

**APPENDIX A**  
**SITE SAFETY AND HEALTH PLAN**

**Final  
Site-Specific Safety and Health Plan Attachment  
Investigation at Anniston Water Works  
and Sewer Board Tank Sites  
Near Baby Bains Gap Road Ranges  
Fort McClellan  
Calhoun County, Alabama**

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

**Prepared by:  
  
Shaw Environmental, Inc.  
312 Directors Drive  
Knoxville, Tennessee 37923**

**Task Order CK10  
Contract No. DACA21-96-D-0018  
Shaw Project No. 796887**

**July 2005**

**Revision 0**

The following SSHP has been designed for the methods presently contemplated by the company for execution of the proposed work. Therefore, the SSHP may not be appropriate if the work is not performed by or using the methods presently contemplated by the company. In addition, as the work is performed, conditions different from those anticipated may be encountered and the SSHP may have to be modified. Therefore, the company only makes representations or warranties as to the adequacy of this SSHP for currently anticipated activities and conditions.

This site-specific safety and health plan (SSHP) must be used in conjunction with the installation-wide safety and health plan, and the installation-wide ordnance and explosives management plan, Fort McClellan, Alabama.

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

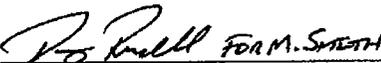
I have read and approve this site-specific safety and health plan attachment for investigations at two future Anniston Water Works and Sewer Board tank sites located near the Baby Bains Gap Road Ranges at Fort McClellan, Alabama, with respect to project hazards, regulatory requirements, and IT Corporation procedures.

  
\_\_\_\_\_  
Steven G. Moran, PG  
Project Manager

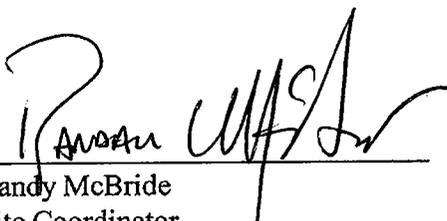
7/19/05  
Date

  
\_\_\_\_\_  
Doug Russell  
Health & Safety Manager

7-19-05  
Date

  
\_\_\_\_\_  
Melissa Smith, CIH, CHMM  
Certified Industrial Hygienist

7-19-05  
Date

  
\_\_\_\_\_  
Randy McBride  
Site Coordinator

7-19-05  
Date

## **Acknowledgements**

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The approved version of this site-specific safety and health plan (SSHP) attachment for the for investigations at two future Anniston Water Works and Sewer Board tank sites located near the Baby Bains Gap Road Ranges 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.

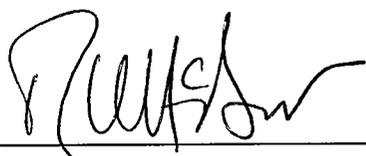


Project Manager

7/19/05

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

7-19-05

Date



## Fort McClellan Gate Hours

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

## Fort McClellan Project Emergency Contacts

Range Control Office (Main Post).....	(256) 848-6772
Fire Department (off post) .....	911
Ambulance (off post) .....	911
Northeast Regional Medical Center.....	(256) 235-5121
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
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 Holstein, FTMC Transition Force.....	(256) 848-7455
Lee Coker, U.S. Army Corps of Engineers, Mobile District .....	(251) 690-3099
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
Darryl Stabile, U.S. Army Corps of Engineers .....	(251) 690-2784
Steve Moran, Shaw Project Manager.....	(865) 690-3211
Randy McBride, Shaw Site Manager.....	Site (256) 848-3482, -3499, and Cellular (865)705-7412
Doug Russell, Shaw H&S Manager.....	Direct dial (865) 692-3584, and Cellular (865)414-9545
Melissa Smith, Shaw CIH.....	(865) 690-3211
Dr. Jerry H. Berke, Health Resources Occupational Physician .....	(800) 350-4511

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Attachment 1 – Evaluating OE/UXO/CWM in Support of HTRW Activities

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## **List of Acronyms**

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See Attachment 1 of the Site-Specific Field Sampling Plan for the list of Abbreviations and Acronyms

## **1.0 Site Work Plan Summary**

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**Project Objective.** Shaw Environmental, Inc. (Shaw) will conduct investigations at two future Anniston Water Works and Sewer Board (AWWSB) tank sites located near the Baby Bains Gap Road (BBGR) Ranges at Fort McClellan (FTMC), Alabama to facilitate transfer of these properties from the Army to the AWWSB. The purpose of this investigation is to determine the presence or absence of metals-contaminated soils within the two AWWSB tank site boundaries.

Attachment 1, Evaluating OE/UXO/CWM Hazards in Support of HTRW Activities, confirm 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, and no real time air monitoring for chemical warfare materials will be required.

