Final
Site-Specific Safety and Health Plan Attachment
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7), 229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan
Calhoun County, Alabama
EPA ID No. AL7 210 020 562

Prepared for:

U.S. Army Corps of Engineers, Mobile District
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Mobile, Alabama 36602

Prepared by:

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312 Directors Drive
Knoxville, Tennessee 37923

Delivery Order CK09
Contract No. DACA21-96-D-0018
IT Project No. 786886

February 2000

Revision 1

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.

Draft
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 Fill Areas, Parcels 78(6), 79(6), 80(7), 81(5), 175(5), 227(7), 230(7), 229(7), 126(7), 231(7), 233(7), and 82(7) at Fort McClellan, Alabama, with respect to project hazards, regulatory requirements, and IT Corporation procedures.

Stephen D. Moran for
Jeanne Yacoub, PE
Project Manager

02/03/00
Date

Michael Henderson
Michael Henderson, CIH
Health & Safety Manager

1/30/2000
Date

Stephen D. Moran for
Jeff Tarr
Site Coordinator

02/03/00
Date

Acknowledgements

The final approved version of this site-specific safety and health plan (SSHP) attachment for the fill area investigations 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 6 months until project completion.

Project Manager — Date: 02/03/00

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/or the health and safety manager.

Site Coordinator — Date: 02/03/00

Site-Specific Safety and Health Plan
Acknowledgement Form

I have been informed of, and will abide by the procedures set forth in, this site-specific safety and health plan attachment for the activities at the fill areas at Fort McClellan, Calhoun County, Alabama.

Printed Name	***Signature***	***Representing***	***Date***

Fort McClellan Gate Hours

Baltzell Gate	Baltzell Road. Open 24 hours daily, 7 days a week.

Fort McClellan Project Emergency Contacts

Fire Department (on post)	911
Fire Department (off post)	(256) 257-3541
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) 820-7272
(Hank Hubbard, Huntsville COE UXO EODT)	cell phone (205) 994-2254 or 994-2269
UXO Emergencies	(256) 820-7272
(Hank Hubbard, Huntsville COE UXO EODT)	cell phone (205) 994-2254 or 994-2269
UXO Nonemergencies/Reporting Only (Ronald Levy)	(256) 848-3758
Baltzell Gate Guard Shack (Staffed 1600-0700 hours, Mon-Sun)	(256) 848-5693, 848-3821
National Response Center & Terrorist Hotline	(800) 424-8802
Poison Control Center	(800) 462-0800
EPA Region IV	(404) 562-8725
Ronald Levy, Chief, FTMC Environmental Management	(256) 848-3758
Ellis Pope, U.S. Army Corps of Engineers	(334) 690-3077
Jeanne Yacoub, IT Project Manager	(770) 663-1429
Michael Henderson, IT H&S Manager	(865) 690-3211
Mike Moore, Fort McClellan Safety Office	(256) 848-5433
Dr. Elaine Theriault, IT Occupational Physician	(800) 229-3674

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List of Acronyms

BZ	breathing zone
ESE	Environmental Science and Engineering, Inc.
FTMC	Fort McClellan
FID	flame ionization detector
PPE	personal protective equipment
SHP	installation-wide safety and health plan
SSHO	site safety and health officer
SSHP	site-specific safety and health plan
UST	underground storage tank
UXO	unexploded ordnance
VOH	volatile organic hydrocarbon

1.0 Site Work Plan Summary

Project Objective. The objective of this investigation at Fort McClellan (FTMC), Calhoun County, Alabama is to determine the vertical and horizontal extent of the fill areas and to characterize the waste fill material at the following fill areas: Landfill No. 1; Landfill No. 2; Landfill 3; Landfill 4 and Industrial Landfill; Fill Area north of Landfill No. 2; Fill Area East of Reilly Field and Former Post Garbage Dump; Fill Area Northwest of Reilly Field; Fill Area at Range 30; Fill Area West of Iron Mountain Road and Range 19; and the Stump Dump.

Project Tasks

- Provide unexploded ordnance (UXO) surface avoidance and downhole survey support during field work at three fill areas.
- Collect twenty soil samples.
- Excavate sixty-seven exploratory trenches.
- Collect geophysical surveys.

Personnel Requirements. Up to ten employees.

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

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).

Potential contaminant sources at the site may include asbestos, diesel, Diazinon, benzene, toluene, ethyl benzene, xylenes, lead, and gasoline. Three of the sites identified were within former "Possible Explosive Ordnance Impact Areas." These fill areas include the following sites:

- Fill Area North of Landfill No. 2, Parcel 230(7)
- Fill Area at Range 30, Parcel 231(7)
- Fill Area West of Iron Mountain Road and Range 19, Parcel 233(7)
- Stump Dump, Parcel 82(7).

