

**Draft Final**  
**Site-Specific Unexploded Ordnance Safety Plan Attachment**  
**Cane Creek Training Area, Parcel 510(7)**  
**Fort McClellan, Calhoun County, Alabama**

**Prepared for:**

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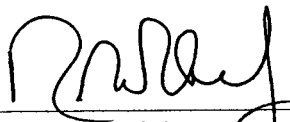
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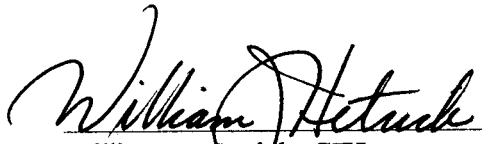
**September 2002**

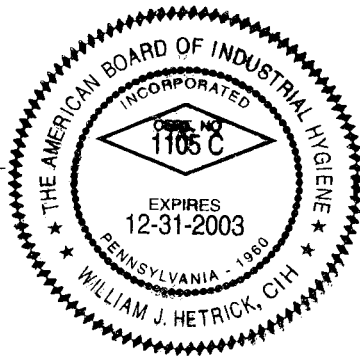
**Draft Final**  
**Site-Specific Unexploded Ordnance Safety Plan Attachment**  
**At Cane Creek Training Area, Parcel 510(7)**

I have read and approve this site-specific unexploded ordnance (UXO) safety plan attachment for Cane Creek Training Area, Parcel 510(7), at Fort McClellan, Alabama, with respect to project hazards, regulatory requirements, and IT Corporation UXO procedures.

  
\_\_\_\_\_  
Robert W. Hickman, Jr.  
UXO Technical Manager

26 Sep 02  
Date

  
\_\_\_\_\_  
William J. Hetrick, CIH  
Health & Safety Manager



9/26/02  
Date

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Attachment 1 - Fort McClellan Unexploded Ordnance Supplementary Procedures	

## **List of Acronyms**

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See Attachment 1, List of Abbreviations and Acronyms, of the Site-Specific Field Sampling Plan Attachment contained in this binder.

## 1.0 Introduction

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This document defines anomaly avoidance procedures for activities to be performed by IT Corporation (IT) unexploded ordnance (UXO) personnel in conjunction with the site investigation at Cane Creek, Parcel 510(7), at Fort McClellan (FTMC), Calhoun County, Alabama. This document is not a stand-alone document; it must be used in conjunction with the *Fort McClellan Unexploded Ordnance Supplementary Procedures* (IT, 2001), attached as Attachment 1.

IT UXO personnel will perform visual surveys, assisted by hand-held magnetometers and metal detectors, to support the collection of surface soil, subsurface soil, groundwater, surface water, sediment samples and/or other types of samples for chemical analysis at the Cane Creek Training Area, Parcel 510(7). The purpose is to avoid any ordnance and explosives (OE) during hazardous, toxic, and radioactive waste (HTRW) sampling activities. Intrusive anomaly investigation is not authorized for this site work.

Cane Creek Training Area, Parcel 510(7), is located in the south-central area of the Main Post. The Cane Creek Training Area straddles South Branch of Cane Creek on the east side of Fox Road, southeast of the intersection of Derby Street with Fox Road (Figure 1-2 of the site-specific field sampling plan [SFSP] contained in this binder). The parcel is approximately 2 acres in size. The Cane Creek Training Area first appeared on the 1956 map of the Chemical Corps Training Areas. In 1958, it was used for training classes in decontamination procedures and equipment. It is unknown if toxic agents were used in this area (Parsons Engineering Sciences, Inc. [Parsons], 2002).

Analysis of historical aerial photographs shows an abundance of activity at this site from the early 1940s to about 1969, but the majority of the activity appears related to the clearing of trails that have crossed the area. There were no burial locations on this site noted based on the aerial photograph review.

A site visit conducted by Parsons in February 1999 identified the presence of a depression approximately 12 feet in diameter. The depression, label as a sump by Parsons, is located directly across the street (east) from the Training Area T-6 (Naylor Field) entrance, approximately 50 feet from the road, and may be the remains of a burial pit. A pump was recorded to be located a few feet southeast of the depression/sump. Indications of metallic

1 objects were noted in the pit from a geophysical survey conducted by Parsons. There were not  
2 any other anomalies were found during the site visit.