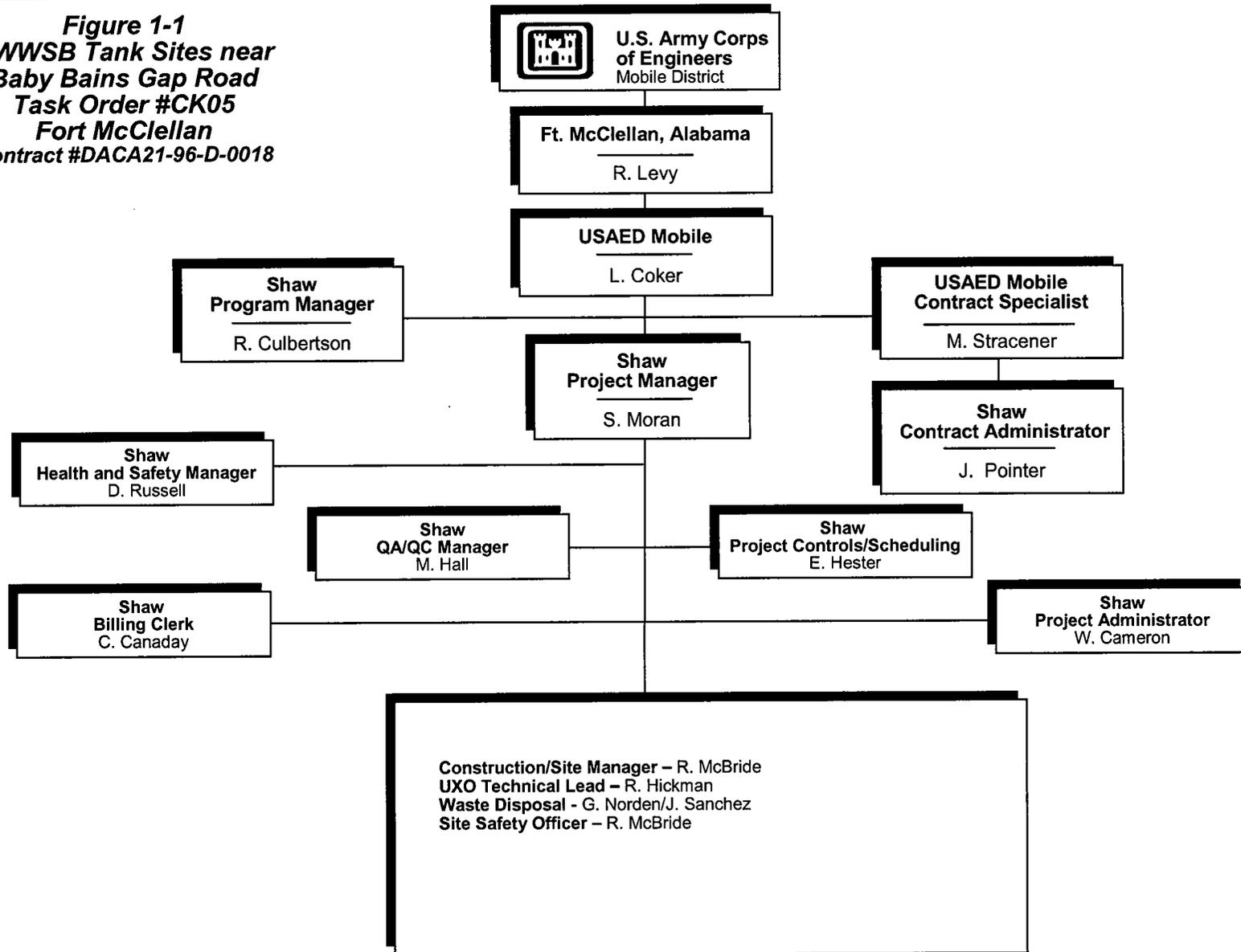
### **Project Tasks**

- Utilities identification and clearance
- Conduct a surface and near-surface UXO survey over all areas to be included in the sampling effort.
- Collect surface soil and x-ray fluorescence (XRF) samples at the AWWSB tank sites near the BBGR Ranges.
- Analyze samples for the parameters listed in the SFSP for each tank site.

**Personnel Requirements.** Up to 15 employees are anticipated for this scope of work. See Figure 1-1 for an organization chart.

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 shall be familiar with the requirements of this site-specific safety and health plan (SSHP). This SSHP must be used in conjunction with the SHP for FTMC, Alabama.

**Figure 1-1**  
**AWWSB Tank Sites near**  
**Baby Bains Gap Road**  
**Task Order #CK05**  
**Fort McClellan**  
**Contract #DACA21-96-D-0018**



## **2.0 Site Characterization and Analysis**

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### **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), August 2000a, *Final Installation-Wide Sampling and Analysis Plan, Fort McClellan, Calhoun County, Alabama*.

Lead in soil will be the most likely metal encountered since live fire was conducted at the nearby ranges. Additional metals associated with the live fire of ammunition include: arsenic, antimony, and barium.

Procedures contained in the Site Specific UXO Safety Plan shall be followed for all site activities associated with this investigation.

Table 2-1 contains the toxicological properties of chemicals anticipated or to be used at the AWWSB tank sites near the BBGR Ranges.

### **2.2 General Site Information**

Fort McClellan (FTMC) is located in the foothills of the Appalachian Mountains of northeastern Alabama near the cities of Anniston and Weaver in Calhoun County. FTMC is approximately 60 miles northeast of Birmingham, 75 miles northwest of Auburn and 95 miles west of Atlanta, Georgia.