Table 2-1 contains the toxicological and physiological properties of chemicals anticipated or to be used at the UST closure assessments.

UXO. UXO safety will be achieved by employing UXO specialists to ensure that field personnel do not come into contact with UXO. In areas where UXO is suspected to exist, the UXO specialists will perform the following field UXO avoidance operations.

- ***Area UXO Surveys Using Magnetometers.*** During this operation UXO on the surface will be detected and marked for avoidance during field operations. Metal objets just below the surface (within 2 feet) will also be marked to indicate the potential hazard.

- ***Downhole Boring and Trench UXO Surveys.*** UXO specialists will perform downhole magnetometer surveys to detect metal objects in the path of the boring apparatus until undisturbed soils are reached. The boring location will be moved if subsurface metal objects are detected. UXO specialists will perform magnetometer surveys to detect metal objects in the path of trenching equipment until undisturbed soils are reached.

Table 2-1

Toxicological and Physical Properties of Chemicals
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

Substance [CAS]	IP[a] (eV)	Odor Threshold (ppm)	Route[b]	Symptoms of Exposure	Treatment	TWA[c]	STEL[d]	Source[e]	IDLH (NIOSH)[f]
Asbestos [1332-21-4]	NA	?	Inh Ing Con	Asbestos; dyspnea; interstitial fibrosis; restricted pulmonary function; irritated eyes.	Eye: Irrigate immediately Breath: Fresh air	0.1 f/cc 0.1 f/cc 0.1 f/cc	1 f/cc	PEL TLV REL	Ca (ND)
Acetone [67-64-1]	9.7	13–100	Inh Ing Con	Irritated eyes, nose, and throat; headache, dizziness; dermatitis.	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	750 ppm 750 ppm 250 ppm	1,000 ppm 1,000 ppm	PEL TLV REL	20,000 ppm
Benzene [71-43-2]	9.24	34–119	Inh Abs Ing Con	Irritates eyes, nose, respiratory system; giddiness; headache, nausea, staggered gait; fatigue, anorexia, lassitude; dermatitis; bone-marrow depression. Carcinogenic.	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Immediate medical attention	1 ppm (10 ppm) NIC–0.1 skin 0.1 ppm	5 ppm C1 ppm (Ca)	PEL TLV REL	Ca [1,000 ppm]* *OSHA
Diazinon [333-41-5]	?	?	Inh Abs Con Ing	Irritated eyes; miosis; blurred vision; dizziness; confusion; weakness, convulsions, dyspnea; nausea; vomiting.	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	0.1 mg/m^3 0.1 mg/m^3 skin	-- -- --	PEL TLV REL	ND
Ethyl benzene [100-41-4]	8.76	0.09–0.6	Inh Ing Con	Irritates eyes, mucous membranes; headache; dermatitis; narcosis, coma.	Eye: Irrigate immediately Skin: Water flush promptly Breath: Respiratory support Swallow: Immediate medical attention	100 ppm 100 ppm 100 ppm	125 ppm 125 ppm 125 ppm	PEL TLV REL	2,000 ppm

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Toxicological and Physical Properties of Chemicals
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

Substance [CAS]	IP[a] (eV)	Odor Threshold (ppm)	Route[b]	Symptoms of Exposure	Treatment	TWA[c]	STEL[d]	Source[e]	IDLH (NIOSH)[f]
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, sub-sternal 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	
Fuel Oil No. 1, see kerosene. [NA]								PEL TLV REL	
Fuel Oil No. 2, see fuel oil. [NA]								PEL TLV REL	

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Toxicological and Physical Properties of Chemicals
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

Substance [CAS]	IP[a] (eV)	Odor Threshold (ppm)	Route[b]	Symptoms of Exposure	Treatment	TWA[c]	STEL[d]	Source[e]	IDLH (NIOSH)[f]
Fuel Oils No. 4, 5, and 6 [NA]	?	?	Abs Con	Low toxicity; prolonged contact may produce systemic effects.	Eye: Irrigate immediately (15 min) Skin: Soap wash immediately Swallow: Immediate medical attention			PEL TLV REL	
Kerosene	?	?	Inh Ing Con	Irritation to eyes, skin, nose, throat; burning sensation in chest; nausea; weakess; headache; confusion; drowsiness; vomiting; dermatitis; chemical pneumonia.	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Immediate medical attention	100 mg/m^3		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 300 ppm Ca, lowest feasible conc. (LOQ 15 ppm)	500 ppm 500 ppm	PEL TLV REL	?
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	50 ppm 50 ppm 50 ppm		PEL TLV REL	5,000 ppm
Hydrogen chloride (hydrochloric acid) [74-90-8]	12.74	0.255–10.6	Inh Ing Con	Inflamed nose, throat, larynx; cough, burns throat, choking; burns eyes, skin; dermatitis; in animals; laryngeal spasm; pulmonary edema.	Eye: Irrigate immediately Skin: Water flush immediately Breath: Respiratory support Swallow: Immediate medical attention		C5 ppm C5 ppm C5 ppm	PEL TLV REL	100 ppm