3  
4 Parsons conducted an engineering evaluation/cost analysis (EE/CA) investigation in 2001 at the  
5 Cane Creek Training Area to address the potential presence of chemical warfare materiel (CWM)  
6 or other subsurface disposal using geophysical surveys, excavation of suspect anomalies,  
7 continuous air monitoring, soil sampling, and laboratory analysis of the soils for sarin (GB),  
8 distilled mustard (HD), nerve agent (VX), and chemical agent breakdown products. The EE/CA  
9 investigation did not find any evidence of soil contamination by chemical agent. Based on the  
10 results of soil sampling and analysis, therefore, the likelihood for current and future risk of  
11 human exposure to chemical agents is very unlikely. Thus, Parsons concluded that it could be  
12 inferred that current and future human health risks due to exposure to CWM at this site are very  
13 unlikely. A letter from the Department of Army providing release of properties on Main Post for  
14 HTRW investigations is attached to the site-specific safety and health plan contained in this  
15 binder.

16  
17 A requirement by the U.S. Army Corps of Engineers (USACE)-Huntsville for conducting work  
18 at potential CWM sites is to use UXO anomaly avoidance techniques. Surface sweeps and  
19 downhole surveys will be conducted to identify anomalies for the purpose of UXO avoidance.

## 20 21 **2.0 UXO Team Composition** \_\_\_\_\_

22  
23 UXO team and personnel requirements will be in accordance with EP 75-1-2 (USACE, 2000)  
24 and installation-wide sampling and analysis plan (SAP) (IT, 2002) for FTMC. A UXO team will  
25 be on site during all sampling or intrusive activities where OE is suspected.

## 26 27 **3.0 Responsibilities** \_\_\_\_\_

28  
29 The UXO Team Leader is responsible for ensuring that personnel performing UXO tasks at  
30 FTMC have the required qualifications. The UXO Team Leader supervises and coordinates  
31 UXO work activities.

32  
33 The UXO team member(s) will provide UXO avoidance, explosive ordnance recognition,  
34 location, and safety functions for IT employees and any subcontractors during sampling

1 activities. Additionally, the UXO team will survey sample points and safe access and egress to  
2 and from the site in support of HTRW operations.

#### 3 4 **4.0 Authority**

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5  
6 UXO personnel are authorized to perform UXO avoidance activities only. UXO personnel are  
7 not permitted to initiate OE investigative or disposal activities.

#### 8 9 **5.0 UXO Avoidance Procedures to Support HTRW Sampling** 10 **Activities at FTMC**

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11  
12 The scope of work for site investigation activities with the Cane Creek Training Area, Parcel  
13 510(7), includes the following UXO tasks:

- 14  
15 • Provide UXO avoidance support during the collection of four surface soil samples,  
16 four subsurface soil samples, four groundwater samples, three surface water  
17 samples, three sediment samples and two depositional soil samples. Sample  
18 locations are defined in Chapter 4.0 of the SFSP contained in this binder.
- 19  
20 • Provide downhole UXO support for all intrusive drilling to determine buried  
21 downhole hazards.
- 22  
23 • Provide surveys for all intrusive field activities (e.g., digging, fence post driving,  
24 grading, or excavation).

25  
26 Since these areas may contain OE contamination, the UXO team must conduct a surface access  
27 survey for UXO before any type of activities commence. This includes foot and vehicular traffic.  
28 UXO avoidance activities at Cane Creek Training Area, Parcel 510(7), will include:

29  
30 a) Access Corridors and Sampling Sites

- 31  
32 (1) Access surveys are defined as those UXO sweeps performed to allow entry  
33 to and exit from sampling sites. In cases where hand-auger sampling is  
34 required, the UXO team may consist of a UXO technician and sampling  
35 personnel. The UXO technician will sweep ahead of the non-UXO  
36 technician team member and mark a clear route. Access surveys will  
37 begin in a known clear area and proceed by the most direct route to the  
38 sampling site. The boundaries of the access route, whether for vehicle or

1 personnel traffic, and the area of the sampling site, will be marked with  
2 white tape or white pin flags.

