

**Draft Final
Site-Specific Safety and Health Plan Attachment
Former Decontamination Training Area
South of the Toxic Gas Area
Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

Prepared for:

**U.S. Army Corps of Engineers, Mobile District
109 St. Joseph Street
Mobile, Alabama 36602**

Prepared by:

**IT Corporation
312 Directors Drive
Knoxville, Tennessee 37923**

**Task Order CK05
Contract No. DACA21-96-D-0018
IT Project No. 774645**

July 2002

Revision 0

The following Safety and Health Plan (SHP) has been designed for the methods presently contemplated by IT Corporation (IT) for execution of the proposed work. Therefore, the SHP may not be appropriate if the work is not performed by or using the methods presently contemplated by IT.

In addition, as the work is performed, conditions different from those anticipated may be encountered and the SHP may have to be modified. Therefore, IT only makes representations or warranties as to the adequacy of the SHP for currently anticipated activities and conditions.

This Site-Specific Safety and Health Plan must be used in conjunction with the Installation-Wide Safety and Health Plan, Fort McClellan, Alabama.

**Site-Specific Safety and Health Plan Attachment Approval
Fort McClellan, Calhoun County, Alabama**

I have read and approve this site-specific safety and health plan attachment for the sampling at the Former Decontamination Training Area South of the Toxic Gas Area Parcel, 207(7), at Fort McClellan, Alabama, with respect to project hazards, regulatory requirements, and IT Corporation procedures.

Jeanne Yacoub, PE
Project Manager

Date

William J. Hetrick, CIH
Health & Safety Manager

Date

Jeff Tarr
Site Coordinator

Date

Acknowledgments

The approved version of this site-specific safety and health plan (SSHP) attachment for the sampling at the Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7), at Fort McClellan, Alabama, has been provided to the site coordinator. I acknowledge my responsibility to provide the site coordinator with the equipment, materials, and qualified personnel to implement fully all safety requirements in this SSHP attachment. I will formally review this plan with the health and safety staff every six months until project completion.

Project Manager

Date

I acknowledge receipt of this SSHP attachment from the project manager, and that it is my responsibility to explain its contents to all site personnel and cause these requirements to be fully implemented. Any change in conditions, scope of work, or other change that might affect worker safety requires me to notify the project manager and the health and safety manager.

Site Coordinator

Date

Fort McClellan Gate Hours

Baltzell Gate	Baltzell Road. Open 24 hours daily, 7 days a week.
Galloway Gate	Galloway Road. Open 6 am to 6 pm Monday through Friday

Pelham Range Access Requirements

Pelham Range	IT personnel will contact the Range Control Office each day access is required to receive an access permit and available areas of entry. See Attachment 1 for Range Control contact for Pelham Range.
--------------	---

Fort McClellan Project Emergency Contacts

Range Control Office (Main Post).....(256) 848-6772
Fire Department (off post)911
Ambulance (off post)911
Regional Medical Center(256) 235-5121
Military Police (SSG Busch) (256) 848-5680, 848-4824
DOD Guard Force (Mr. Bolton) (256) 848-5680, 848-4732
Anniston Police Department(256) 238-1800
Chemical Agent Emergencies.....(256) 895-1598
 (Mike Smith, CEHNC) cell phone (256) 759-3931
UXO Emergencies(256) 895-1598
 (Mike Smith, CEHNC) cell phone (256) 759-3931
UXO Nonemergencies/Reporting Only (Ronald Levy)(256) 848-6853
Baltzell Gate Guard Shack..... (256) 848-5693, 848-3821
National Response Center & Terrorist Hotline.....(800) 424-8802
Poison Control Center.....(800) 222-1222
EPA Region IV(404) 562-8725
Ronald Levy, BRAC Environmental Coordinator, FTMC Transition Force(256) 848-6853
Lisa Kingsbury, FTMC Transition Force(256) 848-7455
Ellis Pope, U.S. Army Corps of Engineers, Mobile District(251) 690-3077
Phillip Stroud, Alabama Department of Environmental Management.....(334) 270-5646
Doyle Brittain, EPA Region IV(404) 562-8259
Ross McCollum, U.S. Army Corps of Engineers, Mobile District.....(251) 690-3113
Mike Moore, Fort McClellan Safety Office.....(256) 848-5433
Darryl Stabile, U.S. Army Corps of Engineers.....(251) 690-2784
Jeanne Yacoub, IT Project Manager(770) 663-1429
Jeff Tarr, IT Site Manager..... (256) 848-3482, -3499
Bill Hetrick, IT H&S Manager (865) 692-3571, and pager (888) 655-9529
Dr. Jerry H. Berke, Health Resources Occupational Physician(800) 350-4511

Table of Contents

	<i>Page</i>
List of Tables	ii
List of Figures	ii
List of Acronyms	iii
1.0 Site Work Plan Summary	1
2.0 Site Characterization and Analysis	3
2.1 Anticipated Hazards	3
2.2 General Site Information	5
3.0 Personal Protective Equipment	6
4.0 Site Monitoring	9
5.0 Activity Hazard Analysis	10
Attachment 1 – Pelham Range Emergency Route and Range Control Contact	
Attachment 2 – Evaluation of OE/UXO/CWM in Support of HTRW Activities	

List of Tables

Number	Title	Follows Page
2-1	Toxicological and Physical Properties of Chemicals	4
4-1	Action Levels	9
4-2	Air Monitoring Frequency and Location	9
5-1	Activity Hazard Analysis	10

List of Figures

Number	Title	Follows Page
1-1	Organization Chart	2
5-1	Hospital Emergency Route	10

List of Acronyms

See Attachment 1, List of Abbreviations and Acronyms, in the site-specific field sampling plan contained in this binder.

1.0 Site Work Plan Summary

Project Objective. The objective of the work plan for sampling at the Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7), is to collect 5 surface soil samples, 5 subsurface soil samples, and 3 groundwater samples. Potential contaminant sources are primarily unknown but may include metals and nitroexplosives. Chemical analyses of the samples collected during the field program will include nitroaromatic/nitramine explosives, metals, volatile organic compounds, and semivolatile organic compounds.

Project Tasks. The scope of work for activities associated with the sampling at the Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7), includes the following tasks:

- Conduct surface and near-surface unexploded ordnance (UXO) survey over all areas to be included in the sampling effort
- Provide downhole UXO support for all drilling and intrusive sampling to determine buried downhole hazards
- Install groundwater monitoring wells
- Collect surface soil samples, subsurface soil samples, and groundwater samples
- Analyze samples.

Attachment 2, Evaluation of Ordnance and Explosives (OE)/UXO/Chemical Warfare Material (CWM) Hazards in Support of Hazardous Toxic and Radiologic Waste (HTRW) Activities, confirms that the historical records available for the sites have been reviewed and that UXO support is required for all site activities. Additionally, based on all available information, it is anticipated that the potential for chemical warfare agents is low; no real-time air monitoring for CWM will be required.

UXO surface sweeps and downhole surveys of soil borings will be required to support field activities at this site, due to proximity of parcels with history as impact areas. The surface sweeps and downhole surveys will be conducted to identify anomalies for the purpose of UXO avoidance. The site-specific UXO safety plan will be used to support sample collection activities

1 for the site investigation, if incidental ordnance, explosives, and UXO are encountered and
2 require avoidance.

3

4 At completion of the field activities and sample analysis, draft and final reports will be prepared
5 to summarize the results of the activities.

6

7 **Personnel Requirements.** Up to 10 employees. See Figure 1-1 for an organization chart.

8

9 Note: All personnel on this site shall have received training, informational programs, and
10 medical surveillance as outlined in the installation-wide safety and health plan (SHP) for site
11 investigations at FTMC, and be familiar with the requirements of this site-specific SHP (SSHP).

12

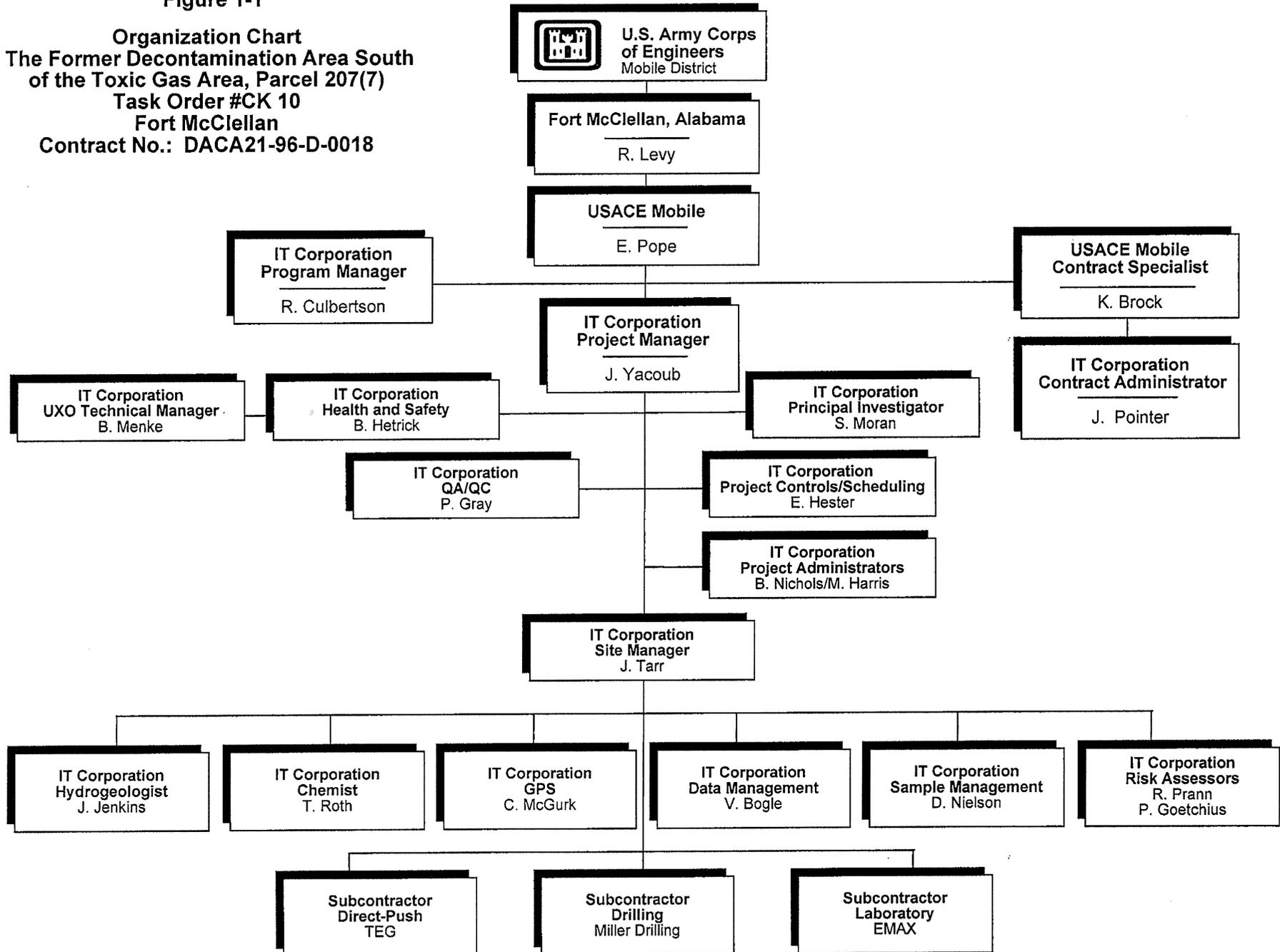
13 This SSHP must be used in conjunction with the SHP, FTMC, Alabama.