Table 2-1

Toxicological and Physical Properties of Chemicals
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

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 500 ppm	PEL TLV REL	12,000 ppm
Lead [7439-92-1]	NA	NA	Inh Ing Con	Weak, insomnia, facial pallor, constipated, abdominal pain, colic, anemia, irritated eyes, paralysis of wrists and ankles, encephalopathy.	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Immediate medical attention	0.05 mg/m 0.05 mg/m 0.1 mg/m		PEL TLV REL	100 mg/m
Methanol	10.85	4.2-5960	Inh Abs Ing Con	Irritated eyes, headache, drowsiness, lightheadedness, nausea, vomiting, disturbance in vision, blindness.	Eye: Irrigate immediately Skin: Water flush promptly Breath: Fresh air Swallow: Immediate medical attention		200 ppm (skin) 200 ppm (skin) 200 ppm	PEL TLV REL	25,000 ppm
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	
Naphtha, see petroleum distillate									

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Toxicological and Physical Properties of Chemicals
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

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	100 ppm
Petroleum distillate (Naphtha) [8002-05-9]	?	?	Con Ing	Coughing, dyspnea, nausea, or vomiting.	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	400 ppm		PEL TLV REL	
Petroleum hydrocarbons, see Stoddard solvent									
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 10 mg/m^3/ total dust 5 mg/m^3 respirable fraction	TLV PEL/REL	
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		C2 mg/m^3 C2 mg/m^3 C2 mg/m^3	PEL TLV REL	250 mg/m^3
Stoddard Solvent	?	?	Inh Ing Con	Irritated eyes, nose, and throat; dizziness; dermatitis; chemical pneumonia.	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	500 ppm 350 mg/m^3		PEL TLV REL	20,000 mg/m^3

Table 2-1

Toxicological and Physical Properties of Chemicals
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

Substance [CAS]	IP[a] (eV)	Odor Threshold (ppm)	Route[b]	Symptoms of Exposure	Treatment	TWA[c]	STEL[d]	Source[e]	IDLH (NIOSH)[f]
Toluene [108-88-3]	8.82	0.16–37	Inh Abs Ing Con	Fatigue, weakness; confusion, euphoria, dizziness, headache; dilated pupils, lacrimation; nervousness, muscular fatigue, insomnia; paralysis; dermatitis.	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Immediate medical attention	100 ppm 50 ppm (skin) 100 ppm	150 ppm 150 ppm	PEL TLV REL	2,000 ppm
Xylene (o-, m-, and p-isomers) [1330-20-7;95-47-6; 108-38-3;106-42-3]	8.56/ 8.56/ 8.44	1.1–20	Inh Abs Ing Con	Dizziness, excitement, drowsiness, incoordination, staggering gait; irritated eyes, nose, throat; corneal vacuolization; anorexia, nausea, vomiting, abdominal pain; dermatitis.	Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Immediate medical attention	100 ppm 100 ppm 100 ppm	150 ppm 150 ppm 150 ppm	PEL TLV REL	1,000 ppm

[a]IP = Ionization potential (electron volts).
[b]Route = Inh, Inhalation; Abs, Skin absorption; Ing, Ingestion; Con, Skin and/or eye contact.
[c]TWA = 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.
[d]STEL = 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.
[e]PEL = 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.
[f]IDLH (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 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, Pub. 1998).
C = Ceiling limit value which should not be exceeded at any time.
Ca = Carcinogen.
NA = Not applicable.
? = Unknown.

Table 2-1

Toxicological and Physical Properties of Chemicals
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

LEL = Lower explosive limits.
LC_{50} = Lethal concentration for 50 percent of population tested.
LD_{50} = 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.
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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.

2.2 General Site Information

Location of Site. The site-specific field sampling plan lists the locations of the fill area assessments.

Duration of Planned Employee Activity. Employee activity duration is 3 months.

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

3.0 Personal Protective Equipment

The work activities will begin in the following levels of protection. Also, a completed description of Level D, Modified Level D, and Level C PPE is provided.

Task	Initial Level of PPE
Staging equipment	Level D
Collecting samples	Level C
Conducting UXO surface surveys	Level D**
Conducting UXO downhole and trenching surveys	Level C
Excavating exploratory trenches	Level C

**Personnel will not wear steel-toed safety boots while conducting UXO surface surveys.

Level D. The minimal level of protection that will be required of IT Corporation 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:

- Tyvek coveralls
- Latex boot covers
- Nitrile, heavy work, or latex gloves
- Steel-toed safety boots
- Safety glasses
- Hard hat
- Hearing protection (when working near/adjacent to operating equipment).