**Range 23.** The AWWSB tank site is located along Snap Lane, adjacent to the southwest corner of the Range 23 RI study area. The tank site covers approximately 5.8 acres. Range 23 was used from 1951 until Base closure. Weapons fired at this range included the M-16 automatic rifle and M-16 with tracer. The EBS further reports evidence of artillery ordnance impact at Range 23, as Base personnel have found shell fragments and an unexploded mortar round in the area. According to the *Archives Search Report (ASR)*, Range 23 (OA-41) started the Inter-War period

**Table 2-1**

**Toxicological Properties of Chemicals  
Investigation at Anniston Water Works and Sewer Board Tank Sites Near Baby Bains Gap Road Ranges  
Fort McClellan, Calhoun County, Alabama**

(Page 1 of 4)

Substance [CAS]	IP <sup>a</sup> (eV)	Odor Threshold (ppm)	Route <sup>b</sup>	Symptoms of Exposure	Treatment	TWA <sup>c</sup>	STEL <sup>d</sup>	Source <sup>e</sup>	IDLH (NIOSH) <sup>f</sup>
Arsenic [7440-38-2]	NA	NA	Inh Ing Con	Cough, diarrhea, shortness of breath, vomiting, grey skin. Redness	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	0.01 mg/m <sup>3</sup> 0.01 mg/m <sup>3</sup>	(Ca) 0.002 mg/m <sup>3</sup>	PEL TLV REL	5 mg/m <sup>3</sup>
Antimony [7440-36-0]	NA	NA	Inh Ing Con	Coughing, abdominal pain, burning sensation, vomiting, diarrhea,	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow : Immediate medical attention	0.5 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup>		PEL TLV REL	50 mg/m <sup>3</sup>
Barium [7440-39-3]	NA	NA	Inh Ing Con	Cough, sore throat  Redness	Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention	0.5 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup>		PEL TLV REL	NA
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	

**Table 2-1**

**Toxicological Properties of Chemicals  
Investigation at Anniston Water Works and Sewer Board Tank Sites Near Baby Bains Gap Road Ranges  
Fort McClellan, Calhoun County, Alabama**

(Page 2 of 4)

Substance [CAS]	IP <sup>a</sup> (eV)	Odor Threshold (ppm)	Route <sup>b</sup>	Symptoms of Exposure	Treatment	TWA <sup>c</sup>	STEL <sup>d</sup>	Source <sup>e</sup>	IDLH (NIOSH) <sup>f</sup>
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	1400 ppm (10% LEL)
Lead {7439-92-1}	N/A	N/A	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	0.050 mg/m <sup>3</sup> 0.050 mg/m <sup>3</sup> 0.100 mg/m <sup>3</sup>		PEL TLV REL	100 mg/m <sup>3</sup>
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	2,000 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	
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	25ppm

**Table 2-1**

**Toxicological Properties of Chemicals  
Investigation at Anniston Water Works and Sewer Board Tank Sites Near Baby Bains Gap Road Ranges  
Fort McClellan, Calhoun County, Alabama**

(Page 3 of 4)

Substance [CAS]	IP <sup>a</sup> (eV)	Odor Threshold (ppm)	Route <sup>b</sup>	Symptoms of Exposure	Treatment	TWA <sup>c</sup>	STEL <sup>d</sup>	Source <sup>e</sup>	IDLH (NIOSH) <sup>f</sup>
Portland cement [ 65997-15-1 ]	NA	NA	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	5 mg/m <sup>3</sup> respirable fraction 15 mg/m <sup>3</sup> total dust 10 mg/m <sup>3</sup> 10 mg/m <sup>3</sup> / total dust		PEL  TLV REL	5000 mg/m <sup>3</sup>
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 <sup>3</sup> C 2 mg/m <sup>3</sup> C 2 mg/m <sup>3</sup>		PEL TLV REL	10 mg/m <sup>3</sup>

NOTE: Additional chemical safety information for arsenic, lead, antimony, barium and nitroglycerin follows Table 2-1.

<sup>a</sup>IP = Ionization potential (electron volts).

<sup>b</sup>Route = Inh, Inhalation; Abs, Skin absorption; Ing, Ingestion; Con, Skin and/or eye contact.

<sup>c</sup>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.

<sup>d</sup>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.

<sup>e</sup>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.

<sup>f</sup>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.

LEL = Lower explosive limits.

## Table 2-1

### Toxicological Properties of Chemicals Investigation at Anniston Water Works and Sewer Board Tank Sites Near Baby Bains Gap Road Ranges Fort McClellan, Calhoun County, Alabama

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LC<sub>50</sub> = Lethal concentration for 50 percent of population tested.

LD<sub>50</sub> = 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, 2004, 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, 2004.
- 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.
- Verschueren, 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.

as a pistol range and later became a rifle and machine gun range, with multiple orientations and layouts used during this period (USACE, 2001). Further, the ASR reports that a part of this area was used in Combat Range #1 (OA-43). The ASR also points out that Range 23 is constructed within the WWI Artillery Impact Area.

**Range 25.** The AWWSB tank site is located along Bains Gap Road, just outside the eastern boundary of the Range 25 RI study area. The tank site covers approximately 6.1 acres. Range 25 is one of the oldest and most used ranges at FTMC and may have been in use as early as the 1920s. Long-time FTMC personnel believe that Range 25 was constructed as a 600-yard known-distance range for training using M-1903 Springfield rifles (.30 caliber) and M-1 Garand rifles (.30 caliber). This range was also reportedly used as a machine gun range. FTMC Range Control records indicate that the range was used for M-14 training. Day-and-night-phase firing was practiced here. The EBS states that weapons fired at this range included various small arms, including the M-14, M-16, M-1, and M-60 (with tracers) rifles. The firing direction was to the northeast. The ASR notes out that this area is within the WWI Artillery Impact Area (USACE, 2001).