14

15

Figure 1-1

Organization Chart
The Former Decontamination Area South
of the Toxic Gas Area, Parcel 207(7)
Task Order #CK 10
Fort McClellan
Contract No.: DACA21-96-D-0018



2.0 Site Characterization and Analysis

2.1 Anticipated Hazards

The activity hazard analysis in Chapter 5.0 contains project-specific practices utilized to reduce or eliminate anticipated site hazards. The activity hazard analysis indicates specific chemical and physical hazards that may be present and encountered during each task from on-site operations. Below each task is a list of hazards and specific actions that will be taken to control the respective hazards. These control measures may include work practice controls, engineering controls, and/or use of appropriate personal protective equipment (PPE). Site control with the use of specific work zones (support zone, contamination reduction zone, and exclusion zone) is addressed in Chapter 7.0 of Appendix A of the IT Corporation (IT), February 2002, *Draft Revision 3, Final Installation-Wide Sampling and Analysis Plan, Fort McClellan, Calhoun County, Alabama*.

The Former Decontamination Training Area South of the Toxic Gas Area is located in Pelham Range (see Figure 1-1 of the site-specific field sampling plan [SFSP]). The site is south of the Toxic Gas Area (Training Area 10B) and north of the northern radiological field boundary fence (see Figure 1-2 of the SFSP). This training site, measuring approximately 75 yards by 50 yards, was located approximately 150 yards south of the road (see Figure 1-3 of the SFSP). Training in decontamination of chemical agents was conducted by spreading the chemical agents on the ground. Instructors would pour one gallon of the chemical agent mustard (H) onto the ground, and then trainees would decontaminate the area using a supertropical bleach (STB) slurry. According to the interview notes in the environmental baseline survey, the area where decontamination training occurred may have been two different sites. One site was located within the Toxic Gas Area, and the other site (Parcel 207[7]) was located south of the Toxic Gas Area along the northern perimeter of the Rideout radiological field. The time period during which these areas were used is unknown, but an individual who was involved with training in the area was stationed at Fort McClellan in the 1960s.

According to the environmental baseline survey, an interviewee described an end-of-course test for Chemical Staff Specialists near Road Junction 29; however, based on site descriptions and review of Pelham Range maps, the field personnel decontamination station may have been located near Road Junction 28 instead of 29. A half-track truck located near Road Junction 29 was contaminated with mustard (H) and distilled mustard (HD) and then decontaminated during

1 training activities. Classes were conducted 10 to 12 times a year. The vehicle and the ground
2 were decontaminated with an STB slurry (26 fifty-pound cans of STB mixed with approximately
3 225 gallons of water). Excess agent was buried. Typically, decontaminants were applied to
4 agent when it was buried, but it has been reported that not all agent burials include the
5 application of decontaminants.

6
7 The following types of chemical agents and decontamination solutions were presumably used at
8 the Former Decontamination Training Area South of the Toxic Gas Area:

- 9
- 10 • Distilled mustard (HD), also referred to as sulfur mustard and mustard gas
- 11
- 12 • Supertropical bleach (STB).
- 13

14 **HD.** HD (bis-[2-chloroethyl] sulphide) is an oily chemical that has a high boiling point. HD has
15 many synonyms and trade names, and is also referred to as H and HS. HD was used extensively
16 in World War I. HD hydrolyzes very slowly at normal temperatures. In dilute aqueous solution,
17 it degrades to form thiodiglycol. Experience has demonstrated that mustard can remain stable
18 underwater for years if there is little turbulence or mixing. Two additional decomposition
19 products are 1,4-dithiane (DT) and 1,4-oxathiane (OT). 1,4-DT is a thermal degradation product,
20 and 1,4-OT is formed from dechlorination of mustard.

21
22 **STB.** STB (supertropical bleach), also known as hypochlorite, has been used extensively for
23 decontamination of HD. While STB was often used in excess quantities, due to the low
24 solubility of HD in aqueous solutions, poor mixing, or incorrect proportions of STB to HD, the
25 HD that was treated may not have been completely consumed. Byproducts of the
26 decontamination process are an indicator of the potential presence of undestroyed agent (HD).

27
28 Table 2-1 contains the toxicological and physical properties of chemicals anticipated or used at
29 the Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7).
30 Attachment 2 is an Evaluation of OE/UXO/CWM in Support of HTRW Activities.

31
32 The presence of UXO is suspected, since Parcel 207(7) is located within Pelham Range, which is
33 still active. Procedures contained in the site-specific UXO safety plan shall be followed for all
34 site activities associated with this investigation and include surface sweeps and downhole
35 surveys of soil borings to support field activities.

Table 2-1

**Toxicological and Physical Properties of Chemicals
The Former Decontamination Area South of the Toxic Gas Area
Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 1 of 4)

Substance [CAS]	IP ^a (eV)	Odor Threshold (ppm)	Route ^b	Symptoms of Exposure	Treatment	TWA ^c	STEL ^d	Source ^e	IDLH (NIOSH) ^f
Acetone [67-64-1]	9.7	13-100	Inh Ing Con	Irritated eyes, nose, and throat; headache, dizziness; dermatitis, CNS depression	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	1,000 ppm 500 ppm 250 ppm	750 ppm	PEL TLV REL	2,500 ppm (10% LEL)
Fuel oil (diesel oil, medium)	?	?	Ing Inh Con	Ingestion causes nausea, vomiting, and cramps; depressed central nervous system, headache, coma, death; pulmonary irritation; kidney and liver damage; aspiration causes severe lung irritation, coughing, gagging, dyspnea, substernal stress, pulmonary edema; bronchopneumonia; excited, then depressed, central nervous system.	Eye: Irrigate promptly Skin: Soap wash Breath: Respiratory support Swallow: Immediate medical attention Aspiration: Immediate medical attention			PEL TLV REL	
Gasoline [8006-61-9]	?	0.3	Inh Ing Con	Intoxication, headaches, blurred vision, dizziness, nausea; eye, nose throat irritation; potential kidney and other cancers. Carcinogenic.	Eye: Irrigate immediately (15 min) Skin: Soap wash promptly Breath: Respiratory support Swallow: Immediate medical attention	300 ppm Ca, lowest feasible conc. (LOQ 15 ppm)	500 ppm	PEL TLV REL	Ca [N.D.]
n-Hexane [110-54-3]	10.18	65-248	Inh Ing Con	Lightheadedness; nausea, headache; numbness of the extremities, muscular weakness; irritation of the eyes and nose; dermatitis; chemical pneumonia; giddiness.	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	500 ppm 50 ppm 50 ppm		PEL TLV REL	1,100 ppm (10% LEL)

Table 2-1

**Toxicological and Physical Properties of Chemicals
The Former Decontamination Area South of the Toxic Gas Area
Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 2 of 4)

Substance [CAS]	IP ^a (eV)	Odor Threshold (ppm)	Route ^b	Symptoms of Exposure	Treatment	TWA ^c	STEL ^d	Source ^e	IDLH (NIOSH) ^f
Isopropyl alcohol (isopropanol) [67-63-0]	10.16	43-200	Inh Ing Con	Mild irritation of the eyes, nose, and throat; drowsiness, dizziness, headache; dry, cracked skin.	Eye: Irrigate immediately Skin: Water flush Breath: Respiratory support Swallow: Immediate medical attention	400 ppm 400 ppm 400 ppm	500 ppm 500 ppm	PEL TLV REL	2,000 ppm (10% LEL)
Motor Oil [NA]	?	?	Inh Ing	Irritated eyes, skin, respiratory system; usually only a problem if misted or ingested.	Eye: Irrigate immediately (15 min) Skin: Soap wash immediately Swallow: Immediate medical attention			PEL TLV REL	
Mustard gas	NA	0.0006 mg/m ³	Abs Inh	Garlic-like odor. Eye and respiratory tract irritation; redness of skin and blisters develop 4 to 24 hours after exposure; hoarseness, sore throat, coughing, pulmonary edema	Treat like a thermal burn. Do not break blisters. Eye: Irrigate immediately. Transfer to medical facility Skin: Remove victim from area immediately. Flush skin and clothes with bleach within 1 minute. Cut and remove contaminated clothing, then wash skin again with bleach and then with soap and water. Transfer to medical facility. Breath: Remove from area immediately. Transfer to medical facility.	-	C0.003 mg/m ³	AEL	Ca