Note: In addition to modifying Level D PPE, the operator of high-pressure water jetting equipment shall wear metatarsal guards for the legs and feet.

Level C. Level C protection will not be used for activities other than those listed in the table on Page 4 unless air-monitoring data indicate the need for upgrade; however, the equipment shall be readily available on site. The following equipment will be used for Level C protection:

- National Institute of Occupational Safety and Health- approved full-face, air-purifying respirators equipped with organic vapor/acid gas/P100 cartridge
- 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).

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

4.0 Site Monitoring

The potential environmental contaminants of concern resulting from the fill area investigation activities are asbestos, diesel, diazinon benzene, toluene, ethyl benzene, xylenes, lead, and gasoline. Table 4-1 contains action levels for site monitoring at the UST closure assessments.

Monitoring will be performed by the site safety and health officer (SSHO) during the performance of ground-intrusive operations. A calibrated flame ionization detector (FID) (i.e., photovac microfid 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 protection level. A calibrated combustible gas/oxygen monitor will be utilized to monitor the sampling locations and BZs to determine if any combustible/flammable gases or oxygen levels may be present that would necessitate evacuating the site. Benzene detector tubes will be utilized to monitor the sampling locations and BZs for benzene when real time air monitoring action levels are met or exceeded. Table 4-2 contains the air monitoring frequency and location for site monitoring during the fill area investigations.

Table 4-1

Action Levels
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

When in Level C Personal Protective Equipment (PPE)

Analyte	Action Level	Required Action[a]
Volatile organic hydrocarbons (VOH)	≥ 10 ppm above background in breathing zone (BZ)	Stop work, evacuate work area, upgrade to Level B.
Benzene	≥ 5 ppm in BZ	Stop work, evacuate work area, upgrade to Level B.
Oxygen	≥ 20%, <23% < 20%, >23%	Normal operations. Stop work, evacuate work area.
Flammable vapors	≥ 10% lower explosive limit (LEL) < 10% LEL	Stop work, evacuate work area. Continue operations, monitor for volatile organic compounds (VOC).

When in Level D Modified/D PPE

Analyte	Action Level	Required Action[b]
VOHs	≥ 5 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.
Benzene	1 ppm in BZ	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
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

When in Support Zone

Analyte	Action Level	Required Action
VOHs	≥ 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.

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

Table 4-2

Air Monitoring Frequency and Location
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(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	OV Monitor LEL/O_2 Monitor BDT	Continuously Continuously As Needed	BZ of employees
Excavating trenches	OV Monitor LEL/O_2 Monitor BDT	Continuously Continuously As Needed	BZ of employees

OV = Organic vapor.
LEL/O_2 = Lower explosive level/oxygen.
BDT = Benzene detector tube.

5.0 Activity Hazard Analysis

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

- Setup of equipment and general field activities
- Soil sampling
- Excavate exploratory trenches.