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

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

### 3.0 Personal Protective Equipment

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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
Utilities clearance	Level D
Initial UXO avoidance sweep and equipment staging	Level D
Surface water, sediment and surface soil sampling (Including XRF)	Level D
Surveying	Level D

**Level D.** The minimal level of protection that will be required of 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)
- Nitrile gloves (when handling contaminated equipment or samples)
- Steel-toed safety boots
- Safety glasses
- Hard hat
- Hearing protection (when working near/adjacent to operating equipment).

**Modified Level D.** Modified Level D is not anticipated to be used. The following equipment is used for Level D-Modified protection:

- Permeable Tyvek, Kleenguard, or its equivalent (polycoated Tyvek for pressure washing)
- Latex boot covers
- Outer Nitrile, heavy work, or latex gloves
- Latex or lightweight nitrile gloves (inner)
- Steel-toed safety boots
- Safety glasses

- Hard hat
- Hearing protection (when working near/adjacent to operating equipment).

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

**Level C.** Level C protection will not be used.

## **4.0 Site Monitoring**

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The environmental contaminants of concern at the AWWSB tank sites near the BBGR Ranges are metals (primarily lead). The source of contamination is bullets and bullet fragments from weapons training. Based on the subsurface soil sampling data, the contamination is almost exclusively limited to surface soils (i.e., upper 12 inches).

No air monitoring for organic vapors, flammable vapors, oxygen, or dust will be required for investigation activities at the AWWSB tank sites near the BBGR Ranges.

**Radiological.** Radiation hazards are not anticipated from previous site activities at the AWWSB tank sites near the BBGR Ranges. However, the field screening for lead contamination near range fans using the NITON x-ray fluorescence (XRF) instrument requires general radiation awareness training. The XRF contains a cadmium <sup>109</sup>, americium <sup>241</sup>, and iron <sup>55</sup> sealed radioactive sources. Operators of the XRF shall be trained in the safe use of the instrument and follow all required manufacturers instructions. Leak detection testing within the last six months shall be performed on the XRF and certificates of analysis included in the shipping container. Required licensing documentation and storage requirements shall be enforced. Exposure to radiation is related to three factors: time, distance and shielding. Human exposure to radiation is typically measured in rems, or in one-thousandths of a rem, called millirems (mR). The allowable limit in the US for occupational exposure is 5,000 mR/year for a whole-body and 50,000 mR for shallow penetration of extremities. Exposure from a properly-used NITON will be less than 50 mR per year, even if the instrument is used 2,000 hours per year.

**Unexploded Ordnance.** UXO support for sampling activities are specified in the site-specific UXO safety plan developed for the AWWSB tank sites near the BBGR Ranges. The UXO specialists will perform UXO avoidance sweeps prior to moving personnel and equipment onto the site. During this operation, UXO on the surface will be detected and marked for avoidance during field operations. The practice of UXO avoidance shall be implemented for all intrusive activities.

If UXO is encountered, personnel will contact the site manager and UXO specialist immediately. Personnel will evacuate the immediate area and secure it.

## **5.0 Activity Hazard Analysis**

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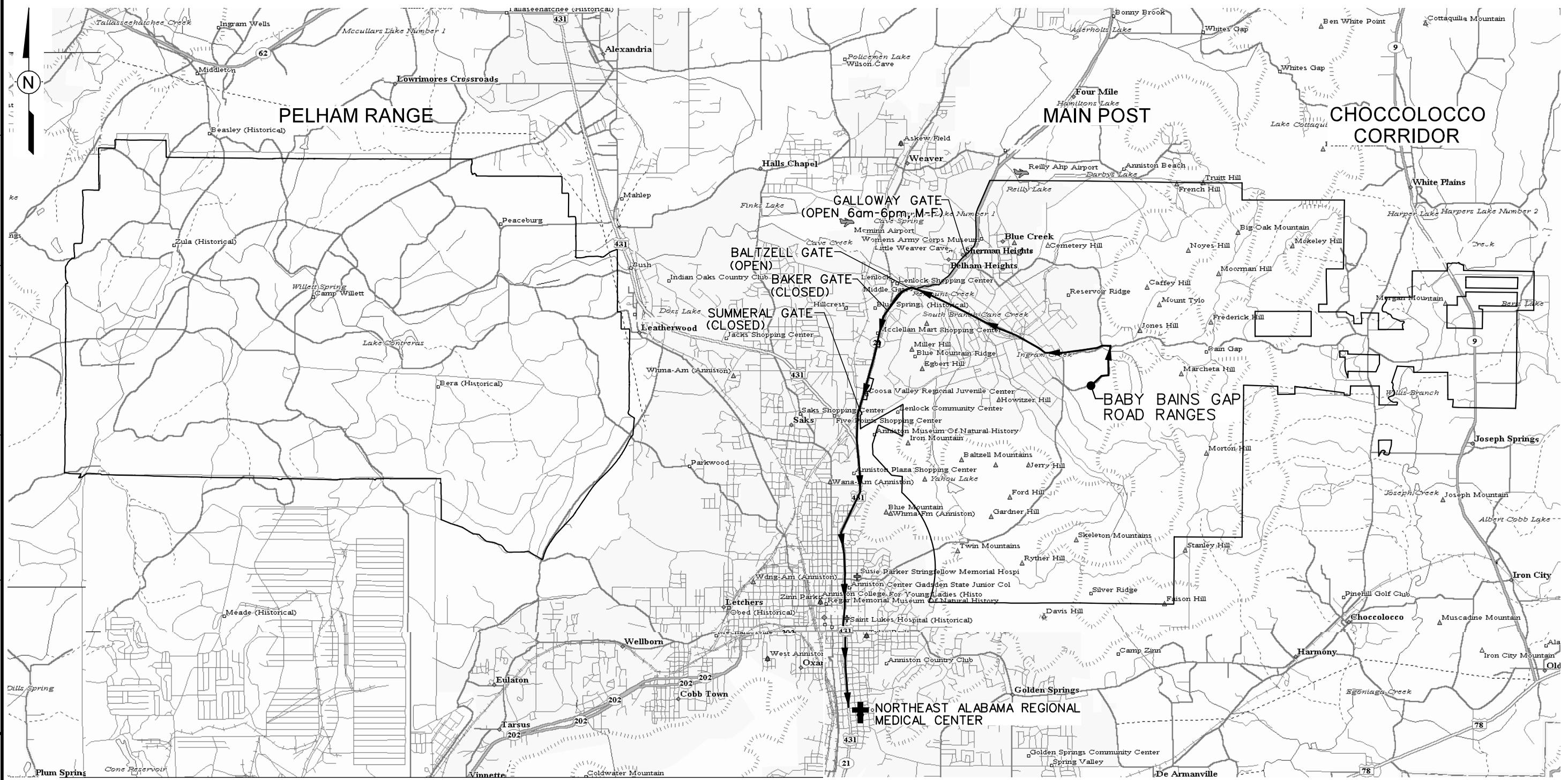
The attached activity hazard analysis (Table 5-1) is provided for the following activities:

- Utilities identification and marking
- Initial UXO avoidance sweep and equipment staging.
- Subsurface soil, surface water and sediment sampling.
- Surveying
- Moving and shipping collected samples.

All injuries and illnesses must be immediately reported to the site manager or the site safety and health officer, 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, 400 East 10th Street, Anniston, Alabama. The telephone number is (256) 235- 5121. Directions to the hospital are provided in Figure 5-1.

DWG. NO.: ... \800486es.043  
 INITIATOR: R. McBRIDE  
 DRAFT. CHCK. BY:  
 ENGR. CHCK. BY: S. MORAN  
 DATE LAST REV.:  
 DRAWN BY: D. BOWMAR  
 7/19/2005  
 12:17 PM  
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 dbomar



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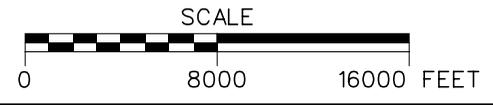
-  ROUTE TO NORTHEAST ALABAMA REGIONAL MEDICAL CENTER
-  U.S. HIGHWAY
-  HOSPITALS
-  INVESTIGATION SITE

**DRIVING DIRECTIONS FROM BALTZELL GATE ROAD TO THE NORTHEAST ALABAMA MEDICAL CENTER**

- LEAVING FORT MCCLELLAN ON BALTZELL GATE ROAD, TURN LEFT (SOUTH) ONTO AL HWY 21
- GO ~ 2.5 MILES 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 10th STREET
- PHONE NUMBER : (256) 235-5121

**FIGURE 5-1**  
**BABY BAINS GAP ROAD RANGES**  
**HOSPITAL EMERGENCY ROUTE**

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



**Table 5-1**

**Activity Hazard Analysis  
Investigation at Anniston Water Works and Sewer Board Tank Sites Near Baby Bains Gap Road Ranges  
Fort McClellan, Calhoun County, Alabama**

(Page 1 of 7)

Activity	Potential Hazards	Recommended Controls
Initial UXO avoidance sweep and equipment staging	Slip, trip, and fall hazards	<ul style="list-style-type: none"> <li>• Determine best access route before transporting equipment.</li> <li>• Practice good housekeeping; keep work area picked up and clean as feasible.</li> <li>• Continually inspect the work area for slip, trip, and fall hazards.</li> <li>• Look before you step; ensure safe and secure footing.</li> </ul>
	Heavy lifting	<ul style="list-style-type: none"> <li>• Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment.</li> </ul>
	Falling objects	<ul style="list-style-type: none"> <li>• Stay alert and clear of materials suspended overhead; wear hard hat and steel-toed boots.</li> </ul>
	Flying debris, dirt, dust, etc.	<ul style="list-style-type: none"> <li>• Wear safety glasses/goggles; ensure that eye wash is in proper working condition.</li> </ul>
	Pinch points	<ul style="list-style-type: none"> <li>• Keep hands, fingers, and feet clear of moving/suspended materials and equipment.</li> <li>• Beware of contact points.</li> <li>• Stay alert at all times!</li> </ul>
	Cuts/bruises	<ul style="list-style-type: none"> <li>• Use cotton or leather work gloves for material handling.</li> </ul>
	Bees, spiders, and snakes	<ul style="list-style-type: none"> <li>• Inspect work area carefully and avoid placing hands and feet into concealed areas.</li> </ul>
	Ticks	<ul style="list-style-type: none"> <li>• Wear light colored clothing (can see ticks better).</li> <li>• Mow vegetated and small brush areas.</li> <li>• Wear insect repellent.</li> <li>• Wear long sleeves and long pants.</li> <li>• Visually check oneself promptly and frequently after exiting the work area.</li> </ul>
	Fire	<ul style="list-style-type: none"> <li>• Fire extinguishers shall be suitably placed, distinctly marked, readily accessible, and maintained in a fully charged and operable condition.</li> </ul>
	Hazard communication	<ul style="list-style-type: none"> <li>• Label all containers as to contents and appropriate hazard warning and dispose of properly.</li> <li>• Ensure Material Safety Data Sheets (MSDS) are available for hazardous chemicals used on site.</li> </ul>
	Noise	<ul style="list-style-type: none"> <li>• Sound levels above 85 decibels (dBA) mandates hearing protection.</li> </ul>
Lighting	<ul style="list-style-type: none"> <li>• Adequate lighting will be provided to ensure a safe working environment.</li> </ul>	