Table 2-1

**Toxicological and Physical Properties of Chemicals
The Former Decontamination Area South of the Toxic Gas Area
Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 3 of 4)

Substance [CAS]	IP ^a (eV)	Odor Threshold (ppm)	Route ^b	Symptoms of Exposure	Treatment	TWA ^c	STEL ^d	Source ^e	IDLH (NIOSH) ^f
Nitric acid [7697-37-2]	11.95	0.3-1	Inh Ing Con	Irritated eyes, mucous membranes, and skin; delayed pulmonary edema, pneumonitis, bronchitis; dental erosion.	Eye: Irrigate immediately Skin: Water flush promptly Breath: Respiratory support Swallow: Immediate medical attention	2 ppm 2 ppm 2 ppm	4 ppm 4 ppm 4 ppm	PEL TLV REL	25 ppm
Portland cement			Inh	Fine gray powder that can be irritating if inhaled or in eyes.	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention		10 mg/m ³ 15 mg/m ³ Total Dust 5 mg/m ³ Respirable Fraction	TLV PEL/REL	5,000 mg/m ³
Sodium hydroxide [1310-73-2]	NA	NA	Inh Ing Con	Irritated nose; pneumonitis; burns eyes, and skin; temporary loss of hair.	Eye: Irrigate immediately Skin: Water flush immediately Breath: Respiratory support Swallow: Immediate medical attention	2 mg/m ³	C 2 mg/m ³ C 2 mg/m ³ C 2 mg/m ³	PEL TLV REL	10 mg/m ³
Sulfuric acid [7664-93-9]	?	0.15	Inh Ing Con	Irritated eyes, nose, and throat; pulmonary edema, bronchitis; emphysema; conjunctivitis; stomatitis; dental erosion; tracheobronchitis; skin and eye burns; dermatitis.	Eye: Irrigate immediately Skin: Water flush immediately Breath: Respiratory support Swallow: Immediate medical attention	1 mg/m ³ 1 mg/m ³ 1 mg/m ³	3 mg/m ³	PEL TLV REL	15 mg/m ³

^aIP = Ionization potential (electron volts).

^bRoute = Inh, Inhalation; Abs, Skin absorption; Ing, Ingestion; Con, Skin and/or eye contact.

^cTWA = Time-weighted average. The TWA concentration for a normal work day (usually 8 or 10 hours) and a 40-hour work week, to which nearly all workers may be repeatedly exposed, day after day without adverse effect.

^dSTEL = Short-term exposure limit. A 15-minute TWA exposure that should not be exceeded at any time during a workday, even if the TWA is not exceeded.

^ePEL = Occupational Safety and Health Administration (OSHA) permissible exposure limit (29 CFR 1910.1000, Table Z).

AEL = Airborne Exposure Limit.

TLV = American Conference of Governmental Industrial Hygiene (ACGIH) threshold limit value—TWA.

REL = National Institute for Occupational Safety and Health (NIOSH) recommended exposure limit.

^fIDLH (NIOSH)—Immediately dangerous to life or health (NIOSH). Represents the maximum concentration from which, in the event of respirator failure, one could escape within 30 minutes without a

Table 2-1

Toxicological and Physical Properties of Chemicals The Former Decontamination Area South of the Toxic Gas Area Parcel 207(7) Fort McClellan, Calhoun County, Alabama

(Page 4 of 4)

respirator and without experiencing any escape-impairing or irreversible health effects.

NE = No evidence could be found for the existence of an IDLH (NIOSH Pocket Guide to Chemical Hazards, Pub1998).

C = Ceiling limit value which should not be exceeded at any time.

Ca = Carcinogen.

NA = Not applicable.

? = Unknown.

LEL = Lower explosive limits.

LC₅₀ = Lethal concentration for 50 percent of population tested.

LD₅₀ = Lethal dose for 50 percent of population tested.

NIC = Notice of intended change (ACGIH).

References:

American Conference of Governmental Industrial Hygienists Guide to Occupational Exposure Values, 1998, compiled by the American Conference of Governmental Industrial Hygienists.

Amoore, J. E. Hautula, "Odor as an Aid to Chemical Safety," Journal of Applied Toxicology, 1983.

Clayton, George D., Clayton, F. E., Patty's Industrial Hygiene and Toxicology, 3rd ed., John Wiley & Sons, New York.

Documentation of TLVs and BEIs, American Conference of Governmental Industrial Hygienists, 6th ed., 1998.

Fazzuluri, F. A., Compilation of Odor and Taste Threshold Values Data, American Society for Testing and Materials, 1978.

Gemet, L. J. Van, Compilation of Odor Threshold Values in Air and Water, CIVO, Netherlands, 1977.

Gemet, L. J. Van, Compilation of Odor Threshold Values in Air and Water, Supplement IV, CIVO, Netherlands, 1977.

Lewis, Richard J., Sr., 1992, Sax's Dangerous Properties of Industrial Materials, 8th ed., Van Nostrand Reinhold, New York.

Micromedex Tomes Plus (R) System, 1992, Micromedex, Inc.

National Institute for Occupational Safety and Health Pocket Guide to Chemicals, Pub. 1998, National Institute for Occupational Safety and Health.

Odor Threshold for Chemicals with Established Occupational Health Standards, American Industrial Hygiene Association, 1989.

Respirator Selection Guide, 3M Occupational Health and Safety Division, 1993.

Verschuseren, K., Handbook of Environmental Data on Organic Chemicals, Van Nostrand and Reinhold, 1977.

Warning Properties of Industrial Chemicals—Occupational Health Resource Center, Oregon Lung Association.

Workplace Environmental Exposure Levels, American Industrial Hygiene Association, 1992.

1 **2.2 General Site Information**

2
3 **Location of Site.** FTMC is located in the foothills of the Appalachian Mountains of
4 northeastern Alabama near the cities of Anniston and Weaver in Calhoun County. FTMC is
5 approximately 60 miles northeast of Birmingham, 75 miles northwest of Auburn, and 95 miles
6 west of Atlanta, Georgia. FTMC consists of three main areas of government-owned and leased
7 properties: Main Post, Pelham Range, and Choccolocco Corridor (lease terminated in May
8 1998). The Pelham Range consists of approximately 22,245 acres to the west of U.S. Highway
9 431. The Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7), is
10 located within Pelham Range (Figure 1-1 of the SFSP).

11
12 **Duration of Planned Employee Activity.** Employee activity duration is anticipated to be
13 less than one month.

14
15 **Pathways for Hazardous Substance Dispersion.** Possible pathways for hazardous
16 substances in the area are soils and groundwater.

3.0 Personal Protective Equipment

Work activities will begin in the following levels of protection. A description of Level D, Modified Level D, and Level C PPE is provided.

Task	Initial Level of PPE
Initial UXO sweep and equipment staging	Level D
Surveying	Level D
Surface and subsurface soil sampling	Modified Level D*
Surface water Groundwater, and sediment sampling	Modified Level D*

*Initial level will be raised to Level C or higher if air monitoring results in the breathing zone (BZ) are greater than action levels.

Level D. The minimal level of protection that will be required of IT personnel at the site will be Level D. The following equipment will be used for Level D protection:

- Coveralls or work clothing
- Leather work gloves (when necessary)
- Steel-toed safety boots
- Safety glasses
- Hard hat
- Hearing protection (when working near/adjacent to operating equipment).

Modified Level D. The following equipment will be used for Level D-Modified protection:

- Permeable Tyvek, Kleenguard, or its equivalent. Saran-coated Tyvek is required where chemical agents such as mustard (HD) or Sarin (GB) presumably may have been used.
- Latex boot covers
- Nitrile, heavy work, or latex gloves
- Steel-toed safety boots

- 1 • Safety glasses
- 2
- 3 • Hard hat
- 4
- 5 • Hearing protection (when working near/adjacent to operating equipment)
- 6
- 7 • Escape/egress air supply pack (where chemical agents are suspected).
- 8

9 Note: In addition to modified Level D PPE, the operator of high-pressure water jetting
10 equipment shall wear metatarsal guards for the legs and feet and a face shield.

11
12 **Level C.** Level C protection will not be used unless air-monitoring data indicate the need for
13 upgrade; however, the equipment shall be readily available on site. The following equipment
14 will be used for Level C protection:

- 15
- 16 • National Institute of Occupational Safety and Health/Mine Safety and Health
17 Administration-approved full-face, air-purifying respirator equipped with organic
18 vapor/acid gas cartridge in combination with high-efficiency particulate air filter
- 19
- 20 • Hooded, Saran-coated Tyvek, taped at gloves, boots, and respirator
- 21
- 22 • Nitrile gloves (outer)
- 23
- 24 • Latex or lightweight nitrile gloves (inner)
- 25
- 26 • Neoprene steel-toed boots or polyvinyl chloride overbooties/steel-toed safety boots
- 27
- 28 • Hard hat
- 29
- 30 • Hearing protection (when working near/adjacent to operating equipment)
- 31
- 32 • Escape/egress air supply pack (where chemical agents are suspected).
- 33

34 Note: In addition to Level C PPE, the operator of high-pressure water jetting equipment shall
35 wear metatarsal guards for the legs and feet and a face shield.

36
37 **Level B.** Level B protection is not anticipated for this project. If required, it will be used only
38 after authorization by the health and safety manager for the project. The following equipment
39 will be used for Level B protection.

- 1
 - 2
 - 3
 - 4
 - 5
 - 6
 - 7
 - 8
- NIOSH approved positive pressure respirator, air line or SCBA
 - Hooded saran-coated Tyvek, taped at gloves, boots and respirator
 - Nitrile gloves (outer)
 - Latex or lightweight nitrile gloves (inner)
 - Neoprene steel-toed boots or polyvinyl chloride overbooties/steel-toed safety boots
 - Hard hat
 - Hearing protection (when working near/adjacent to operating equipment)

4.0 Site Monitoring

The environmental contaminants of concern resulting from activities at the Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7), include metals, nitroaromatics and nitroexplosives, volatile organic compounds, semivolatile organic compounds, and agent breakdown products. Table 4-1 contains action levels for site monitoring at the Former Decontamination Area South of the Toxic Gas Area, Parcel 207(7).