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

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

Table 5-1

Activity Hazard Analysis
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Staging Equipment and General Construction	Access/egress hazards	• 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. • Use appropriate footwear for the task assigned.
	Slip, trip, and fall hazards	• 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	• Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment.
	Falling objects	• Stay alert and clear of materials suspended overhead; wear hard hat and steel-toed boots.
	Flying debris, dirt, dust, etc.	• Wear safety glasses/goggles; ensure that eye wash is in proper working condition.
	Pinch points	• Keep hands, fingers, and feet clear of moving/suspended materials and equipment. • Beware of contact points. • Stay alert at all times!
	Cuts/bruises	• Use cotton or leather work gloves for material handling.
	Fire	• Fire extinguishers shall be suitably placed, distinctly marked, readily accessible, and maintained in a fully charged and operable condition.
	Contact with moving equipment/vehicles	• Work area will be barricaded/demarcated. • Equipment will be laid out in an area free of traffic flow.
	Hazard communication	• Label all containers as to contents and appropriate hazard warning. • Ensure Material Safety Data Sheets (MSDS) are available for hazardous chemicals used on site.
	Noise	• Sound levels above 85 decibels (dBA) mandates hearing protection.
	Lighting	• Adequate lighting will be provided to ensure a safe working environment.
	Heat rash	• 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	• Drink plenty of cool fluids even when not thirsty. • Provide cool fluid for work crews. • Move victim to shaded, cool area.
	Heat exhaustion	• 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
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Staging Equipment and General Construction (continued)	Heat stroke	• Evaluate possibility of night work. • Perform physiological monitoring on workers during breaks. • Wear body cooling devices.
	Contact with moving equipment/vehicles	• 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	• 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	• 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.
	Hand Tools	• Defective tools shall not be used. • Defective tools shall be tagged and immediately removed from service or repaired.
	Grinding/sawing	• Use safety glasses with side shields and hearing protection. • Do not use defective tools.
	Extension cords	• 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
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Staging Equipment and General Construction (continued)	Falls from elevated work surfaces	• All employees working six feet or more from the ground or next level shall be provided with positioning devices and fall protection 100% of the time. Fall protection shall consist of one of the following: standard railing, warning line system, catch platform, or a full body harness equipped with a single point of attachment. • All fall protection equipment shall be inspected for damage or wear prior to being brought on the jobsite and daily before each use. • Fall protection equipment shall not be modified. Synthetic materials shall not be painted. • Fall protection equipment shall be stored and maintained as per manufacturers recommendations. • All standard railings shall be constructed to withstand a load of 200 lbs in any direction with minimal deflection • Tie-off points shall be capable of supporting 5400 lbs of dead weight per each user.
	Injuries from improper use of ladders	• Ladders shall be inspected at a minimum quarterly and after any potentially damaging incident. Ladders which are damaged or have faulty construction shall be tagged out and removed from the jobsite. • Extension ladders shall be tied or blocked to prevent collapse. • Ladders shall extend three feet above the landing and shall be secured against movement at the top, and placed at a 4:1 slope ratio, height over distance. Non-slip feet shall be provided. • Ladders shall not be placed in aisles or doorways where they may be displaced, unless protected by a barricade. • Metal ladders shall not be used. • The rated load capacity of ladders shall not be exceeded.
	Electrical installation	• Electrical installation, repairs, and maintenance shall be performed by qualified individuals. • Before maintenance on existing electrical lines, lockout/tagout procedures in accordance with OSHA 1910.147 will be followed. • Lockout is the placement of a device that uses a positive means such as a lock to hold an energy- or material-isolating device or system, ensuring that the equipment cannot be operated until the lockout device is removed. If a device cannot be locked out, a tagout system will be used. Tagout is the placement of a warning tag on an energy- or material-isolating device indicating that the equipment controlled may not be operated until the tag is removed. • All electric wiring and equipment must be a type listed by UL, FM, or other recognized testing or listing agency. • All installations must comply with the National Electrical Safety Code, or National Electrical Code. • All circuits must be protected from overload. • Temporary power lines, switch boxes, receptacle boxes, metal cabinets, and enclosures around equipment must be marked to indicate the maximum operating voltage.

Table 5-1

Activity Hazard Analysis
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Staging Equipment and General Construction (continued)	Lightning strikes	• 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. • 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, tornadoes	• 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.
	Ticks	• Wear light colored clothing (can see ticks better). • Mow vegetated and small brush areas. • Wear insect repellant. • Wear long sleeves and long pants. • Visually check oneself promptly and frequently after exiting the work area.
	Poison ivy/oak/sumac	• 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	• A UXO specialist will conduct a UXO surface survey prior to surveying.
	Bees, spiders, and snakes	• 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.
Geophysical and Land Surveying for Piping	Slip, trip, fall	• 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. • Determine the best access route before transporting equipment. • 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.

Table 5-1

Activity Hazard Analysis
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Geophysical and Land Surveying for Piping (continued)	Traffic accidents	• 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.
	Ticks	• Wear light colored clothing (can see ticks better). • Mow vegetated and small brush areas. • Wear insect repellant. • Wear long sleeves and long pants. • Visually check oneself promptly and frequently after exiting the work area.
	Poison ivy/oak/sumac	• 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	• A UXO specialist will conduct a UXO surface survey prior to surveying.
	Bees, spiders, and snakes	• 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.
Moving and Shipping Collected Samples	Pinch points	• Keep hands, fingers, and feet clear of moving/suspended materials and equipment. • Beware of contact points. • Stay alert at all times!
	Cut hazards	• Wear adequate hand protection. Use care when handling glassware.
	Hazard communication	• Label all containers as to contents and associated hazards.
	Heavy lifting	• Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment; size up the lift.
	Ticks	• Wear light colored clothing (can see ticks better). • Mow vegetated and small brush areas. • Wear insect repellant. • Wear long sleeves and long pants. • Visually check oneself promptly and frequently after exiting the work area.
	Poison ivy/oak/sumac	• 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	• A UXO specialist will conduct a UXO surface survey prior to surveying.
	Bees, spiders, and snakes	• 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.