- 3
- 4 (2) If an OE item is found during the survey, the location will be  
5 conspicuously marked with a red pin flag and avoided by altering the  
6 route. Additionally, UXO personnel will complete the IT FTMC  
7 "Unexploded Ordnance Report Form." Subsurface anomalies will be  
8 marked with a yellow flag.
- 9
- 10 (3) The boundaries of the access route and sampling site will be recorded in  
11 the IT FTMC "UXO Sketch Log" by the UXO technician. Additionally,  
12 anomaly locations will be recorded on this form.
- 13
- 14 (4) Instrumentation used at this site will include the Schonstedt GA 72, the  
15 CST Corporation Magna-Trak 102, or the Whites Spectrum XLT Metal  
16 Detector. Additionally, the Schonstedt MG-220 or MG-230 will be set up  
17 for downhole monitoring. All equipment will be operated as specified in  
18 the appropriate operator's manual. All equipment will be function tested  
19 prior to use following the procedure in paragraph 3.2, *FTMC UXO*  
20 *Supplementary Procedures* (IT, 2001) and the operator's instructions. The  
21 Whites Metal Detector will be used in conjunction with hand-held  
22 magnetometers in areas of high concentrations of rocks with a magnetic  
23 signature to assist in eliminating anomalies created by "hot rocks."
- 24
- 25 (5) The access route will be twice as wide as the widest vehicle that will use  
26 the route. Footpath lanes will be a minimum of three feet wide.
- 27
- 28 (6) If surface OE or subsurface anomalies are encountered that cannot be  
29 avoided, the access route must be diverted to avoid contact. No personnel  
30 will be allowed outside of the surveyed areas without a UXO escort. No  
31 unescorted access is permitted inside the corridor area until a survey has  
32 been completed and boundaries established.
- 33
- 34 (7) At the actual investigation site, the UXO team must also complete a  
35 survey of an area sufficient to support mechanical excavation equipment  
36 maneuverability, parking of support vehicles, and establishment of  
37 decontamination stations. As a minimum, the surveyed area should have a  
38 dimension in all directions equal to twice the length of the largest vehicle  
39 or piece of equipment to be brought on site. White pin flags or tape will  
40 be used to mark the boundaries of the surveyed site.
- 41
- 42 (8) Surface soil samples are normally collected at depths of 0 to 12 inches  
43 below ground surface. The UXO team will survey the area of the soil

1 sampling site for any indication of OE. Sampling is not permitted at any  
2 location where an anomaly has been detected.

3  
4 (9) Tracked or other vehicles whose movement would disturb the soil are  
5 authorized for use only in areas that have been surveyed and in which no  
6 anomalies have been detected.

7  
8 (10) If grading or soil movement is required to support access corridor  
9 development or a sampling location, UXO personnel will perform a  
10 survey. After an area has been surveyed and no anomalies have been  
11 detected, soil can be removed at a rate of no more than 1 foot per cut. If  
12 additional grading is required, another survey will be performed after each  
13 1 foot of soil has been removed.

14  
15 (11) Erosion and weathering will typically cause some OE items to leach to the  
16 surface or otherwise be uncovered. In cases where access corridors or  
17 sampling sites have not been surveyed or traversed for a period of time,  
18 additional surveys may be required. The decision regarding the  
19 performance of follow-on surveys will be made by the site superintendent  
20 with input provided by the FTMC UXO Safety Officer and FTMC UXO  
21 Team Leader. The decision will be based on such factors as: the amount  
22 of time since the last survey was performed, the weather during this  
23 period, the terrain in the area of concern, the former use of the area, and  
24 the type of quantity of OE found during initial surveys.

25  
26 (12) Incremental geophysical surveys at drill hole locations will be initially  
27 accomplished using a hand auger to install a pilot hole. An access survey  
28 of the immediate vicinity of the pilot hole location will precede the  
29 installation of the pilot hole. The UXO team will use a manual or  
30 mechanical portable auger to install the pilot hole. The augered hole will  
31 be inspected for anomalies with a geophysical instrument (configured for  
32 downhole utilization) in 2-foot increments as the hole is advanced below  
33 ground surface. Hand augering of a hole will not proceed if an anomaly is  
34 detected that cannot be positively identified as inert material. If a suspect  
35 OE item is encountered, the sampling personnel must select a new drill  
36 hole location. The pilot hole will also be inspected with the geophysical  
37 instrument upon reaching the final depth of the hand augered hole,  
38 providing a total clearance depth equal to pilot hole depth plus 2 feet. If  
39 the proposed site is still free of magnetic anomalies, the drilling equipment  
40 may be brought on site and utilized. The UXO team will continue to  
41 inspect the drill hole for anomalies at 2-foot increments as the drilling is  
42 advanced from the clearance depth of the pilot hole until a depth of 12 feet  
43 is reached.  
44

1           b)    Vegetation Removal

2  
3           In cases where large trees or other vegetation removal is required to support  
4           access or sampling operations, the procedures in paragraph 4.2, *FTMC UXO*  
5           *Supplementary Procedures* (IT, 2001) will be followed.  
6