Chemical. Air monitoring shall be performed by the site safety and health officer during the performance of ground intrusive operations. A calibrated photoionization detector (i.e., HNu DL-101 or equivalent) organic vapor analyzer will be utilized to monitor the sampling locations and BZs to determine if any organic material may be present that would necessitate upgrading of the protection level. A calibrated combustible gas/oxygen indicator will be utilized to monitor the work areas and BZs to determine if any combustible/flammable oxygen levels may be present that would necessitate evacuation of the work area. Table 4-2 contains the air monitoring frequency and location for site monitoring.

Chemical warfare material (CWM) could be encountered during sampling activities. Unreacted HD, while not anticipated and deemed unlikely, could be encountered. If suspected CWM is encountered at any time, work will cease and the on-site UXO technician will be notified. Evacuation and exclusion zone criteria will be implemented as detailed in Section 2.2 of the site-specific UXO safety plan.

Unexploded Ordnance. UXO support for sampling activities is specified in the site-specific UXO safety plan. The UXO specialists will perform UXO sweeps prior to moving any equipment onto the site. During this operation, UXO on the surface will be detected and marked for avoidance/removal during field operations. Additionally, downhole magnetometer surveys will be performed to detect metal objects in the area of sampling boreholes.

If UXO is encountered, personnel will contact the site manager and senior UXO supervisor immediately. UXO personnel will secure the immediate area until the proper authority has removed the hazard. UXO personnel will follow the procedures specified in the site-specific UXO safety plan contained in this binder. IT will not perform UXO destruction.

Table 4-1

**Action Levels
Soil/Water Sampling at the Former Decontamination Training Area South of the
Toxic Gas Area
Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 1 of 2)

When in Level C PPE

Analyte	Action Level	Required Action ^a
VOCs (volatile organic compound)	≥ 10 ppm above background in breathing zone (BZ)	Stop work, evacuate work area, notify CIH.
Oxygen	≥ 20%, ≤23% < 20%, >23%	Normal operations. Stop work, evacuate work area.
Flammable vapors	≥ 10% LEL < 10% LEL	Stop work, evacuate work area. Continue operations, monitor for VOCs.

When in Level D Modified/D PPE

Analyte	Action Level	Required Action ^b
VOCs	≥ 1 ppm above background in BZ	Stop activities, suspend work activities for 15 to 30 minutes, if readings are sustained then upgrade to Level C PPE.
Oxygen	≥ 20%, ≤23% < 20%, >23%	Normal operations. Stop work, evacuate work area.
Flammable vapors	≥ 10% LEL < 10% LEL	Stop work, evacuate work area. Continue operations, monitor for VOCs.

Table 4-1

**Action Levels
Soil/Water Sampling at the Former Decontamination Training Area South of the
Toxic Gas Area
Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 2 of 2)

When in Support Zone

Analyte	Action Level	Required Action
VOCs	≥ 1 ppm above background in BZ	Evacuate support zone and re-establish perimeter of exclusion zone.

^a Four instantaneous peaks in any 15-minute period or a sustained reading for 5 minutes in excess of the action level will trigger a response.

^b Contact with the H&S manager must be made prior to continuance of work. The H&S manager may then initiate perimeter/integrated air sampling along with additional engineering controls. This may also trigger additional CWA monitoring by the Huntsville division prior to continuation of investigative operations.

No one is permitted to downgrade levels of PPE without authorization from the H&S manager.

BZ – Breathing zone.

CIH – Certified industrial hygienist.

CWA – Chemical warfare agent.

H&S – Health and safety.

LEL – Lower explosive limit.

PPE – Personal protective equipment.

VOC – Volatile organic compound.

Table 4-2

**Air Monitoring Frequency and Location
The Former Decontamination Training Area South of the Toxic Gas Area
Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

Work Activity	Instrument	Frequency	Location
Staging equipment	OV Monitor	Initially for area	Breathing zone (BZ) of employees
Soil sampling (Surface and subsurface)	OV Monitor	Continuously	BZ of employees
Water sampling (Surface, groundwater and sediment)	OV Monitor LEL/O ₂ Monitor	Continuously Continuously	BZ of employees BZ of employees

OV = Organic vapor.

LEL/O₂ = Lower explosive level/oxygen.

1 **5.0 Activity Hazard Analysis**

2
3 The attached activity hazard analysis (Table 5-1) is provided for the following activities:

- 4
5
- 6 • Initial UXO sweep, downhole UXO surveys, and equipment staging
 - 7 • Soil sampling
 - 8 • Groundwater monitoring well installation and subsurface soil sampling.

9 All injuries and illnesses must be immediately reported to the site manager or the site safety and
10 health officer, who will then notify off-site personnel and organizations as necessary.

11
12 If hospital care must be provided, the victim shall be treated at Northeast Regional Medical
13 Center. Directions to the hospital are provided in Figure 5-1.

Table 5-1

**Activity Hazard Analysis
The Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 1 of 12)

Activity	Potential Hazards	Recommended Controls
Initial UXO Sweep, Equipment Staging And Downhole Surveys	Slip, trip, and fall hazards	<ul style="list-style-type: none"> • Determine best access route before transporting equipment. • Practice good housekeeping; keep work area picked up and clean as feasible. • Continually inspect the work area for slip, trip, and fall hazards. • Look before you step; ensure safe and secure footing.
	Heavy lifting	<ul style="list-style-type: none"> • Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment.
	Falling objects	<ul style="list-style-type: none"> • Stay alert and clear of materials suspended overhead; wear hard hat and steel-toed boots.
	Flying debris, dirt, dust, etc.	<ul style="list-style-type: none"> • Wear safety glasses/goggles; ensure that eye wash is in proper working condition.
	Pinch points	<ul style="list-style-type: none"> • Keep hands, fingers, and feet clear of moving/suspended materials and equipment. • Beware of contact points. • Stay alert at all times!
	Cuts/bruises	<ul style="list-style-type: none"> • Use cotton or leather work gloves for material handling.
	Bees, spiders, and snakes	<ul style="list-style-type: none"> • Inspect work area carefully and avoid placing hands and feet into concealed areas.
	Ticks	<ul style="list-style-type: none"> • Wear light colored clothing (can see ticks better). • Mow vegetated and small brush areas. • Wear insect repellent. • Wear long sleeves and long pants. • Visually check oneself promptly and frequently after exiting the work area.
	Fire	<ul style="list-style-type: none"> • Fire extinguishers shall be suitably placed, distinctly marked, readily accessible, and maintained in a fully charged and operable condition.
	Hazard communication	<ul style="list-style-type: none"> • Label all containers as to contents and dispose of properly. • Ensure Material Safety Data Sheets (MSDS) are available for hazardous chemicals used on site.

Table 5-1

**Activity Hazard Analysis
The Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 2 of 12)

Activity	Potential Hazards	Recommended Controls
Initial UXO Sweep, Equipment Staging And Downhole Surveys (continued)	UXO	<ul style="list-style-type: none"> • UXO safety support will be conducted by an on-site UXO team during all sampling activities. • If UXO is encountered, cease all activities, mark the location, and notify the site manager and the site UXO technician. • If CWM is encountered (containers, ordnance, etc.) all operations will cease and the personnel will withdraw from the area and follow the procedures in Section 5.0 of the UXO safety plan.
	Noise	<ul style="list-style-type: none"> • Sound levels above 85 decibels (dBA) mandate hearing protection.
	Lighting	<ul style="list-style-type: none"> • Adequate lighting will be provided to ensure a safe working environment.
	Cold stress	<ul style="list-style-type: none"> • Workers should wear insulated clothing when temperatures drop below 40 degrees Fahrenheit (°F). • Drink warm beverages on breaks. Refrain from drinking caffeinated beverages. • Remove wet clothing promptly. • Take breaks in warm areas. • Reduce work periods as necessary. • Layer work clothing.
	Poison ivy/oak/sumac	<ul style="list-style-type: none"> • Avoid plant areas if possible. • Wear long sleeves and long pants. • Promptly wash clothing that has contacted poisonous plants. • Wash affected areas immediately with soap and water.
	Heat rash	<ul style="list-style-type: none"> • Keep the skin clean and dry. • Change perspiration-soaked clothing, as necessary. • Bathe at end of work shift or day. • Apply powder to affected area.
	Heat cramps	<ul style="list-style-type: none"> • Drink plenty of cool fluids even when not thirsty. • Provide cool fluid for work crews. • Move victim to shaded, cool area.
	Heat exhaustion	<ul style="list-style-type: none"> • Conduct physiological worker monitoring as needed (i.e., heart rate, oral temperature). • Set up work/rest periods. • Use the "buddy system." • Allow workers time to acclimate. • Have ice packs available for use. • Take frequent breaks.

Table 5-1

**Activity Hazard Analysis
The Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 3 of 12)

Activity	Potential Hazards	Recommended Controls
Initial UXO Sweep, Equipment Staging And Downhole Surveys (continued)	Heat stroke	<ul style="list-style-type: none"> • Evaluate possibility of night work. • Perform physiological monitoring on workers during breaks. • Wear body cooling devices.
	Contact with moving equipment/vehicles	<ul style="list-style-type: none"> • Work area will be barricaded/demarcated. • Equipment will be laid out in an area free of traffic flow. • Barricades shall be used on or around work areas when it is necessary to prevent the inadvertent intrusion of pedestrian traffic. • Barriers shall be used to protect workers from vehicular traffic. • Barriers shall be used to guard excavations adjacent to streets or roadways. • Flagging shall be used for the short term (less than 24 hours) to identify hazards until proper barricades or barriers are provided. • Heavy equipment shall have backup alarms.
	Forklift operations	<ul style="list-style-type: none"> • Use qualified and trained forklift operators. • The operator shall not exceed the load capacity rating for the forklift. • The load capacity shall be clearly visible on the forklift. • Forklift operators shall inform their supervisor of any prescribed medication that they are taking that would impair their judgement.
	Portable electric tools	<ul style="list-style-type: none"> • Portable electric tools that are unsafe due to faulty plugs, damaged cords, or other reasons, shall be tagged (do not use) and removed from service. • Portable electric tools and all cord and plug connected equipment shall be protected by a ground-fault circuit interrupter (GFCI) device. • Electrical tools shall be inspected daily prior to use.
	Extension cords	<ul style="list-style-type: none"> • Extension cords that have faulty plugs, damaged insulation, or are unsafe in any way shall be removed from service. • Cords shall be protected from damage from sharp edges, projections, pinch points (doorways), and vehicular traffic. • Cords shall be suspended with a nonconductive support (rope, plastic ties, etc.). • Cords shall be designed for hard duty. • Cords shall be inspected daily.