Table 5-1

Activity Hazard Analysis
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
High-Pressure Water Jetting Operations	Heavy lifting	• Use proper lifting techniques. • Lifts greater than 60 pounds require assistance or mechanical equipment; size up the lift.
	Slip, trip, and fall hazards	• 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	• 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.
	Faulty or damaged equipment	• 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	• 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	• Only qualified and trained personnel are permitted to operate machinery and mechanized equipment associated with water jet cutting and cleaning.
	Out of control equipment	• 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	• Sound levels above 85 dBA mandates hearing protection by nearby site personnel.
	Activation during repairs	• 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	• Keep feet and hands clear of moving/suspended materials and equipment. • Stay alert and clear of materials suspended
	Falling objects	• Hard hats are required by site personnel. • Stay alert and clear of material suspended overhead.
	Flying debris	• Impact-resistant safety glasses with side shields are required.
	Contact with potentially contaminated materials	• All site personnel will wear the appropriate PPE.
	Ticks	• Wear light colored clothing (can see ticks better). • Mow vegetated and small brush areas. • Wear insect repellant. • Wear long sleeves and long pants. • Visually check oneself promptly and frequently after exiting the work area.

Table 5-1

Activity Hazard Analysis
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
High-Pressure Water Jetting Operations (continued)	Poison ivy/oak/sumac	• 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	• A UXO specialist will conduct a UXO surface survey prior to surveying.
	Bees, spiders, and snakes	• 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.
Disposal of Investigation-Derived Waste (IDW) (Forklift Operation)	Forklift operations	• 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.
	Drum handling	• 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 are securely attached. Leverage properly when tilting drum. Be sure toes stay away from drum.
	Ticks	• Wear light colored clothing (can see ticks better). • Mow vegetated and small brush areas. • Wear insect repellant. • Wear long sleeves and long pants. • Visually check oneself promptly and frequently after exiting the work area.
	Poison ivy/oak/sumac	• 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	• A UXO specialist will conduct a UXO surface survey prior to surveying.
	Bees, spiders, and snakes	• 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.

Table 5-1

Activity Hazard Analysis
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Excavating and Trenching	Contact with moving equipment/vehicles	• Site workers shall establish hand signals when verbal communication becomes difficult. • Seats should be provided for each occupant of the equipment. • Equipment operated on the highway shall be equipped with headlights, taillights, brake lights, backup lights, and turn signals visible from the front and rear. • Heavy equipment shall be equipped with backup alarms. • Never walk or work directly in back of or to the side of heavy equipment without the operator's knowledge. • Assign flag personnel if necessary to direct traffic.
	Dump truck operations	• Dump truck bodies shall be fully lowered or blocked when maintenance is being performed or when not in use. • Dump trucks will have back-up alarms. • A signal person will be used when the point of operation is not in full view of the vehicle, machine or equipment operator; vehicles are backed more than 100 feet; terrain is hazardous; or two or more vehicles are backing in the same area.
	Faulty or damaged equipment being utilized to perform work	• All machinery or mechanized equipment will be inspected by a competent mechanic and be certified to be in safe operating conditions. • 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.
	Fire/explosion	• Install fire extinguishers on heavy equipment. • Shut down mechanized equipment prior to fueling. • Place fire extinguishers in the work area as needed.
	Hazard communication	• Obtain material safety data sheets for hazardous chemicals used at the site. • Label all containers as to contents and appropriate hazard warning.
	Heat stress	• Drink plenty of fluids. • Take frequent breaks. • Allow workers time to acclimate. • Conduct physiological monitoring as needed. • Watch for signs and symptoms of heat stress.
	Inexperienced operator	• Machinery and mechanized equipment shall be operated only be designated personnel. • Heavy equipment operators shall inform their supervisor(s) of any prescribed medication that they are taking that would impair their judgment.
	Lacerations	• Wear cotton or leather work gloves for material handling.
	Overhead hazards	• Make sure that no obstacles are within the radius of the excavator bucket. • Always stay a safe distance from power lines. • Maintain proper clearance from heavy equipment. • Beware of contact points. • Stay alert at all times.
	Noise	• Wear hearing protection when working on or adjacent to heavy equipment.
	Pinch points	• Beware of contact points. • Stay alert at all times.

