

**Final
Site-Specific Field Sampling Plan Attachment
Site Investigation at the Autocraft Shop/
Former DPDO Building 1800,
Parcels 100(7), 20(7), and 47(7)
Fort McClellan
Calhoun County, Alabama**

Prepared for:

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**Delivery Order CK005
Contract No. DACA21-96-D-0018
IT Project No. 774645**

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Revision 1

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List of Acronyms

| | |
|--------|---|
| ADEM | Alabama Department of Environmental Management |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CERFA | Community Environmental Response Facilitation Act |
| CESAS | Corps of Engineers South Atlantic Savannah |
| CFR | Code of Federal Regulations |
| CLP | Contract Laboratory Program |
| COPC | chemical(s) of potential concern |
| CSEM | conceptual site exposure model |
| DOD | U.S. Department of Defense |
| DPDO | Defense Property Disposal Office |
| DQO | data quality objective |
| DRMO | Defense Reutilization and Marketing Office |
| EBS | environmental baseline survey |
| EPA | U.S. Environmental Protection Agency |
| ESE | Environmental Science and Engineering, Inc. |
| FTMC | Fort McClellan |
| GPS | global positioning system |
| IDW | investigation-derived waste |
| IT | IT Corporation |
| µg/L | micrograms per liter |
| PAH | polyaromatic hydrocarbon |
| PCB | polychlorinated biphenyl |
| PID | photoionization detector |
| ppm | parts per million |
| PSSC | potential site-specific chemical(s) |
| PVC | polyvinyl chloride |
| QAP | quality assurance plan |
| QA/QC | quality assurance/quality control |
| RCRA | Resource Conservation and Recovery Act |
| SAP | installation-wide sampling and analysis plan |
| SEMS | Southern Environmental Management & Specialties |
| SFSP | site-specific field sampling plan |
| SHP | installation-wide safety and health plan |

List of Acronyms *(Continued)*

| | |
|--------|---|
| SI | site investigation |
| SSHP | site-specific safety and health plan |
| TRADOC | U.S. Army Training and Doctrine Command |
| USACE | U.S. Army Corps of Engineers |
| UST | underground storage tank |
| VOC | volatile organic compound |
| VSI | visual site inspection |
| WMP | waste management plan |
| WP | work plan |

Executive Summary

In accordance with Contract No. DACA21-96-D-0018, Delivery Order CK005, IT Corporation (IT) will conduct site investigation activities at the Autocraft Shop/Former Defense Property Disposal Office (DPDO) Building 1800, Parcels 100(7), 20(7), and 47(7), at Fort McClellan (FTMC), Calhoun County, Alabama, to determine the presence or absence of potential site-specific chemicals at this site. The purpose of this site-specific field sampling plan (SFSP) is to provide technical guidance for sampling activities at the Autocraft Shop/Former DPDO Building 1800, Parcels 100(7), 20(7), and 47(7).

The Autocraft Shop/Former DPDO Building 1800, Parcel 100(7) is located on 23rd Avenue. FTMC personnel use this facility to repair and rebuild privately owned vehicles. The Autocraft Shop was built in 1976, and records indicate that these activities were not conducted on post prior to 1976 (ESE, 1998). The facility has several bays, some with in-floor hydraulic lifts or mobile electric lifts for maintenance and repair. The building also houses a muffler shop area, tire changing area, tool room, machine shop, body work area, and paint spray booth. Pressurized spray car wash booths are also attached to the north end of Building 1800. An oil/water separator has recently been installed for the facility and appears to be operating normally. The facility has an oil filter crusher with an indoor waste oil recovery tank, an antifreeze recycling unit, chlorofluorocarbon (CFC) recovery unit for air-conditioning system service, tire and battery turn-in to the Defense Reutilization and Marketing Office (DRMO), and use of a Safety Kleen7 parts washer with nonhazardous mineral spirits. According to site sewer maps, floor drains are connected to the sanitary sewer system. No evidence of releases or other environmental problems were noted during the visual site inspection (VSI) (ESE, 1998).

Two USTs are located at this site; a 2,000-gallon waste oil UST (Parcel 20[7]) and a 2500-gallon heating oil UST (Parcel 47[7]). In 1990, Weston, documented oil-stained soils on the surface around the outside waste oil UST located at rear (east) of Building 1800 (Weston, 1990). In April 27, 1994, the original steel 600-gallon waste oil UST was removed and replaced with a 2000-gallon UST (Braun, 1995). It was noted in the report , prepared by Braun for ADEM, that at least one leak had occurred at an unsealed joint in the PVC pipeline. Although there were not any holes noted in the tank, stained soils were observed in the excavation from the top to the bottom on the east side of the excavation. Also, surface spills were noted above the UST before removal. The pipe trench was excavated to about 2 feet below ground surface to remove and replace approximately 14 feet of the piping to the UST. Approximately six cubic yards of soil

were removed from the excavation. The soil was stockpiled and the excavation was backfilled with pea gravel. Excavated soils were transported to the base landfill for disposal.

