

8.0 WORK, DATA, AND COST MANAGEMENT PLAN

The purpose of this Work, Data and Cost Management Plan is to ensure the effective management of allocated funds, manpower, and equipment. This plan describes the resources and tools Foster Wheeler Environmental will use to manage the project to ensure effective delivery of the required scope of services. This is a delivery order specific plan and is an extension of the general plan presented in the Site-Wide WP (sec. 8.0). It has been prepared to be consistent with the requirements of CEHNC DID OE-005-08, Work, Data, and Cost Management Plan.

8.1 Project Management

Figure 2-1 depicts the management team that Foster Wheeler Environmental is proposing for execution of the M2 Parcel OE Removal project. This team provides the appropriate level of management, safety, and quality oversight to ensure that all work will be performed in an efficient, safe, and cost-effective manner. As discussed previously, the Delivery Order Manager will report directly to the Foster Wheeler Environmental Project Manager, who will in turn report to the CEHNC Project Manager to ensure effective communication of technical and management issues throughout the performance of work.

8.2 Schedule

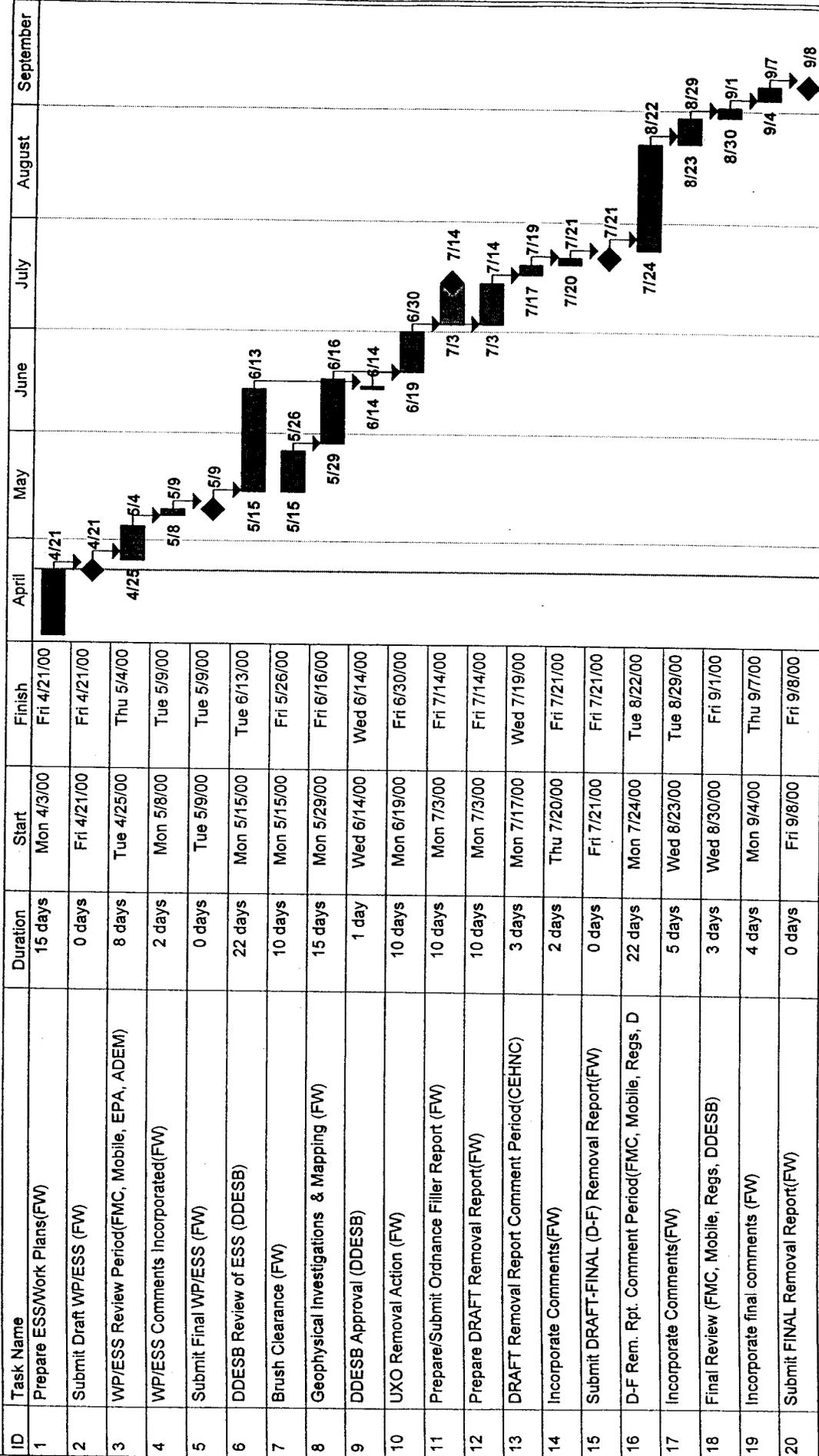
Figure 8-1 depicts the planned tasks and the proposed schedule (with milestones) for this project. Please note that this schedule has a high dependency on timely reviews and approvals of deliverables. Delays in receipt of comments and/or approvals have the potential to cause delays in subsequent tasks and an overall delay in completion of the project. The schedule identifies the individual tasks, duration, and sequence in which they will be performed. The schedule will be used to track the work and to identify individual tasks that have, or have the potential to, impact the task order and/or overall project schedule. Schedule impacts will be immediately discussed with the CEHNC Project Manager along with proposed resolutions, which may include additional staffing, alternate approaches, etc. The schedule is based on a forty-hour work week.

8.3 Manpower Requirements

The Foster Wheeler Environmental project management team is depicted in Figure 2-1. On-site support personnel will include the site geophysicist, UXO specialists (UXO Technicians I, II and III) and administrative support.

**Figure 8-1
Preliminary Schedule**

**Fort McClellan
M2 Parcel OE Removal Action Work Plan**



Task: [Bar]

Progress: [Bar]

Milestone: [Diamond]

Summary: [Bar]

External Tasks: [Bar]

Project Summary: [Bar]

Rolled Up Task: [Bar]

Rolled Up Milestone: [Diamond]

Rolled Up Progress: [Bar]

Split: [Bar]

8.4 Cost Control and Tracking

The schedule depicted in Figure 8-1 was prepared with Microsoft Project. Microsoft Project or similar cost-schedule software capable of tracking both schedule and cost will be used. Budgets will be entered into the software for tracking purposes. The Delivery Order Manager will approve all hours charged to the project by all field and office personnel to ensure no unauthorized hours are charged to the project. Foster Wheeler Environmental's accounting system will provide weekly updates of all charges posted to specific delivery orders. These data will be used 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 Foster Wheeler Environmental Project Manager and, if appropriate, the CEHNC Project Manager. Cost and schedule performance, identifying any actual or anticipated variances and proposing corrective action, will be reported within the weekly report to CEHNC.

8.5 Recurring Deliverables

8.5.1 Monthly and Weekly Status Reports will be submitted. The monthly report will be submitted no later than the 10th day of each calendar month and will consist of an OE Monthly Summary Report and an Exposure Data Report. The weekly report will be submitted via facsimile or e-mail no later than the first working day of the week following the week for which the report is prepared. Reports will be prepared in accordance with CEHNC DID OE-080 Monthly Status Report, and CEHNC DID OE-085 Weekly Status Report, and as described in the Site-Wide WP (sec. 8.0).

8.5.2 Though not required as a deliverable, daily progress reports will be maintained in the Foster Wheeler Environmental field office for compilation of the weekly and monthly reports and will be available for review by CEHNC upon request. The daily report will be prepared using the form presented in Figure 8-2 (or an equivalent form).

Figure 8-2
Foster Wheeler Environmental Corporation
Daily Report

Date: _____

Contract No: DACA87-99-D-0010; Delivery Order 0005

Project: M2 Parcel OE Removal Action, Fort McClellan, AL

Weather _____ **Precipitation** _____ in. **Temp** Min. ___ F Max. ___ **Wind** _____ mph

Personnel On site: FOSTER WHEELER () SUBCONTRACTOR ()

| NAME | COMPANY | FUNCTION | HOURS |
|------|---------|----------|-------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Total man hours this day: _____ Foster Wheeler () Subcontractor ()

Total man hours this project: _____ Foster Wheeler () Subcontractor ()

1.0 Work Performed: (Indicate location and description of work performed by prime and/or subcontractors and complete Table).

| <u>TASK</u> | <u>DAILY TOTAL</u> | <u>CUMULATIVE</u> |
|---------------------------|--------------------|-------------------|
| GRIDS ESTABLISHED | () | () |
| UXO VISUAL CLEARANCE | () | () |
| GRIDS CLEARED (VEGETATION | () | () |
| GEOPHYSICAL SURVEY | () | () |
| UXO INTRUSIVE SAMPLING | () | () |
| ANOMALIES INVESTIGATED | () | () |

2. Operating Plant or Equipment Utilized, Mob and/or Demo. (Not hand tools)

Equipment Utilized:

3. Control Activities Performed:

Preparatory Inspections: ()

Initial Inspection: ()

Follow-up Inspections: ()

4. Material Received: (Note inspection results and storage provided)

5. Waste Generated and/or Disposed: (- lbs) was picked up by project personnel and placed in designated pickup areas. Total metal debris picked up to date: ___ - lbs ___

-UXO Located: (date/grid #/anomaly ID/description/disposal information)

-UXO Related: (date/grid #/anomaly ID/description/disposal information)

6. Job Safety: (List items checked, results, instructions and corrective actions taken)

Total Number of Days Worked on Site: ___

Total Man-hours Worked with No Lost Time Accidents: _____

Total Number of Lost Time Accidents on the Site to Date: _____

Number of Lost Man-hours for Bad Weather Today: _____; To Date _____,

Lost intrusive time today: Equipment (), EZ violation (), Miscellaneous (), Total ()

Lost intrusive time to Date: Equipment (), EZ violation (), Miscellaneous (), Total ()

Safety functions completed today:

7. Remarks: (Instructions received or given. Conflict(s) in Plans and/or specifications. Delays encountered).

COMMENTS:

8. Attachments:

9.0 PROPERTY MANAGEMENT PLAN

A property management plan is not required for this delivery order as there is no plan to purchase property under this delivery order.

10.0 SAMPLING AND ANALYSIS PLAN

Sampling and Analysis of chemical constituents is not specifically required by this delivery order. However, if incidental HTRW sampling should become required as part of this OE removal action, and authorized by the CEHNC, all sampling and analysis will be performed in accordance with the approved Installation-Wide Sampling and Analysis Plan prepared by IT Corporation for Fort McClellan.

11.0 QUALITY ASSURANCE AND QUALITY CONTROL PLAN

The purpose of the Quality Assurance and Quality Control (QA/QC) Plan is to plan and implement a comprehensive set of controls and systematic procedures to ensure quality throughout the execution of this project. The objective is to ensure that the work performed and the data acquired are of a quality necessary to fulfill Data Quality Objectives (DQOs) implemented for the project. The CEHNC DIDs referenced in the statement of work and throughout this work plan, define the minimum DQOs for this project. The respective DIDs are included in the Site-Wide Work Plan. The site-wide Quality Assurance and Quality Control Plan (sec. 11.0 of the Site-Wide Work Plan) includes QA/QC measures applicable to the planned removal action at the M2 parcel. The work to be performed under this delivery order includes planning, staffing, site preparation (brush removal), control surveys, geophysical investigations, anomaly acquisition and reacquisition, and reporting, all of which need to be performed consistent with the expectations of Fort McClellan, TRADOC, Environmental Protection Agency, ADEM, CEHNC, Foster Wheeler Environmental, and the public.

11.1 Planning

Planning for the M2 Parcel Removal Action includes preparation of work plan documents including the ESS. The work plan was developed IAW the CEHNC DID OE-005-01 Type II Work Plan which specifies the format, content and preparation instructions for all work plans for OE projects or response actions. The ESS was developed IAW CEHNC DID OE-060 Conventional Explosives Safety Submission which specifies the format and content for preparing the OE removal action safety criteria for approval by the DoD Explosives Safety Board. Foster Wheeler Environmental Corporate QA/QC policy requires that several levels of internal, interdisciplinary reviews be performed on planning documents, including the work plan (this document) and the Explosives Safety Submission. Peer and appropriate discipline reviews will include geophysicists experienced in OE investigations and in particular, the analysis and discrimination of data and development of target anomaly dig lists and Foster Wheeler UXO specialists.

11.2 Staffing

Personnel selected for this project will meet the criteria and minimum requirements specified in the CEHNC DID OE-025 Personnel/Work Standards. Resumes of the key personnel identified for the project have been included in Appendix C of this work plan. Only qualified and experienced geophysicists, UXO personnel, and subcontractors will be utilized in order to ensure that the project objectives and data requirements are achieved. For this project qualified Foster Wheeler Environmental personnel will be used for all project management, administration, engineering and geophysical investigations, as well as UXO safety and UXO quality control. USA Environmental, our UXO subcontractor under the overall Fort McClellan contract will conduct all OE intrusive activities, including excavation and disposal of OE. The SUXOS is a USA Environmental employee. The Kevric Company, also a team member under the overall Fort McClellan contract has been selected to provide GIS services for this project. Other subcontractors will include a brush cutting company and a land surveyor, both yet to be selected.

All subcontractors will be pre-qualified in accordance with Foster Wheeler procedures prior to use on this project. Pre-qualification will focus on the company's health and safety record, regulatory compliance history, and financial strength.

11.3 Brush Removal

Primary site preparation (sec. 2.5) includes brush clearing. Brush clearing will be performed by a subcontractor that has been pre-qualified by Foster Wheeler IAW our corporate pre-qualification process. Guidelines for brush clearing operations include limits on the size of trees that will be cut, that brush will be cut down to no more than 4 inches above the ground, and that all brush cutters will be escorted by UXO specialists. The work will be inspected periodically to confirm that the teams are staying within the guidelines established for tree size and brush heights and that the overall level of clearing will be consistent with that required to allow the geophysical survey teams adequate access to the site.

11.4 Control surveys

Control surveys will be performed by a surveyor that has been pre-qualified by Foster Wheeler IAW our pre-qualification process. The scope of work for the surveyor is defined in sec. 2.5. All surveying and mapping will be as described in sec. 7.0 Location Surveys and Mapping and will be performed IAW CEHNC DID OE-005-07 Location Surveys and Mapping Plan.

11.5 Geophysical Investigations

The geophysical investigation will be performed by Foster Wheeler Environmental staff and be directed by the lead geophysicist. The investigation will be conducted IAW the Geophysical Investigation Plan in sec. 5.0, which was prepared to meet the requirements of the CEHNC DID OE-005-05 Geophysical Investigation Plan. The geophysical investigation is an extremely important phase of this project. It will provide the data that defines the locations of suspect OE items. Inaccurate positioning data and/or inaccurate EM sensor data will reduce the effectiveness of the removal action.

11.5.1 Data Quality Objectives

11.5.1.1 DQOs are qualitative and quantitative statements that specify the quality of the data required to support decisions. The DQO process provides a logical basis for linking the QA/QC procedures to the intended use of the data, primarily through the decision maker's acceptable limits on decision error. DQOs can be defined as what the end user expects to obtain from the analysis results, and are developed through a seven-step process:

- Step 1 State the problem
- Step 2 Identify the decision
- Step 3 Identify inputs to the decision

- Step 4 Define the study boundaries
- Step 5 Develop a decision rule
- Step 6 Specify limits on decision errors
- Step 7 Optimize the decision for obtaining data

11.5.1.2 For the M2 Parcel removal action, data generated by geophysical surveys and mapping will achieve a data use level to support an ultimate goal of removing all suspect OE items within the M2 parcel. Specifically, these data will be used to:

- Confirm and further define the nature and extent of surface and subsurface OE contamination, through the excavation of geophysical target anomalies and identification of excavated material as scrap, ordnance scrap, inert ordnance, or UXO; and
- Obtain sufficient data to support conclusions relative to the extent of cleanup that has been achieved.

11.5.2 Data Quality Characteristics

The overall QA/QC objective for the field investigation is to develop and implement procedures that will provide data of known and documented quality. DQOs are composed of written expectations for data quality characteristics (DQCs), which include precision, accuracy, representativeness, completeness, and comparability. Data Quality Objectives for each of these parameters are determined based on the level of data required. Descriptions of these characteristics, and specific QA objectives for both screening (i.e., geophysical mapping) and definitive (i.e., anomaly excavation) data, are included in the Site-Wide QA/QC Plan (sec. 11.0 of the Site-Wide Work Plan)

11.5.3 General Sequence of QA/QC Components

The general sequence and associated QA/QC components for geophysical investigations are as follows:

1. Collect geophysical data in accordance with the approved Work Plan and Geophysical Investigation Plan.
2. Data are collected and reviewed by project geophysicists.
3. A second review of a representative portion of collected geophysical data will be conducted by the Foster Wheeler Environmental lead geophysicist (QC).
4. A third review of a representative portion of the geophysical data will be conducted by CEHNC (QA).
5. Each of the above elements has a feed-back loop to the field team to perform data corrections as necessary.

6. The geophysicists develop dig sheets based on interpretation of the geophysical data and transfer data to CEHNC for QA and additional target selection.
7. UXO personnel excavate target anomalies, as selected by the project geophysicist and CEHNC. In the search for the target anomalies, the potential exists that target anomalies thought to be single OE items may actually be masking other anomalies or that additional anomalies exist at a lower depth than the target anomaly. To confirm that the target anomaly was in fact a single item, immediately following the excavation of the target anomaly, the area within a 3.5 foot radius of the excavation will be screened with a hand-held EM 61 to verify that there are no additional anomalies present. If additional anomalies are detected, they will be excavated, identified, and recorded.
8. The SUXOS, UXOQCS, and CEHNC QA compare and evaluate 100 percent of the dig sheet estimates (size, location, depth) vs. the excavation results. If any of the selected target anomalies are not recovered during excavation activities, the interpretation geophysicist will re-evaluate the data and if necessary, relocate the anomaly with geophysical instrumentation.
9. The project geophysicist performs a second comparative analysis of the dig sheet estimates vs. the actual excavation results and performs corrective actions, as necessary.
10. Re-acquire geophysical data (and produce anomaly identification maps) for selected areas and compare results with the dig sheets results. Perform 100 percent geophysical mapping over 5% of the grids.
11. An assessment of QA/QC results, non-conformance, and any associated corrective actions taken will be presented in the Site Specific Final Report.

The Chain of Custody form utilized to document the QA/QC process for each grid is presented as Table 11-1.

11.6 Anomaly Acquisition and Reacquisition

Following the acquisition/reacquisition process, post-excavation QC procedures will be carried out to determine if geophysical target anomalies have been completely and successfully removed. Geophysical data will be re-acquired over approximately five percent of all grids after UXO intrusive operations. Geophysical data will indicate if chosen anomalies have been encountered and removed during the intrusive excavations.

11.6.1 Accuracy

According to the Geophysical Investigation Plan DID (OE-005-05), 98 percent of all excavated targets must lie within a 20 cm radius of their mapped surface location as marked in the field after reacquisition. If node measurements (as determined with a tape measure) exceed the prescribed limits, the location data from the applicable grids and other grids processed since the last acceptable evaluation must be re-evaluated to determine the cause. If possible, corrections

**Table 11-1
QA/QC Chain Of Custody**

Sector ID: _____

Grid ID: _____

| Task | Performed by/Date | Checked by/Date | Comments/Resolution |
|--|--------------------------|------------------------|----------------------------|
| Geophysical equipment calibration | | | |
| USRADS reference check | | | |
| Geophysical survey | | | |
| Geophysical mapping and target selection | | | |
| Dig sheet production | | | |
| Anomaly excavation | | | |
| Geophysical confirmation | | | |
| Anomaly re-excavation | | | |
| UXO/anomaly identification | | | |

will be performed in the processing center (e.g., revise incorrect conversions of relative coordinates to State Planar Coordinates), followed by re-flagging the locations, and performing an in-field check with a geophysical instrument. If the discrepancy cannot be corrected, and the anomalies flagged in these grids are not at the actual target locations (as determined by a geophysical instrument), then the data at the grids in question will be re-acquired.

11.7 Audits

11.7.1 The Project QC Officer will conduct internal audits as necessary on all phases of the activities affecting quality. These internal audits will assess the continuing implementation, effectiveness, compliance, and adequacy of the QC Program. QC procedures will identify audit schedules, evaluate work performance and critical areas such as health and safety, and review documentation controls. The Project QC Officer will record audit criteria and results of the QC review on a task-specific check list.

11.7.2 QC Audits are to be conducted on both a scheduled and an unscheduled basis. They will be conducted at a frequency commensurate with the status of the activity and will be initiated early in the work phase to ensure desired quality. The results of the audit, including deficiencies, non-conformance, and potential quality problems will be carefully documented and continue to be monitored until corrective action is made. The Project Manager and the SUXOS will recommend solutions to correct each quality control problem, ensure that the corrective actions are implemented, and guarantee that re-audit of the activity is completed.

11.7.3 The Project QC Officer will conduct an audit of the documentation (e.g., field activity logbooks) relating to field operations to assure accuracy and completeness of the forms. Audits will concentrate on locating procedures, on-site transportation of explosives, storage of explosive material/ordnance, on-site disposal, scrap metal, proper documentation, and safety procedure.

11.8 Corrective/ Preventative Actions

The following procedures have been established to assure that conditions adverse to data quality (e.g., malfunctions, deficiencies, deviations, errors, etc.) are promptly investigated, documented, evaluated, and corrected. When a significant condition that effects the levels of quality is noted (i.e., failure to meet DQOs or other requirements, the cause of the condition will be determined and corrective action taken to prevent repetition. Condition identification, cause(s), and planned corrective action will be documented and reported to the UXOQCS who will in turn notify the Foster Wheeler Environmental Project Manager. Implementation of corrective actions will be approved prior to implementation and verified by documented follow-up action. All project personnel have the responsibility to identify and immediately report any problems. At a minimum, corrective actions will be initiated:

- When performance goals or standards are not attained;
- When procedures are determined to be inadequate;
- When data errors are identified;

- When QA requirements are not implemented properly; and/or
- When routine scheduled audits or daily inspections identify areas of concern.

11.9 Data Management

11.9.1 Data reduction and interpretation activities will be performed at Fort McClellan on a daily basis in order to verify that the survey objectives are being met and to aid in the planning, or modification, if necessary, of the next day's field activities.

11.9.2 A geophysical database will be maintained on field laptop computers and desktop computers at the processing center. Data will be backed-up on tape cartridge daily and a file naming convention and subdirectory structure will be established.

11.9.3 Upon completion of the geophysical survey, digitally recorded magnetic survey data along with sensor position information will be downloaded from the data logging systems to a field computer for minor editing and preprocessing prior to analyses via PC-based target characterization software.

11.9.4 The interpolated data are then formatted for input into a commercially available mapping system which has the ability to map the interpolated data to an image of the subsurface signal response and provide image enhancement capabilities to aid in the detection of the more subtle anomalies present in the image.

11.10 Field Operations

During the intrusive investigation, the SUXOS will notify the Foster Wheeler Environmental Project Manager of whether any discrepancies (e.g., locations, numbers, etc.) have been recognized on the anomalies detected and identified by the geophysical investigation. These discrepancies, if any, will be resolved prior to clearance of the anomalies.