Table 5-1

Activity Hazard Analysis
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Excavating and Trenching (continued)	Slips, trips, and falls	• Good housekeeping shall be implemented. • The work area shall be kept clean as feasible. • Inspect the work area for slip, trip, and fall hazards.
	Thunderstorms, lightning, and tornadoes	• Whenever possible, halt activities and take cover. • If outdoors, stay low to the ground. • Seek shelter in a building if possible. • Stay away from windows. • Cease field activities during thunderstorms.
	Cave-Ins	• Use caution when walking adjacent to trenches and around spoil material. • Entry into excavation/trench shall be allowed only after consultation with the site supervisor. • Excavations/trenches greater than 5 feet deep shall not be entered unless sloped, steeped, or shored. • Design of any support system shall be reviewed and approved by a professional engineer. • A competent person trained in soils identification will be present in the field. • Nonessential equipment will be staged at least 6 feet outside the immediate work area. • Material used for piling, bracing, shoring, and underpinning shall be in good serviceable condition. • Foundations adjacent to where the excavation is to be made below foundation depth shall be supported by shoring, bracing, or underpinning.
	Confined space	• Personnel shall not enter an excavation that have any of the following conditions: contains or could contain a hazardous atmosphere; could engulf an entrant; could asphyxiate an entrant due to inwardly conversing walls or by a floor that slopes down to a small cross section; or contains any other recognized serious safety or health hazard. • Entries into confined spaces shall be performed in accordance with IT Procedure HS300, Confined Spaces. • Personnel shall not enter a confined space without completing a confined space permit.
	Slip, trip, fall	• All work shall be performed from a stable ground position. • Workers who enter excavations 5 feet or greater in depth shall be protected by sloping, shoring, or benching. • For entry into excavations/trenches 4 feet or greater, a means of entry/egress shall be provided every lateral 25 feet. • Spoil material shall be placed at least 2 feet from the edge of the excavation/trench to avoid load strain on the sidewalls. • The excavation/trench shall be guarded on all sides. • Excavations/trenches shall be backfilled as soon as practical after work is completed and all associated equipment removed. • Ladders placed into excavation/trench shall extend 3 feet above the top of the excavation.
	Underground utilities	• Identify work area to be cleared. • Look at underground drawings. • Receive approval for excavation/trenching or relocate activities. • Complete Excavation Permit as required by client procedures. • Review expiration date of Excavation Permit.

Table 5-1

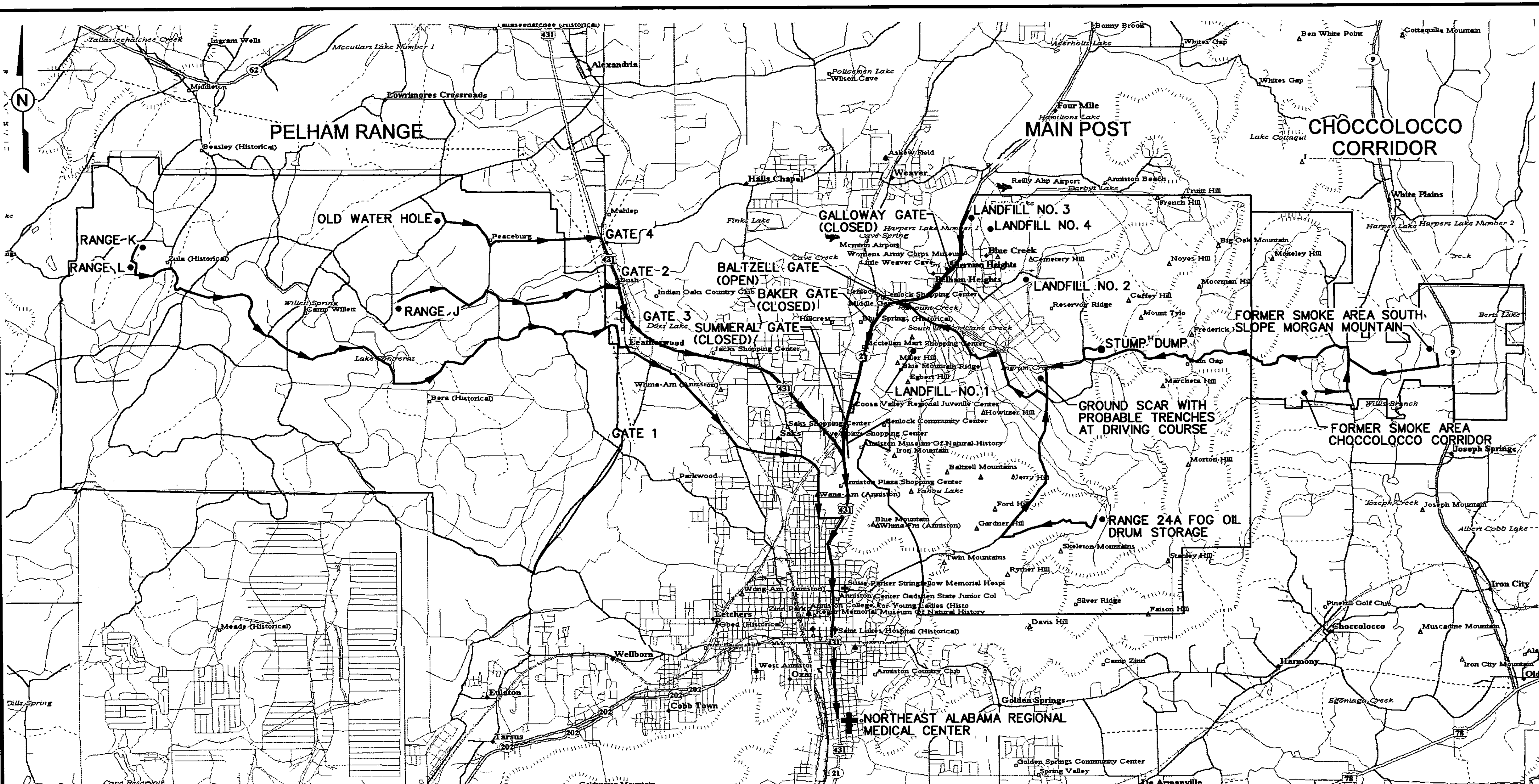
Activity Hazard Analysis
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Excavating and Trenching (continued)	Ticks	• Wear light colored clothing (can see ticks better). • Mow vegetated and small brush areas. • Wear insect repellant. • Wear long sleeves and long pants. • Visually check oneself promptly and frequently after exiting the work area.
	Poison ivy/oak/sumac	• 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	• A UXO specialist will conduct a UXO surface survey prior to surveying.
	Bees, spiders, and snakes	• 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.
Surveying for UXO	Slip, trip, and fall hazards	• Site workers will be required to wear safety glasses with side shields, and work boots when working in the field. • Provide adequate lighting in all work areas. • Flag or cover inconspicuous holes to protect against falls. • Work areas will be kept clean and orderly. • Tools and accessories will be properly maintained and stored.
	Traffic accidents	• 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. • 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	• Workers should be cautious when walking through the site in order to avoid encounters with animals.
	Biological hazards	• When walking through overgrown grass areas, watch for snakes (rattlesnakes, moccasins, copperheads).
	Ticks	• Wear light colored clothing (can see ticks better). • Mow vegetated and small brush areas. • Wear insect repellant. • Wear long sleeves and long pants. • Visually check oneself promptly and frequently after exiting the work area.
	Poison ivy/oak/sumac	• 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	• UXO specialists will conduct UXO avoidance operations.