Four monitoring wells were installed near the waste oil UST (Parcel 20[7]) excavation to collect groundwater samples for analyses in accordance with the ADEM UST requirements. Each monitoring well was constructed of 4-inch diameter PVC riser with a 10-feet of PVC screen. Three of the wells were installed to 15 feet below ground surface and one was installed to 14.5 feet below ground surface. One round of groundwater samples was collected on October 13, 1994 for wells MW-1, -2, -3 and -4. Analyses performed on the samples include volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs) and total lead. VOCs and PAHs were not detected above the reporting limit in the groundwater samples with the exception of fluorene in MW-1 and MW-3 at 0.3 µg/L and 0.12 µg/L, respectively. Total lead was only detected in MW-4 above the reporting limit at 3 µg/L.

The original 2000-gallon heating oil UST (Parcel 47[7]) located near the southwest end of Building 1800 was removed on October 9, 1996 (SEMS, 1997). The UST was replaced with a 2500-gallon double wall fiberglass tank with interstitial monitoring on October 29, 1997. It appeared in the report to have been removed according to ADEM guidelines. There is no record in the report of any samples being collected. Groundwater was not encountered as the excavation was extended to five feet beyond the bottom of the tank.

Specifically, IT will collect two surface soil samples, six subsurface soil samples, six groundwater samples, three surface water samples, three sediment samples, and three depositional soil samples at this site. Chemical analyses of the samples collected during the field program will include volatile organic compounds (VOC), semivolatile organic compounds (SVOC), metals, chlorinated pesticides, polychlorinated biphenyls, chlorinated herbicides, and organophosphorus pesticides. Results from these analyses will be compared with site-specific screening levels specified in the installation-wide work plan (WP) and regulatory agency guidelines.

This SFSP attachment to the installation-wide sampling and analysis plan (SAP) for the Autocraft Shop/Former DPDO Building 1800, Parcels 100(7), 20(7), and 47(7) will be used in conjunction with the site-specific safety and health plan (SSHP), and the WP and SAP. The SAP includes the installation-wide safety and health plan, waste management plan, and quality assurance plan. Site-specific hazard analyses are included in the SSHP.

1.0 Project Description

1.1 Introduction

The U.S. Army is conducting studies of the environmental impact of suspected contaminants at Fort McClellan (FTMC) in Calhoun County, Alabama, under the management of the U.S. Army Corps of Engineers (USACE)-Mobile District. The USACE has contracted IT Corporation (IT) to provide environmental services for the site investigation (SI) of the Autocraft Shop/Former DPDO Building 1800 Site, Parcels 100(7), 20(7), and 47(7), under Delivery Order CK005, Contract No. DACA21-96-D-0018.