11.10.1 Precision and Repeatability

Precision and repeatability of the geophysical equipment used in each grid will be assessed by re-acquiring measurements with each detection system along a portion of one selected data acquisition line within the sample area. These data points will be used to assess the repeatability of the geophysical measurements and the results documented in the field log book.

11.11 Equipment Calibration and Equipment Testing

11.11.1 In order to satisfy quality assurance procedures, each piece of geophysical equipment utilized during the geophysical investigation will be listed according to make, model and serial number on field data sheets. Checklists of equipment tests and calibrations will be filled out and retained in the project files. In addition, calibration and testing procedures may be stored on

magnetic media or in field logbooks. If equipment is sent to the manufacturer for repair or maintenance, it will be re-calibrated. Documentation of any recalibrations will be maintained in the project files.

11.11.2 To ensure optimal accuracy and performance of field geophysical equipment used in this project, daily testing of the equipment will be performed according to the manufacturer's recommended testing procedures as outlined in the operating manual for the specific piece of equipment. In accordance with 10 CFR Part 50, results of the tests performed will be recorded in field logbooks or in digital format.

11.11.3 Since each piece of equipment planned for use in this project is calibrated by the manufacturer prior to leaving the factory, on-site calibration of the equipment will not be required. If equipment field checks indicate that certain equipment is not operating properly and a field repair cannot be performed, the equipment will be tagged and removed from service. Replacement equipment will meet the same specifications for accuracy and sensitivity as the original equipment. Documentation regarding any necessary factory recalibration of the equipment will, however, be maintained in the project file.

11.12 Documentation

11.12.1 All site documentation will be recorded in the field activity logbooks, and each page will be numbered consecutively. The field activity logbooks will be used to record the daily activities of the field team and will provide drawings and locations, materials consumed, and other observations related to the project. These field logs will include the: Daily Activity Log, Safety Log, Training Log, QC Log, and Ordnance Accountability Log.

11.12.2 The Project QC Officer will maintain a record of all activities evaluated, including the function, personnel involved, specific task, results, and recommended corrective action. In addition to these observations, the Project QC Officer will ascertain if additional training, or re-accomplishment of a specific task is required.

11.12.3 The Project QC Officer will audit the on-site logbooks for neatness, accuracy, and completeness. Field activities will be monitored and the results documented to the Senior UXO Supervisor and the Project Manager. This plan is the source document to be used to establish audit criteria.

11.12.4 All QC records and documentation will be maintained on site and furnished for government inspection upon request. All QC documentation will be submitted as part of, or as supporting documentation of the Investigation Report.

11.13 Lessons Learned Reporting

Results of an audit will result in a written report which will document findings and also result in preparation of lessons learned summary.

11.14 Document Review Process

All technical work prepared under this contract will be reviewed by a fully competent individual within the specific area of expertise and of the same peer level (minimum). Reviewers will be designated by the Project Manager.

11.15 Training

All necessary training will be conducted to overcome any deficiencies noted within an audit.

12.0 ENVIRONMENTAL PROTECTION PLAN

12.0.1 An Environmental Protection Plan, prepared in accordance with CEHNC DIDOE-005-12, was developed to minimize any potential adverse effects to the environment occurring as a result of OE investigations and response actions at Fort McClellan, and is included in the Site-Wide WP (sec. 12.0).

12.0.2 The general plan discusses endangered and threatened species, wetlands, cultural and archeological resources, water resources, and coastal zones and mitigation measures to protect these resources.

12.0.3 Based on personal communication with the Fort McClellan wildlife biologist, no threatened or endangered species or wetland areas are expected to be present within the M2 Parcel site. However, prior to commencing site activities at the M2 Parcel, Foster Wheeler will request that the Fort McClellan biologist inspect the site to confirm the same.

12.0.4 For sampling only investigation sites, there is generally considerable flexibility to relocate sampling areas to avoid potential disturbance or damage to endangered and threatened species. However, this project is an OE removal action in a heavily-wooded area and will require brush clearance of the entire 20-acre site. As a result, there will necessarily be less flexibility to avoid endangered and threatened species. Mitigation measures described in the Site-Wide WP (sec. 12) will be followed to minimize impact on these species if verified by the Fort McClellan biologist to be present within the site.

12.0.5 There are two or three surface drainage ditches that run through the site. However, these have not been identified as wetlands. According to the Preliminary Wetland Survey, Fort McClellan and Pellham Range Anniston, AL, no wetlands have been identified within the M2 Parcel.

13.0 INVESTIGATION DERIVED WASTE MANAGEMENT PLAN

A plan, prepared in accordance with CEHNC DID OE-005-13, Investigative Derived Waste Plan, was developed to describe the management of investigation derived waste (IDW) at Fort McClellan and is included in the Site-Wide WP (sec. 13.0). The plan addresses regulatory drivers, expected waste streams, waste management requirements, waste transporters and disposal facilities, and documentation/notification requirements.

13.1 OE Scrap and Miscellaneous Metallic Items

IDW generated during the M2 Parcel OE Removal project is expected to primarily consist of OE scrap and miscellaneous metallic items. This scrap material will be managed in accordance with the Ordnance Scrap Management Plan contained in sec. 2.8 of this work plan.

13.2 Excavated Soils

Soils excavated during the process of uncovering target anomalies will be used to backfill the excavations. If the soils appear contaminated based on visual examination, they will be treated as IDW and managed in accordance with the approved Installation-Wide Sampling and Analysis Plan prepared by IT Corporation for Fort McClellan.

14.0 GEOGRAPHIC INFORMATION SYSTEMS PLAN

A geographic information systems plan was prepared for Fort McClellan in accordance with CEHNC DID OE-005-14, GIS Plan, and will be followed during the execution of this project. Refer to the Site-Wide WP (sec. 14.0).

15.0 REFERENCES

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7. EOD General Safety Precautions, Explosive Ordnance Disposal Procedures, EODB 60A-1-1-22/ARMYTM, May 6, 1998.
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13. Moser, P.H. and S.S. DeJarnette, 1992. Groundwater Availability in Calhoun County, Alabama. Geological Survey of Alabama, Special Map 228.

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17. U. S. Army Corps of Engineers, 1992. Safety and Health Requirements Manual, EM 385-1-1, October 1992.
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22. U.S. Army Corps of Engineers, Data Item Description (DID), Geophysical Investigation Plan, OE-005-05, Approved 000303.
23. U.S. Army Corps of Engineers, Data Item Description (DID), Location Surveys and Mapping Plan, OE-005-07, Approved 000303.
24. U.S. Army Corps of Engineers, Data Item Description (DID), Quality Control Plan, OE-005-11, Approved 000303.
25. U.S. Army Corps of Engineers, Data Item Description (DID), Personnel/Work Standards, OE-025, Approved 000303.
26. U.S. Army Corps of Engineers, Data Item Description (DID), Site Specific Final Report, OE-030, Approved 000303.

APPENDIX A

**REVIEW COMMENTS AND RESPONSES ON THE DRAFT M2 PARCEL
ORDNANCE AND EXPLOSIVES REMOVAL ACTION WORK PLAN**

U.S Army Corps of Engineers
Engineering and Support Center
Huntsville

M2 Parcel Removal Action Work plans - Ft. McClellan, AL

DESIGN REVIEW COMMENTS

PROJECT

- SITE DEV & GEO
- ENVR PROT& UTIL
- ARCHITECTURAL
- STRUCTURAL

- MECHANICAL
- MFG TECHNOLOGY
- ELECTRICAL
- INST.& CONTROLS

- SAFETY
- ADV TECH
- ESTIMATING
- SPECIFICATIONS

- SYSTEMS ENG
- VALUE ENG
- OTHER

Work Plan

07/26/00

M.Parker/ED-SY-S/mp-05-163-00/5-1585

ITEM DRAWING NO. OR REFERENCE

COMMENT

ACTION

1. General
2. Paragraphs 6.4.1 and 6.16.9, Pgs. 6-7 & 6-25

Ensure signatures of the responsible personnel are on the final SSHP. Chemical Hazards and Hazard Communication. Since CWM is not anticipated, pyrotechnic mixes of smokes incendiaries (i.e., white phosphorus, black powder) are of concern. Hexachloroethane is a common smoke filling. Other mixes may include Sulfur and Potassium Chlorate. Ensure MSDSs are available for know suspect incendiaries materials. Verify Note. Generic MSDSs for Hexachloroethane, Potassium Chlorate and Black Powder are enclosed for your use. Respiratory protection is warrant if the suspect chemicals (incendiaries mixes) are close to the TLV. For example, a full face-piece HEPA with an organic vapor cartridge filter or supplied air/self-contained breathing apparatus.

Concur
MSDSs for commonly used/suspected incendiary materials will be maintained on file at the project site.
The likelihood of employee exposure to incendiary compounds is low as the amount of dust that would need to be generated for an exposure to occur is above visible dust. However, should an OE item suspected to potentially contain incendiary chemicals be encountered, the item will be marked and the area evacuated. Before re-entering the area, an Activity Hazard Analysis will be performed and an evaluation and upgrade of PEP made and approved.

See revisions to 6.4.1 and 6.16.9

Concur. This has been added to the HASP included in the General Site-Wide WP.

Current training records will be maintained onsite in accordance with 6.5.12 of the HASP included in the General Site-Wide WP.

Comment noted.

3. Paragraph 6.4.3.1, Pg. 6-12, General

Ensure the following statement is added to your preventive measures. That is, "Apply deet (vapor-active repellent) to any exposed skin surface (except eyes and lips), and apply the permethrin repellent spray to field clothing." Note. Allow the permethrin to dry before using the treated clothing.

4. Paragraph 6.5. Pg. 6-13, General

Training. Recommend current training certificates (i.e., 40-hour, 8-hour-refresher and 8-hour supervisor be submitted (appended to the SSHP) for site personnel. (ER-385-1-92)

5. General

Continue to ensure the SSHP address all elements required by 29 CFR 1910.120(b)(4)(ii), 29 CFR 1926(b)(4)(ii), ER 385-1-92, appendix B and EM 385-1-1.

ACTION CODES W - WITHDRAWN
A - ACCEPTED/CONCUR N - NON-CONCUR
D - ACTION DEFERRED VE - VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS

PROJECT Fort McClellan (CN: 05-163-00, S: May 16, 2000)

| | | | | |
|--|--|---|--------------------------------------|--------|
| <input checked="" type="checkbox"/> SITE DEV & GEO | <input type="checkbox"/> MECHANICAL | <input type="checkbox"/> SAFETY | <input type="checkbox"/> SYSTEMS ENG | REVIEW |
| <input type="checkbox"/> ENVIR PROT & UTIL | <input type="checkbox"/> MFG TECHNOLOGY | <input type="checkbox"/> ADV TECH | <input type="checkbox"/> VALUE ENG | DATE |
| <input type="checkbox"/> ARCHITECTURAL | <input type="checkbox"/> ELECTRICAL | <input type="checkbox"/> ESTIMATING | <input type="checkbox"/> OTHER | NAME |
| <input type="checkbox"/> STRUCTURAL | <input type="checkbox"/> INST & CONTROLS | <input type="checkbox"/> SPECIFICATIONS | | |

Draft Site-specific WP for M2 Parcel
16 May 00
Valerie Clinkenbeard, ED-CS-G

| ITEM | DRAWING NO. OR REFERENCE | COMMENT | ACTION |
|------|--------------------------|---|--|
| 1. | Pg. 1-3, para. 1.4.2 | Add 2.36" rocket, practice to the list of items. | Added to Text section as indicated and to Table 6-1. |
| 2. | Pg. 2-7, para. 2.5.1 | Line 21: Change "UXO" to "OE". Line 24: Change "UXO" to "OE". | DONE DONE |
| 3. | Pg. 2-8, para. 2.5.3 | Lines 3-4: Change "potentially dangerous ordnance and explosives waste" to "OE". We will remove any OE we find on the surface prior to mapping. | DONE |
| 4. | General | Additional comments will be provided later on the other portions of the plan. | Noted |

ACTION CODES W - WITHDRAWN
A - ACCEPTED/CONCUR N - NON-CONCUR
D - ACTION DEFERRED VE - VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS

PROJECT

M2 Parcel Removal Action Work Plan Review

SITE DEV & GEO
 MECHANICAL
 SAFETY
 SYSTEMS ENG
 REVIEW DATE: 26 July 2000
 ENVIR PROT& UTIL
 MFG TECHNOLOGY
 ADV TECH
 VALUE ENG
 NAME: Thad Striping/ed-cs-d/5-1613
 ARCHITECTURAL
 ELECTRICAL
 ESTIMATING
 OTHER
 STRUCTURAL
 INST & CONTROLS
 SPECIFICATIONS

| ITEM | DRAWING NO. OR REFERENCE | COMMENT | ACTION |
|------|--------------------------|---|----------------------|
| 1. | | Sections 2.2.3.5 and 2.2.3.6 are missing. | Text has been added. |

ACTION CODES W - WITHDRAWN
 A - ACCEPTED/CONCUR N - NON-CONCUR
 D - ACTION DEFERRED VE - VE POTENTIAL/VEP ATTACHED

PROJECT ALFTMC01SAM (Fort McClellan) CN:5-163-00 S: 16May00

DESIGN REVIEW COMMENTS

- SITE DEV & GEO
- ENVR PROT & UTIL
- ARCHITECTURAL
- STRUCTURAL
- MECHANICAL
- MFG TECHNOLOGY
- ELECTRICAL
- INST & CONTROLS
- SAFETY
- ADV TECH
- ESTIMATING
- SPECIFICATIONS
- SYSTEMS ENG
- VALUE ENG
- OTHER

REVIEW DATE NAME ACTION
 Draft M2 Parcel Removal Action Work Plan
 16May00
 Betina V. Martin ED-CS-P

| ITEM | DRAWING NO. OR REFERENCE | COMMENT | ACTION |
|------|--|---|------------------------------|
| 1 | Note to PM | I have reviewed the Draft M2 Parcel Removal Action Work Plan and have the following comments at this time: | |
| 2 | Page 2-2 Section 2.2.3.2 Lines 18&19 | Please state that a surface sweep will be conducted by UXO personnel BEFORE and AFTER brush clearing. | DONE |
| 3 | Page 2-3 Line 9 & 10 | There is no text associated with 2.2.3.5 and 2.2.3.6 | Text has been added |
| 4 | Page 11-4 Section 11.5.3 Line 22 | Confirm grid reacquisition amounts with Valerie Clinkenbeard. It is my understanding that generally only 5% of the grid is reacquired for comparing with actual dig sheets. | Text has been revised to 5%. |
| 5 | Page 11-4 Section 11.6 Line 30 | Same as comment #4 | See response to comment #4 |
| 6 | General | For Draft-Final or Final version, I suggest that you go with double-sided which would make the document much smaller in size and easier to carry in the field. | noted |
| | | | |
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| | | | |

ACTION CODES W - WITHDRAWN
 A - ACCEPTED/CONCUR N - NON-CONCUR
 D - ACTION DEFERRED VE - VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS

| | | | | | |
|---|--|---|--------------------------------------|--------|----------------------------|
| <input type="checkbox"/> SITE DEV & GEO | <input type="checkbox"/> MECHANICAL | <input checked="" type="checkbox"/> OE SAFETY | <input type="checkbox"/> SYSTEMS ENG | REVIEW | Review and Comment |
| <input type="checkbox"/> ENVIR PROT& UTIL | <input type="checkbox"/> MFG TECHNOLOGY | <input type="checkbox"/> ADV TECH | <input type="checkbox"/> VALUE ENG | DATE | 15 May, 2000 |
| <input type="checkbox"/> ARCHITECTURAL | <input type="checkbox"/> ELECTRICAL | <input type="checkbox"/> ESTIMATING | <input type="checkbox"/> OTHER | NAME | Ken Barnett 33668989350593 |
| <input type="checkbox"/> STRUCTURAL | <input type="checkbox"/> INST & CONTROLS | <input type="checkbox"/> SPECIFICATIONS | | | |

| ITEM | DRAWING NO. OR REFERENCE | COMMENT | ACTION |
|------|--|--|--------|
| 1. | Para 2.2.3.1 | <p>- Explain what is meant by "render safe the area". RESPONSE: Concur w/comment-see revised text.e</p> <p>- Explain procedures the UXO Team will use to clear/render safe the area prior to brush cutting.</p> <p>- Add to paragraph procedures in the event that OE is located in the grid before the ESS is approved.</p> <p>RESPONSE see revised text.</p> <p>- Explain the methodology behind establishing survey grids after OE Removal instead of before OE Removal.</p> <p>RESPONSE-as written paragraph was misleading. Survey grids are to be established before OE removal action. See revised text.</p> <p>The Tech II should make the preliminary assessment and determine to evacuate the brush crews until the Tech III or SUXOS confirms the ID.</p> <p>RESPONSE-Concur/see text revision</p> <p>A UXO escort should not be necessary if the grids are not surveyed until after the OE Removal action as proposed in paragraph 2.3.3.3 above.</p> <p>Correct the sequence of events and correct the effected paragraphs.</p> <p>RESPONSE-the grids will be surveyed prior to OE removal action. See revised text.</p> <p>Paragraph is titled Intrusive Sampling. Paragraph 2.6 states that is a removal action of all target anomalies.</p> <p>Rewrite the paragraph to reflect the requirements of the SOW of Area M-2.</p> <p>RESPONSE-concur/see revised paragraph.</p> <p>Same as above- rewrite to reflect the requirements of the SOW.</p> | |
| 2. | Para 2.2.3.3 3 rd sentence | | |
| 3. | Para 2.5.1 line 55 | | |
| 4. | Para 2.5.2 line 31 | | |
| 5. | Para 2.7.1 | | |
| 6. | Para 2.7.1.1.1 | | |

ACTION CODES W - WITHDRAWN
 A - ACCEPTED/CONCUR N - NON-CONCUR
 D - ACTION DEFERRED VE - VE POTENTIAL/VEP ATTACHED

| U. S. ARMY ENGINEER DIVISION HUNTSVILLE DESIGN REVIEW COMMENTS | PROJECT Draft- M2 Parcel Removal Action Work Plans, Ft McClellan, AL Project Number: ALFTMC01SAM | CORPS OF ENGINEERS 5-163-00 | |
|--|---|---|--|
| <input type="checkbox"/> SITE DEV & GEO <input type="checkbox"/> ENVR PROT& UTIL <input type="checkbox"/> ARCHITECTURAL <input type="checkbox"/> STRUCTURAL | <input type="checkbox"/> MECHANICAL <input type="checkbox"/> MFG TECHNOLOGY <input type="checkbox"/> ELECTRICAL <input type="checkbox"/> INST & CONTROLS | <input checked="" type="checkbox"/> OE SAFETY <input type="checkbox"/> ADV TECH <input type="checkbox"/> ESTIMATING <input type="checkbox"/> SPECIFICATIONS | <input type="checkbox"/> SYSTEMS ENG <input type="checkbox"/> VALUE ENG <input type="checkbox"/> OTHER |
| REVIEW DATE 15 May, 2000 | REVIEW NAME Ken Barnett 256-895-1593 | | |
| ITEM | DRAWING NO. OR REFERENCE | COMMENT | ACTION |
| 7. | Para 2.7.1.2.1 Line 6 | <p>RESPONSE-concur/see revised paragraph.</p> <p>As reads: "boundaries will be 100 feet".</p> <p>Justify why the exclusion zone is less than 200-feet. also, explain has this 100-foot exclusion been approved in Huntsville. Include justification in Work Plan of 100 foot exclusion zone through Huntsville.</p> <p>RESPONSE-justification has been included in the revised paragraph.</p> <p>This paragraph discusses possible evacuation and road closures and the Government assuming the responsibilities.</p> <p>Rewrite the paragraph to incorporate the use of Engineering Controls to eliminate the impact of the local community.</p> <p>- If evacuation is necessary, then CEHNC Safety Specialist will be notified and all intrusive activity will cease in that area until evacuation can be coordinated through the local authorities.</p> <p>- Delete the last sentence "in either case the decision will be made by the government and the government will assume responsibility and control.</p> | |
| 8. | Para 2.7.1.2.2 | <p>RESPONSE-concur/see revised text paragraph.</p> <p>Access: change sentence to mean- special access within the exclusion zone will be controlled through the use signin/out log. There will be no intrusive activities when non-UXO personnel are within the exclusion zone.</p> <p>Change "should" to <u>will</u>.</p> <p>RESPONSE-concur/see revised text paragraph</p> <p>Change times from 1600 to 1700 TO: 1430 to 1615. This will keep demo times standard with other contractors on the installation.</p> <p>Also: para 2.7.1.5.2 and para 2.8.5.1.4.2</p> | |
| 9. | Para 2.7.1.2.3 2 nd sentence 3 rd sentence | <p>RESPONSE-concur/see revised text paragraph.</p> <p>Change times from 1600 to 1700 TO: 1430 to 1615. This will keep demo times standard with other contractors on the installation.</p> <p>Also: para 2.7.1.5.2 and para 2.8.5.1.4.2</p> | |
| 10. | Para 2.7.1.5 2 nd sentence | <p>RESPONSE-concur/see revised text paragraph</p> <p>Change times from 1600 to 1700 TO: 1430 to 1615. This will keep demo times standard with other contractors on the installation.</p> <p>Also: para 2.7.1.5.2 and para 2.8.5.1.4.2</p> | |

DESIGN REVIEW COMMENTS

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| <input type="checkbox"/> SITE DEV & GEO | <input type="checkbox"/> MECHANICAL | <input checked="" type="checkbox"/> OE SAFETY | <input type="checkbox"/> SYSTEMS ENG | REVIEW |
| <input type="checkbox"/> ENVIR PROT& UTIL | <input type="checkbox"/> MFG TECHNOLOGY | <input type="checkbox"/> ADV TECH | <input type="checkbox"/> VALUE ENG | DATE 15 May, 2000 |
| <input type="checkbox"/> ARCHITECTURAL | <input type="checkbox"/> ELECTRICAL | <input type="checkbox"/> ESTIMATING | <input type="checkbox"/> OTHER | NAME Ken Barnett 256-895-1593 |
| <input type="checkbox"/> STRUCTURAL | <input type="checkbox"/> INST & CONTROLS | <input type="checkbox"/> SPECIFICATIONS | | |

| ITEM | DRAWING NO. OR REFERENCE | COMMENT | ACTION |
|------|--|---|--------|
| 11. | Para 2.7.1.5.2 1 st bullet 3 rd sub-bullet | RESPONSE-concur/revisions made. Delete reference to EODB60A1-1-4 RESPONSE-concur/revisions made Change Test caps.....25 feet. CHANGE TO: 50 feet downwind. This change is IAW 60 A1-1-31 safety supplement. RESPONSE-concur/revisions made Protection measures will be IAW the CEHNC Directives. - CEHNC Engineering Branch will establish exclusion zones. - Delete reference to TM 5-855-1 and EODB 60 A1-1-4. - State reference and authority for using less than 200 foot exclusion zone. | |
| 12. | Para 2.7.2.1 13 th bullet | | |
| 13. | Para 2.7.2.1 16 th bullet | | |
| 14. | Para 2.7.2.2.2 | RESPONSE-concur/revisions made As reads: Caps and /or detonators will not be transported in the same vehicle. CHANGE TO: may be transported in approved containers separated by the maximum distance possible. | |
| 15. | Para 2.7.2.4.1 | RESPONSE-concur/revisions made Paragraph identifies that a radio controlled firing system will be used but the equipment is not identified in the work plan. Identify the equipment to be used. (Recommendation, use of NONEL or MDI, greatly enhances safety and reduces handling and setup hazards associated with controlled demolition operations.) | |

ACTION CODES W - WITHDRAWN
A - ACCEPTED/CONCUR N - NON-CONCUR
D - ACTION DEFERRED VE - VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS

| | | | | |
|--|--|---|--------------------------------------|-------------------------------|
| <input type="checkbox"/> SITE DEV & GEO | <input type="checkbox"/> MECHANICAL | <input checked="" type="checkbox"/> OE SAFETY | <input type="checkbox"/> SYSTEMS ENG | REVIEW |
| <input type="checkbox"/> ENVIR PROT & UTIL | <input type="checkbox"/> MFG TECHNOLOGY | <input type="checkbox"/> ADV TECH | <input type="checkbox"/> VALUE ENG | DATE 15 May, 2000 |
| <input type="checkbox"/> ARCHITECTURAL | <input type="checkbox"/> ELECTRICAL | <input type="checkbox"/> ESTIMATING | <input type="checkbox"/> OTHER | NAME Ken Barnett 256-895-1593 |
| <input type="checkbox"/> STRUCTURAL | <input type="checkbox"/> INST & CONTROLS | <input type="checkbox"/> SPECIFICATIONS | | |

| ITEM | DRAWING NO. OR REFERENCE | COMMENT | ACTION |
|------|--------------------------|--|--------|
| 16. | Para 2.7.2.5 | <p>RESPONSE-at the M2 Parcel, the NONEL system will be used. Additional text describing the NONEL firing and misfire procedures have been added at sections 2.7.2.15.3 & 2.7.2.15.4.</p> <p>Elaborate the use of the terms "secured" and "exposed". Secured when used in terms with communications means something totally different. Also, Exposed gives a lot of room for interpretation. Rewrite and clarify their meaning.</p> <p>RESPONSE-concur/see revised text.</p> <p>Safety signals. Change to add: SUXOS/SSHO will request a 5 min window through the CEHNC Safety Specialist. CEHNC SS will then notify the Transition Force Base Operations that there will be x# of demolition shots within the next 5 min. CEHNC will then notify the SUXOS/SSHO that they have their 5 min. the SUXOS/SSHO will then give a 1 min notification to all teams over the radio. Prior to firing the shot -3 fire-in-the-hole warnings voice and radio will be given.</p> <p>RESPONSE-concur/see revised text.</p> <p>This paragraph describes the procedures for the radio controlled firing device. The system is not identified but sounds a lot like the military style XM122. If so, the procedures are not complete. (never armed the receiver).</p> <ul style="list-style-type: none"> - Has this system been used and approved for use? - Does it meet the Army's latest safety message on use of the 122 firing device? <p>RESPONSE-at the M2 Parcel, the radio controlled firing device will not be used.</p> <p>Only one person is suppose to check the misfire.</p> <p>Review and correct the wait time. According to your procedures, if the shot does not detonate you investigate then try again. If it still fails to detonate then you wait</p> | |
| 17. | Para 2.7.2.6 | | |
| 18. | Para 2.7.2.15.1.8 | | |
| 19. | Para 2.7.2.15.2 | | |

ACTION CODES W - WITHDRAWN
 A - ACCEPTED/CONCUR N - NON-CONCUR
 D - ACTION DEFERRED VE - VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS

SITE DEV & GEO MECHANICAL OE SAFETY SYSTEMS ENG REVIEW
 ENVIR PROT& UTIL MFG TECHNOLOGY ADV TECH VALUE ENG DATE 15 May, 2000
 ARCHITECTURAL ELECTRICAL ESTIMATING OTHER NAME Ken Barnett 256-895-1593
 STRUCTURAL INST & CONTROLS SPECIFICATIONS

| ITEM | DRAWING NO. OR REFERENCE | COMMENT | ACTION |
|------|--------------------------|--|--------|
| 20. | Pg 6-16 Table 6-3 | <p>1 hour.</p> <p>Review and correct the procedures.</p> <p>RESPONSE-concur/revision made.</p> <p>PPE Selection.</p> <p>For UXO Activities the standard work dress is safety glasses for intrusive operations or operations where an eye hazard exist. Leather gloves, and leather boots. The only time that hard hats and steel-toed boots are used is when an overhead hazard exist or foot hazard exist or around heavy equipment. NORMALLY, neither of which occurs on an ordnance removal operation using schonstedt's and shovels.</p> <p>RECOMMEND that the requirements for these items be reassessed for the actual task that are to be operation to be preformed and the PPE Selection chart be changed accordingly.</p> <p>RESPONSE-concur/Table 6-3 of the safety plan has been revised accordingly.</p> | |
| 21. | Para 11-5 number 10 | <p>Please explain the meaning of the 5% and 10% at the end of the sentence.</p> <p>RESPONSE-text revised to 5%.</p> | |

ACTION CODES W - WITHDRAWN
 A - ACCEPTED/CONCUR N - NON-CONCUR
 D - ACTION DEFERRED VE - VE POTENTIAL/VEP ATTACHED

Fort McClellan

**FORT MCCLELLAN COMMENTS
ON
DRAFT M2 PARCEL ORDNANCE AND EXPLOSIVES REMOVAL ACTION
WORK PLAN
AT
FORT MCCLELLAN, AL**

1. General Comment: Comment - Documents that have been referenced should be added to paragraph 15.0, References. Paragraphs with documents listed that are not included in paragraph 15.0 include 2.1, 2.2.2.1, 2.2.2, 2.2.3.4, 2.2.5, 2.2.6, 2.3.1, 2.7.1.5.1, 2.7.1.6, 2.7.2.1, 2.8.2, 3.0, and 4.0.

Rationale - All documents referenced should be included in the list of references.

RESPONSE: Concur. All referenced documents will be included in the References section.

2. Page 1-3, paragraph 1.4.2, line 2: Comment - The location in the General WP (paragraph/section number) where the Fort McClellan site history can be found should be stated.

Rationale - Stating the location will clarify this document.

RESPONSE: Concur. The location, Sec. 1.4 of the General Site-Wide WP will be referenced.

3. Page 2-1, paragraphs 2.2.2.1 and 2.2.2.2, lines 18 and 25: Comment - The numbering on paragraphs 2.2.2.1 and 2.2.2.2 should be changed to 2.2.1.1 and 2.2.1.2 respectively.

Rationale - The paragraph numbers used are incorrect.

RESPONSE: Concur.

4. Page 2-3, paragraphs 2.2.3.5 and 2.2.3.6, lines 9-10: Comment - Add information applicable to these paragraphs.

Rationale - No information is provided for these paragraphs.

RESPONSE: Concur. This information will be added.

5. Page 2-3, paragraph 2.2.4, line 13: Comment - Change "OE Scrap Management Plan included in the General WP (sec. 2.0)" to the correct location in the General WP.

Rationale - The OE Scrap Management Plan was not in section 2.0 of the Draft General WP.

RESPONSE: Concur. The reference will be revised to sec. 2.8 of the General Site-Wide WP.

6. Page 2-7, paragraph 2.4.3, line 5: Comment - Delete the "9" after "WP".

Rationale - The number does not appear to refer to anything in the WP.

RESPONSE: Concur. The "9" will be removed.

7. Page 2-8, paragraph 2.5.3, line 9: Comment - Change "sec. 2.0" to "sec. 2.8"

Rationale - The correct location of the OE scrap management plan is sec. 2.8.

RESPONSE: Concur. Reference will be revised to sec. 2.8.

8. Page 2-9, paragraph 2.7.1.1.2, line 23: Comment - Change "Fort McClellan Transition Force Operations" to "the appropriate utility companies".

Rationale - The utilities on the installation have been transferred to local utility companies who will be responsible for providing clearances needed for work that could affect their utility.

RESPONSE: Concur. The reference will be revised to "the appropriate utility companies".

9. Page 2-11, paragraph 2.7.1.4.3, line 23: Comment - Change "Fort McClellan Transition Force Operations" to "the appropriate utility companies".

Rationale - The utilities on the installation have been transferred to local utility companies who will be responsible for providing clearances needed for work that could affect their utility.

RESPONSE: Concur. The reference will be revised to "the appropriate utility companies"

10. Page 2-12, paragraph 2.7.1.5.1, lines 24-25: Comment - The sentence in these two lines needs to be completed.

Rationale - The sentence is incomplete.

RESPONSE: Concur. The sentence will be revised to "...permit disposal operations, in accordance with procedures outlined in sec. 2.7.2 Explosive Disposal Operations".

11. Page 2-14, paragraph 2.7.1.7.2, line 12: Comment - Change "scarp" to "scrap".

Rationale - The word "scrap" is misspelled.

RESPONSE: Concur. Scarp will be corrected to scrap.

12. Page 2-19, paragraph 2.7.2.14, lines 25-28: Comment - The sentence on these lines needs to be completed.

Rationale - The sentence has words missing that are needed to make it complete.

RESPONSE: Concur. Paragraph will be revised to clarify as follows:

The SUXOS, or his delegate, the UXO Disposal Supervisor/Demolition Team Leader, will complete the Explosive Disposal Activities Checklist (Attachment 2-1), Explosive Disposal Log (Attachment 2-2), and the UXO Acquisition and Accountability Log (Attachment 2-3), which tracks the OE/UXO from cradle to grave. (NOTE: Attachments 2-1, -2, and -3 will be renumbered in accordance with this revision).

13. Page 2-24, paragraph 2.8.4.4, line 2: Comment - Replace "of" with "or".

Rationale - The change is needed to make the sentence grammatically correct.

RESPONSE: Concur. "Of" will be corrected to "or".

14. Page 3-1, paragraph 3.0, line 6: Comment - Delete "has been prepared".

RESPONSE: Concur.

15. Page 5-1, paragraph 5.1, line 3: Comment - The location in the Site-Wide WP (paragraph/section number) where the pre-survey surface inspection and sweep (UXO safety) information can be found should be stated.

Rationale - Stating the location will clarify this document.

RESPONSE: Concur. Sentence will be revised to include reference to General WP, sec. 5.0.1 Pre-Survey Surface Inspection and Sweep.

16. Page 5-1, paragraph 5.2.1.1, lines 11 and 12: Comment - Insert "of" between "action" and "all" in line 11 and remove "the" between "at" and "Fort" in line 12.

Rationale - The changes are needed to make the sentence grammatically correct.

RESPONSE: concur.

17. Page 5-2, paragraph 5.2.5, line 16: Comment – Change "Section 5.1.4" to "Section 5.2.4".

Rationale – The information on training items is located in Section 5.2.4 instead of Section 5.1.4.

RESPONSE: Concur.

18. Pages 5-2 and 5-3, paragraphs 5.2.7, 5.2.8, 5.2.9, 5.2.10, 5.2.13 and 5.2.15: Comment - The location in the Site-Wide WP (paragraph/section number) where the information for the subjects of these paragraphs can be found should be stated.

Rationale - Stating the location will clarify this document.

RESPONSE: Concur. The locations in the General WP where the information for the subjects of these paragraphs can be found will be added.

19. Page 5-4, paragraph 5.3.1.2, line 6: Comment - Change "Section 5.3.6" to "Section 5.3.5".

Rationale - Process referenced is actually covered in Section 5.3.5 instead of Section 5.3.6.

RESPONSE: Concur. 5.3.6 will be corrected to 5.3.5

20. Page 5-6, paragraph 5.3.3.2, line 8: Comment - The location in the Site-Wide WP (paragraph/section number) where the responsibilities of the field personnel conducting the investigation can be found should be stated.

Rationale - Stating the location will clarify this document.

RESPONSE: Concur. Reference to sec. 5.2.3 will be added.

21. Page 5-8, paragraph 5.3.7.2, line 40: Comment - Delete "be" after "will".

Rationale - The word needs to be deleted to make the sentence grammatically correct.

RESPONSE: Concur. The "be" will be deleted.

22. Pages 5-11 and 5-12, paragraphs 5.6.4, 5.7, 5.8, 5.9, 5.10, 5.11, 5.12, 5.13 and 5.14: Comment - The location in the Site-Wide WP (paragraph/section number) where the information for the subjects of these paragraphs can be found should be stated.

Rationale - Stating the location will clarify this document.

RESPONSE: Concur. The locations in the General WP where the information for the subjects of these paragraphs can be found will be added.

23. Page 6-8, paragraph 6.4.2.1, lines 7-8: Comment - Need to provide information on the required measures to control potential heat stress hazards in this paragraph or provide the correct location where they can be found in the General Site-Wide Work Plan.

Rationale - The required measures to control these hazards is not described in Section 6.4.2.1 of the General Site-Wide Work Plan as stated.

RESPONSE: Concur. The corrected reference is 6.14.1. The text will be revised accordingly.

24. Page 6-8, paragraph 6.4.2.3, lines 16-17: Comment - Need to provide information on the required measures to control potential cold stress hazards in this paragraph or provide the correct location where they can be found in the General Site-Wide Work Plan.

Rationale - The required measures to control these hazards is not described in Section 6.4.2.3 of the General Site-Wide Work Plan as stated.

RESPONSE: Concur. The corrected reference is 6.14.2. The text will be revised accordingly.

25. Page 6-8, paragraph 6.4.2.5, lines 23-24: Comment - Need to provide information on the required measures to control potential hazards posed by the use of hand and portable power tools in this paragraph or provide the correct location where they can be found in the General Site-Wide Work Plan.

Rationale - The required measures to control these hazards is not described in Section 6.4.2.5 of the General Site-Wide Work Plan as stated.

RESPONSE: Concur. The corrected reference is 6.15.9. The text will be revised accordingly.

26. Page 6-9, paragraph 6.4.2.6, lines 7-8: Comment - Need to provide information on the required measures to control potential noise stress hazards in this paragraph or provide the correct location where they can be found in the General Site-Wide Work Plan.

Rationale - The required measures to control these hazards is not described in Section 6.4.2.6 of the General Site-Wide Work Plan as stated.

RESPONSE: Concur. The corrected reference is 6.8.4. The text will be revised accordingly.

27. Page 6-9, paragraph 6.4.2.8, line 31: Comment - Delete the space between "with" and "in".

Rationale - The word "within" is misspelled if the space is not deleted.

RESPONSE: Concur.

28. Page 6-10, paragraph 6.4.2.10, lines 12-13: Comment - Need to provide information on the required measures to control potential hazards posed by manual lifting in this paragraph or provide the correct location where they can be found in the General Site-Wide Work Plan.

Rationale - The required measures to control these hazards is not described in Section 6.4.2.10 of the General Site-Wide Work Plan as stated.

RESPONSE: Concur. The corrected reference is 6.15.10. The text will be revised accordingly.

29. Page 6-10, paragraph 6.4.2.11, lines 15-16: Comment - Need to provide information on the required measures to control potential electrical hazards in this paragraph or provide the correct location where they can be found in the General Site-Wide Work Plan.

Rationale - The required measures to control these hazards is not described in Section 6.4.2.11 of the General Site-Wide Work Plan as stated.

RESPONSE: Concur. All electrical work will be conducted by a licensed electrician. All electrical sources will be locked out/tagged out and verified in accordance with Foster Wheeler procedures EHS 6-4 Lockout/Tagout. All equipment will stay a minimum of 15 feet away from energized line (50 kV). This distance will increase 0.4 inches for each 1 kV above 50 kV. All equipment will be bonded and grounded to prevent the buildup of static electricity and to prevent potential explosion. Electrical outlets, extension cords and/or equipment will be equipped with GFCIs.

(Note: This information will be added to the General Site-Wide WP as sec. 6.15.11 Electrical Practices; EHS 6-4 will be added to the Site -Wide WP as an additional attachment; and the reference from the M2 Parcel WP will be revised accordingly).

30. Page 6-10, paragraph 6.4.2.13, line 25: Comment - Insert the word “with” after “accordance”.

Rationale - The sentence is grammatically incorrect if the word is not inserted.

RESPONSE: Concur.

31. Page 6-11, paragraph 6.4.2.13, line 1: Comment - Insert the word “inches” after “5”.

Rationale - The sentence is grammatically incorrect if the word is not inserted.

RESPONSE: Concur.

32. Page 6-11, paragraph 6.4.2.13, line 15: Change “form” to “from”.

Rationale – The word is misspelled.

RESPONSE: Concur.

33. Page 6-12, paragraph 6.4.2.14, lines 2-3: Comment - Need to provide information on the required measures to control potential hazards posed by steam, heat and splashing in this paragraph or provide the correct location where they can be found in the General Site-Wide Work Plan.

Rationale - The required measures to control these hazards is not described in Section 6.4.2.13 of the General Site-Wide Work Plan as stated. **RESPONSE: Personnel**

will be trained in the proper use of pressure washers. Personnel using pressure washers will use face shield and safety glasses or goggles and thermal boots. Stream/steam will not be directed toward other personnel. Personnel will stay out of splash/steam radius, shielding will be used as necessary. Pressure washer wand will be equipped with a dead man's switch and wand extender. Personnel using pressure washer will not aim stream at feet, knees or hands, items to be cleaned will not be held with one's hand or braced with knees or feet while cleaning with pressure washer.

(NOTE: This information will be added as sec. 6.15.12 Safe Pressure Washing Practices in the General Site-Wide WP and the reference in the M2 Parcel WP will be revised accordingly).

34. Page 6-17, paragraph 6.8.2.3, line 22: Comment - Insert the word "analysis" after "perform".

Rationale - The sentence is grammatically incorrect if the word is not inserted.

RESPONSE: Concur.

35. Page 6-21, paragraph 6.12.3, line 7: Comment - Change "Table 6-3" to "Table 6-2".

Rationale - The wrong table number is used.

RESPONSE: The correct table number in the General WP is 6-1; however, the Table will be included in the revised M2 Parcel WP, where it will be labeled as 6-2. The text will be revised.

36. Attachment 6-6, Directions to Springfellow Memorial Hospital: Comment - Need to include directions from the site to the main gate and show the route to follow from the work site to the main gate on the map.

Rationale - The directions and route to the main gate need to be included to clearly show personnel working on the site how to get to the main gate.

RESPONSE: The map has been revised to include the information above.

37. Page 7-1, paragraph 7.2.2, line 21: Comment - Need to insert "be" after "not".

Rationale - The sentence is grammatically incorrect if the word is not inserted.

RESPONSE: Concur.

38. Page 8-2, Figure 8-1: Comment - The scheduled completion date for the OE removal and final report (8 Sep 00) needs to be changed.

Rationale - The date does not comply with the completion date of 14 Aug 00 that has been used to program dates for transfer of the property.

RESPONSE: The schedule was prepared to match the schedule provided by Col Treuting on 3/1/00.

39. Page 8-3, paragraph 8.4, line 3: Comment - Delete “and” after “both”.
Rationale - The sentence is grammatically incorrect if the word is not deleted.
RESPONSE: Concur.
40. Page 11-1, paragraph 11.0, line 7: Comment - Replace “DOQs” with “DQOs”.
Rationale - The acronym is misspelled.
RESPONSE: Concur.
41. Page 11-1, paragraph 11.1, line 22: Comment - Capitalize “explosives”.
Rationale - The word is a proper name and should be capitalized.
RESPONSE: Concur.
42. Pages 11-3 and 11-4, paragraph 11.5.3: Comment - Insert a period after subparagraphs 1, 2, 3, 6, 8, and 9.
Rationale - Periods are needed to provide consistent punctuation in the paragraph.
RESPONSE: Concur.
43. Page 11-4, paragraph 11.5.3.7, line 10: Comment - Delete “are” after “anomalies”.
Rationale - The sentence is grammatically incorrect if the word is not deleted.
RESPONSE: Concur.
44. Page 11-4, paragraph 11.5.3.10, line 22: Comment - The percent of grids to have 100 percent geophysical mapping should be verified and the other percents shown on the line deleted. Five percent is used in the General Site-Wide Work Plan.
Rationale - The percent of grids to be 100 percent mapped should be clearly shown.
RESPONSE: Text will be revised to 5%.

Alabama Department of Environmental Management

May 24, 2000

Ronald M. Levy
BRAC Environmental Coordinator
Environmental Office, Bldg. 215, 15th Street
US Army Garrison
Fort McClellan, Alabama 36205-5000

**RE: ADEM's Comments on the Draft M2 Ordnance and Explosives Removal Action Work Plan,
Fort McClellan, Alabama, 22 April 2000**

Dear Mr. Levy:

The Alabama Department of Environmental Management has received and reviewed the Draft M2 Ordnance and Explosives Removal Action Work Plan, Fort McClellan, Alabama, 22 April 2000. As a result of our review, ADEM has enclosed comments for your review and written response.

For any questions or concerns regarding this matter please contact me at 334-271-7750 or email at <mailto:pns@adem.state.al.us>

Sincerely,

Philip N. Stroud
Governmental Facilities Section
Hazardous Waste Branch
Land Division

PNS/

cc: Bart Reedy, EPA Region 4
Ellis Pope, USACE

**ADEM's COMMENTS ON THE DRAFT M2 PARCEL ORDNANCE AND
EXPLOSIVES REMOVAL ACTION WORK PLAN, 22 APRIL 2000
FORT McCLELLAN, ALABAMA**

General Comments

1. An acronym list would be helpful. Acronyms are not spelled out very well in this Draft M2 Parcel Ordnance and Explosives (OE) Action Work Plan.

RESPONSE: Concur. An acronym list will be provided.

2. The SSHP states that 10-pound (lbs.) ABC fire extinguishers will be used during field operations. Knowing the dangers of the work to be performed, please consider 20-lbs fire extinguishers or larger. The 10-lbs. fire extinguisher is the minimum size to be considered.

RESPONSE: The 10-lb units are preferred because the 20-lb units, being larger and heavier, are more cumbersome to carry. As a precaution against fire breakout, Fort McClellan has agreed to provide a water truck (brush truck) to be onsite during explosives disposal operations. Additionally, "each UXO disposal team will carry water sprayers in the event a small fire should erupt due to detonation operations. Each team will have two five-gallon containers of water with them at all times during demolition operations. Each vehicle will be equipped with a fire extinguisher". This later sentence has been added to sec. 2.7.2.1 Safety Precautions of the work plan.

3. This work plan needs a general location map and a site location map so the reader will be able to reference Fort McClellan in relation to the State of Alabama and to Calhoun County. A figure showing the portions of Fort McClellan subject to this investigation would be useful

RESPONSE: Figure 1-1 shows the site location for the M2 Parcel on Fort McClellan and Figure 4-1 shows the M2 Parcel specifically. A small map of Alabama showing the location of Fort McClellan will be added to Figure 1-1 to show the location of Fort McClellan relative to Alabama and Anniston. Also, Summerall Gate Road and State Road (SR) 21 will be annotated on the figure.

4. ADEM is aware that most of the UXO will be blown in place or rendered safe within the boundaries of Fort McClellan. However, if UXO or scrap material is delivered off site, the route should be discussed with the community. The UXO material should be delivered off site on roads with minimum human exposure. Dates and time of delivery should be posted for all involved parties (community, fire department, police department, etc.).