7           c)    Magnetometer/Metal Detector Checkout and Field Procedures

8  
9           The procedures in paragraph 3.0, *FTMC UXO Supplementary Procedures* (IT,  
10          2001) will be followed. Since previous uses of the Cane Creek Training Area,  
11          Parcel 510(7) are unknown, the function test will utilize the function test  
12          ordnance that most closely approximates the 75 millimeter projectile. The UXO  
13          Team Leader may designate another function test item if other types of  
14          ordnance are discovered.  
15

16          d)    UXO Logbooks and Documentation

17  
18          All UXO personnel identified in paragraph 5.0, *FTMC UXO Supplementary*  
19          *Procedures* (IT, 2001) will maintain a logbook in accordance with that  
20          procedure.  
21

22    **6.0 Safety**

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23  
24    In addition to the requirements of the site-specific safety and health plan prepared for this site,  
25    the UXO personnel will ensure the following:

26  
27          a)    During the access and subsurface surveys conducted with a geophysical  
28          instrument, the UXO team members will not wear safety shoes or other  
29          footwear that would cause the instrument to present a false response.  
30

31          b)    The UXO team will not be required to wear protective helmets unless an  
32          overhead hazard is present.  
33

34          c)    The FTMC UXO Safety Officer will monitor UXO activities to ensure  
35          compliance with applicable safety requirements.  
36

37          d)    The FTMC UXO Safety Officer will certify that all FTMC UXO workers are  
38          capable of performing UXO activities at FTMC based on observation of work  
39          performance.  
40

41          e)    The FTMC UXO Safety Officer is responsible for all site-specific UXO  
42          training.

- 1  
2 f) The UXO technician on site will advise project personnel regarding all  
3 evacuation and/or exclusion zones as appropriate. The UXO technician will  
4 monitor all sampling site activities to ensure that only the minimum number of  
5 personnel are present on site.  
6

## 7 **7.0 Quality**

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8  
9 The IT FTMC UXO Quality Control Officer will follow quality control instructions and  
10 procedures listed in Section 9.0 of the installation-wide OE management plan contained in  
11 Volume IV of the SAP (IT, 2002) appropriate to this task and the *FTMC UXO Supplementary*  
12 *Procedures*. The IT FTMC UXO Quality Control Officer will also utilize the “UXO Avoidance  
13 Quality Control Report” to document his activities. Copies of this form will be provided to the  
14 IT quality assurance representative upon request.  
15

## 16 **8.0 References**

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- 17  
18  
19 IT Corporation (IT), 2001, *Fort McClellan Unexploded Ordnance Supplementary Procedures*,  
20 June.  
21  
22 IT Corporation (IT), 2002, *Draft Revision 3, Installation-Wide Sampling and Analysis Plan,*  
23 *Fort McClellan, Calhoun County, Alabama*, February.  
24  
25 Parsons Engineering Science, Inc., 2002, *Final Chemical Warfare Materiel (CWM)*  
26 *Engineering Evaluation/Cost Analysis (EE/CA), Fort McClellan, Alabama*, June.  
27  
28 U. S. Army Corps of Engineers (USACE), 2000, *Engineering Publication, EP 75-1-2,*  
29 *Unexploded Ordnance (UXO) Support During Hazardous, Toxic, and Radiological (HTRW)*  
30 *and Construction Activities*, 20 November.  
31  
32

**ATTACHMENT 1**

**FORT MCCLELLAN UNEXPLODED ORDNANCE SUPPLEMENTARY  
PROCEDURES**



Procedure No.	OE001
Revision No.	0
Date of Revision	6/6/01
Last Review Date	6/6/01
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## **FTMC UXO SUPPLEMENTARY PROCEDURES**

**Subject: Ordnance and Explosives**

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### **1.0 INTRODUCTION**

IT Corporation (IT) has been retained by the U.S. Army Corps of Engineers-Mobile District, under Contract Number DACA21-96-D-0018, to provide environmental services related to Base realignment and closure (BRAC) of Fort McClellan, Alabama. The Installation-Wide Ordnance and Explosives (OE) Management Plan for Fort McClellan (FTMC) was prepared by IT Corporation and submitted as a final document in March 2000. The Installation-Wide OE Management Plan was prepared to provide general guidance for conducting unexploded ordnance (UXO) work associated with hazardous, toxic, and radiological waste (HTRW) investigations and remedial activities currently in progress at FTMC. IT Corporation prepares site-specific field sampling, health and safety, and UXO safety plans for sites where fieldwork will occur that may potentially contain OE. A UXO Safety Plan is not prepared for sites that are not reported to be in areas containing OE.

#### **1.1 Purpose**

This document is intended to provide procedures to the field staff that outline UXO operations and clarify activities currently permitted under "anomaly avoidance." The document is not intended to replace any of the project documents currently approved; rather, it is intended to complement those documents with additional information that allows successful completion of the job.

### **2.0 FTMC EMPLOYEE ORIENTATION/TRAINING AND CERTIFICATION**

The IT FTMC orientation program is designed to:

- Indoctrinate new employees to FTMC-unique procedures
- Verify compliance with regulatory certification requirements
- Provide continuing instruction and updating in UXO fundamentals to sustain readiness to safely perform UXO tasks

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These standard policies and procedures are applicable to all members of The IT Group, Inc. except where superceded or modified by the member Company.



## 2.1 Responsibilities

The IT OE Service Center Operations Manager will oversee the training programs and maintain a master record of UXO employee training and certification status.

The UXO person designated as the senior IT UXO individual at FTMC will schedule the orientation listed below.

The FTMC UXO Safety Officer will:

- Conduct all UXO-specific orientation and training at FTMC
- Certify that each new UXO employee is capable of performing UXO work activities at FTMC
- Maintain FTMC training files and records on each UXO technician on site reflecting his or her current training status.

## 2.2 UXO Employee Orientation

Every UXO employee assigned to FTMC will receive a site-specific UXO orientation in addition to training required by the Occupational Health and Safety Administration (OSHA). This orientation will include, as a minimum, the following topics:

- Local emergency response drills and procedures
- Personal protective equipment (PPE) and personnel decontamination procedures
- Ordnance recognition/UXO expected to be encountered at FTMC
- Equipment safety
- FTMC site orientation
- Chemical warfare material (CWM) awareness and procedures
- Communications procedures
- FTMC Logbook/data recording procedures
- IT administrative policies and procedures
- Magnetometer checkout procedures.

Upon completion of the UXO employee orientation, the FTMC UXO Safety Officer will monitor the performance of the new hire for at least three workdays while conducting typical UXO activities. The FTMC UXO Safety Officer will

then certify that the individual is capable of performing UXO activities at FTMC based upon satisfactory performance of the three-day period. A copy of this certification will be maintained in the individual's site FTMC training file (see example at Attachment 1).

### **2.3 UXO Sustainment Training**

All UXO technicians have had the OSHA 40-hour hazardous waste operations and emergency response (HAZWOPER) course in order to be initially certified at FTMC. They are also required to maintain the certification with an 8-hour OSHA refresher course on an annual basis. Additionally, all IT FTMC UXO personnel will have 8 hours of site-specific annual UXO sustainment training. This training can be performed incrementally (2 hours every quarter) at the discretion of the site superintendent in coordination with the FTMC IT UXO Safety Officer. Topics will include, but are not limited to, the following subjects:

- Site-specific environmental hazards
- Site-specific UXO hazards, ordnance fuzing, functioning and precautions
- Topics which the IT UXO Team Leader or IT Safety UXO Officer determines necessary to support FTMC UXO activities

Sustainment training will be conducted for a period of no less than 8 hours. Daily safety briefings, tailgate safety meetings, and other required site-specific training are not a substitute for this training. The purpose of this training is to provide each UXO employee with site-specific UXO training over and above OSHA requirements. The site-specific UXO training will be recorded in the project file and the UXO employee's personnel file.

### **3.0 FTMC MAGNETOMETER/METAL DETECTOR FUNCTION TEST AND FIELD PROCEDURES**

This section provides FTMC magnetometer/metal detector function tests and operating procedures to be employed at all work sites that have been identified as requiring avoidance support.

### 3.1 Geophysical Test Plot

The purpose of a test plot is to provide a consistent environment where the equipment can be evaluated. The location of the geophysical test plot will be inside the IT compound. It will be established as follows

- The test plot will consist of an area approximately 20 x 20 feet and clear of vegetation and magnetic anomalies, located in the IT compound next to the southeast end of the office trailers.
- Five metal test objects will be buried at depths varying from 6 inches to 24 inches. The objects will approximate the weight, diameter, and length of an MK 2 grenade, a 60mm mortar, a 2.36-inch rocket warhead, a 75mm projectile, and a 37mm projectile. Additionally, three non-ferrous test objects will be buried at a depth of 2 inches to 8 inches. A 6-inch length of 1/2-inch reinforcing rod will be placed on the surface for use as a surface check source. Items with greater mass will be buried at greater depths. Each burial location will be marked with a wooden stake located about 6 inches to the north of the object. Each stake will be assigned a reference number and will be tagged or marked to denote the depth, type of item and orientation of the item. The site will utilize native soils; no fill material will be brought in from another area. Sand will be used to cover the area to mitigate the effects of wet weather.
- For downhole magnetometer testing, a length of 2-inch PVC pipe will be buried to a depth of 36 inches. The pipe should be of sufficient length to allow at least another 24 inches to extend above the surface of the ground. A metal object will be buried at a depth of 24 inches and 24 inches from the side of the pipe. The location of the item, similar in size and mass to a 75mm projectile, will be marked with a wooden stake tagged to denote the depth, type of item, orientation, and reference number assigned.

### 3.2 Magnetometer/Metal Detector Check-Out Procedures

- Prior to field use, all magnetometers and metal detectors will be set up following the guidelines in the manufacturer's operating manual for the specific instrument used. Instrumentation used at this site will include the Schonstedt GA 72, the CST Corporation Magna-Trak 102, or White's Spectrum XLT Metal Detector. Additionally, the Schonstedt MG-220 or

MG-230 will be set up for downhole monitoring. All equipment will be operated in a manner consistent with instructions contained in the appropriate operator's manual. All equipment will be function-tested prior to use. The White's Metal Detector will be used in conjunction with hand-held magnetometers in areas of high concentrations of rocks with a magnetic signature, to assist in eliminating anomalies created by "hot rocks." The operating manual for each of the instruments used at FTMC will be available for use with the equipment.

- Once the instrument has been determined to be working according to the manufacturer's operating manual, the operator will perform a function test on the FTMC geophysical test plot using the detection methods described in the manual. A function test will consist of using the instrument over a minimum of three test sources. The same sources will be used during each function test to ensure consistency. The instrument detection indicator, as described in the operator's manual, will be noted in the instrument logbook. For site checks, a 6-inch length of 1/2-inch steel reinforcing rod will be available to each operator at the work site.
- Instruments that fail to reproduce a detection indication consistent with previous tests will be checked to ensure that the power supply or batteries are sufficient. If the power supply is determined to be sufficient and the operator cannot find a fault in accordance with the operator's manual, the instrument will be tagged and removed from service.
- Function tests will be performed each morning before the equipment is put into service.
- If an instrument is determined to be working improperly, the FTMC UXO Team Leader and the site superintendent will be immediately notified. Any activities performed using that instrument since its last positive test procedure will be considered invalid and will require reevaluation.
- Upon completion of the function test, the "Magnetometer/Metal Detector Functions Test Data Sheet" (Attachment 2) and the equipment logbook will be filled out.

- After an instrument has been function-tested at the beginning of each day, the instrument will be checked at least once during every hour of use or each time the instrument is turned on after having been turned off. This check will consist of dropping the 6-inch length of 1/2-inch reinforcing rod in a clear area and passing the detector over the rod in a manner consistent with the operator's instructions. The instrument indication will be compared to the indication produced during the morning function test. Instruments that fail to produce a consistent indication will be checked and removed from service as required.

### **3.3 Equipment Documentation**

Each piece of equipment will be assigned a logbook noting the make, model, manufacturer, and serial number of the equipment. The logbook and manufacturer's operating manual will be present when the equipment is tested. The following information will be recorded:

- Date and time
- The test plot object used (assigned stake number)
- The reading or indication at each test site
- Whether or not the reading or indication was satisfactory
- The name of the individual performing the test.

The IT FTMC Quality Control (QC) Officer will observe the daily testing of all equipment and will record the results of each test in his field logbook.

### **3.4 Magnetometer/Metal Detector Field Procedures**

All intrusive field activities in potential OE areas (e.g., digging, fence post driving, grading, well installation or excavation) will be preceded by a UXO sweep. Each hole made in areas where OE may potentially be found will have a check immediately over the spot of the intrusion. Magnetometer operations at FTMC will assume a detection depth of one foot when surveying an area for excavation.

All magnetometers and metal detectors will be operated in accordance with the manufacturers specifications and procedures.

When surveying a potential area for a sampling well, an area of sufficient size will be surveyed to allow for installation of required pads and bollards. After the well



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is installed, the location of bollards will be adjusted as required if an anomaly is detected during the bollard installation process.

The White's Metal Detector will be used to augment the magnetometers on sites where "hot rocks" are suspected. The purpose of using the metal detector in addition to the magnetometers is to eliminate the probability of "hot rocks."

#### **4.0 FTMC ACCESS CLEARANCES, VEGETATION REMOVAL, AND ROAD MAINTENANCE**

This section is designed to provide specific procedures regarding activities associated with the building of access corridors, vegetation removal, and road maintenance in support of FTMC operations.

##### **4.1 Access Corridors**

The purpose of access corridors is to enable IT personnel access to well and/or other types of sampling sites within FTMC. Access corridors will be created by marking the route, both length and width, in which a UXO survey has been performed. The marking method will be defined in each site-specific UXO safety plan. No unescorted access is permitted until a corridor has been established. If an anomaly is detected during the survey or during a subsequent excavation, it must be avoided, since investigation is not authorized. The route will be altered to avoid the anomaly for FTMC activities. A magnetometer is considered to reliably detect anomalies to a depth of one foot.

The size of each area to be surveyed is dependent on the type and quantity of equipment expected to be used on that site. The UXO survey crew will follow the procedures outlined in the site-specific UXO safety plan to determine the dimensions of the area to be surveyed. Normally, the width of the access route will be at least twice as wide as the widest vehicle that will use the route; footpaths will be a minimum of 3 feet wide.

Tracked or other vehicles, that disturb the soil are authorized for use only in areas that have been surveyed and no anomalies have been detected.

Erosion and weathering will typically cause some UXO items to leach to the surface or otherwise be uncovered. In cases where access corridors or sampling sites have not been surveyed or traversed for a period of time, additional UXO surveys may be required. The decision regarding the performance of additional

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surveys will be made by the FTMC UXO team leader and the IT FTMC UXO Safety Officer. The site superintendent will be notified of this decision. This decision will be based on, but not limited to, such factors as: the amount of time since the last survey was performed; the weather during this period; the terrain in the area of concern; and the type and quantity of UXO found during initial surveys.

#### **4.2 Vegetation Removal**

In cases where removal of large trees or other types of vegetation is required, the following procedures will be followed:

- The UXO technician will survey around the base of the tree or vegetation, and, if no anomaly is detected, direct the bulldozer or other equipment to proceed. If an anomaly is detected, the location will be recorded and marked and another route will be selected. The size of the area to be surveyed will depend on the size of the suspected root system of the tree to be removed.
- Once the tree has been pushed over, the UXO technician will survey around the root ball and the area in and around the hole. If an anomaly is detected, the anomaly will be recorded and marked and an alternate route will be selected. If no anomaly is detected, the UXO technician will direct the equipment operator to proceed with the excavation.

#### **4.3 Road Maintenance**

Remote range roads and trails frequently require a certain amount of repair to remain passable. This section describes authorized actions regarding the maintenance of dirt or gravel range roads by IT UXO personnel.

- Bulldozers or grader-type equipment is authorized to repair roads and trails as long as a UXO survey has been performed and no anomalies have been detected.
- The UXO technician will observe the blade of the equipment as the earth is moved. If a potential UXO is uncovered, the UXO technician will signal the equipment operator to immediately stop the equipment. The UXO technician will then attempt to visually identify the object. If the object cannot be positively identified as a non-hazardous item, the

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equipment will be moved, the location of the object marked and recorded on the IT FTMC Unexploded Ordnance Report Form (Attachment 3), and the route changed to avoid the object. If no suspicious objects are detected, the equipment will continue to move earth at a rate of no more than one foot of depth at a time. If, more grading is required after the first pass is complete the UXO technician will perform another survey. If no anomalies are detected, the equipment can repeat the grading process. If an anomaly is detected, the operation will be halted and the route changed.

- After an area has been surveyed and no anomalies have been detected, soil can be removed at a rate of no more than one foot per lift. If additional grading is required, a survey will be performed after each one-foot increment the soil has been removed.
- Earth may not, at any time, be moved at a rate of more than one foot in each lift.

## 5.0 FTMC UXO LOG BOOKS

All UXO team leaders or UXO technicians supporting HTRW operations will maintain a logbook. The purpose of the logbook is to record UXO actions and activities taken at each work site.

### 5.1 Responsibilities

UXO personnel will maintain an individual daily logbook of work activities.

The logbooks will be routinely inspected weekly by the UXO QC Officer and will be made available to the FTMC site superintendent upon request. Copies will be made daily and filed in the IT Field Project office.

Logbooks will contain bound and numbered pages. Entries will be on successive pages as work is performed. The individual using the logbook will sign the page after the last entry for that page has been made. Logbooks are part of the project legal file and will be filed with the project files upon completion of each investigation.



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## 5.2 Data Requirements

As a minimum, individual logbooks will contain the following information:

- Date, time and location of UXO activities
- Personnel involved in the activities
- UXO activities performed, including UXO/anomalies found
- A description of areas swept
- A record of the magnetometer or other equipment used, including instrument serial number
- Weather conditions.

The IT FTMC QC Officer will utilize the IT FTMC “UXO Avoidance Quality Control Report” (Attachment 4) to document checks of field activities.

Additionally, UXO personnel will complete IT FTMC Form “UXO Sketch Log” (Attachment 5) and IT FTMC Unexploded Ordnance Report Form. The “UXO Sketch Log” will contain a description of activities, including the dimensions of the area surveyed. A description of the length and width will be recorded, as well as the manner in which the survey was performed. These forms will be completed as required and presented to the site superintendent.

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## ATTACHMENT 1

### FTMC Employee Certification (Example)

I certify that (name of individual) has fulfilled all UXO orientation requirements and has been observed by me for a period of 3 work days and is therefore eligible to perform UXO activities at FTMC.

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Talmadge Bohannon  
FTMC UXO Safety Officer



## ATTACHMENT 3

### Unexploded Ordnance Report Form

Report Tracking Number:															
<b>Discovery and Reporting Time</b>															
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th colspan="2">Time of Discovery</th></tr> <tr><th>Date</th><th>Time</th></tr> <tr><td> </td><td> </td></tr> </table>		Time of Discovery		Date	Time			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th colspan="2">Time Reported to Base Transition Force</th></tr> <tr><th>Date</th><th>Time</th></tr> <tr><td> </td><td> </td></tr> </table>		Time Reported to Base Transition Force		Date	Time		
Time of Discovery															
Date	Time														
Time Reported to Base Transition Force															
Date	Time														
Employee Name: _____		Reported to FTMC Transitional Force Personnel Name: _____													
<b>Location of Ordnance</b>															
Location, Description, and Parcel Number:															
Coordinates of Ordnance:		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th colspan="2">State Plane Coordinates</th></tr> <tr><th>Northing</th><th>Easting</th></tr> <tr><td> </td><td> </td></tr> </table>		State Plane Coordinates		Northing	Easting								
State Plane Coordinates															
Northing	Easting														
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th colspan="4">Picture Taken of Ordnance</th></tr> <tr><th>Yes</th><th>No</th><th>Date</th><th>Time</th></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>				Picture Taken of Ordnance				Yes	No	Date	Time				
Picture Taken of Ordnance															
Yes	No	Date	Time												
Written Description and/or Sketch of Ordnance:															
<b>Corrective Action Taken by Fort McClellan Transition Force</b>															
Date															

These standard policies and procedures are applicable to all members of The IT Group, Inc. except where superceded or modified by the member Company.



## ATTACHMENT 4

### UXO Quality Control Report

**Project Location:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Work Site Location:** \_\_\_\_\_

**Day:** \_\_\_\_\_

**1. Personnel Involved:**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**2. Description of Work Being Performed:**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**3. Equipment Utilized:**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**4. Comments:**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\_\_\_\_\_  
**Completed By**

\_\_\_\_\_  
**Printed Name & Title**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Date**

These standard policies and procedures are applicable to all members of The IT Group, Inc. except where superceded or modified by the member Company.

## ATTACHMENT 5

### UXO Sketch Location Log

**District:** \_\_\_\_\_ **Hole Number:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Company Name:** IT Corporation **Subcontractor:** \_\_\_\_\_

**Parcel Location:** \_\_\_\_\_ **Well Location:** \_\_\_\_\_ **Date Started:** \_\_\_\_\_ **Date Completed:** \_\_\_\_\_

<b>Type of UXO Work Being Performed:</b>

<b>Most Probable Munition:</b>	_____
<b>Down-Hole Depth Achieved for UXO Avoidance:</b>	_____
<b>Total Number of Surface UXO Marked:</b>	_____
<b>Total Number of Anomalies Marked:</b>	_____

<b>Location Sketch/Comments:</b>	<b>Not to Scale</b>
Signature of UXO Technician:	Date:

These standard policies and procedures are applicable to all members of The IT Group, Inc. except where superceded or modified by the member Company.