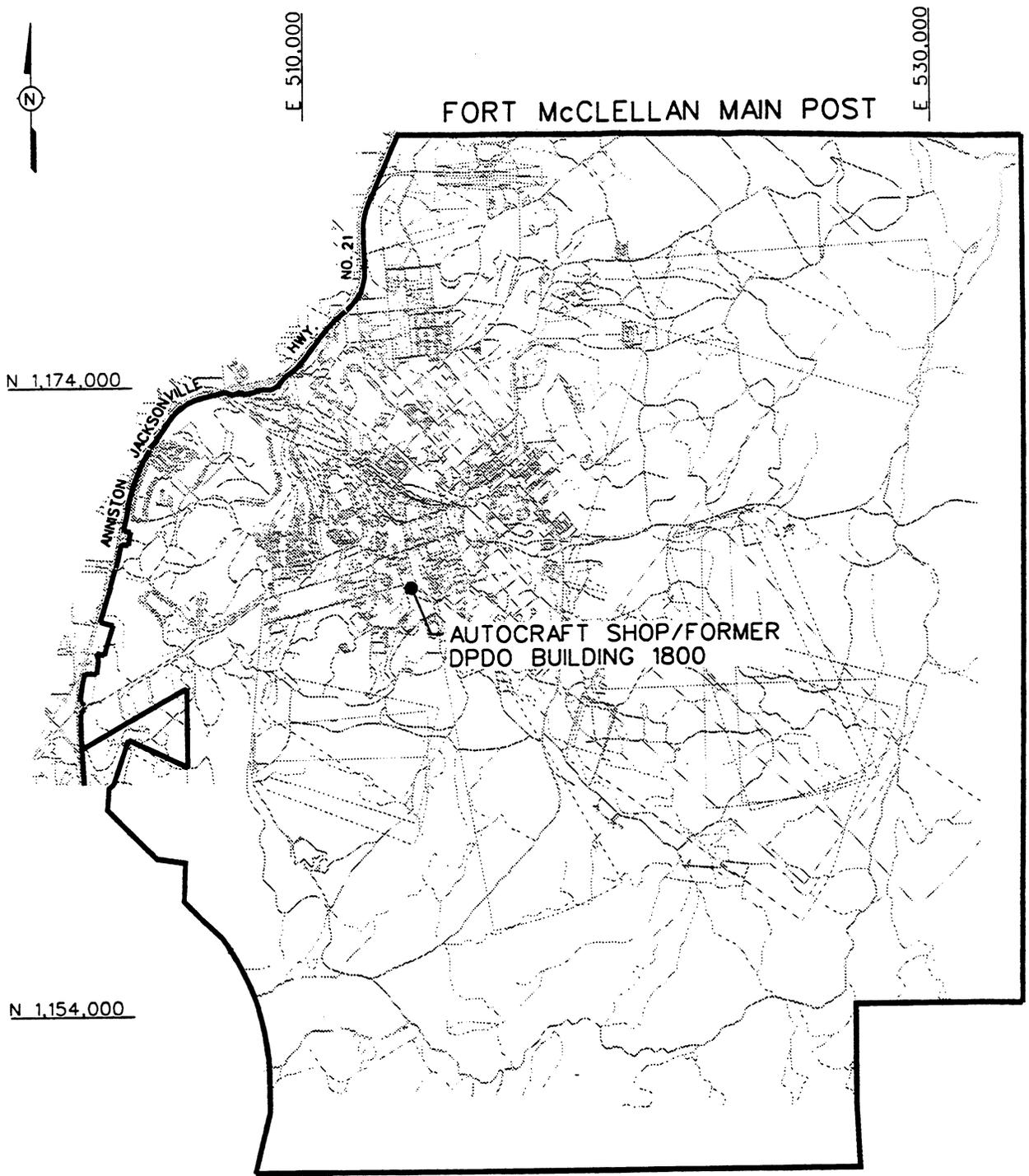
This site-specific field sampling plan (SFSP) attachment to the installation-wide sampling and analysis plan (SAP) (IT, 1998a) for FTMC has been prepared to provide technical guidance for sample collection and analysis at the Autocraft Shop/Former Defense Property Disposal Office (DPDO) Building 1800 Site, Parcels 100(7), 20(7), and 47(7) (Figure 1-1). The SFSP is intended to be used in conjunction with the site-specific safety and health plan (SSHP) developed for the Autocraft Shop/Former DPDO Building 1800 Site. The SFSP will be used in conjunction with the site-specific safety and health plan (SSHP) developed for the Autocraft Shop/Former DPDO Building 1800 Site, and the installation-wide work plan (WP) (IT, 1998b), and the SAP. The SAP includes the installation-wide safety and health plan (SHP), quality assurance plan (QAP), and the waste management plan (WMP).

1.2 Site Description and History

The Autocraft Shop, Building 1800, Parcel 100(7) is located on 23rd Avenue (Figure 1-2). FTMC personnel use this facility to repair and rebuild privately owned vehicles. The Autocraft Shop was built in 1976. Records indicate that these activities were not conducted on post prior to 1976 (Environmental Science and Engineering, Inc. [ESE], 1998).

The facility has several bays, some with in-floor hydraulic lifts or mobile electric lifts for maintenance and repair of motor vehicles. The building also houses a muffler shop area, tire changing area, tool room, machine shop, body work area, and spray paint booth. Pressurized spray car wash booths are also attached to the north end of Building 1800. An oil/water separator has recently been installed for the facility and appears to be operating normally. The facility has an oil filter crusher with an indoor waste oil recovery tank, an antifreeze recycling unit, chlorofluorocarbon (CFC) recovery unit for air-conditioning system service, tire and battery return to the Defense Reutilization and Marketing Office (DRMO), and a Safety Kleen parts

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 PROJ. NO.: 774645
 INITIATOR: J. RAGSDALE
 PROJ. MGR.: J. YACOUB
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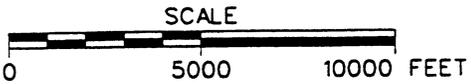


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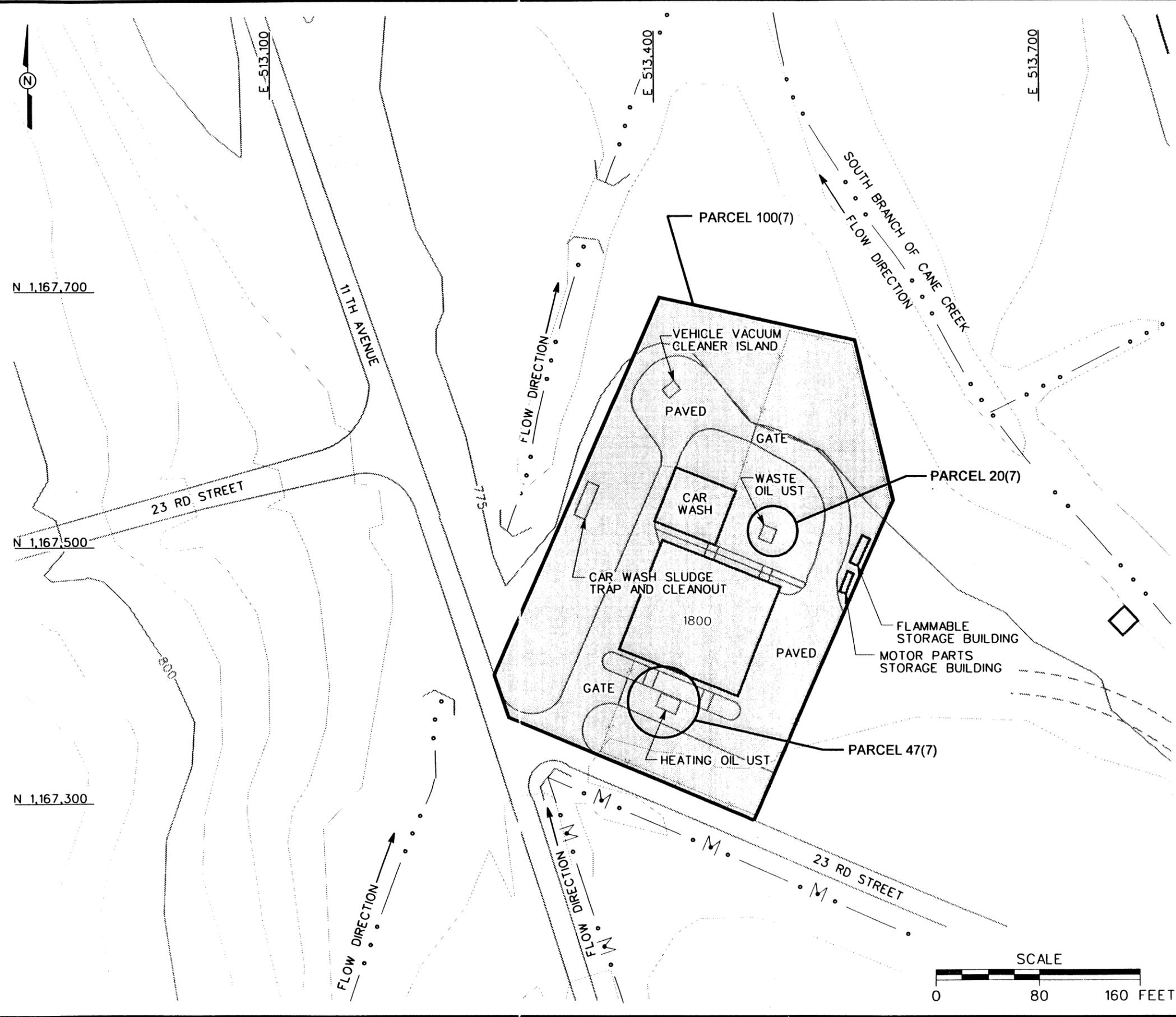

 FORT McCLELLAN BOUNDARY

FIGURE 1-1
SITE LOCATION MAP
AUTOCRAFT SHOP/FORMER DPDO
BUILDING 1800
PARCELS 100(7), 20(7) & 47(7)

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

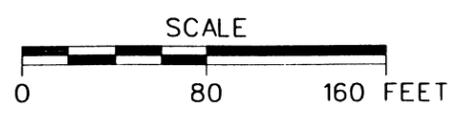


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 INITIATOR: J. RAGSDALE
 PROJ. MGR.: J. YACOUB
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 PROJ. NO.: 774645



- LEGEND**
- UNIMPROVED ROADS AND PARKING
 - PAVED ROADS AND PARKING
 - BUILDING
 - TOPOGRAPHIC CONTOURS
 - PARCEL BOUNDARY
 - BRIDGE
 - CULVERT WITH HEADWALL
 - SURFACE DRAINAGE / CREEK
 - MANMADE SURFACE DRAINAGE FEATURE
 - FENCE

FIGURE 1-2
 SITE MAP
 AUTOCRAFT SHOP/FORMER DPDO
 BUILDING 1800
 PARCELS 100(7), 20(7) & 47(7)
 U. S. ARMY CORPS OF ENGINEERS
 MOBILE DISTRICT
 FORT McCLELLAN
 CALHOUN COUNTY, ALABAMA
 Contract No. DACA21-96-D-0018



washer with nonhazardous mineral spirits. According to site sewer maps, floor drains are connected to the sanitary sewer system. Evidence of releases or other environmental problems were not noted during the visual site inspection (VSI) (ESE, 1998).

Two underground storage tanks (UST) are located at this site: a 2,000-gallon waste oil UST (Parcel 20[7]) and a 2000-gallon heating oil UST (Parcel 47[7]). Roy F. Weston, Inc. (Weston) documented oil-stained soils on the surface around the waste oil UST in 1990 (Weston, 1990). The waste oil UST was removed and replaced in April 1994 by Braun Intertec Corporation (Braun). Soil contamination was documented in the closure report (Braun, 1995) that presents sampling and analytical results. A limited amount of petroleum-contaminated soil was excavated and sent to the landfill. The extent of soil contamination was not determined.

Another UST (a 2,000-gallon heating oil tank) was removed from southwest end of Building 1800 on October 9, 1996 (Southern Environmental Management & Specialties [SEMS], 1997). The UST was replaced with a 2,500-gallon double wall fiberglass tank with interstitial monitoring on October 29, 1997. It appeared in the report to have been removed according to ADEM guidelines. There is no record in the report of any samples being collected. Groundwater was not encountered as the excavation was extended to five feet beyond the bottom of the tank. There was not any soil removed for disposal.

Oil stains were observed by Weston in the parts laydown area in the back of Building 1800. Overflow oil from this area drains to an intermittent stream behind the building. Weston also observed oil stained sediment near the discharge point from the floor drain of the parts laydown area (Weston, 1990).

According to records, the former DPDO, now DRMO, was located just north of the area where the Autocraft Shop building now stands. During the VSI in the summer of 1996, empty lead-acid battery casings were observed embedded in a low concrete wall along the west bank of the creek, immediately west of the current Autocraft Shop. Other reports of spills or other documentation of the past DPDO operations at the Building 1800 area were not discovered during the VSI (ESE, 1998).

The former DPDO Building 1800 is one of four areas at FTMC known to have been used for polychlorinated biphenyl (PCB) storage. According to 1981 U.S. Army Training and Doctrine Command (TRADOC) Guidance for turn-in of PCB Items to DPDO (FTMC pre-1989 files), "nonleaking" transformers, capacitors, and any accessories were to be wiped clean with a rag,

and the contents were to be analyzed and turned in (Weston, 1990). Leaking items were overpacked and handled by Pesticide Branch personnel. According to records, the DPDO (now DRMO) was formerly located at the Autocraft Shop Area Building 1800. FTMC facility real estate records indicate that the Autocraft Shop was built in 1976, so any DPDO activity at this location would have been prior to this time. The current DRMO building was built in 1970. Based on this information, it is assumed that DRMO/DPDO stored PCB transformers at their facilities in Building 1800 on 23rd Avenue before 1976.

The soils at this site are the Philo and Stendal fine sandy loams (PhA), which are developing in general alluvium on nearly level bottoms subject to flooding. The surface soil ranges from dark grayish-brown to dark brown. The subsoil ranges from dark brown to yellowish brown. A few areas are weakly cemented at depths of 30 to 38 inches. Runoff is slow, and flooding common occurs during low or heavy rain of short duration. Infiltration is medium and permeability is moderate. The capacity for moisture is high. Depth to the water table may be as shallow as 1 to 2 feet; however, at the Autocraft Shop/Former DPDO Building 1800, it is believed to be 6 to 8 feet. General soil depth in these series is approximately 2 to 5.5 feet of moderately well drained to somewhat poorly drained fine sandy loam or fine sandy clay loam. These series are developed from alluvium that washed from sandstone and shale soils that frequently flooded. Depth to bedrock is likely greater than 6 feet (U.S. Department of Agriculture, 1961).

1.3 Scope of Work

The scope of work for activities associated with the site investigation at the Autocraft Shop/Former DPDO Building 1800 site, as specified in the statement of work (USACE, 1998) includes the following tasks:

- Develop the SFSP attachment.
- Develop the SSHP attachment.
- Collect two surface soil, six subsurface soil, six groundwater, three surface water, three sediment samples and three depositional soil samples to determine whether potential site-specific chemicals (PSSC) are present at the Autocraft Shop/Former DPDO Building 1800 site, and to provide data useful for supporting any future planned corrective measures and closure activities.

Upon completion of the field activities and sample analyses, draft and final SI summary reports will be prepared in accordance with current U.S. Environmental Protection Agency (EPA) Region IV and Alabama Department of Environmental Management (ADEM) requirements.

2.0 Summary of Existing Environmental Studies

An environmental baseline survey (EBS) was conducted by ESE to document the current environmental conditions of all FTMC property (ESE, 1997). The study was to identify sites that, based on available information, have no history of contamination and comply with U.S. Department of Defense (DOD) guidance for fast track cleanup at closing installations. The EBS also provides a baseline picture of FTMC properties by identifying and categorizing the properties by seven criteria:

1. Areas where no storage, release, or disposal (including migration) has occurred.
2. Areas where only storage has occurred.
3. Areas of contamination below action levels.
4. Areas where all necessary remedial actions have been taken.
5. Areas of known contamination with removal and/or remedial action underway.
6. Areas of known contamination where required response actions have not been taken.
7. Areas that are not evaluated or require further evaluation.

The EBS was conducted in accordance with the Community Environmental Response Facilitation Act (CERFA) (CERFA-Public Law 102-426) protocols and DOD policy regarding contamination assessment. Record searches and reviews were performed on all reasonably available documents from FTMC, ADEM, EPA Region IV, and Calhoun County, as well as a database search of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-regulated substances, petroleum products, and Resource Conservation and Recovery Act (RCRA)-regulated facilities. Available historic maps and aerial photographs were reviewed to document historic land uses. Personal and telephone interviews of past and present FTMC employees and military personnel were conducted. In addition, VSIs were conducted to verify conditions of specific property parcels.

A steel 600-gallon waste oil UST located at the rear (east) of Building 1800 was removed on April 27, 1994 and replaced with a 2,000-gallon UST (Parcel 20[7]) (Braun, 1995). During normal operation, the tank was filled by pouring used oil into a sink in Building 1800 and

allowing the oil to gravity feed through an underground polyvinyl chloride (PVC) pipe to the UST. It was noted in the report, prepared by Braun for ADEM, that at least one leak had occurred at an unsealed joint in the PVC. The base of the tank was approximately 8 feet below the ground surface and water was not encountered at that depth. After removal of the tank, water was encountered at bedrock as the excavation was enlarged to approximately 10 feet deep. Although holes were not noted in the tank, stained soils were observed on the east side of the excavation from the top of the excavation to the bottom of the excavation. Surface spills were noted in the Weston report before the UST removal. The pipe trench was excavated to approximately 2 feet below ground surface to remove and replace approximately 14 feet of the piping leading to the UST. Approximately 6 cubic yards of soil were removed from the excavation. The soil was stockpiled and the excavation was backfilled with pea gravel. Excavated soils were transported to the Base landfill for disposal.

Soil samples were collected from the side walls and the bottom of the excavation after the tank was removed. These sample results are listed in Table 2-1. Sample locations are shown on Figure 2-1. Samples labeled as "A" were collected at the surface of each location (walls and floor) and samples labeled as "B" were collected 2 feet further into the undisturbed soil. Where "A" sample results exceeded 100 parts per million (ppm) for total petroleum hydrocarbons (TPH) (EPA Method 418.1), the "B" samples were analyzed. High concentrations of TPH were detected in all of the samples, except the sample collected from the north side of the excavation.

Four monitoring wells were installed near the waste oil UST (Parcel 20[7]) excavation to collect groundwater samples for analyses in accordance with the ADEM UST requirements. These four wells are shown on Figure 2-1. Each monitoring well was constructed of 4-inch-diameter PVC pipe with a 10-foot-long PVC screen. Three of the wells were installed to 15 feet below ground surface and one was installed to 14.5 feet below ground surface. One groundwater sample was collected from each of the wells (MW-1, MW-2, MW-3, and MW-4) on October 13, 1994. Samples were analyzed for volatile organic compounds (VOC), polynuclear aromatic hydrocarbons (PAH) and total lead. VOCs and PAHs were not detected above the reporting limit in the groundwater samples, with the exception of fluorene in MW-1 and MW-3 at 0.3 micrograms per liter ($\mu\text{g/L}$) and 0.12 $\mu\text{g/L}$, respectively. Total lead was detected above the reporting limit in MW-4 at 3 $\mu\text{g/L}$, but below the EPA action level of 15 $\mu\text{g/L}$ (EPA, 1996).

Table 2-1

**Historical Sample Data^a for the Removal of 600-Gallon Waste Oil UST
Autocraft Shop/Former DPDO Building 1800
Fort McClellan, Calhoun County, Alabama**

| Sampling Task | Sample Number | Sample Location Sample Description | Sample Date | Sample Depth (feet) | Analytical Parameters | |
|--|---------------|---------------------------------------|-------------|---------------------|-----------------------|--------------------------|
| | | | | | Total Lead (mg/kg) | TPH ^b (mg/kg) |
| Samples collected after UST and piping removal | 94-0431-21 | North sidewall "A" | 4/27/94 | 4 | 3.9 | < 5 |
| | 94-0431-26 | North sidewall "B" | 4/27/94 | 4 | c | c |
| | 94-0431-22 | South sidewall "A" | 4/27/94 | 4 | 17 | 5000 |
| | 94-0431-27 | South sidewall "B" | 4/27/94 | 4 | 7.9 | 680 |
| | 94-0431-23 | East sidewall "A" | 4/27/94 | 4 | 16 | 41,000 |
| | 94-0431-28 | East sidewall "B" | 4/27/94 | 4 | 8.5 | 45 |
| | 94-0431-24 | West sidewall "A" | 4/27/94 | 4 | 58 | 26,000 |
| | 94-0431-29 | West sidewall "B" | 4/27/94 | 4 | 7.4 | 425 |
| | 94-0431-25 | Base "A" | 4/27/94 | 6 | 15 | 1200 |
| | 94-0431-30 | Base "B" | 4/27/94 | 8 | 14 | 12,000 |
| | 94-0431-31 | Pipe trench "A" | 4/27/94 | 1.5 | 95 | 71,000 |
| | 94-0431-32 | Pipe trench "B" | 4/27/94 | 3.5 | 12 | 340 |
| | 94-0452-11 | Stock pile | 5/10/94 | d | 31 | 6,700 |

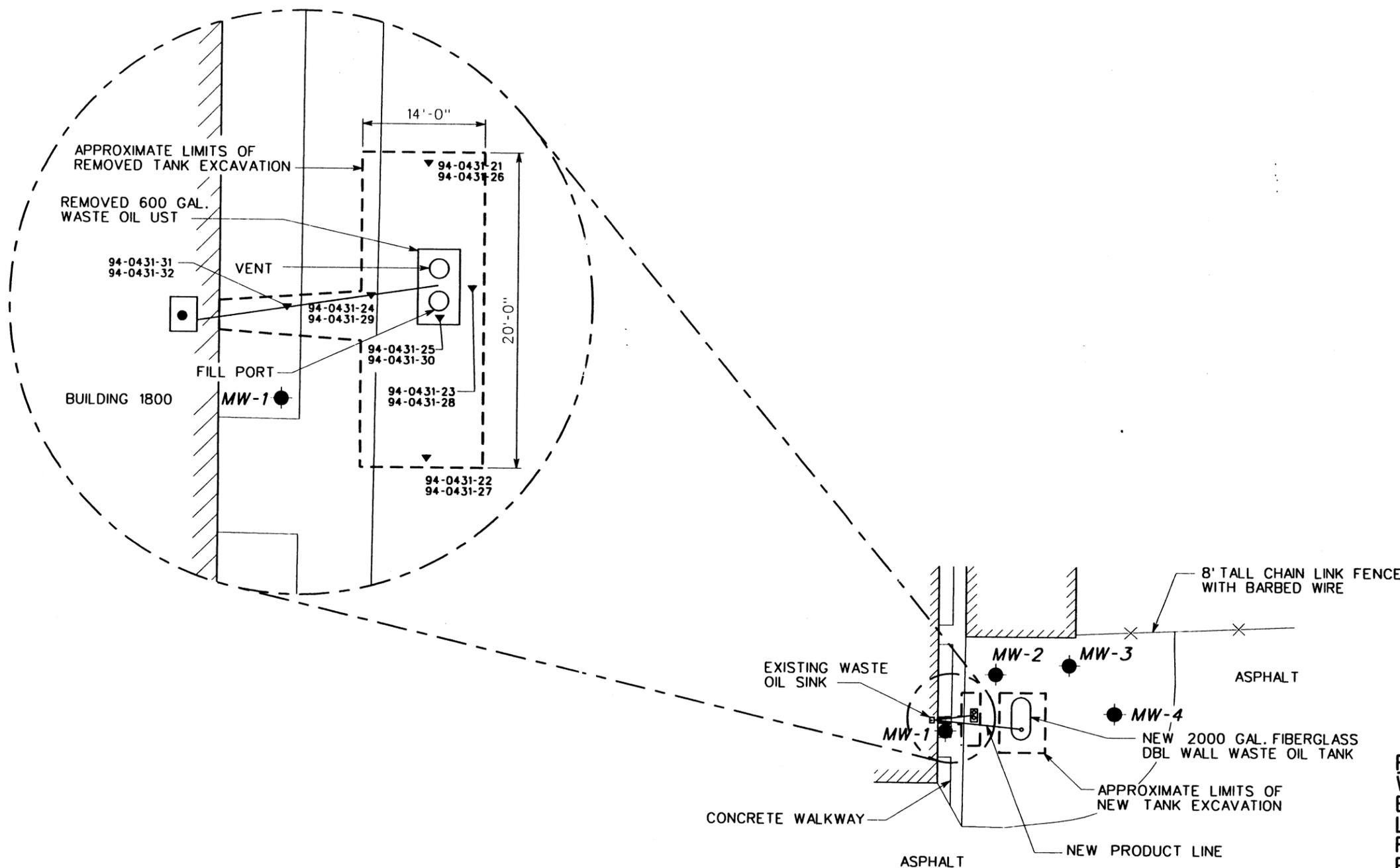
^aBraun Intertec Corporation (Braun) 1995, UST Closure Report, Site Assessment Report, Fort McClellan Building 1800, Calhoun County, Fort McClellan, Alabama, January.

^bTotal petroleum hydrocarbon compounds (EPA Method 418.1).

^cNo laboratory analysis performed.

^dNo depth listed in report.

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 DRAFT, CHECK BY: ENGR. CHK. BY: A. MAYILA
 DATE LAST REV: DRAWN BY: D. BILLINGSLEY
 STARTING DATE: 05/22/98
 DWG. NO.: PROJ. NO.: 774645
 INITIATOR: J. RAGSDALE
 PROJ. MGR.: J. YACOUB



LEGEND
 - - - - - APPROXIMATE LIMITS OF EXCAVATION
 94-0431-21 ▼ COLLOCATED SAMPLE NUMBER
 94-0431-26 ▼
 ● EXISTING BEDROCK MONITORING WELL (EXACT LOCATIONS HAVE NOT BEEN CONFIRMED)

FIGURE 2-1
 WASTE OIL UST REMOVAL
 EXCAVATION AND SAMPLE
 LOCATIONS AUTOCRAFT SHOP/
 FORMER DPDO BUILDING 1800
 PARCELS 100(7), 20(7) & 47(7)

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

SOURCE: BRAUN INTERTEC CORPORATION REPORT
 "UST CLOSURE, SITE ASSESSMENT REPORT
 FORT McCLELLAN BUILDING 1800, CALHOUN
 COUNTY, FORT McCLELLAN, ALABAMA" JANUARY 1995.

NOT TO SCALE



The report stated that the extent of the petroleum contaminated soils was not determined during the excavation. Groundwater was encountered within 5 feet of the bottom of the tank during final excavation (Braun, 1995).

The 2,000-gallon heating oil tank (Parcel 47[7]) was removed from the southwest end of Building 1800 in October, 1996 (SEMS, 1997) and was replaced with a 2,500-gallon, double-wall, fiberglass tank. The tank appears to have been removed according to ADEM guidelines. There is not any record in the report of any soil samples being collected.

The Autocraft Shop/Former DPDO Building 1800 was identified as a Category 7 CERFA site. A CERFA site is a parcel where hazardous substances and/or petroleum products were stored, and where the possibility exists that those substances were released onto the site or to the environment, or were disposed of on the site property. The Autocraft Shop/Former DPDO Building 1800 lacks adequate documentation and therefore requires additional evaluation to determine the environmental condition of the parcel.

3.0 Site-Specific Data Quality Objectives

3.1 Overview

The data quality objective (DQO) process is followed to establish data requirements. This process ensures that the proper quantity and quality of data are generated to support the decision-making process associated with the action selection for the Autocraft Shop/Former DPDO Building 1800 site. This section incorporates the components of the DQO process described in the EPA publication EPA 540-R-93-071 *Data Quality Objectives Process for Superfund* (EPA, 1993). The DQO process as applied to the Autocraft Shop/Former DPDO Building 1800 site is described in more detail in Sections 3.2 and 4.3 of the WP. