is a site wide operation; refer to the FWENC General Site Wide Work Plan, Section 2.4 and Addendum 1.0 of this work plan.

2.4.2 Prior to commencing OE Disposal operations, FWENC UXO demolition teams will perform a visual reconnaissance of the disposal site. In addition, these teams will use an approved magnetometer, such as the Schonstedt 52CX, to clear and mark a route into the disposal area. All personnel involved in the OE Disposal operations will remain within the “cleared” area. The physical size of the area will established by the Demolition Supervisor, based upon terrain considerations, number of OE items to be disposed and engineering controls employed.

2.5 STATISTICAL SAMPLING

2.5.1 Not applicable to this work plan.

2.6 REPORTING AND DISPOSITION OF UXO

2.6.1 Procedures are discussed in Addendum 1.0 of this work plan.

2.7 REPORTING AND DISPOSITION OF OE

2.7.1 Procedures are discussed in Addendum 1.0 of this work plan.

2.8 ADDITIONAL TASKS AND PROCEDURES

2.8.1 Not applicable to this work plan.

2.9 REFERENCES FOR ADDITIONAL PLANS

2.9.1 Not applicable to this work plan.

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ATTACHMENT 2-1
Minimum Separation Distances

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**ATTACHMENT 2-1
INDEX OF USAESCH CALCULATIONS**

OE ITEM	MAXIMUM FRAGMENTATION RANGE (FEET)
PROJECTILE, 37MM	1181
PROJECTILE, 75MM	1701
PROJECTILE, 3"/50 AP MK29	1595
ROCKET, 2.36" (CASE ONLY)	809
ROCKET, 3.5" (CASE ONLY)	1420
ROCKET, LAW 66MM M72A2 (CASE ONLY)	437
MORTAR, 60MM M49A3	1080
MORTAR, 81MM, M374 (NEW STYLE)	1233
MORTAR, STOKES, 3"	1346
GRENADE, 40MM M406	345
GRENADE, RIFLE M31 (CASE ONLY)	351
GRENADE, MK II	650

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ATTACHMENT 2-2

Basic Safety Concepts and Considerations for Ordnance and Explosive Operations

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***BASIC SAFETY CONCEPTS AND
CONSIDERATIONS FOR
ORDNANCE AND EXPLOSIVES
OPERATIONS***

U.S. ARMY ENGINEERING AND SUPPORT
CENTER, HUNTSVILLE

22 May 2000

TABLE OF CONTENTS

	<u>Paragraph</u>	<u>Page</u>
Chapter 1 Introduction		
Purpose.....	1-1	1-1
Applicability.....	1-2	1-1
References.....	1-3	1-1
Distribution	1-4	1-1
Policy	1-5	1-1
Responsibilities.....	1-6	1-1
Term and Definitions	1-7	1-1
General Safety Concerns and Procedures ..	1-8	1-2
Chapter 2 OE Safety Precautions.....	2-1	2-1
Chapter 3 Ordnance and Explosives Storage.....	3-1	3-1
Chapter 4 Ordnance and Explosives Transportation.....	4-1	4-1
Chapter 5 Exclusion Area Operations.....	5-1	5-1
Chapter 6 OE Excavation Operations	6-1	6-1
Chapter 7 OE Disposal Operations	7-1	7-1
Appendix A References		A-1

BASIC SAFETY CONCEPTS AND CONSIDERATIONS FOR ORDNANCE AND EXPLOSIVES (OE) OPERATIONS

CHAPTER 1 INTRODUCTION

1-1. Purpose. This pamphlet establishes the safe operating procedures for dealing with ordnance and explosives (OE) and unexploded ordnance (UXO) items on formerly used defense sites (FUDS), base realignment and closure (BRAC) and installation restoration (IR) projects. Because there are no absolute safe procedures for dealing with OE, merely procedures considered being least dangerous, it is essential that a planned and systematic approach be established.

1-2. Applicability. This pamphlet applies to all Headquarters, United States Army Corps of Engineers (HQUSACE) elements, United States Army Corps of Engineers (USACE) commands, and their contractors having the responsibility for performing OE response activities. For the purpose of this document, all references to OE include UXO.

1-3. References. Required and related publications are listed in appendix A.

1-4. Distribution. Approved for public release; distribution is unlimited.

1-5. Policy. It is the policy of the USACE to produce products and services that fully meet the customers' expectations of quality, timeliness and cost effectiveness. All OE response procedures must be formulated to ensure harmony with the USACE Strategic Vision and should be in concert with activities presented in other USACE guidance. There should be no compromise of health and safety requirements to meet production or quality goals. Safety is the leading edge of quality.

1-6. Responsibilities. It is the responsibility of all USACE and contractor personnel involved with OE response projects to safely execute them in accordance with (IAW) the approved Site Safety and Health Plan (SSHP), Work Plan (WP), and all applicable laws, regulations, and policies.

1-7. Terms and Definitions.

a. Ordnance and Explosives. Ammunition, ammunition components, chemical or biological warfare materiel, or explosives that have been abandoned, expelled from demolition pits or burning pads, lost, discarded, buried or fired. Such ammunition components and explosives are no longer under accountable record control of any DOD organization or activity.

b. Explosive Soil. Explosive soil refers to a mixture of explosives in soil, sand, clay or other solid media at concentrations such that the mixture itself is explosive.

c. Unexploded Ordnance (UXO). Military Munitions that have been primed, fuzed, armed, or otherwise prepared for action, and have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to the operations, installations, personnel, or material, and remain unexploded either by malfunction, design, or any other cause.

d. UXO Qualified Personnel. The term UXO Qualified Personnel applies only to personnel meeting the requirements for the positions of UXO Technician II, UXO Technician III, UXO Safety Officer, UXO Quality Control Specialist, and the Senior UXO Supervisor. For qualification requirements, refer to EP 1110-1-18, Ordnance and Explosives Response.

e. OE Procedures. These procedures include, but are not limited to, the following actions performed by a UXO qualified individual.

(1) Gaining access to (manual excavation) and identifying subsurface anomalies and assessing the condition of buried OE.

(2) Identifying and assessing the condition of surface OE.

(3) Recovery and final disposal of all OE.

f. OE Related procedures: These OE related procedures include, but are not limited to, the following and can be performed by a non-UXO qualified individual:

(1) Location and marking of subsurface anomalies.

(2) Location and marking of suspected surface OE.

(3) Transportation and storage of recovered OE.

(4) Utilizing earth-moving machinery (EMM) to excavate overburden from suspected OE.

1-8. General Safety Concerns and Procedures.

a. OE operations will not be conducted until a complete plan for the site is prepared and approved. These plans will be based upon limiting exposure to the minimum number of personnel, for the minimum time, to the least amount of OE consistent with safe and efficient operations.

b. Only UXO qualified personnel will perform OE procedures. Non-UXO personnel may be utilized to perform OE related procedures when supervised by a UXO Technician III. All personnel engaged in field operations will be thoroughly trained and capable of recognizing the specific hazards of the procedures being performed. To ensure that these procedures are performed to standards, all field personnel will be under the direct supervision of a UXO Technician III.

c. Personnel who will be handling OE items will not wear outer or inner garments having static electricity generating characteristics. Materials made of 100 percent polyester, nylon, silk and wool, are highly static producing. Refer to DA Pam 385-64 for more information regarding non-static producing clothing.

d. Prior to any action being performed on an ordnance item, all fuzing will be positively identified. This identification will consist of fuze type by function, condition (armed or unarmed), and the physical state/condition of the fuze, i.e., burned, broken, parts exposed/sheared, etc.

CHAPTER 2 OE SAFETY PRECAUTIONS

2-1. OE Safety Precautions.

a. Every effort will be made to identify a suspect OE item. Under no circumstances will any OE be moved in an attempt to make a positive identification. The OE item will be visually examined for markings and other external features such as shape, size, and external fittings. If an unknown OE item is encountered, the on-site USACE representative will be notified immediately. If there is no USACE personnel on-site, the District or Design Center's OE Safety representative will be notified as soon as possible. If external research is required, it will be initiated by the U.S. Army Engineering and Support Center, Huntsville. The following are additional considerations for the safe handling of OE items:

- (1) Projectiles containing Base Detonating (BD) fuzes are to be considered armed if the round is fired.
- (2) Arming wires and pop-out pins on unarmed fuzes should be secured prior to any movement.
- (3) Do not depress plungers, turn vanes, rotate spindles, levers, setting rings or other external fittings on OE items. Such actions may arm or activate the OE.
- (4) Do not attempt to remove any fuze(s) from the OE. Do not dismantle or strip components from any OE items.
- (5) UXO Personnel are not authorized to inert any OE items found on-site.
- (6) OE /UXO items will not be taken from the site as souvenirs/training aids.
- (7) Civil War ordnance will be treated as any other OE.

b. Prior to entering areas/ranges contaminated with Improved Conventional Munitions (ICM) an approved DA -waiver must be obtained. The District and/or Design Center's OE Safety representative must be notified.

c. Any time -suspect chemical warfare materiel (CWM) is encountered during conventional OE site activities, all work will immediately cease. Project personnel will withdraw along cleared paths upwind from the discovery. A team consisting of a minimum of two personnel will secure the area to prevent unauthorized access. Personnel should position themselves as far upwind as possible while still maintaining security of the area.

(1) On Formerly Used Defense Sites (FUDS), the UXO team will notify the local Point of Contact (POC) designated in the Work Plan. The local POC will facilitate Explosives Ordnance Disposal (EOD) response and two personnel will secure the site until EOD's arrival. If the local POC designated in the Work Plan is not the local law enforcement agency, the local POC will inform the local law enforcement agency of the discovery. The EOD unit will notify the Technical Escort Unit (TEU) and secure the area until TEU's arrival. After notifying the local law enforcement agencies, the local POC will notify the USAESCH Safety Office to inform them of the actions taken.

(2) On active installations, the UXO team will normally notify the Range Control Officer, Facility Engineer, Post Headquarters, or POC designated in the Work Plan.

d. Avoid inhalation and skin contact with smoke, fumes, and vapors of explosives and other related hazardous materials.

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

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

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

h. Approach an unfired rocket motor from the side at a 45-degree angle. Accidental ignition can cause a missile hazard and hot exhaust.

i. Do not expose unfired rocket motors to any Electromagnetic Radiation (EMR) sources.

j. Consider an emplaced landmine armed until proven otherwise. It may be intentionally booby-trapped to deceive.

(1) Many training mines contain spotting charges capable of inflicting serious injury.

(2) Exercise extreme care with wooden mines that have been buried for long periods of time. Certain soil conditions can cause the wood to deteriorate and any inadvertent movement or pressure may initiate the fuze.

k. Assume that practice OE contains a live charge until it can be determined otherwise. Expended pyrotechnic and practice devices can contain red or white phosphorus residue. Due to incomplete combustion, the phosphorous residue may re-ignite spontaneously if the crust is broken and exposed to air.

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

m. Foreign ordnance was returned to the United States for exploitation and subsequent disposal. Every effort will be made to research the applicable documentation and publications prior to commencement of a project.

n. Anomaly Avoidance Operations. Anomaly Avoidance procedures are detailed in

- ETL 385-1-2, (Draft) Generic Scope of Work for Ordnance Avoidance Operations, August 1996, and
- Ordnance and Explosives (OE) Center of Expertise (CX) Interim Guidance Document 99-01, Unexploded Ordnance (UXO) Support for Other Activities, 5 February 1999.

These documents can be located on the OE Home Page at:

<http://www.hnd.usace.army.mil/oew/policy/regpro.html>

CHAPTER 3 OE STORAGE

3-1. OE Storage. During OE projects, explosive storage falls into two categories, on-DOD installations and off-DOD installations.

- a. On-DOD installations the provisions of DOD 6055.9 STD will be followed. Generally, the installation should have an explosive storage area that meets DOD standards. The permitting and compliance requirements are the responsibility of the installation. The compatibility of explosives found in Chapter 3, DOD 6055.9 STD will be followed. OE items awaiting final disposition will not be stored with other explosives. Storage of commercial explosives requires DOD hazard class storage compatibility group.

b. In the event the installation does not have an existing storage facility, the provisions of paragraph c, in this section, will apply.

c. Off-DOD installations, the contractor will be responsible for the construction of a temporary explosive storage area. This temporary storage area will meet all local, state, and 27 CFR, Bureau of Alcohol Tobacco and Firearms (BATF) requirements and as much of DOD 6055.9 STD as is practical to implement. The establishment of a temporary explosive storage area must meet the following requirements.

(1) The area will, if possible, meet the inhabited building and public traffic route distances specified in DOD 6055.9 STD. If the distances are less than required by the DOD guidance, a proposed barricading plan to protect the public from accidental detonation must be submitted and approved by the Huntsville Center's Engineering Directorate.

(2) Magazines must meet the requirements of the BATF regulations, and each magazine must have a Net Explosive Weight (NEW) established for the explosives to be stored.

(3) Each magazine must be grounded as specified in NFPA 780 and must meet the intermagazine distances as defined in the DOD guidance.

(4) A physical security survey will be conducted to determine if fencing or guards are required. This survey will be coordinated through local law enforcement agencies. Generally, a fence around the magazine is not needed IAW BATF regulations. However, it is the responsibility of the contractor for determining the degree of protection to prevent the theft of explosives and OE items.

(5) A fire plan for either on or off-installation explosive storage areas will be prepared and coordinated with the local fire department. All magazines will have placards IAW 27 CFR/ATF P 5400.7 or DOD 6055.9 STD.

CHAPTER 4 OE TRANSPORTATION

4-1. OE Transportation. In the event that OE items must be transported off-site, the provisions of 49 CFR, DA Pam 385-64 state and local laws will be followed. These additional considerations are provided for the safe transportation of OE items:

- a. USACE contractors are prohibited from transporting OE off-site for destruction until the provisions of paragraph 1-9, TB 700-2 are followed.
- b. Do not transport WP munitions unless they are immersed in water, mud or wet sand.
- c. If loose pyrotechnic, tracer, flare or similar mixtures are to be transported, they will be placed in #10 mineral oil or equivalent to minimize the fire and explosion hazards.
- d. Incendiary loaded munitions should be placed on a bed of sand and covered with sand to help control the burn if a fire should start.
- e. If an unfired rocket motor must be transported, it will be positioned in the vehicle parallel to the rear axle. This will afford maximum protection for the personnel operating the vehicle.
- f. If a base-ejection projectile must be transported to a disposal area, the base will be oriented in the vehicle so that it is parallel to the rear axle. This will afford maximum protection for the personnel operating the vehicle.
- g. OE with exposed hazardous fillers such as High Explosive (HE), will be placed in appropriate containers with packing material to prevent migration of the hazardous fillers. Padding should be added to protect the exposed filler from heat, shock and friction.

CHAPTER 5 EXCLUSION ZONE OPERATIONS

5-1. Exclusion Zone Operations. On OE project sites, it is the responsibility of the contractor's UXO Safety Officer (UXOSO) to establish the exclusion zone for each UXO team. This exclusion zone should not be confused with the safe separation distance, which is maintained between teams.

a. The purpose of the exclusion zone is for the protection of non-essential project personnel and the public from blast overpressure and fragmentation hazards. There are two criteria for calculating exclusion zones;

(1) Intentional Detonations. When destroying ordnance, both the hazards from fragmentation and overpressure must be considered. The minimum separation distances in DOD 6055.9 STD will be used unless otherwise stated. The maximum fragmentation and overpressure distances may also be calculated IAW HNC-ED-CS-S-98-1, Methods for Predicting Primary Fragmentation Characteristics of Cased Munitions.

(2) Unintentional Detonations. If the identification of OE on an OE site is unknown, the minimum separation distance specified in DOD 6055.9 STD, Chapter 5, Paragraph C5.5.4, will be used to establish the exclusion zones. When the identification of OE items are known, the exclusion zones will be determined by the U.S. Army Engineering and Support Center, Huntsville, (USAESCH) Engineering Directorate using HNC-ED-CS-S-98-1.

b. When multiple teams are working on site, a safe separation distance will be established. The minimum distance maintained between teams will never be less than 200 feet or the K50 overpressure distance. The one that is greater will be used.

c. While OE operations are being conducted, only personnel essential for the operation will be allowed in the exclusion zone. When non-essential personnel enter the exclusion zone, all OE operations will cease. In addition to this work stoppage, the following actions will be accomplished:

(1) The individual(s) must receive a safety briefing and sign the visitor's log prior to entering the zone.

(2) The individual(s) will be escorted by a UXO qualified individual.

(3) All OE operations will cease within the radius of the exclusion zone for the areas to be visited.

d. All personnel working within the exclusion zone will comply with the following:

(1) There will be no smoking within the exclusion zone, except in areas designated by the UXOSO.

(2) There will be no open fires for heating or cooking (gas stoves, grills, etc.) within the exclusion zone, except where authorized by the UXOSO.

(3) During magnetometer operations, workers will have no metal parts in or on their shoes that would cause the magnetometer to present false indications.

CHAPTER 6 OE EXCAVATION OPERATIONS

6-1. OE Excavation Operations.

a. Hand excavation is the most reliable method for uncovering OE provided the item is near the surface. Hand excavation exposes personnel to the hazard of detonation for longer periods of time than any other method. Taking this into consideration, only UXO qualified personnel will be used to accomplish this task.

b. Earth-Moving Machinery (EMM) may be used to excavate overburden from suspected OE. EMM will not be used to excavate within 12 inches of a suspected OE. Once the EMM is within 12 inches of the OE, the excavation will be completed by hand excavation methods. Personnel who are not UXO qualified may operate EMM only when supervised by a UXO Technician III.

(1) If more than one EMM is to be used on site, the same minimum separation distances required for multiple work teams applies.

(2) EMM operations will be conducted within the guidelines of EM 385-1-1 and 29 CFR 1926 Subpart P.

c. Excavation operations, whether by hand or EMM, will employ a step down or offset access method. Under no circumstances will any excavation be made directly over the suspected OE.

CHAPTER 7 OE DISPOSAL OPERATIONS

7-1. OE Disposal Operations. All demolition operations will be conducted IAW TM 60A 1-1-31 and the USAESCH Procedures for Demolition of Multiple Rounds on OE Sites. No other publications are to be used for these operations.

a. As a general rule, all demolition operations will be accomplished by electrical means to assure maximum safety. There are exceptions to this requirement in situations where static electricity or Electromagnetic Radiation (EMR) hazards are present. Unintentional detonations can occur because of these induced currents (or lightning). The following precautions from TM 9-1375-213-12 are to be followed.

(1) Premature detonation of electric blasting caps by induced current from radio frequency (RF) signals is possible. Refer to TM 9-1375-213-12 that shows the minimum safe distance in respect to transmitter power and indicates distance beyond which it is safe to conduct electric blasting even under the most adverse conditions.

(2) Lightning is a hazard to both electric and non-electric blasting caps. A strike or a nearby miss is almost certain to initiate either type of cap or other sensitive explosive elements such as caps in delay detonators. Lightning strikes, even at distant locations, may cause extremely high local earth currents that may initiate electrical firing circuits. Effects of remote lightning strikes are multiplied by proximity to conducting elements, such as those found in buildings, fences, railroads, bridges, streams, and underground cables or conduits. The only safe procedure is to suspend all blasting activities during electrical storms and when one is impending.

(3) Electric power lines also pose a hazard for electric initiating systems. It is recommended that any demolition operation closer than 155 meters to electric power lines be done with a non-electric system such as NON-EL. This non-electric firing system provides the same amount of safety and control as electrical firing systems, but without the interference of EMR and static electricity hazards.

(4) Provisions of paragraph 1-9, TB 700-2 will be fully complied with prior to USACE contractors transporting OE off-site for destruction.

a. Only serviceable condition explosive material will be used for disposal operations.

b. The only acceptable disposal method is the one stated in the appropriate TM60 Series manual for specific ordnance types. Any commercial explosives being used will be equivalent to the military explosive required for the disposal operation.

NOTE

Oil well perforators/conventional shape charges are not acceptable substitutes for bulk explosives and will not be used for disposal operations except where applicable, refer to TM 60A-2-1-51. Otherwise these items are to be used only for the venting OE items prior to their turn-in as scrap.

c. If a situation dictates, protective measures to reduce shock, blast overpressure, and fragmentation will be taken. The USAESCH Engineering Directorate will assist in any design work and will review and approve all proposed protective works. As a minimum requirement all demolition shots will be tamped with clean earth or sand. IAW DOD 6055.9 STD the following separation distances will be observed unless otherwise directed by the Engineering Directorate.

(1) Minimum separation distance for non-fragmenting explosive materials will be no less than 1250 feet.

(2) Minimum separation distance for fragmenting explosive ordnance will be no less than 2500 feet. For bombs and projectiles with a diameter of 5 inches or greater, use a minimum distance of 4000 feet.

(3) Ordnance items with lifting lugs, strong backs, base plates, etc., will be oriented away from personnel, as fragments from these items tends to travel farther than normal.

d. Once demolition operations are completed, a thorough search of the demolition area will be conducted with a magnetometer to ensure a complete disposal was accomplished.

g. Inert ordnance will not be disposed of for scrap until the internal fillers/voids have been exposed and unconfined. Heat generated during the reclamation process can cause the inert fillers, moisture or air to expand and burst the sealed casings. In this situation, Oil Well Perforators can be used for venting these ordnance items which require demilitarization.

Appendix A

27 CFR 55	Alcohol, Tobacco Products and Firearms
29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1926	Safety and Health Regulations for Construction
49 CFR 100-199	Hazardous Materials Transportation
DOD 6055.9 STD	DOD Ammunition and Explosives Safety Standards, August 1997
AR 190- 11	Physical Security
DA PAM 385-64	Ammunition and Explosives Safety Standards
TM 9-1375-213-12	Operators and Organizational Maintenance Manual; Demolition Materials
TM 60A 1-1-22	EOD Procedures /General EOD Safety Procedures, April 1991
TM 60A 1-1-31	EOD Procedures/General Information on EOD Disposal Procedures, May 1994
EM 385-1-1	USACE Safety and Health Requirements Manual, September 1996
USAESCH	Procedures for Demolition of Multiple Rounds (consolidated shots) on Ordnance and Explosive Sites, August 1998
ER 1110-1-8153	Ordnance and Explosives Response, 19 May 1999
EP 1110-1-18	Ordnance and Explosives Response, 24 April 2000
ATF P 5400.7	ATF Explosives Laws and Regulations, June 1990
HNC-ED-CS-S 98-1	Methods for Predicting Primary Fragmentation Characteristics of Cased Explosives, January 1998
HNC-ED-CS-S 98-2	Methods for Calculating Range to No More Than One Hazardous Fragment Per 600 Square Feet on OE Sites, January 1998
HNC-ED-CS-S 96-8	Guide Selection and Siting of Barricades for Selected OE, September 1997

3.0 EXPLOSIVES MANAGEMENT PLAN

3.0.1 OE Disposal Support is a site wide operation. When required, the FWENC General Site Wide Work Plan, Section 3.0 will be referenced.

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4.0 EXPLOSIVES SITING PLAN

4.0.1 OE Disposal Support is a site wide operation. When required, the FWENC General Site Wide Work Plan, Section 4.0 will be referenced.

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5.0 GEOPHYSICAL INVESTIGATION PLAN

5.0.1 There are no geophysical activities planned that are associated with OE Disposal Support.

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6.0 SITE-SPECIFIC SAFETY AND HEALTH PLAN

6.0.1 OE Disposal Support is a site wide operation. Specific requirements are addressed in this work plan and when required the FWENC General Site Wide Work Plan, Section 6.0 will be referenced.

6.1 GENERAL

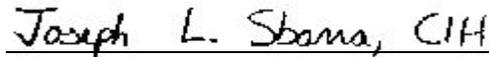
6.1.1 This SSHP, along with referenced safety and health sections of the FWENC General Site-Wide Work Plan, contains the requirements for protection of site personnel and the general public during OE Disposal Support operations at the Fort McClellan site and will be implemented by the UXO Site Safety and Health Officer (UXOSO) or his designee during site work. The content of this SSHP may change or undergo revision based upon additional information made available to safety and health personnel, monitoring results, or changes in the technical scope of work. Any changes proposed must be reviewed by the Foster Wheeler Environmental UXOSO and are subject to the approval of the Foster Wheeler Environmental Project Environmental and Safety Manager (PESM). Changes are also subject to the approval of the U.S. Army Corps of Engineers, Engineering and Support Center, Huntsville (USAESCH). The Field Change Request Form, provided in Attachment 6-1 of the FWENC General Site Wide Work Plan Section 6.0, will be used to initiate such changes. All personnel involved in OE Disposal Support will be required to read this work plan and the FWENC General Site Wide Work Plan.

6.1.1.1 By their signatures, the undersigned certify that this SSHP will be utilized for the protection of the health and safety of workers during OE Disposal Support operations at Fort McClellan.

APPROVALS:

	5/10/01
John C. McIlrath, PE, Project Manager Authorized Company Representative	Date

	5/10/01
Steven R. Paulus, Delivery Order Manager	Date

	5/10/01
Joseph Sbarra, CIH Project Environmental and Safety Manager Work Plan Reviewer	Date

	5/10/01
James Ennis Senior UXO Site Safety and Health Officer Work Plan Preparer	Date

6.2 STAFF ORGANIZATION, QUALIFICATIONS, AND RESPONSIBILITIES

6.2.1 The responsibilities of the health and safety staff are described in the following sections.

6.2.2 Project Manager (PM)

6.2.2.1 The Project Manager is John C. McIlrath. It is the responsibility of the Project Manager to:

6.2.2.1.1 Ensure that full corporate resources are made available to the program, as needed;

6.2.2.1.2 Serves, as necessary, as an intermediary between the USAESCH contract officer (CO) and Foster Wheeler's corporate management; and

6.2.2.1.3 Assist the Delivery Order Manager in problem resolution/corrective action implementation.

6.2.3 Delivery Order Manager

6.2.3.1 The Delivery Order Manager is Steven R. Paulus; the responsibilities of the Delivery Order Manager are:

6.2.3.1.1 Provide the major point of control to ensure that the program's technical, financial and scheduling objectives are achieved;

6.2.3.1.2 Ensure implementation of this program through coordination with the responsible Project Environmental Safety Manager (PESM);

6.2.3.1.3 Conduct periodic inspections;

6.2.3.1.4 Participate in incident investigations;

6.2.3.1.5 Ensure the SSHP has all of the required approvals before any site work is conducted;

6.2.3.1.6 Ensure that the PESH or UXO Site Safety and Health Officer (UXOSO) is informed of project changes which require modifications of the site safety plan; and

6.2.3.1.7 Assume overall project responsibility for Project Health and Safety.

6.2.4 Project Environmental and Safety Manager (PESM)

6.2.4.1 The Project Environmental and Safety Manager (PESM) is Joseph Sbarra, CIH. The responsibilities of the PESH are outlined and described in Section 6.2.2 of the FWENC FWENC General Site-Wide Work Plan.

6.2.5 Senior UXO Supervisor (SUXOS)

6.2.5.1 The Senior UXO Supervisor (SUXOS) is James Ennis. The responsibilities of the SUXOS are outlined and described in Section 6.2.3 of the FWENC General Site-Wide Work Plan.

6.2.6 UXO Site Safety and Health Officer (UXOSO)

6.2.6.1 The UXO Site Safety and Health Officer (UXOSO) is Pat Saveall. The responsibilities of the UXOSO are outlined and described in Section 6.2.4 of the FWENC General Site-Wide Work Plan.

6.2.7 Field Crew Personnel

6.2.7.1 Field crew personnel includes all FWENC UXO personnel. The responsibilities of all field crew personnel are outlined and described in Section 6.2.5 of the FWENC General Site-Wide Work Plan.

6.3 SITE DESCRIPTION AND CONTAMINATION CHARACTERIZATION

6.3.1 The former Fort McClellan Main Post is bounded to the south and west by the City of Anniston and to the northwest by the City of Weaver and consists of 18,929 acres.

6.3.2 Other than the OE that is being disposed and subsequently documented, contamination characterization is not within the scope of this delivery order.

6.3.3 Previous Site Investigations and site history are discussed in Chapter 1.0, paragraphs 1.13 through 1.14 of this work plan.

6.3.4 Source and Nature of Contamination

6.3.4.1 Information of this nature is currently limited to the findings of the ASR and Reconnaissance.

6.4 HAZARD ANALYSIS AND RISK ASSESSMENT

6.4.1 OE Disposal Support is a site wide evolution. This information is referenced in the FWENC General Site Wide Work Plan, Section 6.4. Activity Hazard Analysis (AHA's) are included as Attachment 6-1.

6.4.2 Chemical Hazards

6.4.2.1 In the event of CWM material discovery all personnel will evacuate the area immediately in an upwind direction. The SUXOS will notify Foster Wheeler Environmental Command Center and the USAESCH Safety Representative. If deemed necessary by the USAESCH Safety Representative, Foster Wheeler Environmental UXO personnel will perform area security functions until response elements arrive on scene or until relief is directed by the USAESCH Safety Representative. The Foster Wheeler Environmental Command Center will notify the Ft. McClellan Transition Force Operations and other personnel listed on Table 6.1 as required.

6.4.3 Working on Sloped Areas

6.4.3.1 Working in areas of sloping terrain pose unique requirements on personnel and equipment. There is the danger of slipping, tripping or falling and becoming seriously injured. In addition, the individuals who may perform rescue operations are exposed to the same hazards as well as bloodborne pathogens, hazards associated with rope work, and working with a sense of urgency due to an emergency/rescue situation where rapid response time is often critical. Personnel and equipment safety issues are in review and procedures are being developed. Changes will be submitted as an FCR. Interim guidance, if required, will be from the direction of the USAESCH Safety Representative.

6.5 TRAINING

6.5.1 OE disposal support is a site wide evolution. Training is referenced in the FWENC General Site Wide Work Plan, Section 6.5 and Addendum 1.0 of this work plan.

6.5.2 Mountain Operations

6.5.2.1 Specialized rope rescue and Red Cross first aid training for mountain operations was conducted for FWENC site personnel during the week of March 5 through March 9, 2001.

6.6 PERSONAL PROTECTIVE EQUIPMENT

6.6.1 OE disposal support is a site wide evolution. Personal Protective Equipment is referenced in the FWENC General Site Wide Work Plan, Section 6.6.

6.7 MEDICAL SURVEILLANCE PROCEDURES

6.7.1 OE disposal support is a site wide evolution. Medical Surveillance Procedures are referenced in the FWENC General Site Wide Work Plan, Section 6.7.

6.8 ENVIRONMENTAL AND PERSONAL MONITORING

6.8.1 Not applicable to this work plan. OE disposal support is a site wide evolution. If required, Environmental and Personal Monitoring is referenced in the FWENC General Site Wide Work Plan, Section 6.8.

6.9 SITE CONTROL

6.9.1 OE disposal support is a site wide evolution. Site Control procedures are referenced in the FWENC General Site Wide Work Plan, Section 6.9 and Addendum 1.0 of this work plan.

6.10 PERSONAL AND EQUIPMENT DECONTAMINATION

6.10.1 Not applicable to this work plan. OE disposal support is a site wide evolution. If required, Personal and Equipment Decontamination is referenced in the FWENC General Site Wide Work Plan, Section 6.10.

6.11 EMERGENCY RESPONSE AND CONTINGENCY PROCEDURES (ON-SITE AND OFF-SITE)

6.11.1 OE disposal support is a site wide evolution. Emergency Response and Contingency Procedures (On-Site and Off-Site) are referenced in the FWENC General Site Wide Work Plan, Section 6.12. Emergency Telephone Numbers are listed in Table 6.1 of this work plan. Emergency Hospital routes on and off site are listed in Attachment 6-2 of this work plan.

Table 6.1
Emergency Telephone Numbers

Contact	Firm or Agency	Telephone Number
Emergencies	Calhoun County Emergency Services	911
Police	Anniston Police Dept.	(256) 238-1800
Fire	Anniston Fire Dept.	(256) 231-7644
Ambulance	Anniston EMS	(256) 237-8572
Hospital	Stringfellow Memorial	(256) 235-8900
HAZMAT Response	Anniston Police Dept.	(256) 237-3541
BRAC Environmental Coordinator, Mr. Ronald Levy	Fort McClellan	(256) 848-6853
Project Manager, Mr. John C. McIlrath	Foster Wheeler Environmental Corporation	(256) 830-4100
DO Manager, Mr. Steven R. Paulus	Foster Wheeler Environmental Corporation	(256) 820-7904
PESM, Mr. Joseph Sbarra	Foster Wheeler Environmental Corporation	(973) 630-8101
Project Manager, Mr. Daniel Copeland	USAESCH	(256) 895-1567
Poison Control Center		(800) 462-0800
Chemtrec		(800) 424-9300
National Response Center		(800) 424-8802
Fort McClellan Transition Force Operations		(256) 848-5178

6.12 CONFINED SPACE ENTRY

6.12.1 Not applicable to this work plan.

6.13 SPILL CONTAINMENT

6.13.1 Not applicable to this work plan.

6.14 HEAT/COLD STRESS MONITORING

6.14.1 OE disposal support is a site wide evolution. Heat/Cold Stress Monitoring procedures are referenced in the FWENC General Site Wide Work Plan, Section 6.14.

6.15 STANDARD OPERATING PROCEDURES, ENGINEERING CONTROLS AND WORK PRACTICES

6.15.1 This information is discussed in Addendum 1.0 of this work plan.

6.16 LOGS, REPORTS AND RECORD KEEPING

6.16.1 OE disposal support is a site wide evolution. Logs, Reports and Record Keeping procedures are referenced in the FWENC General Site Wide Work Plan, Section 6.16.

6.17 RADIOLOGICAL AND CHEMICAL WARFARE MATERIAL (CWM)

6.17.1 OE disposal support is a site wide evolution. Controls for radiological material is not applicable to this work plan. Chemical Warfare Material (CWM) procedures are referenced in the Chapter 6.0, paragraph 6.4.2 of this work plan.

ATTACHMENT 6-1
Activity Hazard Analysis



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ACTIVITY HAZARD ANALYSIS

Project: OE DISPOSAL SUPPORT Activity: Mobilization / Demobilization		Location: Fort McClellan, Anniston, Alabama	
MAJOR STEPS	POTENTIAL HAZARDS	PROTECTIVE MEASURES/CONTROLS	ANALYZED BY/DATE
1. Mobilization/ demobilization of equipment and supplies.	1. Back Injuries	1. Site personnel will be instructed on proper lifting techniques; mechanical devices should be used to reduce manual handling of materials; team lifting should be utilized if mechanical devices are not available.	JS 03/14/01
	2. Heavy Equipment Operation	2. Follow procedures in Section 6.15.2 of the General Site-Wide Work Plan, equipment will have rollover protective structures and seat belts; operators shall wear seat belts when operating equipment; do not operate equipment on grades which exceed manufacturer's recommendations; equipment will have guards, canopies or grills to protect from flying objects; ground personnel will stay clear of all suspended loads; all slings chains and ropes will be rated for the load in which it is expected to lift; spills and absorbent materials will be readily available; drip pans, polyethylene sheeting or other means will be used for secondary containment; eye contact with operators will be made before approaching equipment; equipment will not be approached on blind sides; avoid equipment swing areas; know hand signals; all equipment will be equipped with backup alarms, and all equipment will be outfitted with fire extinguishers.	JS 03/14/01
	3. Temperature Extremes	3. Site personnel will be trained about signs and symptoms of heat and cold stress; FWENC Program EHS 4-6 will be followed.	JS 03/14/01
	4. Slips/Trips/Falls	4. Maintain work areas safe and orderly; unloading areas should be on even terrain; watch for uneven terrain, stumps, and vegetation in walk areas; mark tripping hazards and repair if possible.	JS 03/14/01
	5. Vehicular Traffic	5. Spotters will be used when backing up trucks and heavy equipment; trucks and heavy equipment will be equipped with back up alarms; traffic cones/vests will be used when working in public traffic areas.	JS 03/14/01
	6. Overhead Hazards	6. Personnel will be required to wear hard hats.	JS 03/14/01
	7. Dropped Objects	7. Composite toe boots will be worn.	JS 03/14/01
	8. Noise	8. Hearing protection with a noise reduction rating capable of maintaining personal exposure below 85 dBA (ear muffs or plugs) will be worn as needed during heavy equipment operations; all equipment will be equipped with manufacturer's required mufflers.	JS 03/14/01
	9. Eye Injuries	9. Safety glasses will be worn during all field activities including escort, data acquisition, reacquire, and intrusive activities. A portable eye wash station will be located adjacent to work activities.	JS 03/14/01
	10. Sharp Objects	10. Cut resistant work gloves will be worn: All hand and power tools will be maintained in safe condition; first aid kits will be available by work area.	JS 03/14/01
	11. Fire	11. 10 lb. ABC type fire extinguisher will be located adjacent to work area; all gasoline-powered equipment will be grounded.	JS 03/14/01
	12. Spills	12. Spill and absorbent materials will be readily available. All waste materials generated will be contained in 55-gallon drums.	JS 03/14/01
	13. Biological Hazards	13. Follow procedures outlined in Section 6.4.3 of the General Site-Wide Work Plan.	JS 03/14/01
	14. Hand and Power Tools	14. The proper tools will be used for each task, all tools will be inspected before each use, damaged tools will be removed from service, and tools will be used in accordance with manufacturer's instructions.	JS 03/14/01
EQUIPMENT USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS	
1. Level D PPE	1. Pre-use inspection	1. Personnel have read and comply with SSHP	
2. First Aid Kits	2. Inspect first aid kits monthly.	2. Site-specific training	
3. Portable Eyewash	3. Inspect portable eyewash monthly	3. At least 2 individuals on-site will have current CPR and First Aid training	
4. Fire Extinguishers	4. Inspect fire extinguishers monthly	4. Instruct personnel on proper use of fire extinguishers	
5. Heavy Equipment	5. Conduct pre-use inspections	5. Competent operators will be used	
6. Hand and Power Tools	6. Conduct pre-use inspections	6. Instruct personnel on proper use of hand and power tools	

ACTIVITY HAZARD ANALYSIS

Project: OE DISPOSAL SUPPORT		Location: Fort McClellan, Anniston, Alabama	
Activity: OE Surface Survey			
MAJOR STEPS	POTENTIAL HAZARDS	PROTECTIVE MEASURES/ CONTROLS	ANALYZED BY/ DATE
1. Initial/surficial OE survey of study areas.	1. Exposure to OE/chemical hazards 2. Back Injuries 3. Temperature Extremes 4. Slips/Trips/Falls 5. Overhead Hazards 6. Dropped Objects 7. Hand and Power Tools 8. Eye Injuries 9. Sharp Objects 10. Biological Hazards	1. Wear Level D PPE per Section 6.0; follow procedures in the UXO/OE Operational Plan; practice contamination avoidance; follow good personal hygiene practices. 2. Site personnel will be instructed on proper lifting techniques; Mechanical devices should be used to reduce manual handling of materials; team lifting should be utilized if mechanical devices are not available. 3. Site personnel will be trained about signs and symptoms of heat and cold stress; FWENC Program EHS 4-6 will be followed. 4. Maintain work areas safe and orderly; unloading areas should be on even terrain, watch for uneven terrain, stumps, and vegetation in walk areas; mark tripping hazards and repair if possible. 5. Personnel will be required to wear hard hats. 6. Composite toe boots will be worn. 7. The proper tools will be used for each task, all tools will be inspected before each use, damaged tools will be removed from service, and tools will be used in accordance with manufacturer's instructions. 8. Safety glasses will be worn. A portable eye wash station will be located adjacent to work activities. 9. Cut resistant work gloves will be worn; All hand and power tools will be maintained in safe condition; first aid kits will be available by work area. 10. Follow control measures outlined in Section 6.4.3 of the General Site-Wide Work Plan	JS 03/14/01 JS 03/14/01 JS 03/14/01 JS 03/14/01 JS 03/14/01 JS 03/14/01 JS 03/14/01 JS 03/14/01 JS 03/14/01
EQUIPMENT USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS	
1. Level D PPE 2. First Aid Kits 3. Portable Eyewash 4. Fire Extinguishers 5. Geophysical Survey Equipment 6. Hand and Power Tools	1. Pre-use inspection 2. Inspect first aid kits monthly. 3. Inspect portable eyewash monthly 4. Inspect fire extinguishers monthly 5. Conduct pre-use inspections 6. Conduct pre-use inspections	1. Personnel have read and comply with SSHP 2. Site specific training 3. At least 2 individuals on-site will have current CPR and First Aid training 4. Instruct personnel on proper use of fire extinguishers 5. Competent operators will be used 6. Instruct personnel on proper use of hand and power tools 7. UXO Technician or higher.	

ACTIVITY HAZARD ANALYSIS

Project: OE DISPOSAL SUPPORT		Location: Fort McClellan, Anniston, Alabama	
Activity: Brush Clearance		ANALYZED BY / DATE	
MAJOR STEPS		PROTECTIVE MEASURES/CONTROLS	
1. Tree and Brush Trimming	1. Exposure to OE/chemical hazards	1. Wear Level D PPE per Section 6.0; follow procedures in the UX/OE Operational Plan; practice contamination avoidance; follow good personal hygiene practices.	JS 03/14/01
	2. Back Injuries	2. Site personnel will be instructed on proper lifting techniques; Mechanical devices should be used to reduce manual handling of materials; team lifting should be utilized if mechanical devices are not available.	JS 03/14/01
	3. Heavy Equipment Operation	3. A small tractor, brush hog or similar equipment may be used. Follow procedures in Section 6.15.2 of the General Site-Wide Work Plan, equipment will have rollover protective structures and seat belts; operators shall wear seat belts when operating equipment; do not operate equipment on grades which exceed manufacturer's recommendations; equipment will have guards, canopies or grills to protect from flying objects; ground personnel will stay clear of all suspended loads; all slings chains and ropes will be rated for the load in which it is expected to lift; spills and absorbent materials will be readily available; drip pans, polyethylene sheeting or other means will be used for secondary containment; eye contact with operators will be made before approaching equipment; equipment will not be approached on blind sides; avoid equipment swing areas; know hand signals; all equipment will be equipped with backup alarms, and all equipment will be outfitted with fire extinguishers.	JS 03/14/01
	4. Temperature Extremes	4. Site personnel will be trained about signs and symptoms of heat and cold stress; FWENC Program EHS 4-6 will be followed.	JS 03/14/01
	5. Slips/Trips/Falls	5. Maintain work areas safe and orderly; unloading areas should be on even terrain; watch for uneven terrain, stumps, and vegetation in walk areas; mark tripping hazards and repair if possible.	JS 03/14/01
	6. Vehicular Traffic	6. Spotters will be used when backing up trucks and heavy equipment; trucks and heavy equipment will be equipped with back up alarms; traffic cones/vests will be used when working in public traffic areas.	JS 03/14/01
	7. Overhead Hazards	7. Personnel will be required to wear hard hats.	JS 03/14/01
	8. Dropped Objects	8. Composite toe boots will be worn.	JS 03/14/01
	9. Noise	9. Hearing protection with a noise reduction rating capable of maintaining personal exposure below 85 dBA (ear muffs or plugs) will be worn as needed during heavy equipment operations and during power tool use; all equipment will be equipped with manufacturer's required mufflers.	JS 03/14/01
	10. Eye Injuries	10. A face shield and safety glasses will be worn by all personnel engaged in tree and brush trimming operations. A portable eye wash station will be located adjacent to work activities.	JS 03/14/01
	11. Sharp Objects/Cuts	11. Kevlar chaps and cut-resistant work gloves will be worn; All hand and power tools will be maintained in safe condition; first aid kits will be available by work area.	JS 03/14/01
	12. Fire	12. 10 lb. ABC type fire extinguisher will be located adjacent to work area; all gasoline-powered equipment will be grounded.	JS 03/14/01
	13. Spills	13. Spill and absorbent materials will be readily available; all waste materials generated will be contained in 55-gallon drums.	JS 03/14/01
	14. Biological Hazards	14. Follow control measures outlined in Section 6.4.3 of the General Site-Wide Work Plan. If poisonous plants are present, PPE will be upgraded to include tyvek and gloves.	JS 03/14/01
	15. Hand and Power Tools	15. The proper tools will be used for each task, all tools will be inspected before each use, damaged tools will be removed from service, and tools will be used in accordance with manufacturer's instructions. Follow procedures in Sections 8.4.2.5 through 8.4.2.10 of the Site-Specific SSHP	JS 03/14/01
EQUIPMENT USED		TRAINING REQUIREMENTS	
1. Level D PPE	1. Pre-use inspection	1. Personnel have read and comply with SSHP	
2. First Aid Kits	2. Inspect first aid kits monthly.	2. Site specific training	
3. Portable Eyewash	3. Inspect portable eyewash monthly	3. At least 2 individuals on-site will have current CPR and First Aid training	
4. Fire Extinguishers	4. Inspect fire extinguishers monthly	4. Instruct personnel on proper use of fire extinguishers	
5. Heavy Equipment	5. Conduct pre-use inspections	5. Competent operators will be used	
6. Hand and Power Tools	6. Conduct pre-use inspections	6. Instruct personnel on proper use of hand and power tools	

ACTIVITY HAZARD ANALYSIS

Project: OE DISPOSAL SUPPORT		Location: Fort McClellan, Anniston, Alabama	
Activity: Excavate Anomalies		ANALYZED BY / DATE	
MAJOR STEPS	POTENTIAL HAZARDS	PROTECTIVE MEASURES/CONTROLS	ANALYZED BY / DATE
1. Excavation of magnetic anomalies in study areas.	1. Exposure to OE/chemical hazards	1. Wear Level D PPE per Section 6.0; follow procedures in the UX/OE Operational Plan; practice contamination avoidance; follow good personal hygiene practices.	JS 03/14/01
	2. Back Injuries	2. Site personnel will be instructed on proper lifting techniques; Mechanical devices should be used to reduce manual handling of materials; team lifting should be utilized if mechanical devices are not available.	JS 03/14/01
	3. Temperature Extremes	3. Site personnel will be trained about signs and symptoms of heat and cold stress; FWENC Program EHS 4-6 will be followed.	JS 03/14/01
	4. Slips/Trips/Falls	4. Maintain work areas safe and orderly; unloading areas should be on even terrain; watch for uneven terrain, stumps, and vegetation in walk areas; mark tripping hazards and repair if possible.	JS 03/14/01
	5. Overhead Hazards	5. Personnel will be required to wear hard hats.	JS 03/14/01
	6. Dropped Objects	6. Composite toe boots will be worn.	JS 03/14/01
	7. Eye Injuries	7. Safety glasses will be worn. A portable eye wash station will be located adjacent to work activities.	JS 03/14/01
	8. Sharp Objects	8. Cut resistant work gloves will be worn; All hand and power tools will be maintained in safe condition; first aid kits will be available by work area.	JS 03/14/01
	9. Fire	9. 10 lb. ABC type fire extinguisher will be located adjacent to work area; all gasoline powered equipment will be grounded.	JS 03/14/01
	10. Spills	10. Spill and absorbent materials will be readily available; all waste materials generated will be contained in 55-gallon drums.	JS 03/14/01
	11. Hand Tools	11. The proper tools will be used for each task, all tools will be inspected before each use, damaged tools will be removed from service, and tools will be used in accordance with manufacturer's instructions.	JS 03/14/01
	12. Biological Hazards	12. Follow control measures outlined in Section 6.4.3 of the General Site-Wide Work Plan. If poisonous plants are present, PPE will be upgraded to include tyvek and gloves.	JS 03/14/01
EQUIPMENT USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS	
1. Level D PPE 2. First Aid Kits 3. Portable Eyewash 4. Fire Extinguishers 5. Heavy Equipment 6. Hand and Power Tools	1. Pre-use inspection 2. Monthly inspections will be performed on first aid kits. 3. Portable eye wash will be inspected monthly. 4. Monthly inspections will be performed on fire extinguishers 5. Conduct pre-use inspections	1. Personnel have read and comply with SSHP 2. Site specific training 3. At least 2 individuals on-site will have current CPR and First Aid training 4. Instruct personnel on proper use of fire extinguishers 5. Competent operators will be used 6. Instruct personnel in proper use of hand and power tools 7. UXO Technician or higher.	

ACTIVITY HAZARD ANALYSIS

Project: OE DISPOSAL SUPPORT Activity: Decontaminate Heavy Equipment		Location: Fort McClellan, Anniston, Alabama	
MAJOR STEPS	POTENTIAL HAZARDS	PROTECTIVE MEASURES/CONTROLS	ANALYZED BY/DATE
1. Steam clean heavy equipment and accessories (Hazards and controls 1-14 apply)	1. Back Injuries 2. Slips/Trips/Falls 3. Vehicular Traffic 4. Overhead Hazards 5. Dropped Objects 6. Chemical Hazards 7. Steam/Heat/Splashing 8. Pinch/Cut/Smash 9. Temperature Extremes 10. Hand and Power Tools 11. Inclement Weather 12. Eye Injuries 13. Heavy Equipment Operation 14. Struck by/Burns	1. Site personnel will be instructed on proper lifting techniques; mechanical devices should be used to reduce manual handling of materials; team lifting should be utilized if mechanical devices are not available. 2. Maintain work areas safe and orderly; unloading areas should be on even terrain; mark and repair if possible tripping hazards. 3. Spotters will be used when backing up trucks and heavy equipment and moving equipment. When working on or near roadways, the area will be clearly marked with traffic cones or high visibility fencing. Workers will wear high-visibility, traffic, safety vests. Work done in the roadway proper will be limited. Coordinate with facility personnel if road closings are necessary. 4. Personnel will be required to wear hard hats that meet ANSI Standard Z89.1. All ground personnel will stay clear of suspended loads and equipment swing areas. All equipment will be provided with guards, canopies or grills to protect the operator from falling or flying objects. All overhead hazards will be identified prior to commencing work operations. 5. Composite toe boots meeting ANSI Standard Z41 will be worn during all site activities. 6. Wear PPE per Table 6-1; practice contamination avoidance; follow good personal hygiene practices 7. Use face shield and safety glasses or goggles; stay out of the splash/steam radius; do not direct steam at anyone; do not hold objects with your foot and steam area near it; ensure that direction of spray minimizes spread of constituents of concern; use shielding as necessary, personnel will be trained on the proper operation of pressure washer, pressure washer wand will be equipped with a dead man's switch. 8. Use hand tools properly and wear appropriate protective equipment, cut resistant work gloves will be worn when dealing with sharp objects; all hand and power tools will be maintained in safe condition; guards will be kept in place while using hand and power tools. 9. Drink plenty of fluids; train personnel of signs/symptoms of heat/cold stress; monitor air temperatures when extreme weather conditions are present; stay in visual and verbal contact with your buddy; and use Temperature Extremes program EHS 4-6. 10. Daily inspections will be performed; remove broken or damaged tools from service; use the tool for its intended purpose; and use in accordance with manufacturer's instructions. 11. Monitor weather conditions daily. 12. Face shields and safety glasses meeting ANSI Standard Z87 will be worn. 13. Equipment will have seat belts; operators shall wear seat belts when operating equipment; do not operate equipment on grades which exceed manufacturer's recommendations; equipment will have guards, canopies or grills to protect from flying objects; ground personnel will stay clear of all suspended loads; spill and absorbent materials will be readily available; drip pans, polyethylene sheeting or other means will be used for secondary containment; ground personnel will stay out of the swing radius; eye contact with operators will be made before approaching equipment; equipment will not be approached on blind sides; all equipment will be equipped with backup alarms. 14. Personnel operating the pressure washer will use the lowest effective pressure and temperature settings on the pressure washer. Pressure washer spray/stream will not be aimed at people. Personnel using pressure washer will not use hands, feet or knees to brace or hold material to be pressure washed. Pressure washer will not be used to clean personnel boots. Thermal/insulated boots may be used during pressure washing operations.	JS 03/14/01 JS 03/14/01 JS 03/14/01 JS 03/14/01 JS 03/14/01 JS 03/14/01 JS 03/14/01 JS 03/14/01 JS 03/14/01 JS 03/14/01 JS 03/14/01 JS 03/14/01 JS 03/14/01
	INSPECTION REQUIREMENTS 1. Initial inspection of heavy equipment will be performed upon arriving on-site. 2. Pressure washers will be inspected daily, prior to each day's use. 3. PPE will be inspected before and after each use.	TRAINING REQUIREMENTS 1. Personnel have read and will comply with SSHP. 2. Personnel will receive Site specific training. 3. Only qualified operators can operate heavy equipment or vehicles. 4. Personnel will have knowledge of proper use of pressure washer. 5. At least 2 individuals on-site will have current CPR and first aid training.	
EQUIPMENT USED	1. Heavy equipment 2. Pressure washer 3. Appropriate PPE		

ACTIVITY HAZARD ANALYSES

Location: Fort McClellan, Anniston, Alabama

Project: OE DISPOSAL SUPPORT
Activity: Demolition Operations

MAJOR STEPS		POTENTIAL HAZARDS	PROTECTIVE MEASURES/CONTROLS	ANALYZED BY/DATE
1. Receipt/ Issue of explosives	1. Back Injuries	1. Site personnel will be instructed on proper lifting techniques; mechanical devices should be used to reduce manual handling of materials; team lifting should be utilized if mechanical devices are not available.	JS 03/14/01	
2. Transportation of explosives	2. Slips/Trips/Falls	2. Maintain work areas safe and orderly; unloading areas should be on even terrain; watch for uneven terrain, stumps, and vegetation in walk areas; mark tripping hazards and repair if possible.	JS 03/14/01	
3. Set up of demolition area and explosives	3. Temperature Extremes	3. Drink plenty of fluids; train personnel of signs/symptoms of heat/cold stress; monitor air temperatures when extreme weather conditions are present; stay in visual and verbal contact with your buddy; and use Temperature Extremes program EHS 4-6.	JS 03/14/01	
4. Detonation/demolition	4. Fire/Explosion	4. 10 lb. ABC type fire extinguisher will be located in vehicle; do not transmit radio or use cellular telephones within 30 meters of electric initiators; no smoking within 50 feet of explosives; and maintain the two-man rule when working with explosives; ensure fragmentation zone is cleared prior to detonation. Clear a 5-foot radius around each shot, removing dry grass and other combustible material.	JS 03/14/01	
5. Post-detonation Inspection	5. Dropped Objects	5. Composite toe boots will be worn.	JS 03/14/01	
	6. Eye Injuries	6. Safety glasses will be worn during all demolition activities; a portable eye wash station will be located in the explosive vehicle.	JS 03/14/01	
	7. Sharp Objects	7. Cut-resistant work gloves will be worn; all hand tools will be maintained in safe condition; first aid kits will be available by work area.	JS 03/14/01	
	8. Hand Tools	8. Only non-sparking tools will be used for working with explosives; daily inspections will be performed; remove broken or damaged tools from service; use the tool for its intended purpose; and use in accordance with manufacturer's instructions.	JS 03/14/01	
	9. Vehicle collision/breakdown	9. Licensed vehicle operator; inspect vehicle prior to loading or transporting explosives per DD 626; follow safe driving techniques; use preplanned routes.	JS 03/14/01	
	10. Ingestion	10. No eating or drinking allowed while working with explosives; wash hands thoroughly after handling explosives.	JS 03/14/01	
	11. Struck by flying objects/shrapnel	11. Establish fragmentation or exclusion zone based on the munitions.	JS 03/14/01	
	12. White Phosphorus (WP)	12. Avoid the smoke plume. WP should be immersed in water, continuously sprayed with water or covered with wet sand /mud. Wear a face shield, leather apron and gauntlet style gloves when approaching a known or suspected WP munition.	JS 4/26/01	
EQUIPMENT USED		INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS	
1. Level D PPE 2. First Aid Kits 3. Portable Eyewash 4. Fire Extinguishers 5. Hand Tools 6. Explosives 7. Motor Vehicle 8. MK663Mod0 or equivalent 9. Remote Firing Device (RFD) 10. Face Shield 11. Apron (Leather) 12. Gloves (Gauntlet) 13. Magnetometer	1. Inspect prior to use. 2. Monthly inspections will be performed on first aid kits. 3. Portable eyewash will be inspected monthly. 4. Monthly inspections will be performed on fire extinguishers 5. Inspect prior to use. 6. Ensure explosives match Disposal Action checklist 7. Inspect motor vehicle per DD Form 626. 8. Pre-use inspection. 9. Inspect prior to use. 10. Inspect prior to use. 11. Inspect prior to use. 12. Inspect prior to use. 13. Inspect/test prior to use	1. Personnel have read and comply with SSHP 2. Site specific training 3. At least 2 individuals on-site will have current CPR and First Aid training 4. Instruct personnel on proper use of fire extinguishers 5. Instruct personnel on proper use of hand tools 6. Licensed motor vehicle operator		

ACTIVITY HAZARD ANALYSES

Project: OE DISPOSAL SUPPORT Activity: Mountain Rescue Operations		Location: Fort McClellan, Anniston, Alabama	
MAJOR STEPS	POTENTIAL HAZARDS	PROTECTIVE MEASURES/CONTROLS	ANALYZED BY/DATE
1. Mobilization, Demobilization and Rescue	1. Back Injuries	1. Site personnel will be instructed on proper lifting techniques; mechanical devices should be used to reduce manual handling of materials; team lifting should be utilized if mechanical devices are not available.	JS 03/14/01
	2. Slips/Trips/Falls	2. Training on techniques to use on elevated terrain (Slopes); watch for uneven terrain, stumps, loose rock (Sere) leaf cover, holes, vines, and fallen timber.	JS 03/14/01
	3. Temperature Extremes	3. Drink plenty of fluids; train personnel of signs/symptoms of heat/cold stress; monitor air temperatures when extreme weather conditions are present; stay in visual and verbal contact with your buddy; and use Temperature Extremes program EHS 4-6.	JS 03/14/01
	4. Inclement Weather	4. Monitor weather conditions daily.	JS 03/14/01
	5. Biological Hazards	5. Follow control measures outlined in Section 4.2; if heavy concentrations of poisonous plants are present, PPE will be upgraded to include Tyvek suits and gloves	JS 03/14/01
	6. Bloodborne Pathogens	6. Follow guidelines of this work plan and EHS 4-1	JS 03/14/01
	7. Dropped Objects	7. Approved Composite type backpacking boots will be worn (provides for personnel safety and does not interfere with data collection equipment).	JS 03/14/01
	8. Overhead Hazards	8. Rescue team will wear ANSI-approved Rock Helmet.	JS 03/14/01
	9. Eye Injuries	9. Safety glasses will be worn during all rescue activities; one, 500ML bottle of Sterile Water (eyewash) will be carried in the field first aid pack.	JS 03/14/01
	10. Sharp Objects	10. Cut-resistant work gloves will be worn; first aid backpacks will be available by the work area.	JS 03/14/01
	11. Medical Equipment (Including O ₂)	11. Treat as Biohazard waste. Dispose of in accordance with Calhoun County guidelines; do not smoke around Oxygen bottles; do not use petroleum products near Oxygen bottles.	JS 03/14/01
	12. Rope (Prusik Loop & Harness)	12. Will be carried by personnel operating in Mountain areas; Prusik Loop & Harness will be inspected monthly and before/after each use; there is no smoking in the vicinity of the rope or harness.	JS 03/14/01
	13. Rope (Rescue)	13. Rope will be inspected monthly and annotated in the rope maintenance log; only new rope will be used for rescue operations; after use in for rescue, rope will be destroyed and recorded in maintenance log; there is no smoking in the vicinity of the rope.	JS 03/14/01
	14. Rope (Rescue Training)	14. Rope will be inspected monthly and annotated in the rope maintenance log; rope will be destroyed and recorded in maintenance log if damage is greater than 1 pic; there is no smoking in the vicinity of the rope.	JS 03/14/01
	15. Hardware (Oval links, Pulleys & Figure 8's)	15. Used in accordance with Rope Rescue Procedures.	JS 03/14/01
EQUIPMENT USED	TRAINING REQUIREMENTS		
1. Level D PPE	1. Personnel have read and comply with SSHP.		
2. First Aid & Trauma Backpacks (Including O ₂)	2. Site-specific training.		
3. Rope & Harness (Personal)	3. Within 3 months of reporting to the Fort McClellan site, personnel will have current CPR and First Aid training.		
4. Rope (Rescue & Training)	4. Within 3 months of reporting to the Fort McClellan site, personnel will receive "Mountain Operations/Rope Rescue" training.		
5. Rock Helmet			
6. Rescue Hardware			
	INSPECTION REQUIREMENTS		
	1. Pre-use inspection		
	2. Monthly inspections will be performed on the First Aid & Trauma Backpacks, including O ₂ bottles.		
	3. Inspected monthly and before/after each use.		
	4. Inspected monthly and after each use.		
	5. Inspected monthly and after each use.		
	6. Inspected monthly and after each use.		

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**ATTACHMENT 6-2
Emergency Hospital Route**

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Attachment 6-2

Emergency Hospital Route
(Firehouse to Beltzell)
Ft. McClellan, AL
Map Date: 8 March 01

McClellan FireHouse to Beltzell Gate

HU:DCR

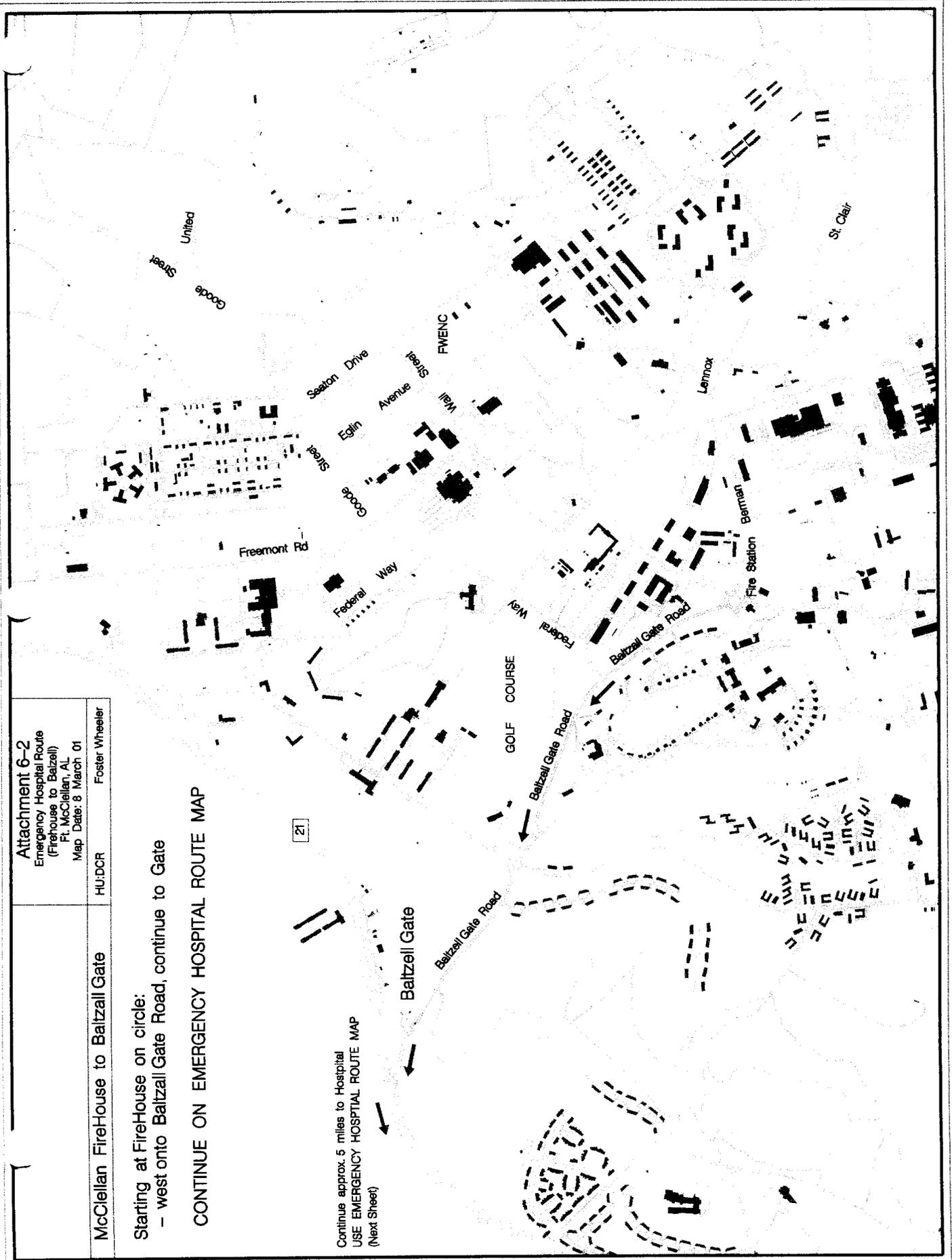
Foster Wheeler

Starting at FireHouse on circle:

- west onto Beltzell Gate Road, continue to Gate

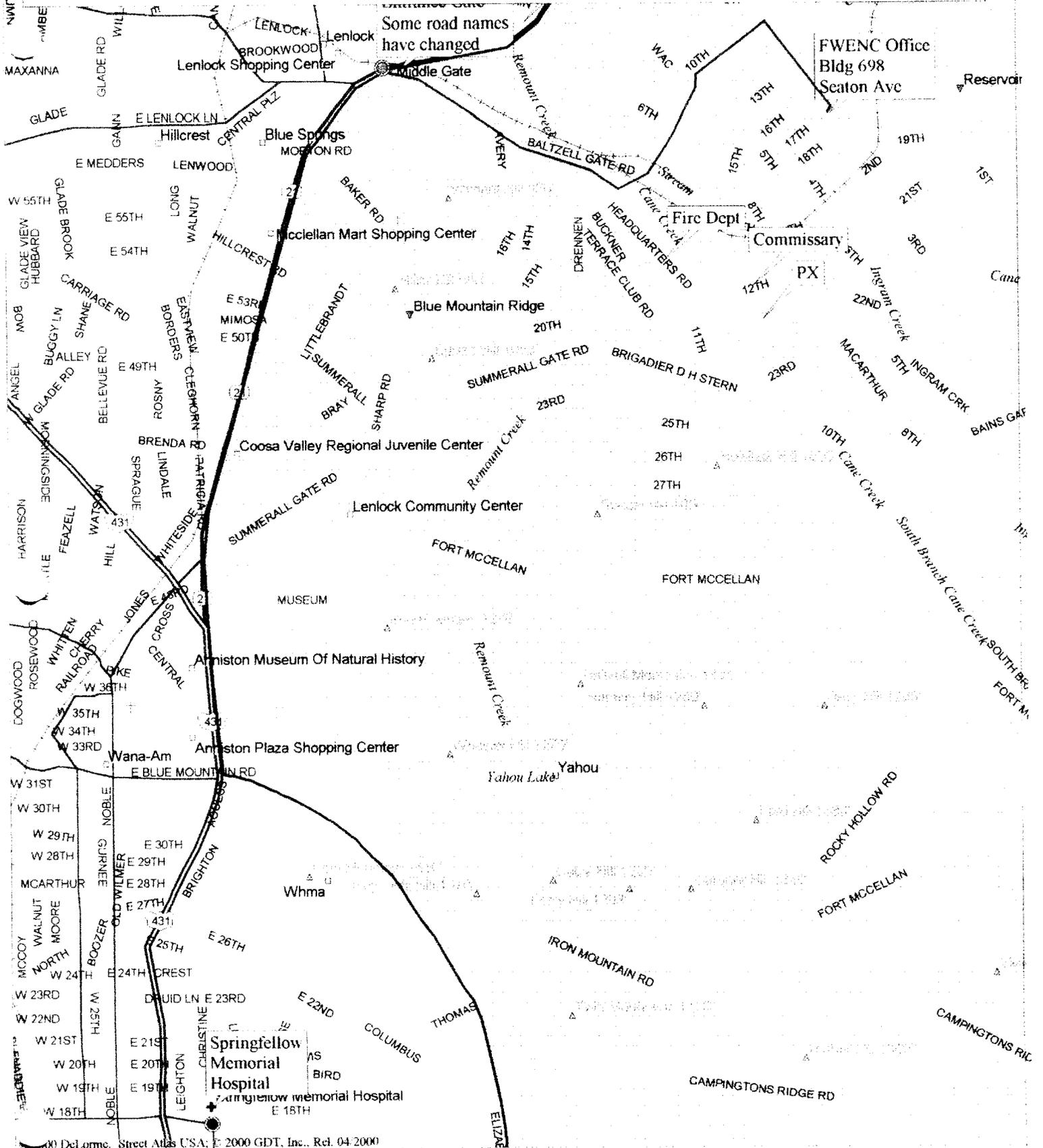
CONTINUE ON EMERGENCY HOSPITAL ROUTE MAP

Continue approx. 5 miles to Hospital
USE EMERGENCY HOSPITAL ROUTE MAP
(Next Sheet)



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Directions to Springfellow Hospital



© 2000 DeLorme, Street Atlas USA; © 2000 GDT, Inc., Rel. 04-2000

Mag 14.00

Scale 1:31,250 (at center)

Thu Mar 22 16:39 2001

2000 Feet

Local Road

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7.0 LOCATION SURVEYS AND MAPPING PLAN

7.0.1 There are no activities planned that would require location surveys and subsequent mapping.

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8.0 WORK, DATA AND COST MANAGEMENT PLAN

8.0.1 OE Disposal Support is a site wide operation. When required, the FWENC General Site Wide Work Plan, Section 8.0 will be referenced. A schedule is not included, since OE Disposal Support is on an on-call basis.

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9.0 PROPERTY MANAGEMENT PLAN

9.0.1 OE Disposal Support is a site wide operation. When required, the FWENC General Site Wide Plan, Section 9.0 will be referenced.

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10.0 SAMPLING AND ANALYSIS PLAN

10.0.1 There are no activities planned that would require sampling and analysis.

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11.0 UXOQC Quality Control

11.0.1 Quality Control is conducted using a three-phase control process; preparatory, initial, and follow-up inspection/audits to ensure processes are in control and opportunities for improving processes are captured and implemented. Personnel conducting Quality Control have stop-work authority and are organizationally independent from the processes.

11.1 PREPARATORY PHASE

11.1.1 A preparatory phase inspection will be performed prior to beginning each definable feature of work. The purpose of this inspection will be to review applicable specifications and verify that the necessary resources, conditions, and controls are in place and compliant before the start of work activities. The personnel responsible for the work activity are responsible for ensuring that:

- 11.1.1.1 Appropriate plans and procedures are developed and approved
- 11.1.1.2 Personnel required for the activity are identified and positions filled
- 11.1.1.3 Training requirements are identified and training complete
- 11.1.1.4 Preliminary work and coordination has been completed
- 11.1.1.5 Equipment required to perform the work has been identified and is available

11.1.2 The following QC actions are performed by the QC Staff for each preparatory phase inspection:

- 11.1.2.1 Verify that appropriate plans and procedures are developed, approved and are available
- 11.1.2.2 Verify personnel identified are available and meet the requirements/qualifications for the position
- 11.1.2.3 Verify that the required training has been performed
- 11.1.2.4 Verify identified equipment is available, functional, and appropriate for the job
- 11.1.2.5 Verify that the preliminary work and coordination have been accomplished
- 11.1.2.6 Verify that quality issues have been addressed and agreed upon

11.1.3 The specific QC activities performed during the preparatory phase, and results of those activities, will be documented on the QC Surveillance Report, which will be attached to the Daily Quality Control Report.

11.1.4 Discrepancies between existing conditions and approved plans/procedures will be resolved and corrective actions taken for unsatisfactory and nonconforming conditions identified during a preparatory phase inspection.

11.1.5 The SSHO will discuss job hazards with site personnel and verify that the necessary safety measures are in place and ready for use.

11.2 INITIAL PHASE INSPECTION

11.2.1 An initial phase inspection will be performed the first time a definable feature of work is performed. The purpose of the inspection will be to check the preliminary work for the compliance with procedures and contract specifications. Also, to establish the acceptable level of workmanship, and check safety compliance, review the preparatory phase inspection, and check for omissions and resolve differences of interpretation.

11.2.2 The following will be performed for each definable feature of work:

- 11.2.2.1 Requirements of quality of workmanship will be established
- 11.2.2.2 Completion of readiness review actions verified
- 11.2.2.3 Conflicts resolved
- 11.2.2.4 Work Plan applicable documents reviewed to ensure that the requirements are being met
- 11.2.2.5 Performance of work will be observed and adequacy of work verified

11.2.3 Discrepancies between site practices and approved plans/procedures will be resolved. Corrective actions for unsatisfactory conditions or practices will be verified by the Site QC Manger or his designee, prior to granting approval to proceed.

11.2.4 The specific QC activities performed during the initial phase, and results of those activities, will be documented on a QC Surveillance Report and attached to the Daily Quality Control Report. Refer to Attachments 11-1 through 11-3.

11.3 FOLLOW-UP PHASE INSPECTION (SURVEILLANCE)

11.3.1 The follow-up phase inspection is performed on a scheduled and unscheduled basis. The purpose of the inspection is to ensure a level of continuous compliance and workmanship. The Site QC Manager is responsible for on-site monitoring of the practices and operations taking place and verification of continued compliance with the

specifications and requirements of the scope of work and approved SOPs. The following will be performed for each definable feature of work:

- 11.3.1.1 Inspections/surveillance to ensure that the work is in compliance with the scope of work and work plans
- 11.3.1.2 Inspections/surveillance to ensure the required level of workmanship is maintained
- 11.3.1.3 Inspections/surveillance to ensure each project log book is properly filled out and maintained
- 11.3.1.4 Inspections/surveillance to ensure data management system is properly tracked and backed up

11.3.2 Follow-up results either negative or positive will be documented on a Surveillance Report and attached to the Daily Quality Control Report.

11.4 DEFICIENCIES AND NONCONFORMANCE

11.4.1 All deficiencies or nonconformance conditions discovered during inspection or other QC functions will be noted and tracked either on a Deficiency, Nonconformance report, or a Deficiency/NC Action Log as appropriate. These three forms are contained in Attachments 11-1, 11-2, and 11-3. All deficiencies and nonconformance conditions will be resolved prior to completion of the project and in the most timely manner possible. The Daily QC Report will include a report on each Deficiency/NCR that was completed and closed out for the day.

11.4.2 It is the responsibility of all personnel on the project to identify deficiencies and nonconforming conditions to their supervisor or manager as soon as they think the condition exists. Deficiencies and nonconforming conditions are not necessarily a “bad thing” and should not have a negative connotation. Deficiencies and nonconforming conditions should be considered opportunities to improve the process.

11.5 ROOT CAUSE ANALYSIS

11.5.1 Both the deficiency and nonconformance report forms contain an area for the entry of information regarding the cause of the problem and proposed resolution. The determination of the root cause of a deficiency or nonconformance is an integral part of the QC process. Root cause analysis is the responsibility of the functional manager or his/her designee with the assistance of Quality Control Representatives. Criteria considered in the analysis will include:

- 11.5.1.1 Staff qualifications and training
- 11.5.1.2 Adequacy of procedures

11.5.1.3 Adequacy of equipment

11.5.1.4 Adequacy of QC measures

11.5.2 Input will be obtained as necessary from field personnel and technical advisors in order to identify the factors, which led to the problem.

11.5.3 The root cause is always “upstream” from where the problem was detected. Two strategies that will be employed for determining the root cause of a deficiency or NCR for this project are: 1) tracing the problem back to the source, and 2) evaluation of the cause using basic questions such as “who, what, when, where, why, and how”. “Why” is probably the most beneficial question when attempting to arrive at a root cause. This question may need to be asked multiple times before the cause is identified. For example “Why did A happen?” Answer: “Because of B,” “Why did B happen?” Answer: “Because of C.” This process is carried on until the real cause is identified.

11.6 CORRECTIVE ACTION

11.6.1 Following the root cause analysis, the Site QC Manager will perform analysis of potential solutions (corrective actions) to determine which remedy is most effective in correcting the problem. The process will include all appropriate personnel and will be documented via meeting notes and information listed in the proper sections on the deficiency notice or NCR report. Potential remedies considered may include:

11.6.1.1 Supplemental personnel training

11.6.1.2 Changes of equipment or modification of equipment currently in use

11.6.1.3 Acquisition of supplemental equipment

11.6.1.4 Implementation of new procedures or modification of existing procedures

11.6.1.5 Changes in QC procedures

11.6.2 The decision for appropriate corrective action to implement is the responsibility of the Delivery Order Manager, however, all parties involved prior to implementation should agree upon this decision.

11.6.3 Successful implementation of corrective action will be documented on the deficiency or nonconformance report. The project QC representative will verify through a follow-up phase surveillance that the corrective action implemented has corrected the deficiency or nonconforming condition and is sufficient to prevent recurrence.

**ATTACHMENT 11-1
Deficiency/NCR Action Log**

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DEFICIENCY/NCR ACTION LOG
 DACA87-99-D-0010
 Former Ft. McClellan

Deficiency #:	Date:	Description:	Responsible Party:	Closed Date:
NCR #:	QC Rep:		Due Date:	Closed By:
Deficiency #:	Date:	Description:	Responsible Party:	Closed Date:
NCR #:	QC Rep:		Due Date:	Closed By:
Deficiency #:	Date:	Description:	Responsible Party:	Closed Date:
NCR #:	QC Rep:		Due Date:	Closed By:
Deficiency #:	Date:	Description:	Responsible Party:	Closed Date:
NCR #:	QC Rep:		Due Date:	Closed By:
Deficiency #:	Date:	Description:	Responsible Party:	Closed Date:
NCR #:	QC Rep:		Due Date:	Closed By:
Deficiency #:	Date:	Description:	Responsible Party:	Closed Date:
NCR #:	QC Rep:		Due Date:	Closed By:
Deficiency #:	Date:	Description:	Responsible Party:	Closed Date:
NCR #:	QC Rep:		Due Date:	Closed By:

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ATTACHMENT 11-2

Deficiency Report



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**DEFICIENCY REPORT
DACA87-99-D-0010
Former Ft. McClellan**

Corrective Action Request		
CAR/Deficiency Number:	Date:	
Organization/Project/Team/Activity:	Person Contacted:	
Observation/Condition/Deficiency:		
Reference:		
Corrective Action Recommendation:		
Originator:	Signature:	
Site QC Representative:	Signature:	Date:
Corrective Action Response		
Responsible Manager/Designee:	Date:	Telephone/Email Address:
Immediate Action Taken:		
Root Cause:		
Corrective Action Taken to Prevent Reoccurrence:		
Corrective Action Taken By:	Signature:	Date:
Evaluation		
Responsible Manager:	Signature:	Date:
QC Comments:		
Site QC Representative:	Signature:	Date:
<input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable		
Distribution		
<input type="checkbox"/> PM <input type="checkbox"/> DOM <input type="checkbox"/> CEHNC <input type="checkbox"/> Site Superintendent <input type="checkbox"/> SUXOSS <input type="checkbox"/> Program QC Manager <input type="checkbox"/> Other:		

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ATTACHMENT 11-3
Nonconformance Report

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NONCONFORMANCE REPORT
DACA87-99-D-0010
Former Ft. McClellan

Corrective Action Request		
Nonconformance Report Number:	Date:	
Organization/Project/Team/Activity:	Person Contacted:	
Nonconformance:		
Reference:		
Corrective Action Recommendation:		
Originator:	Signature:	
Site QC Representative:	Signature:	Date:
7.0 Corrective Action Response		
Responsible Manager/Designee:	Date:	Telephone/Email Address:
Immediate Action Taken:		
Root Cause:		
Corrective Action Taken to Prevent Reoccurrence:		
Corrective Action Taken By:	Signature:	Date:
8.0 Evaluation		
Responsible Manager:	Signature:	Date:
QC Comments:		
Site QC Representative:	Signature:	Date:
<input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable		
Distribution		
<input type="checkbox"/> PM <input type="checkbox"/> DOM <input type="checkbox"/> CEHNC <input type="checkbox"/> Site Superintendent <input type="checkbox"/> SUXOSS <input type="checkbox"/> Program QC Manager <input type="checkbox"/> Other:		

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12.0 ENVIRONMENTAL MANAGEMENT PLAN

12.0.1 OE Disposal Support is a site wide operation. When required, the FWENC General Site Wide Work Plan, Section 12.0 will be referenced.

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13.0 INVESTIGATIVE DERIVED WASTE PLAN

13.0.1 OE Disposal Support is a site wide operation. When required, the FWENC General Site Wide Work Plan, Section 13.0 will be referenced.

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14.0 GEOGRAPHIC INFORMATION SYSTEMS (GIS) PLAN

14.0.1 OE Disposal Support is a site wide operation. When required, the FWENC General Site Wide Work Plan, Section 14.0 will be referenced.

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