Table 5-1

**Activity Hazard Analysis
The Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 4 of 12)

Activity	Potential Hazards	Recommended Controls
Initial UXO Sweep, Equipment Staging And Downhole Surveys (continued)	Lightning strikes	<ul style="list-style-type: none"> • Whenever possible, halt activities and take cover. • If outdoors, stay low to the ground. • Limit the body surface area that is in contact with the ground (i.e., kneeling on one knee is better than laying on the ground). • Seek shelter in a building if possible. • Stay away from windows. • If available, crouch under a group of trees instead of one. • Remain 6 feet away from tree trunk if seeking shelter beneath tree(s). • If in a group, keep 6 feet of distance between people.
	Thunderstorms, tornados	<ul style="list-style-type: none"> • Listen to radio or TV announcements for pending weather information. • Cease field activities during thunderstorm or tornado warnings. • Seek shelter. Do not try to outrun a tornado.
Surveying	Slip, trip, and fall hazards	<ul style="list-style-type: none"> • Site workers will be required to wear hard hat, safety glasses with side shields, work gloves, and steel-toe boots when working in the field. • Provide adequate lighting in all work areas. • Whenever possible, avoid routing cords and hoses across walking pathways. • Flag or cover inconspicuous holes to protect against falls. • Work areas will be kept clean and orderly. • Garbage and trash will be disposed of daily in approved refuse containers. • Tools and accessories will be properly maintained and stored. • Work areas and floors will be kept free of dirt, grease, and slippery materials.
	Traffic accidents	<ul style="list-style-type: none"> • Place physical barrier (i.e., barricades, fencing) around work areas regularly occupied by pedestrians. • If working adjacent to roadways, have workers wear fluorescent orange vests. • Use warning signs or lights to alert oncoming traffic. • Assign flag person(s) if necessary to direct local traffic. • Set up temporary parking locations outside the immediate work area. • Motor vehicle operators shall obey all posted traffic signs, signals, and speed limits. • Pedestrians have the right-of-way. • Wear seat belts when vehicles are in motion.
	Wildlife hazards	<ul style="list-style-type: none"> • Workers should be cautious when driving through the site in order to avoid encounters with passing animals.
	Biological hazards	<ul style="list-style-type: none"> • Walking through overgrown grass areas, watch for snakes (rattlesnakes, moccasins, copperheads).

Table 5-1

**Activity Hazard Analysis
The Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 5 of 12)

Activity	Potential Hazards	Recommended Controls
Surveying (continued)	Ticks	<ul style="list-style-type: none"> • Wear light colored clothing (can see ticks better). • Mow vegetated and small brush areas. • Wear insect repellent. • Wear long sleeves and long pants. • Visually check oneself promptly and frequently after exiting the work area.
	Poison ivy/oak/sumac	<ul style="list-style-type: none"> • Avoid plant areas if possible. • Wear long sleeves and long pants. • Promptly wash clothing that has contacted poisonous plants. • Wash affected areas immediately with soap and water.
	UXO	<ul style="list-style-type: none"> • UXO safety support will be provided by a UXO team during all site activities. • If UXO is encountered, cease all activities, mark the location, and notify the site manager and site UXO technician.
Soil and Groundwater Sampling	Cross-contamination and contact with potentially contaminated materials	<ul style="list-style-type: none"> • Stop immediately at any sign of obstruction. • Sampling technicians will wear proper protective clothing and equipment to safeguard against potential contamination. • Only essential personnel will be in the work area. • Real-time air monitoring will take place before and during sampling activities. • All personnel will follow good hygiene practices. • Proper decontamination procedures will be followed. • All liquids and materials used for decontamination will be contained and disposed of in accordance with federal, state, and local regulations.
	Cut hazards	<ul style="list-style-type: none"> • Use care when handling glassware. • Wear adequate hand protection.

Table 5-1

**Activity Hazard Analysis
The Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 6 of 12)

Activity	Potential Hazards	Recommended Controls
Soil and Groundwater Sampling (continued)	Slip, trip, and fall hazards	<ul style="list-style-type: none"> • Site workers will be required to wear hard hat, safety glasses with side shields, work gloves, and steel-toe/shank boots when working in the field. • Whenever possible, avoid routing cords and hoses across walking pathways. • Flag or cover inconspicuous holes to protect against falls.
	Bees, spiders, and snakes	<ul style="list-style-type: none"> • Workers shall inspect the work area carefully and avoid placing hands and feet into concealed areas. • Evaluate need for sensitive workers to have prescribed antibiotic or medicine to combat onset of symptoms.
	Poison ivy/oak/sumac	<ul style="list-style-type: none"> • Avoid plant areas if possible. • Wear long sleeves and long pants. • Promptly wash clothing that has contacted poisonous plants. • Wash affected areas immediately with soap and water.
	Cold stress	<ul style="list-style-type: none"> • Workers should wear insulated clothing when temperatures drop below 40°F. • Drink warm beverages on breaks. Refrain from drinking caffeinated beverages. • Remove wet clothing promptly. • Take breaks in warm areas. • Reduce work periods as necessary. • Layer work clothing.
	Access/egress hazards	<ul style="list-style-type: none"> • Use qualified and trained bushhog operator. • Keep employees out of the bushhog work area. • Utilize good housekeeping practices. • Keep aisleways, pathways, and work areas free of obstruction. • Clean ice or snow off of walkways or work stations. • Use appropriate footwear for the task assigned.
	Heat rash	<ul style="list-style-type: none"> • Keep the skin clean and dry. • Change perspiration-soaked clothing, as necessary. • Bathe at end of work shift or day. • Apply powder to affected area.
	Heat cramps	<ul style="list-style-type: none"> • Drink plenty of cool fluids even when not thirsty. • Provide cool fluid for work crews. • Move victim to shaded, cool area.

Table 5-1

**Activity Hazard Analysis
The Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 7 of 12)

Activity	Potential Hazards	Recommended Controls
Soil and Groundwater Sampling (continued)	Heat exhaustion	<ul style="list-style-type: none"> • Conduct physiological worker monitoring as needed (i.e., heart rate, oral temperature). • Set up work/rest periods. • Use the buddy system. • Allow workers time to acclimate. • Have ice packs available for use. • Take frequent breaks.
	Heat stroke	<ul style="list-style-type: none"> • Evaluate possibility of night work. • Perform physiological monitoring on workers during breaks. • Wear body cooling devices.
	Lightning strikes	<ul style="list-style-type: none"> • Whenever possible, halt activities and take cover. • If outdoors, stay low to the ground. • Limit the body surface area that is in contact with the ground (i.e., kneeling on one knee is better than laying on the ground). • Seek shelter in a building if possible. • Stay away from windows. • If available, crouch under a group of trees instead of one single tree. • Keep all body parts in contact with the ground as close as possible. • If in a group, keep 6 feet of distance between people.
	UXO	<ul style="list-style-type: none"> • UXO safety support will be provided by a UXO team during all site activities. • If UXO is encountered, cease all activities, mark the location, and notify the site manager and UXO technician.
	Accidental exposure to chemical agents	<ul style="list-style-type: none"> • Modified Level D personal protective equipment (PPE) will be required. During the first 15 feet depth of each monitoring well installation activity, downhole geophysics will be performed. • Engineering controls will be used as appropriate. • Personnel will be equipped with an emergency egress air supply pack.
Moving and Shipping Collected Samples	Heavy lifting	<ul style="list-style-type: none"> • Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment; size up the lift.
	Pinch points	<ul style="list-style-type: none"> • Keep hands, fingers, and feet clear of moving/suspended materials and equipment. • Beware of contact points. • Stay alert at all times!
	Cut hazards	<ul style="list-style-type: none"> • Wear adequate hand protection. Use care when handling glassware.
Moving and Shipping Collected Samples (continued)	Hazard communication	<ul style="list-style-type: none"> • Label all containers as to contents and associated hazards.

Table 5-1

**Activity Hazard Analysis
The Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 8 of 12)

Activity	Potential Hazards	Recommended Controls
Material Storage	Flammable and combustible liquids	<ul style="list-style-type: none"> • Store in NO SMOKING AREA. • Fire extinguisher readily available. • Transfer only when properly grounded and bonded.
Disposal of Investigation-Derived Waste (IDW) (Forklift Operation)	Personnel injury, property damage, and/or equipment damage	<ul style="list-style-type: none"> • Use qualified and trained forklift operators. • The operator shall not exceed the load capacity rating for the forklift. • The load capacity shall be clearly visible on the forklift. • Forklift operators shall inform their supervisor of any prescribed medication that they are taking that would impair their judgement.
	Cross-contamination and contact with potentially contaminated materials	<ul style="list-style-type: none"> • Stop immediately at any sign of obstruction. • Sampling technicians will wear proper protective clothing and equipment to safeguard against potential contamination. • Only essential personnel will be in the work area. • Real-time air monitoring will take place before and during sampling activities. • All personnel will follow good hygiene practices. • Proper decontamination procedures will be followed. • All liquids and materials used for decontamination will be contained and disposed of in accordance with federal, state, and local regulations.
	Cut hazards	<ul style="list-style-type: none"> • Use care when handling glassware. • Wear adequate hand protection.
High-Pressure Water Jetting Operations	Heavy lifting	<ul style="list-style-type: none"> • Use proper lifting techniques. • Lifts greater than 60 pounds require assistance or mechanical equipment; size up the lift.
	Slip, trip, and fall hazards	<ul style="list-style-type: none"> • Good housekeeping shall be implemented. • The work area shall be kept clean as feasible. • Inspect the work area for slip, trip, and fall hazards.
	Fueling	<ul style="list-style-type: none"> • Only approved safety cans shall be used to store fuel. • Do not refuel equipment while it is operating. • Fire extinguishers shall be suitably placed, distinctly marked, readily accessible, and maintained in a fully charged and operable condition.

Table 5-1

**Activity Hazard Analysis
The Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 9 of 12)

Activity	Potential Hazards	Recommended Controls
High-Pressure Water Jetting Operations (continued)	Faulty or damaged equipment	<ul style="list-style-type: none"> • Equipment shall be inspected before being placed into service and at the beginning of each shift. • Preventive maintenance procedures recommended by the manufacturer shall be followed. • A lockout/tagout procedure shall be used for equipment found to be faulty or undergoing maintenance.
	High-pressure water	<ul style="list-style-type: none"> • Jetting gun operator must wear appropriate PPE including hard hat, impact-resistant safety glasses with side shields, water-resistant clothing, metatarsal guards for feet and legs, and hearing protection (if appropriate). • One standby person shall be available within the vicinity of the pump during jetting operation. • The work area shall be isolated and adequate barriers will be used to warn other site personnel.
	Unqualified operators	<ul style="list-style-type: none"> • Only qualified and trained personnel are permitted to operate machinery and mechanized equipment associated with water jet cutting and cleaning.
	Out of control equipment	<ul style="list-style-type: none"> • No machinery or equipment is permitted to run unattended. • Machinery or equipment will not be operated in a manner that will endanger persons or property nor will the safe operating speeds or loads be exceeded.
	Noise	<ul style="list-style-type: none"> • Sound levels above 85 dBA mandates hearing protection by nearby site personnel.
	Activation during repairs	<ul style="list-style-type: none"> • All machinery or equipment will be shut down and positive means taken to prevent its operation while repairs or manual lubrications are being done.
	Pinch points	<ul style="list-style-type: none"> • Keep feet and hands clear of moving/suspended materials and equipment. • Stay alert and clear of materials suspended .
	Falling objects	<ul style="list-style-type: none"> • Hard hats are required by site personnel. • Stay alert and clear of material suspended overhead.
	Flying debris	<ul style="list-style-type: none"> • Impact-resistant safety glasses with side shields are required.
	Contact with potentially contaminated materials	<ul style="list-style-type: none"> • All site personnel will wear the appropriate PPE.

Table 5-1

**Activity Hazard Analysis
The Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 10 of 12)

Activity	Potential Hazards	Recommended Controls
Groundwater Monitoring Well Installation and Subsurface Soil Sampling (Direct-Push)	Overhead hazards	<ul style="list-style-type: none"> • Make sure no obstacles are within radius of boom. Always stay a safe distance from power lines.
	Faulty or damaged equipment being utilized to perform work	<ul style="list-style-type: none"> • All machinery or mechanized equipment will be inspected by a competent mechanic and be certified to be in safe operating condition. • Equipment will be inspected before being put to use and at the beginning of each shift. • Faulty/unsafe equipment will be tagged and if possible locked out. • Drill rigs shall be equipped with reverse signal alarm, backup warning lights, or the vehicle is backed up only when an observer signals it is safe to do so.
	Uneven terrain, poor ground support, inadequate clearances, contact with utilities	<ul style="list-style-type: none"> • Inspections or determinations of road conditions and structures shall be made in advance to ensure that clearances and load capacities are safe for the passage or placing of any machinery or equipment. • All mobile equipment and areas in which they are operated shall be adequately illuminated. • Aboveground and below ground utilities will be located prior to staging equipment. • Whenever the equipment is parked, the parking brake shall be set. • Equipment parked on inclines will have the wheels chocked. • Inspect brakes and tire pressure on drill rig before staging for work.
	Inexperienced operator	<ul style="list-style-type: none"> • Machinery and mechanized equipment shall be operated only by designated personnel. • Operators shall inform their supervisor(s) of any prescribed medication that they are taking that would impair their judgment.
	Jacks/outriggers	<ul style="list-style-type: none"> • Ensure proper footing and cribbing. • Make sure outriggers are fully extended and positioned on firm ground.
	Falling objects	<ul style="list-style-type: none"> • Remove unsecured tools and materials before raising or lowering the derrick. • Stay alert and clear of materials suspended overhead.
	Pinch points	<ul style="list-style-type: none"> • Keep feet and hands clear of moving/suspended materials and equipment. • Stay alert at all times!

Table 5-1

**Activity Hazard Analysis
The Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 11 of 12)

Activity	Potential Hazards	Recommended Controls
Groundwater Monitoring Well Installation and Subsurface Soil Sampling (Direct-Push) (continued)	Fire	<ul style="list-style-type: none"> • Mechanized equipment shall be shut down prior to and during fueling operations. • Have fire extinguishers inspected and readily available.
	Fall hazards	<ul style="list-style-type: none"> • Personnel are not allowed to work off machinery or use them as ladders. • Use fall protection when working above 6 feet.
	Contact with rotating or reciprocating machine parts	<ul style="list-style-type: none"> • Use machine guards; use long-handled shovels to remove auger cuttings. • Safe lockout procedures for maintenance work.
	Heavy lifting	<ul style="list-style-type: none"> • Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment; size up the lift.
	Slip, trip, and fall hazards	<ul style="list-style-type: none"> • Practice good housekeeping, keep work area picked up and clean as feasible. • Continually inspect the work area for slip, trip, and fall hazards.
	Contact with potentially contaminated materials	<ul style="list-style-type: none"> • Real-time air monitoring will take place. If necessary, proper personal protective clothing and equipment will be utilized. • Stop immediately at any sign of obstruction. • Do not breathe air surrounding the boring unless necessary. • Upgrade to respirator if necessary and avoid skin contact with soil cuttings. Wear gloves. • Stay clear of moving parts of rig.
	Drum handling	<ul style="list-style-type: none"> • Be careful not to breathe air from around open drum any more than necessary. Monitor with photoionization detector/flame ionization detector (PID/FID) equipment and upgrade to respirator if necessary. • When filling a drum (with either soil or water), be careful not to make contact with the contained waste. Wear appropriate gloves. Make sure lid or bung of drum is secure. • If moving a drum unassisted, be sure to leverage properly, use proper lifting techniques, and wear safety glasses and steel-toed boots. • When using a drum dolly, make sure straps and lid catch is securely attached. Leverage properly when tilting drum. Be sure toes stay away from drum.

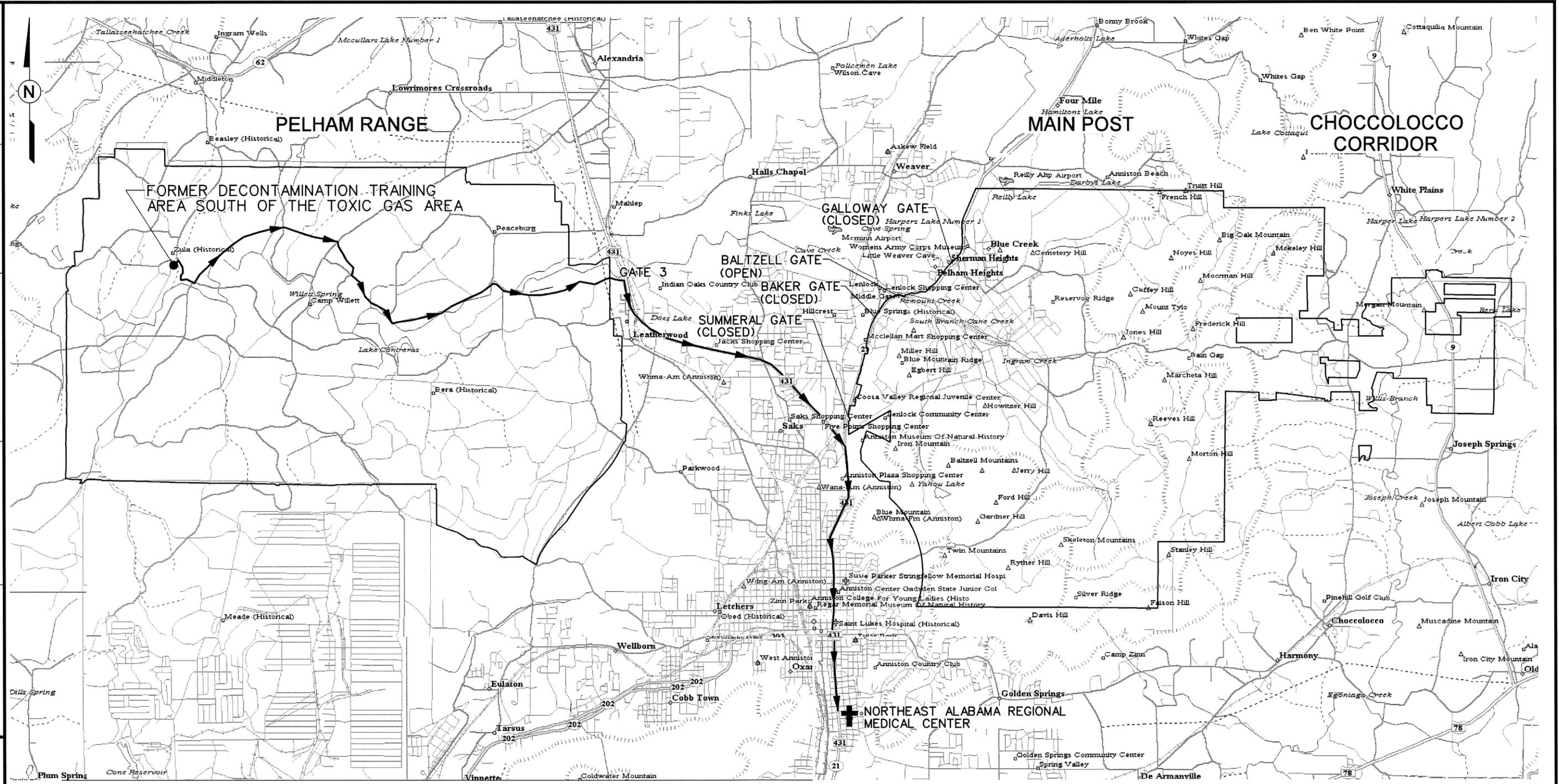
Table 5-1

**Activity Hazard Analysis
The Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7)
Fort McClellan, Calhoun County, Alabama**

(Page 12 of 12)

Activity	Potential Hazards	Recommended Controls
Groundwater Monitoring Well Installation and Subsurface Soil Sampling (Direct-Push) (continued)	Cross-contamination and contact with potentially contaminated materials	<ul style="list-style-type: none"> • Stop immediately at any sign of obstruction. • Sampling technicians will wear proper protective clothing and equipment to safeguard against potential contamination. • Only essential personnel will be in the work area. • Real-time air monitoring will take place before and during sampling activities. • All personnel will follow good hygiene practices. • Proper decontamination procedures will be followed. • All liquids and materials used for decontamination will be contained and disposed of in accordance with federal, state, and local regulations.
	UXO	<ul style="list-style-type: none"> • UXO avoidance monitoring will be conducted by a UXO specialist prior to beginning activities. • If UXO is encountered, cease all activities, mark the location, and notify the site manager and UXO specialist.
	Cut hazards	<ul style="list-style-type: none"> • Use care when handling glassware. • Wear adequate hand protection.

DWG. NO.: ... \774645es.755
 PROJ. NO.: 774645
 INITIATOR: D. ALLEN
 PROJ. MGR.: J. YACOB
 DRAFT. CHCK. BY: S. MORAN
 ENGR. CHCK. BY: J. YACOB
 DATE LAST REV.:
 DRAWN BY:
 STARTING DATE: 04/17/01
 DRAWN BY: D. BOWAR
 04/18/01
 07:39:45 AM



LEGEND:

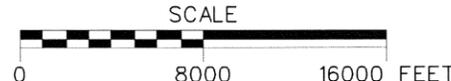
- ROUTE TO NORTHEAST ALABAMA REGIONAL MEDICAL CENTER
- U.S. HIGHWAY
- HOSPITALS
- INVESTIGATION SITE

DRIVING DIRECTIONS FROM PELHAM RANGE GATE 3 TO THE NORTHEAST ALABAMA MEDICAL CENTER

- EXIT PELHAM RANGE AT GATE NO. 3 AND TURN RIGHT ON U.S. HWY 431
- CONTINUE TO WHERE AL HWY 21 MERGES WITH U.S. HWY 431 AND CONTINUE SOUTH
- CONTINUE SOUTH ON AL21/US431 FOR ~ 2.7 MILES
- TURN LEFT ONTO EAST 10th STREET
- GO ~ 0.2 MILE TO MEDICAL CENTER ON RIGHT
- NORTHEAST ALABAMA REGIONAL MEDICAL CENTER, 400 EAST 10 TH STREET
- PHONE NUMBER : (256) 235-5121

**FIGURE 5-1
HOSPITAL EMERGENCY ROUTE**

U. S. ARMY CORPS OF ENGINEERS
 MOBILE DISTRICT
 FORT McCLELLAN
 CALHOUN COUNTY, ALABAMA
 Contract No. DACA21-96-D-0018



IT CORPORATION
 A Member of The IT Group

ATTACHMENT 1

**PELHAM RANGE EMERGENCY ROUTE AND
RANGE CONTROL CONTACT**

Pelham Range Emergency Routes

- Range Control will determine depending on the wind direction the best egress route.
- Range Control will advise over the radio which route to take.
- 4 routes have been indicated on the enclosed map.

Medical Emergency

- Exit gate Number 3 at Pelham Range,
- Turn right onto Route 431,
- Turn right onto Highway 21 (Quintard),
- Turn left onto 10th Street,
- Hospital is 1-1/2 blocks ahead,
 - Northeast Alabama Regional Medical Center
 - 400 East 10th Street
 - Anniston, Alabama

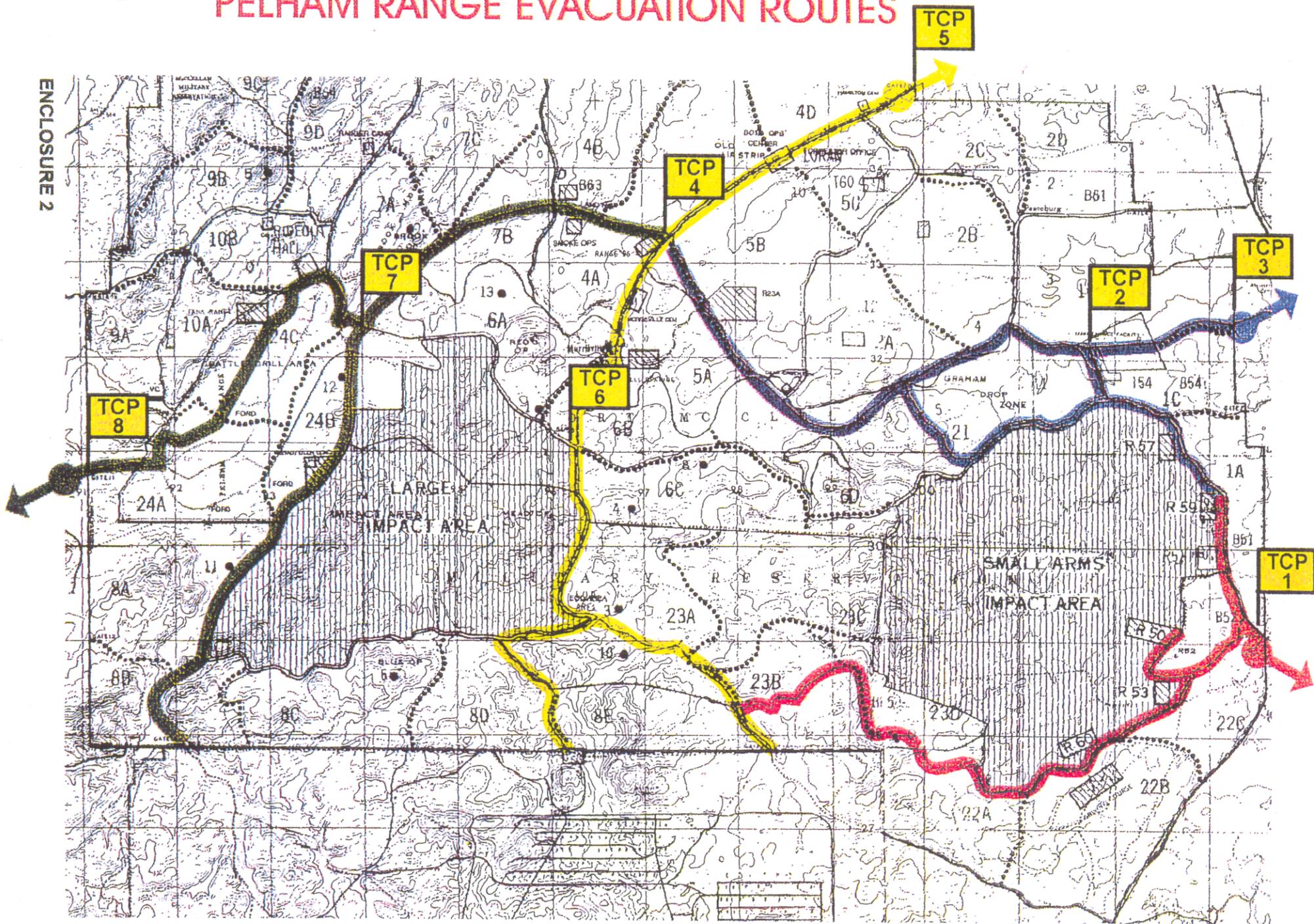
Range Control- Pelham Range

- Building 1120, Ft McClellan
Phone No. 848-6772
Fax No. 848-4412

All access permits are issued by range control, daily.

PELHAM RANGE EVACUATION ROUTES

ENCLOSURE 2



FORT MCCLELLAN ALERT AND NOTIFICATION SYSTEM

An outdoor electronic alert and notification system is operational on Fort McClellan and Pelham Range. The purpose of this system is to provide warning(s) of an emergency situation that poses a threat to the safety and health of personnel on Fort McClellan and Pelham Range. The system has the capability of providing digital voice, electronic tone alerts and live voice loudspeaker warnings of emergency situations. The following is a list of the digital voice and associate tone alerts for the various hazards that could threaten personnel on both portions of the installation:

1. **THIS IS A TEST!** This is a test of the Fort McClellan emergency warning system. **THIS IS A TEST AND ONLY A TEST!** **WAIL TONE**

This message is used for the monthly test on the first Tuesday at 1600 hrs.

2. **WARNING! TORNADO WARNING!** A tornado warning has been issued for this area. Seek shelter immediately. Tune to a local radio station. Seek shelter immediately. **TORNADO WARNING!** **SOLID TONE**

3. **WARNING! SEVERE WEATHER WARNING!** A severe weather warning has been issued for this area. Standby for further instructions. Tune to a local radio station. **SEVERE WEATHER WARNING!** **SOLID TONE**

4. **WARNING! THUNDERSTORM WARNING!** A thunderstorm warning has been issued for this area. Standby for further instructions. Tune to a local radio station. **THUNDERSTORM WARNING!** **SOLID TONE**

5. **WARNING! HAZARDOUS MATERIALS ACCIDENT!** There has been a hazardous materials accident. Standby for further instructions. Tune to a local radio station. **HAZARDOUS MATERIALS ACCIDENT!** **HI-LO TONE**

6. **WARNING! Anniston Army Depot has announced a chemical agent release. Standby for further instructions. Tune to FM 100 radio station. CHEMICAL AGENT RELEASE!** **WHOOPEE TONE**

7. **ALL CLEAR!** The emergency situation is over. **ALL CLEAR!** The emergency situation is over. **ALL CLEAR!** **NO TONE**

8. **CHEMICAL ALERT!** Initiate evacuation procedures immediately. A chemical agent release has occurred at Anniston Army Depot. **EVACUATE IMMEDIATELY! CHEMICAL ALERT!** **WHOOPEE TONE**

This voice message was specifically designed for Pelham Range.

Sequence of initial alert and notification is:

VOICE MESSAGE--TONE--VOICE MESSAGE--TONE
repeated twice, again as the situation warrants.

Enclosure One

ATTACHMENT 2

**EVALUATION OF OE/UXO/CWM
IN SUPPORT OF HTRW ACTIVITIES**

Site Name: Former Decontamination Training Area S of Toxic Gas Area, Parcel 207(7)

Job Number: 774645

Date: 29-Apr-02

Name of person completing form: John Ragsdale

Title: Plan Writer

Signature: John Ragsdale

1a. Have the historical records available for this HTRW site been reviewed? Yes No

If the answer to 1a. is yes, proceed to 1b.
 If the answer to 1a. is no, review site information prior to completing this form.

1b. Is there recent information (site walk, worker interviews, etc.) that indicates a potential OE/CWM hazard at this site? Yes No

Proceed to 2.

2. According to the records review, is this site known or suspected to have been used for:

	Yes	No
2a. Manufacturing, production, or shipping of conventional or chemical warfare materiel (CWM) OE:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Live fire testing of any ordnance:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Conventional or CWM OE training:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Storage of conventional or CWM OE:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Disposal or demilitarization of conventional or CWM OE:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other (specify):		

	Yes	No
2b. Manufacturing, production, or shipping of chemical agent:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Research or testing of chemical agent:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Chemical agent related training:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Storage of chemical agent:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Disposal or demilitarization of chemical agent:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other (specify):		

Any 2a question answered "YES" indicates UXO support is required for all site activities. If all 2a questions are answered "NO", UXO support may not be required. Refer to Installation-Wide Safety and Health Plan (SHP) for additional information concerning UXO support. Proceed to question 2b.

Any 2b question answered "YES" requires the remainder of this form to be completed. If all 2b questions are answered "NO", real-time monitoring for chemical agent will not be required and completing the remainder of this form is not required. Refer to SHP for additional information concerning agent monitoring.

Additional space for notes and explanations on page 4.
 Continue to page 2 of 4 –

Evaluating OE/UXO/CWM Hazards in Support of HTRW Activities

Site Name: Former Decontamination Training Area S of Toxic Gas Area, Parcel 207(7)

Job Number: 774645

Date: 29-Apr-02

3. For sites where the manufacturing, testing, storage, or disposal of CWM is suspected:	Yes	No
Is there evidence that the CWM is/was containerized in potentially unexploded ordnance:	<input type="checkbox"/>	<input type="checkbox"/>
Is there evidence that the CWM is/was containerized in nonexplosive containers:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is there evidence that the CWM is open to the environment (i.e., in an open container or free liquid/solid in the soil/water):	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is there evidence that the CWM hazard has been removed from the site or that the site has been decontaminated:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Has the site been previously monitored or sampled for chemical agent or agent breakdown products:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
For any "YES" above, was the agent or breakdown product identified?	<input type="checkbox"/>	<input type="checkbox"/>

For any "Yes", list types of agent (mustard, lewisite, etc.) and the form (in ordnance, in drum, etc.) the CWM is expected to be found (or state "unknown"):

Mustard and distilled mustard was reported to have been used in decontamination training exercises.

List agent breakdown products identified:
None identified from soil sampling conducted by Parsons Engineering Science, Inc. in 2002.

4. Defining the Potential for the Presence of CWM:	Agent Monitoring Requirements for Site Activities:
4a. High Presence Potential – Definition: CWM is known or highly suspected to be present at the site in a condition (within ordnance and/or nonexplosive container, or in an uncontainerized form in sufficient volume that weathering of the product has not rendered it harmless) that will cause potential harm to personnel if it is encountered.	Mandatory personal and perimeter air monitoring using the DAAMS, MINICAMS, and RTAP collection/analysis methods with off-site surety laboratory confirmation of all environmental samples. Specific monitoring criteria (equipment types and sampling station placement, percentage of personnel monitored, etc.) to be established in the Site Specific Safety and Health Plan (SSHP).
4b. Moderate Presence Potential - Definition: CWM is suspected to have been present at the site, but has been previously removed and/or decontaminated, or has been open to the environment such that it is expected to have degraded and been rendered harmless.	The need for personal and perimeter air monitoring using the DAAMS, MINICAMS, and RTAP collection/analysis methods with off-site surety laboratory confirmation of all environmental samples will be reviewed on a site-by-site basis. Specific monitoring criteria (equipment types and sampling station placement, percentage of personnel monitored, etc.) to be established in the Site Specific Safety and Health Plan (SSHP).
4c. Low Presence Potential – Definition: No indications that CWM will be present in quantity or reactivity (in munitions, projectiles, drums, etc.).	No specific personal or area monitoring for chemical agents required beyond what is specified in the SHP.

Continue page 3 of 4 -

Site Name: Former Decontamination Training Area S of Toxic Gas Area, Parcel 207(7)

Job Number: 774645

Date: 4/29/02

Based on the information available for this site, including information gathered during completion of this form, the potential for CWM to be present at this site, as defined above, is expected to be: **LOW**

Exceptions/Explanations: See Attached Letters from the Department of the Army (additional space for notes and explanations on page 4)

5. Based on the information provided in questions 1 through 5, above, the following guidelines will be used for establishing PPE requirements for activities to be performed at this site; Specific details are provided in the SSHP:

<p>5a. High Exposure Potential - High exposure potential is determined by evaluating the potential presence of CWM in conjunction with the task(s) to be performed, as well as the specific location and duration of the task(s).</p>	<p>Subject to review by the IT CIH, PPE for all personnel in the exclusion zone at a site identified as having a "High Exposure Potential" will be Level B (supplied air) or Level C (full-face respirator with HEPA/Acid Gas/OV cartridges w/ emergency egress hood) and chemically resistant coveralls. Specific PPE requirements are in the SSHP for this site.</p>
<p>5b. Moderate Exposure Potential - Moderate exposure potential is determined by evaluating the potential presence of CWM in conjunction with the task(s) to be performed, as well as the specific location and duration of the task(s).</p>	<p>Subject to review by the IT CIH, PPE for all personnel in the exclusion zone at a site identified as having a "Moderate Exposure Potential" will be Modified Level D (disposable coveralls and emergency egress hood) carried by all personnel. Specific PPE requirements are in the SSHP for this site.</p>
<p>5c. Low Exposure Potential - Low exposure potential is determined by evaluating the potential presence of CWM in conjunction with the task(s) to be performed, as well as the specific location and duration of the task(s).</p>	<p>Subject to review by the IT CIH, no additional PPE requirements above those stated in the SSHP are needed for sites identified as having "Low Exposure Potential." Specific PPE requirements are in the SSHP for this site.</p>

Based on all available information, the exposure potential at this site is considered to be: **LOW**

Exceptions/Explanations: See attached memorandum from the Department of the Army.

Review Signatures:

IT UXO Technical Manager _____ Date: _____ IT H&S Specialist _____ Date: _____

Site Name: Former Decontamination Training Area S of Toxic Gas Area, Parcel 207(7)

Job Number: 774645

Date: 4/29/02

Additional Notes and Explanations:

The Former Decontamination Training Area South of the Toxic Gas Area, Parcel 207(7), is located in Training Area 10B (Toxic Gas Area) of Pelham Range. Training in decontamination of chemical agent was conducted with chemical agents spread on the ground. This site was south of the Toxic Gas Area and north of the northern radiological field boundary fence. This training site was located approximately 150 yards south of the road and the area measured approximately 75 meters by 50 meters. Instructors would pour one gallon of the chemical agent mustard (H) onto the ground and then trainees would decontaminate the area using a STB slurry.

During the EBS preparation, an interviewee described a half-track truck was located near Road Junction 29 that was contaminated with mustard (H) and distilled mustard (HD) and then decontaminated during training activities. Classes were conducted 10-12 times a year. Old vehicles or the ground were contaminated with H or HD. Then the vehicles and the ground were decontaminated with a STB slurry (26 50-pound cans of STB mixed with approximately 225 gallons of water). Excess agent was buried and typically, decontaminants were applied to agent when it was buried, but it has been reported that all agent burials did not include the application of decontaminants.

Note: The Department of Army-Huntsville Center has released Pelham Range for HTRW investigations.

See Attached memorandum: Department of Army, Huntsville Center, Corps of Engineers, dated June 4, 2002.

DEPARTMENT OF ARMY – HUNTSVILLE CENTER
RELEASE OF PROPERTY FOR PELHAM RANGE
HTRW INVESTIGATIONS



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

REPLY TO
ATTENTION OF:

CEHNC-OE-DC

4 June 2002

MEMORANDUM FOR U. S. Army Corps of Engineers, ATTN:
Mr. Ellis Pope (EN-GE), P. O. Box 2288, Mobile, Alabama
36628-0001

SUBJECT: Release of Property for Pelham Range HTRW
Investigations

1. The CWM Site Investigation for Pelham Range has been completed and the results from all the soil samples have been received. All of the samples were clear of Chemical Warfare Material and Chemical Warfare Material by-products.
2. The HTRW investigations can be started on the Chemical Warfare Material Sites that were completed during this investigation using anomaly avoidance and withdrawal if suspect chemical weapons are found.
3. If you have any questions, please call Mr. Dan Copeland at 256-895-1567.

FOR THE COMMANDER:


C. DAVID DOUTHAT, P.E., CSP
Director, Ordnance and
Explosives Directorate