Table 5-1

Activity Hazard Analysis
Fill Areas, Parcels 78(6), 79(6), 80(6), 81(5), 175(5), 230(7), 227(7),229 (7), 126(7), 231(7), 233(7), and 82(7)
Fort McClellan, Calhoun County, Alabama

Activity	Potential Hazards	Recommended Controls
Surveying for UXO (continued)	Confined space	• Personnel shall not enter an excavation that may contain hazardous atmosphere; have the potential for engulfing an entrant; have internal configurations that could trap or asphyxiate an entrant; or contain any other recognized serious safety or health hazard without the completion of a confined space permit. • All entries into excavations which meet the definition of a confined space shall be done in accordance with IT Procedure HS300.
	Oil spillage	• Oil will be drained from the piping and placed in a recovery drain. • Oil absorbent pads will be placed under oil transfer points. • All spilled oil will be cleaned up immediately.
	Ropes, slings, chains, and hooks	• The use of ropes, slings, and chains shall be in accordance with the safe recommendations of their manufacturer. • Rigging equipment shall not be loaded in excess of its recommended safe working load. • The use of open hooks is prohibited in rigging to lift any load where there is danger of relieving the tension on the hook due to the load or hook catching or fouling. • Hooks, shackles, rings, pad eyes, and other fittings that show excessive wear or that have been bent, twisted, or otherwise damaged shall be removed from service. • Rigging equipment for material handling shall be inspected prior to use on each shift and as necessary during its use to insure that it is safe. Defective rigging equipment shall be removed from service. • Rigging equipment, when not is use, shall be removed from the immediate work area and properly stored so as not to present a hazard. • Taglines shall be used to control the loads being handled by hoisting equipment.



LEGEND:

- ROUTE TO NORTHEAST ALABAMA REGIONAL MEDICAL CENTER
- 431 U.S. HIGHWAY
- ✝ HOSPITALS
- ● INVESTIGATION SITES

FIGURE 1-1
HOSPITAL EMERGENCY ROUTES

SCALE
0 8000 16000 FEET

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

DWG. NO.: ...\774645es.284 | PROJ. NO.: 774645
INITIATOR: A. MAYILA | PROJ. MGR.: J. YACOUB
DRAFT. CHCK. BY: | ENGR. CHCK. BY: A. MAYILA
DATE LAST REV.: | DRAWN BY:
STARTING DATE: 8/26/98 | DRAWN BY: D. BILLINGSLEY
02/01/00 02:13:22
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