**Table 5-1**

**Activity Hazard Analysis  
Investigation at Anniston Water Works and Sewer Board Tank Sites Near Baby Bains Gap Road Ranges  
Fort McClellan, Calhoun County, Alabama**

(Page 2 of 7)

Activity	Potential Hazards	Recommended Controls
Initial UXO avoidance sweep and equipment staging (continued)	Cold stress	<ul style="list-style-type: none"> <li>• Workers should wear insulated clothing when temperatures drop below 40 degrees Fahrenheit (°F).</li> <li>• Drink warm beverages on breaks. Refrain from drinking caffeinated beverages.</li> <li>• Remove wet clothing promptly.</li> <li>• Take breaks in warm areas.</li> <li>• Reduce work periods as necessary.</li> <li>• Layer work clothing.</li> </ul>
	Poison ivy/oak/sumac	<ul style="list-style-type: none"> <li>• Avoid plant areas if possible.</li> <li>• Wear long sleeves and long pants.</li> <li>• Promptly wash clothing that has contacted poisonous plants.</li> <li>• Wash affected areas immediately with soap and water.</li> </ul>
	Heat rash	<ul style="list-style-type: none"> <li>• Keep the skin clean and dry.</li> <li>• Change perspiration-soaked clothing, as necessary.</li> <li>• Bathe at end of work shift or day.</li> <li>• Apply powder to affected area.</li> </ul>
	Heat cramps	<ul style="list-style-type: none"> <li>• Drink plenty of cool fluids even when not thirsty.</li> <li>• Provide cool fluid for work crews.</li> <li>• Move victim to shaded, cool area.</li> </ul>
	Heat exhaustion	<ul style="list-style-type: none"> <li>• Conduct physiological worker monitoring as needed (i.e., heart rate, oral temperature).</li> <li>• Set up work/rest periods.</li> <li>• Use the "buddy system."</li> <li>• Allow workers time to acclimate.</li> <li>• Have ice packs available for use.</li> <li>• Take frequent breaks.</li> </ul>

**Table 5-1**

**Activity Hazard Analysis  
Investigation at Anniston Water Works and Sewer Board Tank Sites Near Baby Bains Gap Road Ranges  
Fort McClellan, Calhoun County, Alabama**

(Page 3 of 7)

Activity	Potential Hazards	Recommended Controls
Initial UXO avoidance sweep and equipment staging (continued)	Heat stroke	<ul style="list-style-type: none"> <li>• Evaluate possibility of night work.</li> <li>• Perform physiological monitoring on workers during breaks.</li> <li>• Wear body cooling devices.</li> </ul>
	Contact with moving equipment/vehicles	<ul style="list-style-type: none"> <li>• Work area will be barricaded/demarcated.</li> <li>• Equipment will be laid out in an area free of traffic flow.</li> <li>• Barricades shall be used on or around work areas when it is necessary to prevent the inadvertent intrusion of pedestrian traffic.</li> <li>• Barriers shall be used to protect workers from vehicular traffic.</li> <li>• Barriers shall be used to guard excavations adjacent to streets or roadways.</li> <li>• Flagging shall be used for the short term (less than 24 hours) to identify hazards until proper barricades or barriers are provided.</li> <li>• Heavy equipment shall have backup alarms.</li> </ul>
	Portable electric tools	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Portable electric tools and all cord and plug connected equipment shall be protected by a ground-fault circuit interrupter (GFCI) device.</li> <li>• Electrical tools shall be inspected daily prior to use.</li> </ul>
	Extension cords	<ul style="list-style-type: none"> <li>• Extension cords that have faulty plugs, damaged insulation, or are unsafe in any way shall be removed from service.</li> <li>• Cords shall be protected from damage from sharp edges, projections, pinch points (doorways), and vehicular traffic.</li> <li>• Cords shall be suspended with a nonconductive support (rope, plastic ties, etc.).</li> <li>• Cords shall be designed for hard duty.</li> <li>• Cords shall be inspected daily.</li> </ul>
	Lightning strikes	<ul style="list-style-type: none"> <li>• Whenever possible, halt activities and take cover.</li> <li>• If outdoors, stay low to the ground.</li> <li>• 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).</li> <li>• Seek shelter in a building if possible.</li> <li>• Stay away from windows.</li> <li>• If available, crouch under a group of trees instead of one.</li> <li>• Keep all body parts in contact with the ground as close as possible.</li> <li>• Remain 6 feet away from tree trunk if seeking shelter beneath tree(s).</li> <li>• If in a group, keep 6 feet of distance between people.</li> </ul>

**Table 5-1**

**Activity Hazard Analysis  
Investigation at Anniston Water Works and Sewer Board Tank Sites Near Baby Bains Gap Road Ranges  
Fort McClellan, Calhoun County, Alabama**

(Page 4 of 7)

Activity	Potential Hazards	Recommended Controls
Initial UXO avoidance sweep and equipment staging (continued)	Thunderstorms, tornados	<ul style="list-style-type: none"> <li>• Listen to radio or TV announcements for pending weather information.</li> <li>• Cease field activities during thunderstorm or tornado warnings.</li> <li>• Seek shelter. Do not try to outrun a tornado.</li> </ul>
Surveying	Slip, trip, and fall hazards	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Provide adequate lighting in all work areas.</li> <li>• Whenever possible, avoid routing cords and hoses across walking pathways.</li> <li>• Flag or cover inconspicuous holes to protect against falls.</li> <li>• Work areas will be kept clean and orderly.</li> <li>• Garbage and trash will be disposed of daily in approved refuse containers.</li> <li>• Tools and accessories will be properly maintained and stored.</li> <li>• Work areas and floors will be kept free of dirt, grease, and slippery materials.</li> </ul>
	Traffic accidents	<ul style="list-style-type: none"> <li>• Place physical barrier (i.e., barricades, fencing) around work areas regularly occupied by pedestrians.</li> <li>• If working adjacent to roadways, have workers wear fluorescent orange vests.</li> <li>• Use warning signs or lights to alert oncoming traffic.</li> <li>• Assign flag person(s) if necessary to direct local traffic.</li> <li>• Set up temporary parking locations outside the immediate work area.</li> <li>• Motor vehicle operators shall obey all posted traffic signs, signals, and speed limits.</li> <li>• Pedestrians have the right-of-way.</li> <li>• Wear seat belts when vehicles are in motion.</li> </ul>
	Wildlife hazards	<ul style="list-style-type: none"> <li>• Workers should be cautious when driving through the site in order to avoid encounters with passing animals.</li> </ul>
	Biological hazards	<ul style="list-style-type: none"> <li>• Walking through overgrown grass areas, watch for snakes (rattlesnakes, moccasins, copperheads).</li> </ul>
	Ticks	<ul style="list-style-type: none"> <li>• Wear light colored clothing (can see ticks better).</li> <li>• Mow vegetated and small brush areas.</li> <li>• Wear insect repellent.</li> <li>• Wear long sleeves and long pants.</li> <li>• Visually check oneself promptly and frequently after exiting the work area.</li> </ul>
	Poison ivy/oak/sumac	<ul style="list-style-type: none"> <li>• Avoid plant areas if possible.</li> <li>• Wear long sleeves and long pants.</li> <li>• Promptly wash clothing that has contacted poisonous plants.</li> <li>• Wash affected areas immediately with soap and water.</li> </ul>
	UXO	<ul style="list-style-type: none"> <li>• UXO avoidance monitoring will be conducted by a UXO specialist prior to beginning activities.</li> <li>• If UXO is encountered, cease all activities, mark the location, and notify the site manager.</li> </ul>

**Table 5-1**

**Activity Hazard Analysis  
Investigation at Anniston Water Works and Sewer Board Tank Sites Near Baby Bains Gap Road Ranges  
Fort McClellan, Calhoun County, Alabama**

(Page 5 of 7)

Activity	Potential Hazards	Recommended Controls
Soil Sampling (XRF)	Cross-contamination and contact with potentially contaminated materials	<ul style="list-style-type: none"> <li>• Stop immediately at any sign of obstruction.</li> <li>• Sampling technicians will wear proper protective clothing and equipment to safeguard against potential contamination.</li> <li>• Only essential personnel will be in the work area.</li> <li>• Real-time air monitoring will take place before and during sampling activities.</li> <li>• All personnel will follow good hygiene practices.</li> <li>• Proper decontamination procedures will be followed.</li> <li>• All liquids and materials used for decontamination will be contained and disposed of in accordance with federal, state, and local regulations.</li> </ul>
	UXO	<ul style="list-style-type: none"> <li>• UXO avoidance monitoring will be conducted by a UXO specialist prior to beginning activities.</li> <li>• If UXO is encountered, cease all activities, mark the location, and notify the site manager and UXO specialist.</li> </ul>
	Cut hazards	<ul style="list-style-type: none"> <li>• Use care when handling glassware.</li> <li>• Wear adequate hand protection.</li> </ul>
	Slip, trip, and fall hazards	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Whenever possible, avoid routing cords and hoses across walking pathways.</li> <li>• Flag or cover inconspicuous holes to protect against falls.</li> </ul>
	Bees, spiders, and snakes	<ul style="list-style-type: none"> <li>• Workers shall inspect the work area carefully and avoid placing hands and feet into concealed areas.</li> <li>• Evaluate need for sensitive workers to have prescribed antibiotic or medicine to combat onset of symptoms.</li> </ul>
	Poison ivy/oak/sumac	<ul style="list-style-type: none"> <li>• Avoid plant areas if possible.</li> <li>• Wear long sleeves and long pants.</li> <li>• Promptly wash clothing that has contacted poisonous plants.</li> <li>• Wash affected areas immediately with soap and water.</li> </ul>
	Cold stress	<ul style="list-style-type: none"> <li>• Workers should wear insulated clothing when temperatures drop below 40°F.</li> <li>• Drink warm beverages on breaks. Refrain from drinking caffeinated beverages.</li> <li>• Remove wet clothing promptly.</li> <li>• Take breaks in warm areas.</li> <li>• Reduce work periods as necessary.</li> <li>• Layer work clothing.</li> </ul>

**Table 5-1**

**Activity Hazard Analysis  
Investigation at Anniston Water Works and Sewer Board Tank Sites Near Baby Bains Gap Road Ranges  
Fort McClellan, Calhoun County, Alabama**

(Page 6 of 7)