RESPONSE: This comment addresses both UXO and "scrap material". UXO will not be transported off site. Only scrap material that has been "...100 percent properly inspected andare inert and/or free of explosives or related material" will be transported off site. Procedures describing the handling and disposition of scrap materials are included in sec. 2.8 of the M2 Parcel work plan.

5. It is very apparent in the General Site-Wide Work Plan that care will be taken to protect the wildlife during removal operations. Best management practices should be followed above and beyond the work plans. Avoid cutting trees and shrubs just for convenience sake. Being good stewards of the land and waters of Fort McClellan is vital during this removal phase. The habitat of Fort McClellan houses numerous endangered, threatened, rare, and uncommon species. Extreme care should be given to the ecosystems that contain these plants and animals.

RESPONSE: *Best management practices will be followed. Brush and trees are only removed from the areas that require investigation. The area (M2 Parcel) being investigated (geophysically surveyed) requires that an operator (1) be able to safely and efficiently move through and across the site and (2) that the detector instrument (EM61) he is carrying can pass directly over the area being surveyed. This requires that brush, vines, and small trees be cleared to within 4 inches of the ground (to prevent risk of tripping) and that hanging limbs and vines be removed to provide a minimum 8-foot overhead clearance. The latter is required to provide clearance for the transmitting antenna centered above the operator's head.*

6. As a general reminder to all parties involved in the M2 Parcel UXO removal process, it is ADEM's ultimate concern that protection of the state's air, land, and water resources for our citizens is at the forefront of the process. The future transfer of property, such as the M2 Parcel or any other property with UXO contained within, is secondary to the concerns of the potential dangers that UXO could cause. Risk related issues and concerns are foremost to ADEM.

RESPONSE: *Comment noted.*

Specific Comments

| <u>#/Page/Section</u> | <u>Comment</u> |
|-----------------------|---|
| 1/1-1/1.3 | <p>This work plan needs a general location map and a site location map so the reader will be able to reference Fort McClellan in relation to the State of Alabama and to Calhoun County. A figure showing the portions of Fort McClellan subject to this investigation would be useful.</p> <p>RESPONSE: <i>Figure 1-1 shows the site location for the M2 Parcel on Fort McClellan and Figure 4-1 shows the M2 Parcel specifically. A small map of Alabama showing the location of Fort McClellan will be added to Figure 1-1 to show the location of Fort McClellan relative to Alabama and Anniston. Also, Summerall Gate Road and State Road (SR) 21 will be annotated on the figure.</i></p> |
| 2/1-2/Figure 1-1 | <p>Figure 1-1: This figure needs road names and features suggested from the text (i.e. Highway 21, Summerall gate, etc).</p> <p>RESPONSE: <i>See response to comment no 1 above.</i></p> |
| 3/2-3/2.2.3.6 | <p>Line 10: Delete the “-“ after “Disposal”.</p> |

RESPONSE: The “-“ will be eliminated. Note also that the following text has been added: *OE excavation and disposal will be performed IAW the procedures set forth in Section 2.7 OE Operations, of this WP.*

4/2-6/2.3.1.4 Line 2: Stop work authority may be given Mr. James Ennis (UXO Site Safety Officer [UXOSO]), but any person at any level can stop work if conditions are not safe. Please make a statement suggesting that others can make calls on safety issues if warranted.

RESPONSE: *The following sentence will be added to the paragraph: “Although the UXOSO has the primary authority to stop work, all site personnel have the responsibility to stop work to prevent an unsafe act or when observing unsafe working conditions”.*

5/2-10/2.7.1.2.2 Line 31: ADEM is concerned about the use of the words “responsibility” and “control”. Is the government going to overrule your health and safety plan and compromise safety? Please clarify.

RESPONSE: *The language giving responsibility and control to the government has been removed. The text has been revised as follows:*

Road barricades will be utilized to block road access to the M2 parcel site. Warning tape will restrict immediate access to the M2 Parcel site during intrusive activities. When conducting intrusive activities along the southern and western borders, it may become necessary to implement engineering controls to minimize impact on the local community. If evacuation becomes necessary, then CEHNC Safety Specialist will be notified and all intrusive activity will cease in that area until evacuation can be coordinated through the local authorities.

6/4-2 Figure 4-1: Please identify with and arrow where the M2 Parcel is located (boundaries). Put and arrow to show the locations of Summerall Gate, and the Museum of Natural History. Identify the location of Highway 21.

RESPONSE: *Figure 4-1 will be modified to include Summerall Gate Road, SR 21, and the Museum of natural History.*

7/SSHP/6.0 Attachment 6-6; Hospital Route Figure: This figure is confusing. This figure will become the most important figure in case of a hospital emergency. Please show the M2 Parcel and roads that lead to the Main Entrance Gate to access Highway 21. Move the “Royal Inn” pin-flag to a different location on the figure. Identify on the Figure that this is the Emergency Hospital Route Map. Add additional text to the “Directions to Springfellow Memorial Hospital” that will get you to the Main Entrance Gate. Put the hospital address and phone number on the figure and in the directions. What is the “FWENC Office Bldg 698 2nd Street” on the figure and does it have significance in the route to the hospital? The pin-flags overlay each another and add clutter to the figure.

RESPONSE: *The map has been revised in accordance with the commenter’s suggestions.*

Environmental Protection Agency

May 20, 2000

Mr. Bart Reedy
U.S. Environmental Protection Agency
Region IV
61 Forsyth Street
Atlanta, Georgia 30303-3104

Re: EPA Regional Oversight Contract (ROC), Region 4, No. 65-W5-0020, Work Assignment No. 210-ROC-22 Multi Facility Federal Facility Oversight Support -- Ft. McClellan, Calhoun County, Alabama -- Technical Review and Comments for the M2 Parcel Ordnance and Explosives Removal Action Work Plan at Fort McClellan, Alabama dated 22 April 2000

Dear Mr. Reedy:

In partial fulfillment of ROC Work Assignment No. 210-ROC-22, Gannett Fleming, Inc. is pleased to submit two copies of this Technical Review and Comments (TRC) for the M2 Parcel Ordnance and Explosives Removal Action Work Plan at Fort McClellan, Alabama dated 22 April 2000. A copy of this TRC Report is also enclosed on a 3.5" diskette in WordPerfect 6.1 format.

If you have any questions or comments, please contact Mr. Norrell Lantzer (410)734-4457 or Ms. Laura Wrench (812)384-3587 ext 261.

Sincerely,

GANNETT FLEMING, INC.

John H. Sulima
ROC 2 Program Manager

Enclosures

cc: GF: 35241.013.00125

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**EPAs Comments On
Draft
M2 Parcel Ordnance and explosives
Removal Action Work Plan
at Fort McClellan, Alabama
D.O. # 0005, dtd 22 April 2000**

EPA's review of the *M2 Parcel Ordnance and Explosives Removal Action Work Plan at Fort McClellan, Alabama* dated 22 April 2000 identified that this document will need to some revisions based upon the revisions to the M2 Parcel EE/CA as well as the specific comments listed below.. This review focused on the following areas:

Compliance with Federal (particularly the National Contingency Act (NCP)) specifically reference 18, Department of Defense (DoD) references 1-7, Department of Army (DoA) references 7-17, and State requirements (none identified as required by the NCP and reference 13), focusing on removal action requirements and explosive safety pursuant with the following::

- Adequacy of the proposed UXO clearance operations and QA/QC for UXO clearance operations;
- Adequacy of the UXO geophysical methodology for determining the presence or absence of unexploded ordnance;
- Adequacy of data quality objectives (DQOs) to support the removal approach and the critical data elements to support the remedy selection pursuant to the National Contingency Plan.

Specific Comments.

1. **Page 1-3, Section 1.4.2** This Section references items found in and around the M2 parcel by previous and ongoing site investigations. Additionally in line 8- "OE training items are expected to be found" and in line 10- "Potential items that may be found" Both sentences leads the reader to believe that only training items are to be found in the M2 Parcel, but during one of the investigations (M2 Parcel EE/CA Section 1.3.9) conducted by the COE, Mr. H. Hubbard located a White Phosphorous Hand Grenade. The author should list any potential on-going investigation that may affect this removal action and should also list all the ordnance hazards that may be associated with the M2 parcel, i.e. WP grenade.

RESPONSE—Concur with comment. Section 1.4.2 will be revised to incorporate the latest language used in the EE/CA:

1.4.2 The M2 Parcel has been identified as part of a much larger undocumented training area for OE. Although the full extent of the training area has not been delineated, other site investigations have determined that the potential presence of OE extends east from Summerall

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Gate along the proposed route of the Eastern Bypass as well as encompassing the M2 Parcel. The potential OE that is suspected to be on the M2 Parcel and its associated hazards are identified in Table 1-1. Although most of the potential items have small explosive hazards, no evidence of high explosives or Chemical Warfare Materiel has been associated with the M2 Parcel. The period and duration of training that was conducted in the M2 Parcel is unknown.

1.4.3 Several previous and ongoing investigations have indicated the presence of OE items within the parcel. The US Army Corps of Engineers, St. Louis District, compiled an Archives Search Report (ASR) in 1996. The ASR was prepared by reviewing available records and reports documenting the history of the site. Historical information pertaining to site operations, including a listing of site investigations conducted before 1996, is contained within this document. In 1998, the US Army Corps of Engineers, St. Louis District, revised the ASR to include suspect Chemical Warfare Materiel (CWM) areas. The ASR was finalized in July 1999.

1.4.4 The Final Archives Search Report (prepared by the US Army Corps of Engineers, St. Louis District) presented the findings of the site inspection and evaluation of potential ordnance and explosives occurrence at former Fort McClellan. Numerous areas suspected of being used for chemical warfare training or chemical warfare material storage were inspected. No indication of OE training, chemical training or chemical materiel storage was noted in the document to be within the boundaries of the M2 Parcel.

1.4.5 Barge, Waggoner, Sumner and Cannon, Inc. conducted an Environmental Assessment (EA) for the Alabama Department of Transportation (ALDOT) in August 1998. This document identified the economic and environmental impacts of the proposed eastern bypass and evaluated right-of-way alternatives for the bypass. A Finding of No Significant Impact was finalized in December 1999. The corridor of study for the proposed eastern bypass also encompassed the M2 Parcel. Threatened and endangered species were not anticipated within the M2 Parcel. Isolated wetlands associated with streams were described in three separate areas within the right-of-way, none of which is located in the M2 Parcel.

1.4.6 An Historical Aerial Photography Investigation of the Fort McClellan East By-Pass Study Area (1998) was prepared by Oak Ridge National Laboratory (ORNL) for the US Army Engineering and Support Center, Huntsville. It provided an analysis of land usage over a span of more than 50 years and potential areas of OE occurrence. Part of the M2 Parcel was included in the photographic coverage investigated by ORNL. There were also anomalies identified in photographic coverage overlapping the M2 Parcel that were recommended for further investigation.

1.4.7 Zapata Engineering conducted a non-intrusive ground reconnaissance in August 1998. The purpose of the ground reconnaissance was to resolve anomalies resulting from the Historical Aerial Photography Investigation and to visually identify areas of possible OE occurrence, which may not have been previously characterized within the proposed eastern bypass right-of-way. As documented in Zapata Engineering's Ground Reconnaissance Trip Report dated September 1998, no evidence of ordnance impact areas were identified within the areas in and adjacent to the M2 Parcel. However, several areas revealed evidence of possible

training activities and were identified as potential sample locations. The most notable locations were in the northern portion of the proposed eastern bypass right-of-way, near Summerall Gate. In particular, possible training areas were located north and south of Summerall Gate Road, approximately 200 to 300 yards inside the installation boundary. These areas adjoin and overlap the M2 Parcel.

1.4.8 In February of 1999, Zapata Engineering conducted a geophysical survey of six areas encompassing 8.56 acres in and adjacent to the M2 Parcel. Approximately half of the geophysical data collected in Area 6 overlaps the M2 Parcel. Several subsurface anomalies were identified as potential OE.

1.4.9 In May of 1999, intrusive sampling was conducted in several of the areas previously geophysically mapped. Several OE items used for training were found in sampling grids near the M2 Parcel. The items found included 60mm practice mortars, expended smoke rifle grenades, expended rocket propelled ground signals (slap flares), expended practice anti-personnel mines (M8), expended ground trip flares (M48), and an unexpended M1 mine activator. No intrusive sampling was performed within the M2 Parcel.

1.4.10 In February of 2000, Mr. Hank Hubbard, a safety specialist with CEHNC, performed visual ground reconnaissance within and adjacent to the M2 Parcel, identifying the remains of a White Phosphorus grenade on the ground surface adjacent to the M2 Parcel.

1.4.11 Currently EODT, Inc. is performing a one foot clearance over the proposed footprint of the Eastern Bypass to support pre-construction activities. Expended rifle smoke grenades, smoke grenades and parts of an expended white phosphorus hand grenade were found in grids adjoining the M2 Parcel on the northern boundary

TABLE 1-1 Potential OE at M2 Parcel

| MUNITION/COMPONENT | Explosive/Incendiary Hazard | Calculated Penetration Depth |
|-------------------------------------|--|-------------------------------------|
| WP Hand Grenades | 15 oz. White Phosphorus filler, incendiary | Surface |
| 60mm practice mortars (M69) | None | 4 inches |
| Rifle (Burning type) smoke grenades | Smoke filler, incendiary | 4 inches |
| 2.36 inch practice rocket | None | 10 inches |

| | | |
|---|---------------------------------------|----------|
| Rocket propelled ground signals (slap flares) | Small explosive charge | 3 inches |
| Surface trip flares (M48) | 75 grain propelling charge, explosive | Surface |
| Practice hand grenades (MK II) | 28.35 g black powder, explosive | Surface |
| Mine Activator, practice (M1) | Small explosive charge | Surface |
| Mine, anti-personnel, practice (M8) | 11 g black powder, explosive | Surface |

2. **Page 2-3, Section 2.2.3.5. Data Analysis/Target Reacquisition.** This section is blank. The author should provide a discussion of any variances from the general work plan that will apply to this site specific work plan.

RESPONSE-Concur-This paragraph has been revised as follows:

After the geophysical data have been processed, Foster Wheeler Environmental will interpret the data using internally developed software. Geophysical anomalies will be automatically selected by the computer, selected interactively by the interpreter, or both. Estimates of depth and relative size are determined for each anomaly, and a preliminary dig list will be generated. Preliminary dig list anomalies with estimated sizes and other characteristics that fall within the size ranges for the ordnance types anticipated at the M2 parcel will be identified as potential OE on the final dig list. Anomalies will be reacquired using the USRADS system and the EM61 Hand Held instrument to pinpoint the target(s). Alternately, the EM 61 may be supplemented with a Schonstet magnetic locator or a Vallon VMX-1. The location of the anomaly will be flagged and a unique identification number written on the flag.

3. **Page 2-3, Section 2.2.3.6. OE Excavation and Disposal.** This section is blank. The author should provide a discussion of any variances from the general work plan that will apply to this site specific work plan..

RESPONSE- OE excavation and disposal will be performed IAW the procedures set forth in Section 2.7 OE Operations, of this WP.

4. **Page 2-3 Section 2.2.4. Task 4- Turn-in of Inert Ordnance and Metallic Debris.** This section references section 2 of the General work plan for the OE Scrap Management Plan. There is no OE Scrap Management Plan identified in the General Work Plan,

however section 2.8 of this plan does provide the referenced plan. The author should change the reference from section 2 of the General Work Plan to this site specific work plan.

RESPONSE-Concur. Paragraph will be revised to read:

The turn in of all recovered inert ordnance items and metallic debris will be performed as described in sec. 2 of this plan-OE Scrap Management. OE scrap management plans were developed in accordance with DoD 4160.21-M, the Defense Demilitarization and Trade Security Control Manual.

(Note: The plan will also be added to the General Site-Wide Work Plan).

5. **Page 2-11 Section 2.7.1. Intrusive Sampling. Line 15.** “Intrusive sampling of selected anomalies will be performed...” This statement conflicts with the statement in section 2.6. “Statistical sampling will not be performed.” The author should define what “dig criteria” will be used for selecting anomalies as part of the removal action.

RESPONSE-Concur. Paragraph will be revised as follows:

2.7.1 Intrusive Activities

The effort at the M2 Parcel is a removal action involving the geophysical investigation of the entire area and removal of all target anomalies. OE are not expected to be found below the calculated penetration depths for the suspected items (reference table 1-1), unless the items were buried. However, in accordance with the statement of work for the M2 Parcel, intrusive investigations will continue to the depth required to identify the anomaly. The following procedures describe the specific activities required, including daily briefing/verification; exclusion zone establishment; anomaly acquisition; excavation; located UXO procedures; handling, transportation, and storage of UXO/OE; disposition of located anomalies; demobilization; and data collection and recording.

6. **Page 2-11 Section 2.7.1.3. Anomaly Acquisition.** The author should reference an established standard operations procedure to be used for anomaly acquisition.

RESPONSE- Foster Wheeler has an SOP to perform anomaly acquisition, however it was prepared for a different project and was based on using DGPS for positioning and we are planning to use the USRADS system for positioning at Fort McClellan. The SOP will be modified to include the USRADS and incorporated by reference into the work plan. A copy of this revised SOP will be provided to your office when available.

7. **Page 2-14 Section 2.7.2.1. Safety Precautions.** Due to the heavy vegetation and ground

condition, the author should add a discussion concerning the procedures for actions involving fires due to detonation. Additionally, the author should add precautions for white phosphorous, i.e. Protective clothing, water and sand.

RESPONSE-Cautions and procedures are included in sec 2.7 and in sec.6.0 Site Safety and health Plan (sec. 6). In addition, the following item will be added to the list of safety bullets listed in sec. 2.7.2.1:

- *Each UXO disposal team will carry water sprayers in the event a small fire should erupt due to detonation operations. Each team will have two five-gallon containers of water with them at all times during demolition operations. Each vehicle will be equipped with a fire extinguisher.*

With respect to white phosphorous, the following bullet will be added to the list of safety bullets listed in sec. 2.7.2.1:

- *Do not handle white phosphorous without proper protection including a welders glove and face shield. If encountered, cover smoking white phosphorous with sand and avoid further contact.*

8. **Page 5-1 Section 5.0.** The author should state what the performance criteria for the selected detector, i.e. Probability of Detection and Confidence Level as well as the associated False Alarm Rate.

RESPONSE-Concur. The following paragraphs will be added to section 5.3.5 following 5.3.5.5:

5.3.5.5.1 The 1999 Field Demonstration results were used to evaluate the effectiveness of the navigation, detection, and data processing technologies/methodologies proposed for the M2 Parcel. For the evaluation, the Pd criteria was based on a navigational error of less than 2 meters, the ability to detect items to a depth of 4 feet, the ability to discriminate between multiple targets greater than 3 feet apart, and the ability to discriminate between target anomalies and items too small to be target anomalies (i.e. a target anomaly was defined as an item with a mass greater than 0.5 pounds and a dimension greater than 3.89 inches). A false positive was defined as any target selected that was less than the size or mass criteria specified, had a navigational error greater than 2 meters, and could not be distinguished from another target which was outside a critical radius of 3 feet from the first target. The criteria-specific results for the Proveout were a 98 % Pd with a false alarm rate of 2.1:1.

5.3.5.5.2 A more in-depth review of the Proveout Test results indicates that implementation of certain procedures may improve the performance achieved during the Proveout Test. In order to achieve this level of detection and associated size discrimination, the following procedures will be implemented during the M2 parcel geophysical program:

- 1) UXO personnel will excavate all metallic contacts within a 1 m radius of the interpreted target location. Target locations likely to contain multiple targets that could possibly be outside the critical radius of 1 meter will be identified as such on the digsheet in the comment column (e.g., "multiple targets probable") and the radius will be increased accordingly.
 - 2) USRADS will be used to re-acquire the target locations selected for excavation. The same survey control (i.e., fixed points) will be used during anomaly acquisition as those used for data acquisition. This procedure will minimize position errors resulting from differences between the state plane coordinates and the USRADS position, which is based on slope (not planar) distance.
 - 3) The target selection threshold will be adjusted in the interpretation software based on the "learning curve" associated with the Proveout Test and through data validation during excavation of anomalies identified in the M2 Parcel. This procedure will ensure the M2 data interpretation will be consistent with those attained in the Proveout Test.
9. **Page 5-1 Section 5.2.4.** The author should add table 1.1 of the revised M2 Parcel EE/CA dated May 2000 (ref 19). This chart provides the types of OE expected in this parcel as well as the expected depths the OE is likely to be found.

RESPONSE -Table 1.1. has been added to sec 1.4. See response to comment no. 1 above. Additionally, paragraph 5.2.4 will be revised as follows:

Due to the nature of training that is suspected to have occurred on the M2 Parcel, OE training items are expected to be found on the ground surface or within the top eighteen inches of the subsurface. Potential items that may be found include: WP hand Grenades, 60mm practice mortars (M69), Rifle smoke grenades (burning type), 2.36-inch practice rockets, rocket propelled ground signals (slap flares), surface trip flares (M48), practice hand grenades (MK II), practice mine activators (M1), and practice anti-personnel mines (M8). See Table 1-1 in sec.1.4 for additional details concerning Potential OE at the M2 Parcel.

References.

1. Memorandum DoD/EPA ***Unexploded Ordnance (UXO) Management Principles*** dated 7 March 2000.
2. DoD 6055.9-STD ***DoD Ammunition and Explosives Safety Standards*** July 1999, authorized by DoD Directive 6055.9 ***DoD Explosives Safety Board (DDESB) and DoD Component Explosives Safety Responsibilities*** July 29, 1996
- 3.. Memorandum (DDESB-KO) ***Guidance for Clearance Plans*** dated 27 February 1998

4. Department of Defense (DoD) Directive number 4715.11 *Environmental and Explosives Safety Management on DoD Active and Inactive Ranges within the United States* 17 August 1999
5. Technical Bulletin (TB) 700-2 *Department of Defense Ammunition and Explosives Hazard Classification Procedures* 5 January 1998
6. DoD Manual 4160.21-M *Defense Reutilization and Marketing Manual* 18 August 1997, authorized by DoD Directive 4140.1 *Material Management Policy* 4 January 1993
7. **MEMORANDUM FOR US ARMY TECHNICAL CENTER FOR EXPLOSIVES SAFETY** to assist in the implementation of Chapter 12, DoD 6055.9. Dated 27 Feb 98.
8. Army Regulation (AR) 385-64, *U.S. Army Explosive Safety Program* 28 November 1998
9. Department of the Army Pamphlet (DAP) 385-64, *Ammunition and Explosives Safety Standards* 28 November 1998
10. **US ARMY ENVIRONMENTAL RESTORATION PROGRAMS GUIDANCE MANUAL**, APRIL 1998
11. HQDA Letter 385-98-1 DACS-SF (3 October 1997) *Explosives Safety Policy for Real Property Containing Conventional Ordnance and Explosives* 30 June 1998 note expires 30 June 2000
12. AR 385-15, *Safety Preparation of Standard Operating Procedures for Hazardous Operations*
13. AR 350-4, *Training and Certification Program for Personnel Working in Ammunition Operations*
14. CEHND 1115-3-524, *Removal Action Planning for Ordnance and Explosives Sites Procedural Document*. Note superceded by 1110-1-18 24 Apr 00
15. Engineer Pamphlet (CEMP-RT) 1110-1-18 *Engineering and Design Ordnance and Explosives Response* 24 April 2000
16. CEHNC-OE-CX *Procedures for Demolition of Multiple Rounds (Consolidated Shots) on Ordnance and Explosives (OE) Sites* August 1998 with terminology update March 2000
17. CEHNC-OE-CX *Basic Safety Concepts and Consideration for Ordnance and Explosives (OE) Operations, OE Center of Expertise (CX) Interim Guidance Document 00-02* 7 March 2000

18. **Page 2 Section 3.0** EPA's *Guidance on Conducting Non-Time-Critical Removal Actions under CERCLA* (EPA/540-R-93-057, August 1993)
19. *Final Engineering Evaluation/Cost Analysis Report for the M2 Parcel Fort McClellan, Alabama* dated May 2000

U.S. Fish and Wildlife Service



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Wheeler National Wildlife Refuge
2700 Refuge Headquarters Road
Decatur, Alabama 35603

May 31, 2000

Mr. Ronald M. Levy
BRAC Environmental Coordinator
Bldg 215, 15th Street
Fort McClellan, Alabama 36205

Dear Mr. Levy:

I have reviewed the general site-wide work plan and the M2 parcel work plan in regards to possible adverse or beneficial impacts to the natural environment from the UXO survey process. My concern involves possible alterations or degradation to the natural ecosystem from intrusive survey activities. The U.S. Fish and Wildlife Service (Service) has identified the mountain longleaf pine forest system on these slopes as a rare and unique natural landscape in need of protecting and managing. Current plans involve developing and managing these lands as a new national wildlife refuge with the primary purpose of saving and retaining this rare landscape type. We therefore request that survey efforts take into consideration measures that minimize or avoid adverse alteration to this forest system.

Based on descriptions of vegetation clearing requirements in the general work plan (p 2-15), vegetative cover will be removed from site grids no greater than four inches above the ground and trees less than three inches in diameter will be cut. Our recommendation is to selectively leave longleaf pine in these areas and focus on the removal of hardwoods on pine sites. Actually, disturbances to the soils that allow invasive weed species to develop are a greater concern than the selective removal by cutting of trees and shrubs. We do however support the option presented on p 2-15 of using prescribed fire as an alternative method of vegetative clearing. This method mimics the natural processes that longleaf exists under and would be far preferable to mechanical removal. Brush clearing methods involving heavy equipment and a bush-hog were used on the M2 parcel. We would hope that more sensitive soils and landscapes in the mountains would avoid this approach and employ hand clearance for the selective removal of trees and minimization of soil disturbance.

Section 12 of the general work plan comprises the environmental protection plan. This plan identifies sensitive resources to avoid and provides mitigative techniques to minimize impacts. This section only considers the blue shiner and red-cockaded woodpecker under constraints related to the Endangered Species Act. More detailed consideration should be provided for the white-fringeless orchid. This plant is currently waiting funding to proceed with the listing process. The status report for this orchid identified all spring seeps in the mountain area as potential habitat. Because two populations are already known on the fort, there is a high probability that more exist and the plant should be considered in any activity that potentially could impact wetland areas. Because this orchid may remain dormant in the soil for years, the lack of sightings in a seep or wetland does not necessarily mean it is absent. Section 12.9.2 indicates that wetlands are outside the boundaries of the area. This is incorrect. All streams through the mountains contain numerous seeps along their borders. These small isolated seeps constitute habitat for the orchids. The environmental protection plan also identifies special interest natural areas within the mountain area, but does not provide measures that will be implemented to minimize adverse impacts or degradation. It should be recognized that the first area on the list, Mountain Longleaf Community Complex, comprises the entire mountain area and would include all grid survey locations in the Choccolocco Mountain Area.

Section 2.6 of the general work plan on p 2-17 describes reasonably anticipated future activities as the bases for evaluating risk of UXO on uniform areas. The Service would like to see cleanup of UXO to the fullest extent possible without significantly degrading the environment. Because fire suppression and prescribed burning are primary management goals, the use of heavy equipment on these lands is important. At a minimum, firelanes should be cleared for heavy equipment if unrestricted use of the area is impossible. The Service would also like to see surface use available throughout these lands for both government employees and the public. The Service is currently working with the army on identifying localize intensively developed areas that may require more detailed evaluation in relation to UXO.

Because each area in the mountains involves different constraints and issues, the Service would like to be included in the planning process as each site is identified for survey. We believe that by considering the specific issues at each site, adverse impacts can be minimized or avoided.

Sincerely,

Bill Garland
Biologist

NOTE: These responses are directed at the Site-Wide Work Plan

**Fort McClellan
General Site-Wide Work Plan
Response to USFWS May 31, 2000 Comments**

Comment: The USFWS requests that survey efforts take into consideration measures that minimize or avoid adverse alteration to the mountain longleaf pine forest system and recommends selective cutting to remove hardwoods and leave longleaf in this area. Disturbances of soils that allow invasive weed species to develop are a greater concern than the selective removal by cutting of trees and shrubs, therefore, the USFWS supports the option of prescribed fire as an alternative method of vegetation clearing.

Response: Site activities will take into consideration measures that minimize or avoid adverse alteration to the mountain longleaf pine forest system. Special measures to be employed in this area will include the following:

- Prescribed burning to remove under brush in larger areas
- Hand clearing of under brush in smaller areas. Use of hand tools will avoid soil disturbances. Non woody under brush will be cleared with a high-weed mower. Woody under brush will be with hand held chain saws.
- Selective cutting to remove hardwoods only.

Comment: The USFWS requested that the White-fringless Orchid (*Platanthera intergilabia*) be considered when any activity could impact wetlands.

Response: The white-fringeless orchid will be considered when an activity could impact wetlands. The general approach is to avoid wetland impacts, as any planned activities will be located outside wetland boundaries to the maximum extent practicable.

Comment: The USFWS has stated that "Section 12.9.2 indicates that wetlands are outside the boundaries of the area," and believes this is incorrect.

Response: Since the purpose of OE response at Fort McClellan is to make the land safe for reuse, sampling -- and potentially, removal actions-- may become necessary within wetland areas that fall within the boundaries of areas under investigation. However, sampling and removal actions within wetlands will be intentionally avoided to the extent that avoiding these areas does not compromise the effectiveness of the investigation or OE cleanup. If and when it becomes necessary to perform OE response activities within wetlands, specific guidance and procedures will be included in the site-specific work plans for minimizing damage to these sensitive ecological resources.

Comment: The environmental protection plan also identifies special interest natural areas within the mountain area, but does not provide measures that will be implemented to minimize adverse impacts or degradation.

Response: The first employed method to be implemented to minimize adverse impacts or degradation in these special interest natural areas will be avoidance. If is necessary to conduct activities (e.g., surveys, investigation, removal action, etc.) in these areas, survey efforts will employ measures that minimize or avoid adverse alteration to these areas. Special measures to be employed will be similar to those used for the mountain longleaf pine forest system, specifically:

- Locations of all sampling grids and access roads outside of wetland boundaries.
- Prescribed burning to remove under brush in larger areas.
- Hand clearing of under brush in smaller areas. Use of hand tools will avoid soil disturbances. Non woody under brush will be cleared with a high-weed mower. Woody under brush will be with hand held chain saws.
- Selective cutting.

Additional measures will be identified, in conjunction with the USFWS, on a case by case basis as needed to meet conditions unique to specific areas.

Comment: It should be recognized that the...Mountain Longleaf Community Complex comprises the entire mountain area and would include all grid survey locations in the Choccolocco Mountain Area.

Response: The text will be changed to reflect that the Mountain Longleaf Community Complex comprises the entire mountain area and would include all grid survey locations (as well as any other project required activities in this area) in the Choccolocco Mountain Area.

Comment: Fire lanes should be cleared for heavy equipment if unrestricted use of the area is impossible. The Service would also like to see surface use available throughout these lands for both government employees and the public.

Response: Results of proposed surveys/investigation activities will be used to make recommendations regarding clearing for future use at Fort McClellan. Specific recommendations are premature at this stage.

Comment: Because each area in the mountains involves different constraints and issues, the Service would like to be included in the planning process as each site is identified for survey.

Response: The Army welcomes input from the USFWS and the USFWS will be notified and included in the planning process as each site in the mountains is identified for survey.

APPENDIX B

**DELIVERY ORDER 0005
STATEMENT OF WORK**

STATEMENT OF WORK
ORDNANCE AND EXPLOSIVES (OE) REMOVAL ACTION
M2 PARCEL
FORT McClellan
MARCH 24, 2000

1.0 OBJECTIVE. The objective of this task order is to perform a removal action all OE (UXO and inert ordnance) for the M2 Parcel at the Fort McClellan (FMC), Alabama. This clearance is a final removal action prior to transfer of this property to the Joint Powers Authority for possible commercial development.

2.0 BACKGROUND.

2.1 General.

2.1.1 The work required under this Scope of Work (SOW) falls under the Base Realignment and Closure. Ordnance and Explosives (OE) and OE-related scrap contamination is suspected to exist on this property owned by the Department of the Army.

2.1.2 OE is a safety hazard and may constitute an imminent endangerment. Unexploded ordnance (UXO) may be buried on the site or may possibly be on the ground surface. During this removal action, it is the Government's intent that the Contractor destroys, by detonation on-site, all Unexploded Ordnance (UXO) encountered. Chemical Warfare Materiels (CWM) is not suspected to exist within the limits where this work will be performed although CWM was stored at Fort McClellan. However, if any suspect CWM is discovered, the Contractor shall stop work immediately, withdraw upwind from the area, and notify the Fort McClellan Transition Force

Operations Center. The work done under this SOW will be performed in a manner consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 104, and the National Contingency Plan (NCP) Sections 300.120(c) and 300.400(e). No Federal, State or Local permits should be required for any access or remedial action taken on this site for the activities within this statement of work. The applicable provisions of 29 CFR 1910.120 shall apply.

2.1.3 Work Limitations. Due to the inherent risk in this type of operation, the Contractor shall be limited to a 40-hour workweek (either five 8-hour days or four 10-hour days). UXO personnel shall not perform UXO-related tasks more than 10 hours per day.

2.2 Site Description. Fort McClellan is located northeast of the City of Anniston, Calhoun County, Alabama. To the west are the areas known as Weaver and Blue Mountain. To the North is the City of Jacksonville. The Talladega Forest is to the east of the post.

2.3 Site History. Fort McClellan has been used for artillery training of troops and the National Guard as early as 1912 to present day. In 1941, McClellan became site of the Chemical Corps Training Command. In 1962, the U.S. Army Combat Developments Command Chemical Biological-Radiological Agency moved to Fort McClellan. In 1973, the Chemical Corps School along with the U.S. Army Combat Developments Command Chemical Biological-Radiological Agency closed. In 1979, the U.S. Army Chemical Corps School re-established along with a training Brigade for Basic Training.

2.4 M2 Parcel. This area consists of approximately 20 acres. It is located on the western boundary of FMC just south of

Summerall Gate Road. Several OE training items have been found adjacent to this parcel during other site investigations.

2.5 Recent OE-Related Activities. Several previous and ongoing site investigations in and around the M2 Parcel have indicated the presence of OE training items within the M2 parcel. These activities as well as potential OE items that may be found within the M2 Parcel are described in the Draft Engineering Evaluation/Cost Analysis prepared by CEHNC for this area. Due to the nature of training that is suspected to have occurred on the M2 Parcel, OE training items are expected to be found on the ground surface or within the top eighteen inches of the subsurface. Potential items that may be found include: 60mm practice mortars (M69), Rifle smoke grenades (burning type), rocket propelled ground signals (slap flares), surface trip flares (M48), practice hand grenades (MK II), practice mine activators (M1), and practice anti-personnel mines (M8).

3.0 DESCRIPTION OF SERVICES.

3.1 (TASK 1) Prepare Site-specific Work Plan (WP) and Explosive Safety Submission.

3.1.1 Prepare Site-specific Work Plan. The site specific work plan shall include all site specific details as required by OE-005-1 that are not covered by the site-wide workplan for Fort McClellan.

3.1.2 Prepare Conventional Explosives Safety Submission. The Conventional Explosives Safety Submission shall be prepared in accordance with DID OE-060.

3.2 (TASK 2) LOCATION SURVEYS AND MAPPING.

3.2.1 Surveying. The Contractor shall perform all location surveys and mapping required to establish

boundaries of the area specified in Paragraph 2.4 of this SOW, and as directed in DID OE-005-07. In addition, grid corners shall be established using precision surveying methods. Each corner of each grid area shall be located by establishing the appropriate state plane grid system to the closest one-foot, and shall be both tabulated and shown on maps of the site. Other coordinate systems and accuracy specifications are not acceptable and shall not be used. It is not necessary to manually survey individual locations of recovered UXO and inert ordnance items if the "x" and "y" distance with a horizontal accuracy of plus or minus one foot from the established grid corners can be obtained by other means. The Contractor shall mark and survey the corners of the designated grids with stakes or other visible temporary markers. The location of ordnance scrap, ordnance fragments, shrapnel, small arms ammunition and metallic debris shall be recorded only on a per-grid basis and not located by coordinates.

3.2.2 Items and data to be submitted to the Contracting Officer as part of the tasks are as follows:

3.2.2.1 A tabulated list of the respective grid corners for all grids being cleared in the areas described in Section 2.4 of this SOW.

3.2.2.2 An electronic and hard copy of all drawing files and reference files used for and developed as part of this removal action. These files shall meet the following requirements:

3.2.2.2.1 Each sheet shall also have a standard border, revision block, title block, complete index sheet layout, bar scale,

legend, metric grid lines, grid tick layout, a magnetic north, a grid north, and a true north arrow, and be plotted at a horizontal scale of 1:2,400 (1"=200') minimum.

3.2.2.2.2 The Government shall be provided with a copy of the design files on 8 mm 5.0 or 10.0 gigabyte magnetic tapes, 3 ½" HD floppy disks or approved CD ROM format. CD-ROMs are preferred. The data to be submitted shall contain the final, corrected version of the design file. The tapes or disks shall be labeled, showing the project name, project number, date, company name, address and telephone number and the number of files.

3.3 (TASK 3) UNEXPLODED ORDNANCE REMOVAL. This task shall be accomplished IAW the approved site-wide and site-specific workplans for Fort McClellan.

3.3.1 The Contractor shall furnish all necessary personnel and equipment to locate and perform a clearance of all UXO and inert ordnance. Only CEHNC-approved UXO personnel shall perform UXO procedures IAW DID OE-025 of the basic contract.

3.3.2 The Contractor shall maintain a detailed accounting of all UXO items/components encountered on the project site. This accounting shall include the amounts of UXO, identification, condition, depth located, disposition, location/mapping, and exposure data. This accounting shall be a part of the Removal Report.

3.3.3 All recovered UXO shall be disposed of daily. Exceptions will be approved by the on-site CEHNC Safety Specialist.

3.3.4 The Contractor shall plan to provide demolition materials for disposal of OE. This shall be outlined in the Explosives Management Plan in accordance with DID OE-005-03. All explosives will be stored in the Ammunition Supply Point at FMC. The contractor shall coordinate these arrangements with the QASAS at FMC and the CEHNC Safety Specialist prior to shipment of Explosives to FMC.

3.3.5 All access/excavation/detonation holes shall be back filled to grade.

3.3.6 ETL 385-1-1, Safety Concepts and Basic Considerations for UXO Operations will be used in planning UXO operations in the Technical Management Plan.

3.3.7 TM 60A-1-1-31, General Information for EOD Disposal Procedures will be used when planning for demolition operations used when disposing of UXO and UXO-related items.

3.3.8 The provisions of EM 385-1-1, Safety and Health Requirements Manual, will be used when planning UXO operations.

3.3.9 The contractor will provide an ordnance filler report to assess possible damage to environmental media in accordance with DID OE-090.

3.4 (TASK 4) TURN IN OF INERT ORDNANCE AND METALLIC DEBRIS.

The Contractor shall furnish all necessary personnel and equipment to turn in all recovered inert ordnance items and metallic debris. The methodology to accomplish this task shall be proposed in the workplans. Disposition and

management of all range residue shall be accomplished in accordance with DoD 4160.21-M.

3.4.1 Inert ordnance items shall be vented IAW DOD 4160.21-M-1, Defense Demilitarization Manual.

3.4.2 If a local DRMO is unavailable or if one is available, but is unwilling to accept scrap, the Contractor shall utilize locally available resources for disposal of scrap. The Contractor shall complete a DD Form 1348-1 as turn-in documentation. Instructions for completion of this form are contained in the Defense Utilization and Disposal Manual, DoD 4160.21-M. The Senior UXO Supervisor and the UXO Quality Control Specialist shall sign the required certification statement(s) as required by DoD 4160.21-M.

3.4.3 Turn-in documentation receipts shall be submitted as a component of the Removal Report.

3.5 (TASK 5) PERFORM QUALITY CONTROL.

3.5.1 The Contractor shall furnish the necessary personnel and equipment to administer a Quality Control (QC) Program to manage, control, and document Contractor and subcontractor activities IAW DID OE-005-11. The methodology to accomplish this task shall be proposed in the work plans. The QC activities shall be documented and included in the Removal Report.

3.5.2 If UXO is located within a grid during the UXO Quality Assurance (QA) search, the grid fails and must be re-swept until it passes government QA.

3.6 (TASK 6) PREPARE AND SUBMIT SITE SPECIFIC REMOVAL REPORT. At the conclusion of all field activities, the Contractor shall submit the Site Specific Removal Report IAW DID OE-030.

4.0 SCHEDULE OF MEETINGS AND DELIVERABLES.

4.1 Deliverables. The Contractor shall provide the indicated deliverables on the following schedule:

| Deliverables | Date |
|---|--|
| Draft Site-specific Work Plan and Explosive Safety Submission | April 22, 2000 |
| Final Site-specific Work Plan/ESS | 2 workdays after receipt of com'ts |
| Draft Removal Report to CEHNC | 2 weeks after completion of field work |
| Draft-Final Removal Report to DDESB/FMC | 2 days after receipt of CEHNC com'ts |
| Final Removal Report | 1 week after receipt of final com'ts |
| Report/Minutes, Record of Meeting IAW DID OE-045 | 5 days after event |
| Monthly Status Report IAW DID OE-08 | Monthly |
| Weekly Status Report IAW DID OE-085 | Weekly |
| Cost/Schedule Status Report IAW DID OE-035 | Monthly |
| Telephone Conversation/Correspondence Report IAW DID OE-055 | Monthly |
| Ordnance Filler Report IAW DID OE-090 | 2 weeks after completion of field work |
| Accident/Incident Report IAW DID OE-015 | Written report within 24 hours after the incident occurrence |
| OVERALL COMPLETION DATE | November 30, 2000 |

The original of all status reports shall be sent within 10

days of the end of the reporting period by normal mail to:

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

4.2 Addresses and Distribution. The Contractor shall furnish copies of the draft and final workplans and removal report as indicated to each addressee listed below in the quantities indicated. The Contractor shall use express mail services for delivering these plans and reports. Following each submission, comments generated as a result of their review shall be incorporated as applicable. All comments will be sent to the CEHNC Project Manager for consolidation prior to incorporation. The contractor shall annotate all comments to show all changes and/or responses to support those comments. The following addresses shall be used in mailing submittals:

| ADDRESSEE | Draft Submittals | Draft-Final & Final Submittals |
|--|------------------|--------------------------------|
| Commander US Army Engineering and Support Center, Huntsville ATTN: CEHNC-PM (Mr. David Skridulis) 4820 University Square Huntsville, Alabama 35816-1822 | 6 | 6 |
| Commander US Army Engineer District, Mobile ATTN: CESAM-EN-GH (Mr. Ellis Pope) 109 St. Joseph St. Mobile, AL 36602-3630 | 2 | 2 |

| | | |
|---|---|---|
| U.S. Environmental Protection Agency Atlanta Federal Center ATTN: Mr. Bart Reedy 100 Alabama St. SW Atlanta, GA 30303 | 3 | 3 |
| Alabama Department of Environmental Management Government Facilities Section, Haz Waste Branch, Land Division ATTN: Mr. Chris Johnson 1400 Coliseum Blvd, Montgomery, AL 36110-2059 | 3 | 3 |
| U.S. Army Chemical and Military Police Centers & Fort McClellan Directorate of Environment Building 215 ATTN: ATZN-EM Fort McClellan, AL 36205 | 6 | 6 |

All other submittals shall be distributed in accordance with the corresponding DID.

5.0 SUBMITTALS and CORRESPONDENCE.

5.1 Format and Content of Engineering Report. All drawings shall be of engineering quality with sufficient details. Reports shall consist of 8 1/2" X 11" sheets of paper. The report covers shall consist of durable binders and shall hold pages firmly while allowing easy removal, addition, or replacement of pages. A title shall identify the site, the Contractor, the Huntsville Center, and date. The Contractor's identification shall not dominate the title page.

5.2 Review Comments. The Contractor shall review all comments received through the CEHNC Project Manager and evaluate their appropriateness based upon their merit. The Contractor shall incorporate all applicable comments and provide a written response to each comment.

5.3 Identification of Responsible Personnel. Each submittal

shall identify the specific members and title of the subcontractor and Contractor's staff, which had significant input into the report.

5.4 Correspondence. The Contractor shall keep a record of phone conversations and written correspondence affecting decisions relating to the performance of this task order in accordance with DID OE-055. A summary of the phone conversations and copies of written correspondence shall be submitted to the CO with the Cost/Schedule Status Report.

5.5 Computer Files. All final text files and drawings generated by the Contractor under this task order shall be furnished to the CO in accordance with DID OE-005-07 and DID OE-005-14.

6.0 PERFORMANCE METRICS. The performance and subsequently the evaluation of the contractor shall be based on certain performance metrics. The metrics include quality, schedule, and customer satisfaction. At the completion of the Task Order a board consisting of at least two government personnel and one representative of the contractor will perform the contractor evaluation.

6.1 Safety.

6.1.1. Class A Accidents. Any Class A accident will result in an unsatisfactory rating.

6.1.2 Accident Prevention. The contractor will receive an excellent, satisfactory, or unsatisfactory rating based on his compliance with the Approved Work Plan and other safety regulations and guidance as applicable. This will be determined by the number of safety violations issued by the USACE Safety Specialist as indicated below.

6.1.2.1 Each major safety violation (life threatening, normally associated with activities

involving UXO).

6.1.2.2 Each minor safety violation (non-life threatening, normally associated with non-UXO activities).

6.1.3 The contractor must achieve at least a satisfactory rating on all three safety metrics to achieve an excellent appraisal rating on the Task Order.

6.2 Quality.

6.2.1 Documentation. The contractor will receive an excellent, satisfactory or unsatisfactory rating based on the quality of all documentation including digital data submitted by the contractor. Factors that may be considered in the evaluation are: format, readability, appearance, responsiveness to comments and others as determined to be applicable.

6.2.2 Processes. The contractor will receive an excellent, satisfactory or unsatisfactory rating based on the effectiveness of his processes utilized on the project. Factors that may be considered in the evaluation are: accuracy of characterization of areas potentially contaminated with OE, data capture, data management, team work, and integration of all processes utilized.

6.2.3 Detection. The contractor will receive an excellent, satisfactory or unsatisfactory rating based on his ability to detect target anomalies. This will be measured by the results of QA performed by the government or a representative of the government using the following rating system:

| | <u>Excellent</u> | <u>Satisfactory</u> | <u>Unsatisfactory</u> |
|----------------------|------------------|---------------------|-----------------------|
| Detection | >99 | 95-99 | <95 |
| (% Grids Passing QA) | | | |

6.3 Schedule. The contractor will be rated on his ability to meet schedules on all deliverables for this Task Order. This will be measured as a percentage of deliverables received on time. Schedule slippage beyond the control of the contractor shall be documented and new schedules shall be established with approval of the government.

6.4 Customer Satisfaction. A customer satisfaction survey developed by government with input from the contractor will be sent to the contractor's customers who have been directly involved with part of the work performed under the Task Order. The contractor will be allowed to recommend which customers should be included in the Customer Satisfaction Survey subject to government approval. At a minimum two government personnel who have provided oversight to the contractor on the Task Order will also be part of the rating team. The contractor will be rated on each criterion using a scale of one to five. A cumulative score from one to five will be generated from the results of all the surveys.

| | Excellent | Satisfactory | Unsatisfactory |
|---------------------------------------|------------------|---------------------|-----------------------|
| Customer Satisfaction Survey (rating) | 5-4.5 | 4.5-3 | <3 |

6.5 Incentives. Incentives shall be awarded to the contractor on this Task Order when he achieves an excellent performance rating on at least 80% of the metrics for this Task Order. Incentives for excellent performance may include but are not limited to:

1. Monetary (amount to be determined by the contracting officer)
2. Letters/Certificates of Commendation
3. Write-ups in USACE publications
4. Featuring project success stories at UXO forums and seminars
5. Posting of contractors "excellent" performance on the Huntsville Center's home page
6. Exercising Option years on contract

The government reserves the right to give incentive awards for specific acts, within specific areas or to specific individuals as well as on a Task Order basis. Areas which will be given special consideration when determining if incentives are merited are safety, innovation, and continuous improvement.

7.0 SAFETY REQUIREMENTS. The Contractor shall develop and implement a Health and Safety Program in compliance with the requirements of OSHA standard 29 CFR 1910.120 (b)(1) through (b)(4) and in accordance with DID OE-005-06, as required for this effort.

8.0 Public Affairs. In accordance with the Basic contract.

9.0 REFERENCES.

"Draft EE/CA for the M2 Parcel at Fort McClellan." March 2000, U.S. Army Engineering and Support Center, Huntsville.

References identified in the Basic Contract as applicable.

APPENDIX C

RESUMES OF KEY PERSONNEL

EXPERIENCE SUMMARY

Registered professional engineer with 30 years experience in performing and managing complex environmental programs encompassing design and construction of environmental remediation and restoration projects on sites contaminated with hazardous materials, explosives, low level radioactive wastes, chemical warfare agents and unexploded ordnance, and in performing and managing complex environmental programs including chemical agent demilitarization, hazardous waste storage, site remedial investigations, environmental impact assessments, environmental audits, water supply, and wastewater treatment and disposal. Directly responsible for performance of remedial actions, development of management plans, supervision of professional staff members, direction of contractors, preparation of reports and designs, and assurance of high quality in all products. Formed and led professional teams to accomplish numerous small and large scale environmental projects and is familiar with the requirements of RCRA, CERCLA, TSCA, NEPA, CWA, SDWA, and other environmental statutes.

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, Environmental - GA, No. 20959, 1/5/94
Professional Engineer, Environmental - SC, No. 15933, 1/26/94
Professional Engineer, Environmental - NC, No. 19934, 3/11/94
Professional Engineer, Environmental - MI, No. 6201041860, 10/31/96
Professional Engineer, Environmental - FL, No. 48003, 6/2/94
Professional Engineer, Environmental - AL, No. 19713, 11/19/93
Professional Engineer, Environmental - MD, No. 11688, 12/1/90
Certified Hazardous Materials Manager (Master) - US, No. 2538, 8/15/79
Professional Engineer, Environmental - WV, No. 13293, 2/28/97
Professional Engineer, Environmental - MS, No. 12496, 2/9/95

EDUCATION

MS / Environmental Engineering / University of North Carolina / 1971
BS / Chemical Engineering / University of Illinois / 1968

TRAINING

40-Hour OSHA Hazardous Waste Health and Safety Training - 1990
8-Hour OSHA Hazardous Waste Health and Safety Supervisor Training - 1991
8-Hour OSHA Hazardous Waste Health and Safety Refresher Course - 1996
CPR and First Aid Training - 1993
DoD Security Clearance (Secret)* (Top Secret Eligible)

REPRESENTATIVE PROJECT EXPERIENCE

Manager of Ordnance Programs - Develops, directs and supervises the programs and projects for investigation and remediation of explosives and unexploded ordnance. Directs and oversees the development of technologies, methods and procedures for efficient, effective investigations of unexploded ordnance, evaluation of risk from explosives and unexploded ordnance, supervises the development of plans and procedures for safe, efficient remediation of explosive and unexploded ordnance contaminated sites, and supervises the execution of

3/5/99

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FOSTER WHEELER ENVIRONMENTAL CORPORATION

John C. Mc Ilrath, PE
Director - Remediation

these projects and programs. He has expanded these programs into new technical approaches, increased business size due to client satisfaction, and maintained an accident free program.

U.S. Army Corps of Engineers, Aberdeen Proving Ground UXO RAC, Baltimore District, Maryland, Program Manager - Currently completing the remedial action project. Has developed and led the program staff to accomplish remedial actions at a number of unusual sites where unexploded ordnance, chemical agents and low level radioactive waste were present. Multiple simultaneous DOs were uniformly accomplished below initial cost estimates on or ahead of schedule by a team of up to 60 people. Although these projects included substantial risks, there have been no lost time or reportable injuries in more than 100,000 hours of operations. These projects have uniformly been accomplished below initial estimates and on or ahead of schedule. Has achieved a high level of client satisfaction, resulting in 90-95% award fee determinations.

Huntsville Operations, Manager of Operations – Prior to this assignment, was the Manager of Operations for Foster Wheeler's Huntsville Operations. Was responsible for the technical quality, administration, and contract management for numerous projects performed or managed by the Huntsville office. These projects included hazardous waste studies and remedial designs, environmental impact statements, explosive ordnance studies and designs, wetlands evaluation, underground storage tank management planning and remedial actions, RCRA closure certifications, environmental compliance auditing, wetlands delineation, and oil spill prevention control and countermeasure plans.

Naval Air Station, Marine Corps Logistics Base, Jacksonville, FL, Albany, Georgia, Project Manager – Project manager for three remedial construction projects, two at the Naval Air Station (NAS) Jacksonville, Florida and one at the Marine Corps Logistics Base, Albany, Georgia. One of the projects at the NAS Jacksonville is the decontamination and demolition of an industrial wastewater treatment plant contaminated with heavy metals, cyanides, and acids. The project included decontamination of nine tanks and containment structures, cleaning (pigging) of over 30,000 feet of buried pipelines, and removal and disposal of asbestos contaminated materials from several structures and tanks. The second project at the NAS Jacksonville is installation of an interim recovery system for light nonaqueous phase liquids contaminated with PCBs and radioactive materials. The project at Marine Corps Logistics Base, Albany involved installation of a RCRA cap over a PCB spill site, and excavation to clean site criteria and disposal of chromium contaminated soil from another site.

Camp Shelby, Closure Certification, Mississippi, Project Manager – Project manager for clean closure certification of an open detonation ground in the impact area at Camp Shelby, Mississippi. The closure required collection and analysis of extensive soil, sediment and water samples to completely characterize the site and determine which residual compounds might be present in concentrations above health-based standards. Alternate standards were developed and used to show the effectiveness of closure.

Relocation of Armaments on Chemicals, Rock Island and Redstone Arsenals, Project Manager – Managed the preparation of an environmental impact statement for the relocation of armaments and chemical missions from Rock Island Arsenal to Redstone Arsenal. The move entailed construction of four facilities valued at more than \$50 million and relocation of more



John C. Mc Ilrath, PE
Director - Remediation

than 2,000 jobs. The project required detailed evaluation of ten sites and the impacts of the proposed action on the physical and socioeconomic environment.

U.S. Army Corps of Engineers, Mobile District, Environmental Assessment, Project Manager – Was the Program Manager with responsibility for over 24 projects for the Mobile District of the Army Corps of Engineers. These projects, valued at over \$8,000,000 included cultural resources studies, environmental assessments of installation master plans and natural resources management plans, wetlands evaluations, long term monitoring, environmental compliance assessments, and water supply engineering. Prepared recommendations for listing on the National Registry of Historic Places. Is responsible for overall management, contract negotiations, and federal contract compliance for all projects, and was the project manager for eight of the major projects.

Bridgeport Rental and Oil Services (BROS), Remediation Project, Deputy Project Manager – Deputy Project Engineer for the Superfund project at the BROS Site in New Jersey. This \$100-million project involved the pumping, excavation, and incineration of PCB and dioxin contaminated oil and soils, removal and incineration of over 150 tons of contaminated debris, and removal and disposal of over 1,500 drums of unknown hazardous wastes. The project involved solutions to several complex environmental problems, including obtaining permits for incineration of hazardous waste, treatment and disposal of process water, and disposal of contaminated debris.

U.S. Army Corps of Engineers, Huntsville Division, Unexploded Ordnance Studies, Program Manager – Program Manager for unexploded ordnance studies performed for the Huntsville Division of the U.S. Army Corps of Engineers. Managed three of the major projects involving delineation of unexploded ordnance contaminated areas, and remedial action designs, classified and open source archive searches, and planning for remedial investigations and removal actions, including UXO detection and clearance studies for former Camp Wheeler that required investigation more than 15,000 acres, identifying high probability UXO areas, detecting anomaly densities, and clearing 25-high density areas.

Miscellaneous Services of U.S. Military Operations, Various Titles – Prepared an Environmental Baseline Study for Marshall Space Flight Center. This study provided general and background information for installation planners as the technical basis for evaluation of the impacts of proposed actions. This study evaluated all of the existing facilities, activities, and utilities on Marshall Space Flight Center, and interactions with Redstone Arsenal, the host organization.

Prepared a detailed environmental compliance training course for program managers at the Defense System Management College. This course was primarily based on the experiences gained and lessons learned during the Intermediate Nuclear Forces Treaty-PERSHING missile elimination experience, and used the PERSHING experience extensively, along with many others, to make the training particularly relevant to the program managers. Providing continuing support to the Army Missile Command in defining and evaluating technologies for deactivation/demilitarization of weapons systems while assessing the environmental impacts of these technologies.

Assisted SDB Protege firm to develop and use a craft labor pool that resulted in a 15% cost savings to client and achieved a 26% SDB utilization goal.

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FOSTER WHEELER ENVIRONMENTAL CORPORATION

PRIOR EXPERIENCE***U.S. Army Corps of Engineers, Huntsville Division***
November 1987-January 1990

Contracting Officer for the US Army Chemical Agent Demilitarization Program - Managed and directed development of acquisition strategies, contractor evaluation and selection, and contract performance. Provided executive supervision and contract management for the construction and equipment installation of the Johnson Atoll Chemical Agent Disposal System. Performed supervision of demilitarization operations for the non-lethal chemical agent BZ at Pine Bluff Arsenal, Arkansas and for the decontamination and decommissioning of the demilitarization facility. Provided contract management and supervision for the construction of the Chemical Agent Demilitarization Facility at Tooele Army Depot and the Chemical Demilitarization Training Facility at Aberdeen Proving Ground, Maryland. Also supervised design and equipment acquisition activities for all chemical demilitarization facilities in the continental United States. Responsible for coordination of construction and planning activities with regulatory agencies and political offices in the states of Oregon, Utah, Colorado, New Mexico, Kentucky, Indiana, Arkansas, and Maryland.

U.S. Army Corps of Engineers, Huntsville Division
May 1985 - November 1987

Contracting Officer for Environmental Programs - Managed the performance of contracted work for environmental programs supporting the US Army Training and Doctrine Command, US Army Materiel Command and Defense Logistic Agency. Responsible for contract management, technical supervision, and project success for over 300 environmental projects. Coordinated environmental evaluation, restoration and management activities with USEPA, regulatory agencies in the states of Alabama, Arizona, Arkansas, California, Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Mexico, North Carolina, Ohio, Oklahoma, Tennessee, Texas, South Carolina, Utah, Virginia, Washington, and Wisconsin, and local regulatory agencies in the areas affected by operation of Army and Defense Logistics Agency installations. The projects included field studies, decontamination and decommissioning of explosive production and loading facilities, planning for new and modified munitions production facilities, immediate response actions, policy development, installation support, design, environmental compliance auditing, remedial planning and design, permitting, and special contracting approaches to unique problems. Also involved UXO and hazardous waste design and construction including Initiated earliest UXO studies and removal designs for formerly used Defense sites and the clearance of UXO contamination of 5000 acres around OB/OD areas at Hawthorne Army Ammunition Plant. Managed and directed the inventory efforts for the Defense Environmental Restoration Program. Directed the development of inventory procedures, generic plans, and report formats, and chaired the review committee for findings and determinations of eligibility.



US Army Quartermaster School
May 1981-May 1985

Chief of Water Supply Branch in Directorate of Combat Developments - Developed doctrine, planning factors, equipment requirements and training requirements for Army water supply units. Designed the water supply units for transition from Engineer organizations to Quartermaster Organizations.

U.S. Army Environmental Hygiene Agency
May 1977- May 1981

Chief of the Water Quality Engineering Division - In this position, was responsible for development of personnel, budgets, and annual plans, policy and management plans, supervision of professional staff members, preparation of reports and designs, and assurance of high quality in all products. Supervised the performance of studies for explosive and propellant contamination from Army munitions manufacturing and loading facilities. Responsible for the coordination of environmental programs with regulatory agencies in all of the 50 States. During the intense efforts of the Army Pollution Abatement Program he provided direct leadership of technical data collection efforts, cost estimating, and prioritizing of projects at Army installations worldwide. This \$100-Million program aimed to achieve environmental on an accelerated basis.

Various Assignments, US Army
July 1968 - May 1977

Prepared the first installation environmental assessments for U.S. Military communities in Europe. Those assessments described the environment, setting, missions, and status of activities affecting or potentially affecting the environmental, and established the standard for subsequent assessments.

Managed and performed numerous field investigations and studies of domestic and industrial wastewater in the United States, Europe, and Asia. These assignments included monitoring of natural waters and waste streams, characterizing wastewaters, designing operational enhancements, training operators, negotiating with regulatory agencies, and predicting health and environmental effects to water quality. Experienced in the design and evaluation of industrial wastewater treatment systems, and in devising techniques to minimize wastewater and hazardous waste generation.

Project manager for detailed studies of numerous munitions manufacturing facilities to determine sources and extent of wastewater contamination, develop methods of reducing contamination from propellant and explosive manufacturing, and from load assemble and packing operations. Created detailed inventories of production facilities and recommended actions to improve operations and reduce generation of wastes.

EXPERIENCE SUMMARY

Mr. Moccia has over 25 years of professional responsibility for the management of projects in the fields of hazardous waste management, ordnance and explosive wastes, and water/wastewater management. Areas of expertise include: investigation of hazardous waste contaminated sites (10 years), investigation of ordnance & explosive wastes (OEW) sites (4 years), feasibility studies (15 years), remedial action planning and design (15 years), NPDES and RCRA permitting (10 years), regulatory compliance (15 years), wastewater characterization and treatability studies (5years), and the process and engineering designs of potable water and wastewater processes (4 years).

Current Position:

Program Manager for multiple task order contracts with emphasis on ordnance remediation, including, selection and approval of appropriate project/task managers, ensuring that quality assurance processes are in place and that quality control procedures are being followed for each project, and meeting all contract requirements for budget, schedule and level of quality. Project/Task Manager for specific ordnance related projects. Responsible for the identification, tracking and development of new business opportunities and preparation of ordnance specific proposals. Oversees the financial management of existing field data collection/recording and navigation equipment/instrumentation used in the performance of ordnance projects to ensure an equitable return on investment; evaluation of new equipment/instrumentation to enhance our capability and performance in the field and preparation of justifications for acquisition of new capital purchases. Assist in the development and review of ordnance-related fieldwork procedures.

PROFESSIONAL AFFILIATIONS

National Society of Professional Engineers, member only (since 1985)
Florida Engineering Society, member only (since 1985)
Tau Beta Pi (Engineering Honor Society) , member since 1971

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, Civil - NJ, No. GE 35086, Dates: 05-01-00 - 04/30/02
Professional Engineer, Civil - NY, No. 66527-1, Dates: 12-01-98 - 11-30-00
Professional Engineer, Civil - FL, No. 22992, Dates: 03-01-99 - 02-28-01
Professional Engineer, Civil, - PR, No. 12075, Dates: 09-01-99 - 08-31-00

TRAINING

40-Hour OSHA Hazardous Waste Health and Safety Training – March, 1984
8-Hour OSHA Supervisor Course—October, 1985
8-Hour OSHA Annual Refresher Training- October 1999
First Aid and CPR Training- October 1999
Waste Management Employee Training-November 1999
Project Management Training (PM 100 & 200)-September, 1999
Loss Control Self Study Course – February, 2000
Construction Superintendent Training – March, 2000

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**FOSTER WHEELER ENVIRONMENTAL CORPORATION**

EDUCATION

BS / Chemical Engineering / University of Florida / 1971

REPRESENTATIVE PROJECT EXPERIENCE

US Army Engineering Support Center, Huntsville, Fort McClellan, AL; Master Conceptual Planning for Fort McClellan – Tasked with the development of a Master Concept Plan (MCP) for Fort McClellan, AL. The purpose of the MCP is to present a plan, acceptable to all the stakeholders, that will serve as a "roadmap" for OE removal activities at Fort McClellan. The plan defines a process and sets priorities for OE investigations and removal actions based on such criteria as public safety, desirability of the property, potential for economic return to the local area, and the difficulty of OE activities. The plan describes land uses and characteristics, identification of the remedial action alternatives necessary to achieve UXO clearance for these uses, the technologies selected for use at Fort McClellan, and a discussion of the methodology for establishing UXO cleanup standards. The plan identifies Fort McClellan land areas that are suitable for each defined land use, based on terrain and geographic conditions and presents a general performance/priority plan for cleanup activities and a general schedule for accomplishing these activities.

US Army Engineering Support Center, Huntsville, Fort McClellan, AL; OE Removal Action at M2 Parcel – Responsible for planning and directing OE removal activities within the 20-acre M2 Parcel at Fort McClellan. This site is located along the western boundary of Fort McClellan just south of Summerall Gate Road and is scheduled for release to the public following OE removal activities. Based on previous training activities in the vicinity of the parcel, it is suspected that OE contamination may be present both on and below the surface. The planning phase includes preparation of a site-specific work plan and explosive safety submission. Site work activities include surveying, brush clearance, geophysical data collection and analysis, and UXO accessing, identification and disposal. A final Removal Report will be prepared at the conclusion of the removal activity.

PRIOR EXPERIENCE

Program Manager, Division Manager; Associate Vice President and Chief Engineer, QST Environmental (formerly Environmental Science & Engineering, Inc., Gainesville, Florida, 1986 to 1998.

US Army Corps of Engineers; Engineering and Support Center, Huntsville, Environmental Services in the United States, United States, U.S. Virgin Isles, Puerto Rico; Program Manager; 05/90 - 04/95 – Directed a \$21 million, cost plus fixed fee (CPFF) indefinite delivery contract (IDC) to perform environmental services within the USACE South Atlantic Division, including site investigations and studies for OE (ordnance and explosives) at formerly used defense sites (FUDS) in the southeast U.S. and the Caribbean. Directed 29 delivery orders with individual values up to \$1.6 million. Services included preparing site specific investigation work plans; health and safety plans; conducting records reviews; aerial photogrammetry; surveying and GIS mapping; geotechnical field investigations; ordnance investigations; preparation of Engineering Evaluation/Cost Analysis (EE/CA) Reports and EE/CA Action Memoranda; and public relations support. Twelve FUDS containing suspected OE/Unexploded Ordnance (UXO) and/or chemical warfare materiel (CWM) were investigated:

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FOSTER WHEELER ENVIRONMENTAL CORPORATION

Program Manager-Remediation

Camp Croft, SC; Camp Greene, NC; Laurinburg-Maxton, NC; Camp Sibert, AL; Camp Claiborne, LA; Southwest Proving Grounds, AR; Withlatchoochee Bombing Range, FL; Brooksville Army Air Field; Ft Pierce Naval Amphibious Training Base, FL; Indian Rocks Gunnery Range, FL; Culebra, VI; and Ft Segarra, PR.

US Army Corps of Engineers; Engineering and Support Center, Huntsville, Engineering Evaluation and Cost Analysis (EE/CA) for Former Camp Croft Army Training Facility, SC; Spartanburg, SC; Project Manager; 06/93 - 12/96 – Responsible for performance of Engineering Evaluation/Cost Analysis (EE/CA) investigation and preparation of EE/CA report and EE/CA Action Memorandum. Camp Croft was former artillery and munitions training facility that was confirmed to contain ordnance and explosive wastes (OEW) and suspected unexploded ordnance (UXO) left since closure of the facility in 1947. Due to the nature and extent of UXO discovered at the site (primarily mortars and 105mm projectiles) and the risk posed to park visitors and adjacent residential areas, the investigations at Croft were expanded and three additional delivery orders were awarded. Based on the findings at Croft, there was doubt concerning the thoroughness of the original archive search and an expanded archive search was conducted. Due to the size of the site (20,000 acres), it was determined that a more accurate visual representation was needed and a complete orthophotographic aerial mapping and the development of a comprehensive geographical information system (GIS) was performed. Based on the expanded archive search and the aerial mapping/GIS system, three additional EE/CAs were performed on the park area, developed areas surrounding the park and undeveloped adjacent areas. Work is still ongoing at the site to recover OE/UXO.

US Army Corps of Engineers; Engineering and Support Center, Huntsville, Preparation of Generic Safety Submission Document, Huntsville, AL; Project Manager; 08/93 - 09/96 – Responsible for the preparation of generic work plan and generic health, safety, and emergency response plan for conducting the investigation, location, treatment, and final disposal of chemical warfare material (CWM) at suspected CWM sites. This document was prepared as a guide for use by U.S. Army Corps of Engineers (USACE) ordnance contractors during investigation of CWM sites.

US Army Corps of Engineers; Fort Worth District, Fort Worth, TX; Remediation of TCE-Contaminated Soils, Fort Worth, TX; Project Manager; 03/93 - 04/96 – Responsible for the planning and implementation of a remediation system to remove trichloroethene (TCE) vapors from beneath the floor of Building~181 at the Air Force Plant~4 located in Fort Worth, Texas. This was the site of a former spill and subsequent leakage through the building slab into the underlying soil. The project work included design, installation and operation of an extraction and treatment system, followed by an evaluation of the system performance and providing recommendations for system modifications and/or expansion to enhance continued removal of TCE. The system included vapor extraction wells, soil gas probes, vacuum blower, condensate knockout vessel, activated carbon vessels, and condensate storage tanks. The system worked better than anticipated, removing 3000 lbs of TCE within the first 30 days operation. As a result, an additional task order was awarded to expand the system's coverage and capability to remove TCE and TCE-contaminated groundwater from beneath both Building 181 and adjacent building 182. System expansion included four additional groundwater and vapor extraction wells and a groundwater treatment system including air stripping and activated carbon. Modifications to the existing system included increasing vapor recovery capacity and the removal of perched groundwater from selected vapor recovery wells. The project also included preparation of operation and maintenance manuals and startup training and system operation for the first 30



days. The successful completion of this project earned an "Outstanding" performance rating from the Corps.

US Army Corps of Engineers; Baltimore District, MD; Remedial Investigation, Letterkenny Army Depot, Chambersburg, Pennsylvania, Letterkenny Army Depot, Chambersburg, Pennsylvania; Project Manager; 08/97-10/98 – Responsible for Investigation of Operable Unit 4 (Stormwater Sewers and Associated Drainage ways), at military depot. It was suspected that previous military and equipment maintenance operations at the depot resulted in the release of contaminants into the ground and groundwater, and that these contaminants may be reaching storm sewers and drainage ways by runoff, infiltration into faulty sewer pipes, and through subsurface karst fractures. Specific sampling and analysis of water and sediments within the sewers and drainage ways confirmed the presence of chlorinated organic solvents and heavy metals. Prepared Remedial Investigation report in accordance with CERCLA requirements. An emergency removal action was implemented to remove much of the contamination from the drainage ways. It was proposed that natural attenuation, documented by long term monitoring, would effectively reduce any residual contamination.

US Army Corps of Engineers; Kansas City District, Services During Construction, Tacoma Well 12A, Tacoma, WA; Project Manager; 1993 - 1993 – As Project Manager, provided services during construction for a \$5 million soil vapor extraction and treatment project previously designed by Environmental Science & Engineering to remove TCE contaminated vapors. The project included consultation and review of the vendor shop drawings and materials lists for the equipment used in the extraction and treatment of contaminated soil vapors. Documents reviewed included equipment layouts, controls, and material lists for a solvent recovery system consisting of liquid knockout vessels, activated carbon absorbers, air stripping tower, steam regeneration system, and blowers. Provided recommendations and suggestions to the client for vendor requested changes or deviations from the original design.

US Army Corps of Engineers; Kansas City District, Remedial Design and Treatability Studies, Tacoma Well 12A, Tacoma, WA; Project Manager; 1991 - 1992 – Responsible for remedial design to clean up elevated levels of chlorinated hydrocarbon constituents in the unsaturated zone (vadose) through the use of *in situ* volatilization (ISV) at the Tacoma Well 12A site. The main design activities included completing fieldwork, modeling, and preparing drawings, specifications, and cost estimates. Fieldwork included completing an ISV pump test and evaluating the field data, simulating extraction conditions through the vadose zone with the U.S. Geological Survey (USGS) model. The model was then used to determine optimum extraction and vent well locations.

Phillips Petroleum Company; Resource Conservation and Recovery Act (RCRA) Part B Permit Application, PR; Project Manager; 1993 - 1994 – Responsible for preparation and submission to the Environmental Protection Agency (EPA), Region II, a complete RCRA Part B Permit Application for hazardous waste management units comprises of one 825,000-gallon (gal) wastewater oxidation basin, one 750,000-gal off-specification basin, one 3,360,000-gal ballast water basin, and one 2,253,350gal ballast water basin. The four basins were previously determined by the Toxicity Characteristic Leaching Procedure (TCLP) analysis to hold D018 wastes (due to benzene). In addition to describing the facility, management and contingency plans, Engineering Reports complete with freeboard analysis, dike stability, and description of containment systems were prepared, along with a site specific Geology Report, a Groundwater

Program Manager-Remediation

Monitoring Report and Closure/Post Closure Plans. The application was prepared in ample time to meet the client's internal requirements and subsequently, the EPA deadline.

Florida Department of Environmental Protection; Petroleum Contamination Site Cleanup, FL; Program Manager; 1990 - 1993 – Provided daily direction on \$6-million task order contract to provide cleanup of petroleum contaminated sites under the State of Florida's Early Detection Incentive (EDI) program. Identified and selected Task Order Managers, approved the selection of team members, reviewed all deliverables prior to release, ensured that all contract requirements were met, and served as the primary point of contact and liaison with the client. Tasks included: implementation of initial remedial actions to minimize the hazards of explosion, fire, and public health threat, and to prevent the spread of contamination; assessments to determine the extent of contamination; and preparation and implementation of remedial action plans (RAPs) to complete site cleanups. Thirty sites were completed under this contract.

University of Florida Institute of Food and Agricultural Sciences; Remedial Action Planning and Implementation, Belle Glade, FL; Project Manager; 1989 - 1990 – Prepared the remedial action plan (RAP) for the removal of pesticides-contaminated soil at a south Florida agricultural experiment station. Contaminants included heavy metals and the pesticides toxaphene, DDE, DDT, dieldrin, and others. Managed the implementation of the RAP which included the excavation and removal of 200~cubic yards of soil from the site. Following excavation, verification sampling of the excavation wells and floors was conducted to determine the effectiveness of the removal actions.

City of Philadelphia; Potable Water Disinfection Study, Philadelphia, PA; Project Manager; 1989 - 1990 – Conducted investigation of alternative disinfection processes for the City of Philadelphia water supply. Investigation included a literature review to identify potential disinfection processes, screening to eliminate inappropriate processes, and a feasibility study to determine the most cost-effective disinfection process. Processes evaluated included chlorination, bromination, ultraviolet radiation, and ozonation.

Senior Hazardous Waste Engineer, CH2M Hill, Gainesville, Florida, 1971 to 1986.

Resin Manufacturing Plant, Evaluation of Hazardous Wastes Management Practices, AL; Project Manager; 1985 - 1986 – As Project Manager, identified and evaluated hazardous waste handling practices for resin manufacturer process. After completing a physical/chemical characterization of the wastes and an assessment of current practices, made recommendations for improvements to the handling and disposal of approximately 1 to 2 tons per day of organic solvent-contaminated filter cake generated during the manufacturing process.

U.S. Air Force; Installation Restoration Program Record Searches, USA; 1982 - 1984 – Responsible for conducting record searches at ten U.S. Air Force Bases throughout the United States to determine and document, the past and present hazardous waste management practices and to identify suspected or existing hazardous waste spill or disposal sites. Identified sites were ranked according to their suspected or known threat to the health and safety of the populace and threat to the environment. Based on the evaluations and the ranking of sites, recommendations were made for follow-on activities to better define and characterize the threat posed by the sites.



David Moccia, PE***Program Manager-Remediation***

Environmental Protection Agency; Remedial Action Master Plans, Louisiana, KY; 1981 - 1982 – Responsible for preparing Remedial Action Master Plans (RAMPs) for several uncontrolled hazardous waste sites, including French Ltd., Sikes Disposal Site, Bayou Sorrell, and the Newport Dump. Evaluated existing information, data, and studies previously completed for each site to determine what, if any, additional information would be required to complete a remedial investigation. Prepared preliminary work plans for the additional site investigations deemed necessary to complete remedial investigations.



EXPERIENCE SUMMARY

Master Explosive Ordnance Disposal Technician with 23 years in the United States Navy Explosive Ordnance Disposal (EOD) and industrial safety programs. Proven performance in EOD operations, planning, and administration. Extensive experience in ordnance clearance and diving operations, health and safety programs, explosive safety programs, and ammunition procurement, storage, and shipment.

REGISTRATIONS/CERTIFICATIONS

UXO Specialist
Explosives/Blasting - VA

EDUCATION

Building Construction Technology / Gulf Coast Community College / 1983
Executive Problem Analysis and Decision Making / American University / 1980
AA / Arts and Sciences / Charles County Community College / 1978
Explosive Hazards Control / Indiana University / 1973

TRAINING

40-Hour OSHA Hazardous Waste Health and Safety Training - 1993
8-Hour OSHA Hazardous Waste Health and Safety Supervision Training - 1993
Advanced First Aid and CPR - Current
CHEMRAD USRAD Training - 1/97
Virginia Temporary Blaster - 6/96
DOT/HM-126F Hazmat Training 49 CFR 172, Subpart H - 1996
USACE Quality Control Engineering Course - 1996
G-822L Portable Cesium Magnetometer Certification - 9/94
Corporate Health and Safety Officer Training - 1994
Field Method, TNT/RDX Detection Analysis Certification Training - 1994
Building Construction Technology, Gulf Coast Community College - 1983
Project Manager Course and Executive Problem Analysis and Decision Making, American University - 1980
EOD Refresher Courses, Biannually - 1966-1977
Explosive Hazards Control; Industrial Safety; Industrial Hygiene; Explosive Safety and Hazard Analysis; and Ammunition Storage and Handling, Indiana University - 1973
Vietnamese Language, Department of the Army - 1968
Basic EOD Training at NAVSCOLEOD - 9/63
Naval Underwater Swimmers School, Naval Station - 3/63

REPRESENTATIVE PROJECT EXPERIENCE

Project Manager and Superintendent for UXO projects and Health and Safety Officer for hazardous and toxic waste projects.

Adak Naval Air Facility, Adak, AK, Site Superintendent, Senior UXO Supervisor, UXO Safety, UXO Quality Control, Site Emergency Coordinator, and SSHO during absence of assigned SSHO, (3/97-Present) – Responsible for conducting archive search, geophysical



James W. Ennis
Senior Construction UXO

survey, and intrusive sampling of unexploded ordnance on Naval Air Facility, Adak Island, AK, pursuant to the Base Realignment and Closure (BRAC) Program. Duties and responsibilities include: daily operating schedule; conducting daily safety briefs; supervising UXO surface clearance activities; provide UXO escorts for all site personnel in uncleared areas; conducting EM-61 survey with USRAD system; Chairman Anomaly Selection Committee; supervising UXO excavation and investigation of selected anomalies; supervising UXO identification and disposition of located UXO items; requisition and storage of demolition materials; and ensuring that UXO phase for project is completed in accordance with plans and specifications.

Nansemond, Former Army Ordnance Depot, Tidewater Community College, Portsmouth, VA, Senior UXO Supervisor, Site Superintendent, Health and Safety Officer, and Quality Control Manger (10/96-3/97) – Responsible for an ECCA study. Duties and responsibilities included: provided basis of estimate for project operational phase; daily operating schedule included conducting daily safety briefs; supervised cutting and clearing activities; provided UXO escorts for all site personnel; coordinated scheduled activities of geophysical survey team; supervised UXO excavation and investigation of selected anomalies (1239); supervised UXO demolition operations to dispose of located UXO items; requisition and storage of demolition materials; and ensured that project was completed with plans and specifications.

Camp Wellsfleet, Cape Cod National Seashore Park, 12/96 – Member of a site visit team in preparation for development of an Engineering Evaluation/Cost Analysis for the site.

U.S. Navy, Port Hadlock Detachment Naval Weapons Station, Bangor, WA, Senior UXO Supervisor and alternate Health and Safety Officer, (8/96 – 9 /96) – Responsible for shoreline erosion remediation and capping of a landfill.

Lauderick Creek Area UXO Removal Action, Edgewood Area, Aberdeen Proving Grounds, MD, (1/96 - 7/96) – Member of a team to prepare draft and final work plans for the mobilization, training, surveying, locating, excavating, identifying, removing, and disposing of potential UXO hazards and related waste. Responsibilities included: conducted archives search to define potential hazards associated with area; conducted site inspection to identify geographical features; and assisted in preparing Engineering Evaluation/Cost Analysis (EE/CA).

Environmental Remediation Services, Edgewood Area, Aberdeen Proving Grounds, MD, Senior UXO Supervisor/Health and Safety Officer (2/95 - 7/96) – Significant assignments have included Site Safety and Health Officer (SSHO) of various projects involved with locating, removing, sampling, storing, and disposing of potentially-contaminated material. Potential hazards of concern have included chemical, biological, physical, and UXO.

Chlorine and Experimental Plant Dump Sites, Edgewood Area, Aberdeen Proving Grounds, MD, Site Safety and Health Officer (6/95 - 11/95) – Responsible for ensuring compliance with the SHERP during the sampling, locating, excavating, and removing of potentially-contaminated material (PCM) from an area where multiple chemical production plants, pilot plants, and chemical manufacturing plants operated from the WW1. The project involved the removal of 300 tons of PCM. All intrusive activities were conducted in level B PPE. Monitoring included the use of minicams, ICADs, DAAMs tubes, and standard air monitoring equipment. Potential hazards of concern were chemical, radiation, physical, biological, and UXO.



James W. Ennis
Senior Construction UXO

26th Street Radiation and UXO Removal Site, Edgewood Area, Aberdeen Proving Grounds, MD, Site Safety and Health Officer (5/96 - 7/96) – Responsibilities included sampling, radiation monitoring, UXO removal operations, screening, and packaging of radiation-contaminated materials.

Stokes Avenue Dump Site, Edgewood Area, Aberdeen Proving Grounds, MD, Site Safety and Health Officer (1/96 - 3/96) – Assisted in preparing basis of estimate and estimate for project. Responsible for ensuring compliance with the SHERP during the sampling, locating, excavating, and removal of PCM from an area where multiple chemical production plants operated from WW1. Potential hazards of concern were chemical, physical, biological, and UXO.

Pilot Plant Sumps, Edgewood Area, Aberdeen Proving Grounds, MD, Site Safety and Health Officer (10/95) – Involved with sampling, pumping of sump contents, and filling of sumps with grout.

Building E-3640, Edgewood Area, Aberdeen Proving Grounds, MD, Site Safety and Health Officer (11/95) – The project involved clearing and grubbing, sampling of soils and liquids, excavation of contaminated soils, sump pumping and backfilling, decontamination activities, and site restoration.

C-Field, Edgewood Area, Aberdeen Proving Grounds, MD, Site Safety and Health Officer (6/95) – The project included sampling of soils and liquids, excavation of contaminated soils, and two abandoned septic systems.

U.S. Navy, Port Hadlock Detachment Naval Weapons Station, Bangor, WA, Senior UXO Technician (6/94 - 7/94) – Involved in the UXO/OEW clearance of the open burn/open detonation (OB/OD) Areas 11 and 12.

J-Field, Edgewood Area, Aberdeen Proving Grounds, MD, Site Safety and Health Officer (2/95 - 3/95) – Responsible for construction of a 275-foot gabion wall and rip rap shoreline protection system. Project involved clearing UXO, site clearing and grubbing, and excavation and construction of the shoreline protection system.

OU-1, NAS Jacksonville, FL; Site Safety and Health Officer (4/95 - 6/95) – Responsible for the remedial action of a Navy Priority Listed site on the Navy Installation Restoration Program. Work activities included soil sampling, clearing and grubbing, excavating of contaminated soils, stockpiling contaminated soils, trenching and installing three ground water extraction systems, decontamination activities, and site restoration.

Raritan (Former) Army Depot, Raritan, NJ (9/95) – Conducted a site visit to review 19 selected sites for possible remediation. Also conducted UXO escort for site visit in preparation for development of an EE/CA for the Arsenal.

Nansemond (Former) Army Depot, Suffolk, VA, Task Leader/Site Safety and Health Officer and UXO Escort (4/96) – Responsible for a preliminary land survey in preparation for a UXO removal action.



James W. Ennis
Senior Construction UXO

Newport, RI, Senior UXO Supervisor (6/96) – Responsible for power screening operation of 9,000 cubic yards of contaminated soils that also had three- and five-inch projectiles.

Nansemond (Former) Army Depot, Suffolk, VA, Task Leader/Site Safety and Health Officer/Senior UXO Supervisor (6/96) – Responsible for a preliminary survey to estimate degree of cutting and clearing of 18 selected sites in preparation for a UXO removal action.

PRIOR EXPERIENCE

Conventional Munitions Systems Inc. (CMSI)
Chocolate Mountain Impact Range
El Centro, CA

Senior UXO Technician/Supervisor, 1/95-2/95 – The objective of the project was to clear an access 21.5 miles long by 75 feet wide by eight feet deep for the installation of a new gas line. Concept of operation was to conduct a visual surface sweep of the designated area followed by a towed magnetometer array, locating, and plotting magnetic anomaly system.

Explosive Ordnance Disposal World Systems Inc. (EODWSI)/Conventional Munitions Systems Inc. (CMSI), Kuwait

UXO Team Leader and Zone Manager, 2/92-10/93 – Involved in the post-war cleanup of Kuwait. Duties included mapping the area of operation and plotting located ordnance items with Global Positioning System (GPS), and pronavigation systems conducting land sweeps to locate and dispose of hazardous munitions, reclaiming usable munitions, removing all vehicles, and restoring land area to pre-war condition. Performed as UXO Team Leader for hands-on minefield clearance operation.

Florida, 1983-1992 – A licensed general contractor involved in government, commercial, and residential building projects.

Explosive Ordnance Disposal Detachment Naval Coastal System Center
Panama City, FL

Officer-in-Charge, 1977-1981 – Provided ordnance disposal services to the principal Navy activity for conducting RDT&E in mine countermeasures, antiship torpedo defense, diving and salvage, coastal and inshore warfare defense, and amphibious operations. Functional responsibilities included initiation, review, and approval of plans for the test/evaluation of explosive devices, diving equipment and systems, and explosive safety officer. Prepared technical reports and provided technical expertise to scientific and intelligence agencies in connection with the exploitation of foreign materials. Director of Safety for R&D activity.

Explosive Ordnance Disposal Group Two
Fort Story, VA

Operations Officer, 1974-1977 – Responsible for coordinating the assignment of EOD assets in the eastern United States, Europe, and Atlantic Fleet area of operations. Duties included:



James W. Ennis
Senior Construction UXO

Officer-in-Charge and Parachute Insertion Team, 1974-1977 – Responsible for a special team trained and equipped to respond to an EOD incident anywhere in the area of operation by parachute insertion.

Officer-in-Charge, Secret Service Support Team, 1974-1977

USS Seattle, Mediterranean Deployment, EOD Detachment, Officer-in-Charge, 1/76-7/76 – Completed surface warfare qualifications for deep draft vessels.

Suez Canal Clearance Operation, Senior Operational EOD/Diving Officer, 7/74-11/74

Operations Officer, 12/74-12/75 – Coordinated the assignment of EOD personnel and material assets in the eastern United States, Europe, and Atlantic Fleet area of operations. Initiated operations orders for special fleet and large ordnance clearing operations. Qualified surface warfare for deep draft vessels. EOD/Diving Officer for Task Force responsible for the Suez Canal Clearance.

EOD Detachment
Cecil Field, FL

Officer-in-Charge, 1970-1974 – Provided EOD services to a large military complex. Primary responsibilities included conducting periodic sanitation of four active bombing ranges to clear dud-fired munitions and performed as Explosive Safety Officer for all Naval Activities in the Jacksonville area of operation.

Explosive Ordnance Disposal Group One
Hawaii

1967-1970 – Completed three assignments in the Republic of Vietnam during combat operations.

NAVSCOLEOD
Indian Head, MD

1964-1967 – Primary instructor in explosive filler and filler identification, rockets and guided missiles, land mines and booby traps, and improvised explosive devices instructor. Duty station at NAVSCOLEOD Detachment, Eglin AFB, Florida. Performed practical application of basic EOD techniques covered at Indian Head, Maryland. All operations and procedures were performed on live explosive items.

USS Essex
Quonset Point, RI

EOD Team, 1963-1964 – Provided EOD services.

EXPERIENCE SUMMARY

Mr. Deignan has more than 12 years experience dedicated to engineering and environmental geophysics, with a special emphasis on UXO. Experience includes the design and management of integrated geophysical programs that have utilized electromagnetic, magnetic, resistivity, gravity, seismic, and borehole geophysical methods to investigate and assess ordnance and explosives (OE), geotechnical, geologic, hydrogeologic, and cultural resource features. Utilized these methodologies as part of engineering and cultural resource management programs in the United States and abroad. Specialized in the design and management of high-resolution integrated geophysical programs for OE investigations.

For the past 6 years, Mr. Deignan has been the technical manager for the Foster Wheeler Environmental UXO/ geophysics contingent, and has extensive experience with commercial and internal scientific software routines applied to the modeling, reduction, analysis, and interpretation of geophysical data for UXO projects. He has designed and continuously develops Foster Wheeler Environment's internal processing and interpretation software, mechanical platforms to integrate specific geophysical instruments and differential global positioning system technology, and multiple sensor systems for UXO applications.

Mr. Deignan has been the driving force behind substantial improvements in both effectiveness of UXO removal and in cost reduction made by Foster Wheeler Environmental, including advances in the use of computer-aided systems to collect data and present images of the area to be cleared. These systems can be used effectively to "filter out" the signals from small pieces of metal that obscure the unexploded ordnance items, allowing the UXO specialist to dig more targets that are potential UXO. Mr. Deignan is an expert in state-of-the-art passive and active sensor systems (and other geophysical sensors where radiation or signatures from nonmetallic objects are expected) coupled with internally developed processing, analysis, and visualization software to locate and identify metallic items that may be unexploded ordnance. The software produces target characteristics such as size or mass, depth, x-y location, and color coded images for special analysis.

Mr. Deignan also possesses expertise and experience in the use of the USRADS positioning system – which has been a key factor in the success of several of our UXO remediation sites. USRADS is a positioning and data acquisition system that automates the measurement and mapping of data collected for site investigations. It is especially useful in areas of obstructions, such as heavily wooded areas where current GPS technology cannot accurately locate the geophysical sensor. Utilization of USRADS in difficult survey areas ensures that position accuracy is maintained so that smaller sizes of UXO can be reliably located.

PROFESSIONAL AFFILIATIONS

Archaeological Institute of America
Denver Engineering and Mining Geophysical Society
Engineering and Environmental Geophysical Society (Founding Member)
Minerals and Geotechnical Logging Society
Near Surface Geophysical Society (Society of Exploration Geophysicists)



TRAINING

40-Hour OSHA Hazardous Waste Health and Safety Training - 1988
8-Hour OSHA Hazardous Waste Health and Safety Training - Current
NPS Geophysical Training, Instructor - 1991-1995
Ground Penetrating Radar - 1990, 1994
SAGEEP - 1993, Author
Geotech 1991 and 1992, Geophysical Session Chairman
SAGEEP - spring 1991, Author and Speaker
Borehole Geophysics - winter 1990
SAGEEP - spring 1989
Clandestine Graves - spring 1989
SAGEEP - spring 1988

EDUCATION

MS / Geophysical Engineering / Colorado School of Mines, IP
BS / Geophysical Engineering / Colorado School of Mines / 1987

REPRESENTATIVE PROJECT EXPERIENCE

Responsibilities have included work as project and technical manager as well as lead project geophysicist for numerous geophysical investigations at Department of Energy (DOE) sites, Department of Defense (DoD) sites, and EPA Superfund sites.

Naval Air Facility, Adak, AK; Technical Manager – Conducted geophysical investigation to statistically assess UXO/OEW contamination at site characterized by rough terrain and culturally noisy areas. Evaluated electromagnetic and magnetic results from this site to select optimum methodology and data acquisition parameters for survey. Managed 15+ personnel involved in data acquisition, processing, and analysis of data acquired over 1,400 acres at 1 meter line spacing (21 million data measurements). Acquisition teams used both standard and DGPS location devices for positioning. Developed processing and interpretation software to reduce processing and analysis time, as well as produce more accurate results giving a 96%+ UXO detection rate for dig teams.

Former Camp Wellfleet, MA; Project Geophysicist – Co-managed geophysical survey to statistically assess OE contamination. Designed data acquisition program based on testing of instrumentation and analysis of spatial sample density requirements for small and large OE targets (20mm – 1000 # bombs). Several large practice bombs detected by geophysical survey at depths of 10 – 15 ft below the ground surface. Geophysical and sampling data used to define nature and extent of contamination at facility.

Fort Hancock, NJ; Morgan Depot, NJ; Savanna Depot, GA; Camp Wellfleet, MA; Technical Manager, Project Geophysicist – Involved in the design and implementation of geophysical surveys that used multiple sensors and positioning technologies for OE characterization. Primary responsibilities include data processing and evaluation of target characteristics, as well as selection of the most optimum data acquisition strategy to meet project goals. Ongoing development of software for data processing and evaluation methodologies, as well as definitive statistical parameters based on the geophysical data for risk-based analysis. Designed data acquisition program based on testing of instrumentation and analysis of spatial sample density



Timothy M. Deignan
Senior Geoscientist

requirements for small and large OE targets (20mm – 1000 # bombs). Several large practice bombs detected by geophysical survey at depths of 10 – 15 ft below the ground surface

Rocky Mountain Arsenal, Commerce City, CO; Technical Manager, Project Geophysicist

– Lead project to provide detailed, high resolution, geophysical maps of 3,200 acres on Rocky Mountain Arsenal to permit design of subsurface structures without interference from significant anomalies. High-resolution magnetic data was collected using precision magnetometers and differential GPS. The data was analyzed and stored in a GIS capable of producing detailed maps for use in designing projects.

UXO-related tasks at Rocky Mountain Arsenal included identification of ferrous anomalies at the Arsenal and integration of this information with a site-wide GIS to assess potential UXO impacts on future construction activities, use of an innovative approach that utilizes time domain electromagnetic induction (TDEMI) technology to characterize subsurface anomalies in the precise region the slurry wall was to be constructed, preparation of design drawings and specifications to remove ordnance debris and soil that has failed the TCLP test from 5 burial trenches and 8 munitions testing sites, excavation, transportation to an approved site and detonation or, if deemed unstable, in place explosion of UXO, and screening of excavated soils for potential agent-contamination by headspace sampling.

U.S. Department of Energy; Idaho National Engineering Laboratory, Airborne Geophysics, Idaho Falls, ID; Technical Manager; 04/90-06/92

– Technical manager for an innovative airborne geophysical survey at the Idaho National Engineering Laboratory. More than 120 line miles of magnetic, electromagnetic (EM), and spectroscopy data were collected at four complexes to locate and characterize buried waste. Responsible for the acquisition, analysis, and interpretation of the data as well as interacting with the client and DOE staff on a daily basis. Based on the success of the airborne geophysical survey, a ground-based geophysical survey was completed in the spring of 1992. As the technical manager for this project, organized the acquisition, analysis, and interpretation of more than 100,000 magnetic and electromagnetic data stations.

U.S. Department of Energy; Rocky Flats Plant, Rocky Flats Seismic Program, Golden, CO; Lead Project Geophysicist/Technical Manager; 05/90-05/93

– Lead project geophysicist for the DOE Rocky Flats Plant (RFP) geophysical investigation, including 20,000 linear feet of high-resolution seismic data acquisition, analysis, and interpretation. Additionally, was the technical manager for an EM and ground penetrating radar survey to determine vadose zone characteristics in several drainages at the RFP. He was the technical manager and processor for the RFP borehole geophysics and vertical seismic profile program, which utilized an extensive suite of borehole logging and seismic methods to provide information on lithologic, hydrologic, and geologic properties of the subsurface. Analyzed more than 8,000 feet of geophysical logs at the RFP and interpreted the logs in conjunction with hydrogeologists to generate estimates of hydrogeologic properties.

Raymark Industries Superfund Site; Geophysical Program, Stratford, CT; Technical Manager

– Technical manager for the geophysics program, which plays a vital role in the \$50 million remediation of the Raymark Industries site. A comprehensive geophysical survey is currently being performed with time and frequency domain electromagnetics, ground penetrating radar, and downhole geophysics to provide a wide range of geotechnical, geologic, and hydrogeologic information to engineers and geologists characterizing the site. More than 35

Timothy M. Deignan
Senior Geoscientist

line miles of high-resolution geophysical data have been collected as of the end of 1995. Responsible for the acquisition, analysis, and interpretation of the data, as well as managing a staff of ten field personnel. Also responsible for interacting with Foster Wheeler engineers and scientists, as well as those of the clients (USEPA, USACE, and CT-DEP).

PRIOR EXPERIENCE

Battelle
Denver, CO
08/87-05/88

Project Geophysicist – Project leader conducting magnetic and ground penetrating radar measurements to locate and assess 400 abandoned underground storage tank sites. Implemented ground penetrating radar computer modeling to simulate anticipated subsurface characteristics. Conducted terrain conductivity (electromagnetic) measurements at abandoned landfill sites to delineate landfill boundaries, contaminant plumes, and transportation mechanisms affecting groundwater flow. Also investigated a 4-acre probable drum storage trench with magnetics and ground penetrating radar.

Contract Geological
Denver, CO
06/87-08/87

Geoscientist – Employed on a reverse-circulation drill rig as a well log geoscientist. Characterized mineralogy and subsurface structure from drill cuttings. Additional responsibilities included geologic field mapping, surveying, and microscopy.

Colorado School of Mines
Golden, CO
05/87-06/87

Student Geophysicist – Co-supervisor for an integrated geophysical survey comprised of gravity, magnetic, seismic, and electrical methods. Involved in management of data acquisition, reduction, and interpretation to acquire relevant information on the San Juan Volcanic Series in Colorado. Also responsible for quality control and technical presentation of data.

EXPERIENCE SUMMARY

Mr. Hefter has over nineteen years of data processing experience in the government, business, personal and manufacturing industries. He has worked as a Vice President for Operations, Geographical Information Systems (GIS) Manager, Administration Information Manager, Systems and Policy Analyst, Information Management Specialist and Programmer during his career. Mr. Hefter supports multiple projects including strategic planning, hardware and software coordination, Internet E-Commerce, local area network implementation, data communications installation, resource planning and proposal generation activities.

CURRENT POSITION

Responsible for multiple information management projects involving the design, development, testing and implementation of computer-based solutions for commercial and government clients. These projects include Geographical Information Systems (GIS), computer aided design (CAD), Internet applications development, multiple database development, electronic commerce, local area network support and data communications. Area include policy analysis, information management databases and emergency management strategic planning, science and health-related projects, bioinformatics vocabulary, development of automated database systems and communication networks, information management strategic planning, incorporating information records management techniques, efficiency analysis, solving operational problems and optimizing communication processes.

Other technical support information management responsibilities include supervising large scale database management activities, supervising data-entry personnel, verification and validation, and creating various reports based on client specifications. Management and operation of a full service technical information center using optical image storage and retrieval systems, automated database systems, local area network administration, wide area network strategic planning and the generation of policy and procedure manuals.

TRAINING

Managing Organizational Change, Management Skills For The Financial Industry Courses: - The Manager's Job, Representing Management and Employees; The Management Series, Communications Trends, System Network Architecture, Business of Banking Course.

EDUCATION

Bachelor of Technology in Computer Science / Rochester Institute of Technology / 1981

REPRESENTATIVE PROJECT EXPERIENCE

US Army Engineering Support Center, Huntsville, Fort McClellan, AL; Master Conceptual Planning for Fort McClellan and M2-Parcel Support Areas Geographical Information System (GIS) Manager for Foster Wheeler Environmental Corporation geographical information systems (GIS) production data center project for Fort McClellan, AL utilizing Intergraph's Geomedia Professional application, Smartsketch and Mapsource GPS utility programs.

Maryland National Capital - Park Planning Commission, Upper Marlboro, MD; Geographical Information System (GIS) Project Project Manager for Prince Georges County GIS project providing computer support services to the Department of Taxation and Assessment utilizing ESRI's ARC/Info and ARC/View software applications. Over 250,000 tax parcels were entered, cataloged and verified. Digital maps were printed and database reports generated.

Foster Wheeler Environmental Corporation, New Bedford, MA; Electronic Integrated Data Management System Project Manager for a web-based electronic information database management system for the New Bedford Superfund Harbor environmental remediation project.

PRIOR EXPERIENCE

Vice President for Operations, Corporate Information Officer, Information Systems and Technology Director, Geographical Information Systems Manager, Administration Information Manager, Systems and Policy Analyst, Information Management Specialist, Business Development and Marketing Analyst, The KEVRIC Company, Inc., Silver Spring, MD, 1992-present

Management and operations support of corporate-wide information management program involving strategic planning, Year 2000 compliance, hardware and software coordination, local area network implementation, client/server applications, data communications installation, and resource planning in support of company-wide multiple project support requirements. Provide business development/technical support for proposal generation for all Information and Data Management proposals including level of effort analysis, personnel planning, technical approach, task identification and coordination, and cost estimate identification. Management of the design, development, implementation, and testing of a 100-node Windows NT network (100mb-fiber) with e-mail, full Internet Access, World-Wide Web home page using a T1 data line, print servers, and DSL 1.1mb access data lines for redundancy. Development of an Intranet, and remote e-mail location access to the headquarters network from Atlanta and San Antonio branch offices. Supervision of 10 IT employees. Implementation of corporate e-commerce solution (National Data Corporation, CyberCash, Verisign) to support web-based transactions for use in projects.

Administrative operations responsibilities include employee time reporting review and approvals, expense reports review and approvals, corporate and project financial analysis, field account access, policies and procedures reviews, and year-end bonus pool reviews.

Department of Energy, Germantown, MD; 1992- present, Project Manager - Responsible for Work for Others Technology Transfer program including financial analysis, program research, database development, computer programming and administrative support.

Centers for Disease Control, Hyattsville, MD; Bioinformatics Vocabulary Database; 1998-1999, Project Manager - Responsible for a bioinformatics vocabulary database project providing database management support.

Computer Sciences Corporation, Lanham, MD; Web-Training Application; 2000-present , Project Manager Responsible for a Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP) web-based training and certification application including online testing and database tracking support.

IS Department of Agriculture, Beltsville, MD; Chemical and Biological Inventory Management Tracking Systems, Beltsville, MD; 1996-2000 - Project Manager - Responsible for providing chemical and biological inventory management solutions using Windows (GUI) and web-based platforms, providing a technical support hotline and on-site training classes.

Federal Emergency Management Agency, Washington, DC, State and Local Program Support Services, 1994-2000, Project Manager - Responsible for policy analysis, information management databases and emergency management strategic planning. Coordinated the Radiological Instrument, Maintenance and Calibration information national collection and automated project study. Coordinated the Computerized Activities Resource Listing database and seminar conference support activities.

Department of Energy, Germantown, MD, Office of Nuclear Safety and Policy, and Office of Naval Petroleum and Oil Shale Reserves Support Services, 1994-1996, Assistant Project Manager - Duties include development of automated database systems and communication networks, Information Management Strategic Planning, day-to-day interaction with the client and incorporating information records management techniques, efficiency analysis, solving operational problems and optimizing communication processes.

U.S. Coast Guard, Washington, DC, Database Management Services, 1995-1996, Assistant Project Manager - Technical support information management responsibilities for the U.S. Coast Guard involving large scale database management activities. This includes supervising data-entry personnel, verification and validation, and creating various reports based on client specifications.

Senior Information Manager, ASTA Engineering, INC., Germantown, MD, 1991-1992 - Assisted in the creation of the Information Technology Group of Asta, Germantown. Principal responsibilities include the Business development and expansion of services in the Baltimore/ Washington area (Government and Commercial accounts) and assistance to the Malvern Headquarters (Public Utilities). Technical on-site responsibilities at the Department of Energy's Office of Nuclear Safety Information Center included management and operation of a full service information center using optical image storage and retrieval systems, automated database systems, Local Area Network administration, Wide Area Network Strategic Planning and communication networks, managing full-time and part-time employees, generation of policy and procedure manuals, day-to-day interaction with the client and incorporating information records management techniques into a successful center. Other duties involved efficiency and performance monitoring of the center, solving operational problems and optimizing communication processes.

PC Coordinator, Systems Analyst, Programmer Analyst, System Manager, The House of Seagram, Baltimore, MD, 1988 - 1991 - Responsibilities included all hardware, software, data communications, training, repair and end-user support for PC's in a manufacturing plant environment, as well as Novell (3.1) and Arcnet Local Area Network design. Direct purchasing of new equipment and supplies, vendor interviews, and hardware and software evaluations. Provided cost benefit analyses, comparisons and evaluations of software products. System Manager for a NCR Unix-based computer system that was used for plant-wide payroll and time and attendance recordkeeping. Responsibilities included system software (Unix) and applications software maintenance (Micro-Focus COBOL), day-to-day operations, daily tape back-up, data communications to the IBM 4341 using SNA protocols, hardware maintenance, performance tuning, and end-user training. Assisted Data Center Manager with high-speed 56 KB data communications protocols, troubleshooting and 3270 emulation communication. Served as Coordinator of all the Telecommunications, Data Communications and Network Wiring for a \$25 million new plant manufacturing facility. Provided additional COBOL programming support on an IBM 4341 mainframe computer under DOS/VM for a Manufacturing Resources Planning (MRP) software application.

Systems Analyst, Programmer/Analyst, Programmer, Maryland National Bank, Baltimore, MD, 1986 – 1988
Responsibilities included software design, development, implementation and maintenance of a Work Request tracking system on a DEC/VMS computer system. Microcomputer development included Lotus 123 spreadsheet analysis, Dbase III+ applications, modem communications, and various word processing packages. End-user training on microcomputers and DEC software packages were some additional responsibilities. Projects included the International Banking Information System, including Domestic and Foreign Exchange currencies; Bank Investment Operating System; Commercial Loan Tracking System; Department Internal Invoice Tracking System; and the Compensation Tracking Monitoring System.

Applications Engineer, Rexnord Automation/EMC Systems, Hunt Valley, MD, 1986 - 1986 - Responsibilities included project scheduling, applications programming on a supervisory control and data acquisition (SCADA) project using C under a UNIX platform on a DEC/VMS computer system.

Lead Engineer/Database Group Leader, Public Service Electric & Gas Company of New Jersey (PSE&G), Newark and Lower Alloways Creek, New Jersey, 1981 - 1986 - Involved in the plant start-up of the Hope Creek Nuclear Power Plant. Responsibilities included writing new applications software, maintaining various system software, operating system performance enhancement processes, and verifying the plant computer database and the computer displays for accuracy. Additional experience with the Hope Creek Nuclear Control Room Simulator process computers developing and maintaining the system software and applications software. Worked with the GE Process Computer Systems Division on the Hope Creek Nuclear Steam Supply Process computer system; maintained the system and application software. Worked with EAI Corporation developing applications software for the Salem Nuclear Control Room Simulator. Worked in the Electric & Gas Dispatch computer facilities of PSE&G developing, debugging, and supporting the process computer system applications software.

DANNY P. PAUL**SENIOR UXO SUPERVISOR**

Date Attended Basic EOD School: April 1981

Never been removed from an EOD/UXO assignment for personnel reliability.

EOD/UXO ASSIGNMENTS:

- Apr 81 – Oct 86: EOD Specialist/Team Leader, 75th Ord Det (EOD), Selfridge Angb, MI. Member of and Team Leader for EOD response team.
- Oct 86 – Oct 89: EOD Team Leader/EOD Operations NCO, 72nd Ord Det (EOD), Bremerhaven, Germany. Team Leader for EOD response team. Planned and supervised EOD response activities.
- Oct 89 – Aug 92: EOD Operations Nco and EOD Detachment Nco, 51st Ord Det (EOD), Ft. Sheridan, IL. Planned and supervised EOD response activities.
- Aug 92 – Feb 95: EOD Detachment Nco, 75th Ord Det (EOD), Selfridge Angb, MI. Planned and supervised EOD response activities.
- Feb 95 – Apr 98: EOD Staff Nco, 184th Ord Bn (EOD), Ft. Gillem, GA. Programmed and managed the activities of 10 EOD companies over a wide geographical area.
-
- Apr 98 – Jun 98: UXO Specialist, HFA INC., Former Lowry AFB, CO.
- Jun 98 – Oct 98: UXO Specialist, UXB, Former Loring AFB, ME.
- Oct 98 – Feb 99: UXO Specialist, Ati/oes, Former Blaine NAD, NE
- Feb 99 – Apr 99: Senior UXO Supervisor, USA Environmental, Inc., Massachusetts Military Reservation, Cape Cod, MA. Supervised workforce in the acquisition of geophysical data (EM-61) in the sandwich community adjacent to the Massachusetts Military Reserve.
- Apr 99 – Apr 99: Senior UXO Supervisor, USA Environmental, Inc., Camp Stanley, TX. Supervised inspection of eighty cubic yards of lead contaminated material for UXO and UXO scrap and certified it free of residue prior to off-site shipment.
- May 99 – May 99: Senior UXO Supervisor, USA Environmental, Inc., Eastern Bypass EE/CA project, Fort McClellan, AL. Supervised all UXO activity for intrusive sampling activities to support EE/CA report.
- Aug 99 – Aug 99: Site Safety Officer, USA Environmental, Inc. Grand Oaks Project, Cape Cod, MA. Managed safety aspects of anomaly investigation in the sandwich community.
- Aug 99 – Aug 99: Senior UXO Supervisor, USA Environmental, Inc., Chicopee, MA. Supervised UXO survey of four-acre site.

- Sep 99 – Feb 00: Senior UXO Supervisor, USA Environmental, Inc., Conway, SC. Supervise UXO personnel during brush clearance and geophysical escort support to EE/CA project on 21 ½ acres at the former Conway bombing and gunnery range.
- Feb 00 – Mar 00: UXO Supervisor, USA Environmental, Inc., Former Camp Ellis, IL. Supervise UXO team during anomaly investigation in support of EE/CA project at the former camp.
- Mar 00 – Present UXO Specialist, USA Environmental, Inc., Carabelle, FL. UXO team member at camp Gordon Johnston.

APPENDIX D

CEHNC MEMORANDUMS FOR MSD AND REDUCTION OF MSD



DEPARTMENT OF THE ARMY
HUNTSVILLE CENTER, CORPS OF ENGINEERS
P.O. BOX 1600
HUNTSVILLE, ALABAMA 35807-4301

REPLY TO
ATTENTION OF:

CEHNC-OE-S (200-1c)

30 June 2000

MEMORANDUM FOR CEHNC-OE-DC (Mr. David Skridulis)

SUBJECT: Contract DACA 87-99-D-0010, Task Order 05, Ordnance and Explosives Removal Action, M2 Parcel, Fort McClellan, Anniston, Alabama - Reduction of Minimum Separation Distance (MSD)

1. References:

a. Memorandum, CEHNC-OE-CX, 2 March 2000, Interim Guidance Document 00-01.

b. Memorandum, CEHNC-OE-DC, 13 April 2000, SAB (Encl).

2. Your request to reduce the MSD at the M2 Parcel at Fort McClellan to 200 feet is approved. The reduced distance is based on the M15 White Phosphorus Hand Grenade range to no more than 1 hazardous fragment/600 square feet.

3. Should any other munition be discovered, all intrusive work will cease, and the MSD will be reevaluated.

4. If you have any questions, please call Mr. Greg Bayuga, OE Safety Group, at 256-895-1596.

FOR THE DIRECTOR OF
ORDNANCE AND EXPLOSIVES:


WAYNE H. GALLOWAY
Chief, Safety Group
for Ordnance and Explosives

CEHNC-OE-DC

30 June 2000

MEMORANDUM FOR CEHNC-OE-S. (Mr. Wayne Galloway)

SUBJECT: Contract DACA87-99-D-0010, Task Order 05, Ordnance and Explosives Removal Action, M2 Parcel, Fort McClellan, Anniston, Alabama - Reduction of Minimum Separation Distance

1. Reference CEHNC-OE-CX Interim Guidance Document 98-08.
2. Request approval to reduce the minimum separation distance for subject project to the "1 in 600" distance for normal OE operations.
3. The most probable munition (MPM) for the M2 Parcel is the M15 White Phosphorus Hand Grenade. The maximum fragment range for this item is 517 feet. The 1 in 600 distance for this item would be a minimum separation distance of 200 feet (See Attachment). The only evidence that this ordnance item may be present within the M2 Parcel was the remains of the top of a WP grenade was found approximately 300 feet north of the M2 Parcel. However, approximately 30 acres of grids have been cleared in this area and no other evidence of WP has been identified.
4. The M2 Parcel consists of twenty acres of wooded property that is part of an OE training area. The M2 Parcel is bordered on the west by Highway 21, a four lane highway which is the main thoroughfare for the city of Anniston, and on the south by an occupied commercial facility. In order to maintain the 200 feet MSD for clearance of grids located on the west and south boundaries, traffic will have to be halted on Highway 21 to the west of the M2 Parcel and the facility would have to be evacuated to the south of the M2 Parcel.
5. At any time an OE item is identified at the site which would change the assumptions made from the existing information, all operations will be halted until the MPM and MSD have been reevaluated and approved by the appropriate agencies.

6. If you have any questions please the Project Engineer,
Valerie Clinkenbeard at 5-1622.



Valerie Clinkenbeard
Project Engineer, Ed-Cs-G

Concurrence: _____

Wayne Galloway
CEHNC-OE Safety Chief

Date: 30 June 2000

Minimum Separation Distances
Ft. McClellan, M2 Parcel
M15 WP Hand Grenade
30 June 2000

REQUESTED BY: Valerie Clinkenbeard
PREPARED BY: Michelle Crull, PhD, PE

This form shows calculated distances only. It does not constitute approval. Concurrence of CEHNC-OE-S is required to determine the applicable distance for a specific site.

In accordance with (IAW) OE Center of Expertise Interim Guidance Document 00-01, use of the range to no more than 1 hazardous fragment/600 sq ft as the minimum separation distance for accidental detonations requires written justification, a risk analysis, calculation of this distance by CEHNC-ED-CS-S, and concurrence of CEHNC-OE-S.

CALCULATIONS FOR UNINTENTIONAL DETONATIONS

Maximum Fragment Range = 517 ft
Range to No More Than 1 Hazardous Fragment/600 sq ft = 200 ft
Range to 0.9 psi Overpressure = 17 ft

IAW OE Center of Expertise Interim Guidance Document 00-01, the minimum separation distance for intentional detonations may not be less than the default distance provided in DoD 6055.9-STD or the maximum fragment range or the K328 overpressure distance.

CALCULATIONS FOR INTENTIONAL DETONATIONS

Maximum Fragment Range = 517 ft
K328 Overpressure Range = 111 ft

The primary fragmentation characteristics used in the calculation of the values listed above were computed IAW CEHNC-ED-CS-S-98-1. The maximum fragment range was calculated using the maximum weight fragment and the initial velocity from these characteristics in the computer software TRAJ. The range to no more than 1 hazardous fragment/600 sq ft was calculated IAW CEHNC-ED-CS-S-98-2.

SIGNATURES:

Michelle Crull 6/30/00
Subject Matter Expert

Michelle Crull 6/30/00
acting CEHNC-ED-CS-S Branch Chief

APPENDIX E

**AMMUNITION SUPPLY POINT EXPLOSIVE STORAGE LIMITS AND
LICENSE**