Activity	Potential Hazards	Recommended Controls
Soil Sampling (XRF) (continued)	Heat rash	<ul style="list-style-type: none"> <li>• Keep the skin clean and dry.</li> <li>• Change perspiration-soaked clothing, as necessary.</li> <li>• Bathe at end of work shift or day.</li> <li>• Apply powder to affected area.</li> </ul>
	Heat cramps	<ul style="list-style-type: none"> <li>• Drink plenty of cool fluids even when not thirsty.</li> <li>• Provide cool fluid for work crews.</li> <li>• Move victim to shaded, cool area.</li> </ul>
	Heat exhaustion	<ul style="list-style-type: none"> <li>• Conduct physiological worker monitoring as needed (i.e., heart rate, oral temperature).</li> <li>• Set up work/rest periods.</li> <li>• Use the buddy system.</li> <li>• Allow workers time to acclimate.</li> <li>• Have ice packs available for use.</li> <li>• Take frequent breaks.</li> </ul>
	Heat stroke	<ul style="list-style-type: none"> <li>• Evaluate possibility of night work.</li> <li>• Perform physiological monitoring on workers during breaks.</li> <li>• Wear body cooling devices.</li> </ul>
	Lightning strikes	<ul style="list-style-type: none"> <li>• Whenever possible, halt activities and take cover.</li> <li>• If outdoors, stay low to the ground.</li> <li>• 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).</li> <li>• Seek shelter in a building if possible.</li> <li>• Stay away from windows.</li> <li>• If available, crouch under a group of trees instead of one single tree.</li> <li>• Keep all body parts in contact with the ground as close as possible.</li> <li>• If in a group, keep 6 feet of distance between people.</li> </ul>
Moving and Shipping Collected Samples	Heavy lifting	<ul style="list-style-type: none"> <li>• Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment; size up the lift.</li> </ul>
	Pinch points	<ul style="list-style-type: none"> <li>• Keep hands, fingers, and feet clear of moving/suspended materials and equipment.</li> <li>• Beware of contact points.</li> <li>• Stay alert at all times!</li> </ul>

**Table 5-1**

**Activity Hazard Analysis  
Investigation at Anniston Water Works and Sewer Board Tank Sites Near Baby Bains Gap Road Ranges  
Fort McClellan, Calhoun County, Alabama**

(Page 7 of 7)

Activity	Potential Hazards	Recommended Controls
Moving and Shipping Collected Samples (continued)	Cut hazards	<ul style="list-style-type: none"><li>• Wear adequate hand protection. Use care when handling glassware.</li></ul>
Material Storage	Hazard communication	<ul style="list-style-type: none"><li>• Label all containers as to content and associated hazard warning.</li></ul>
	Flammable and combustible liquids	<ul style="list-style-type: none"><li>• Store in NO SMOKING AREA.</li><li>• Fire extinguisher readily available.</li><li>• Transfer only when properly grounded and bonded.</li></ul>

**ATTACHMENT 1**

**EVALUATING OE/UXO/CWM HAZARDS  
IN SUPPORT OF HTRW ACTIVITIES**



Site Name: AWWSB Tank Sites at BBGR Ranges

Job Number: 796887

Date: 8-Jul-05

<b>3. For sites where the manufacturing, testing, storage, or disposal of CWM is suspected:</b>	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 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 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 type="checkbox"/>
Has the site been previously monitored or sampled for chemical agent or agent breakdown products:	<input 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"):

List agent breakdown products identified:

4. Defining the Potential for the Presence of CWM:	Agent Monitoring Requirements for Site Activities:
<p><b>4a.</b> 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.</p>	<p>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).</p>
<p><b>4b.</b> 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.</p>	<p>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).</p>
<p><b>4c.</b> Low Presence Potential – Definition: No indications that CWM will be present in quantity or reactivity (in munitions, projectiles, drums, etc.).</p>	<p>No specific personal or area monitoring for chemical agents required beyond what is specified in the SHP.</p>

Continue to page 3 of 4 -

Site Name: AWWSB Tank Sites at BBGR Ranges

Job Number: 796887

Date: 18-Jul-05

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: This area is not within a previously identified CWM area. (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><b>5a.</b> 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 Shaw 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><b>5b.</b> 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 Shaw 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><b>5c.</b> 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 Shaw 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: Shaw personnel will closely observe the area during field activities and will leave the site and notify UXO support if unknown items are found.

**Review Signatures:**

Shaw UXO Technical Manager  Date: 7-20-05 Shaw H&S Specialist  Date: 7-20-05

**Site Name: AWWSB Tank Sites at BBGR Ranges**

**Job Number: 796887**

**Date: 18-Jul-05**

***Additional Notes and Explanations:***

The site history indicates these areas overlap Range 25 and Range 23 (part of the previously investigated Baby Bains Gap Road Ranges). Ranges 23 and 25 were historically used for small arms training.

Shaw conducted RI activities at the site in 2002 and 2003, of surface and subsurface soil sampling, installation of monitoring wells and subsequent groundwater sampling. Shaw issued a Remedial Investigation (RI) report in August 2004 which noted extensive surface soil metals contamination in the impact area from expended rounds present on the surface. At Range 25, specifically in Parcel 118Q-X, several ordnance items (mortars) were found on the surface. Historically, similar items have also been found at Range 23.

Given the site history and previous RI work conducted, the presence of unexploded ordnance (UXO) is possible. Therefore, Shaw has prepared a UXO plan for this investigation activity (Appendix B).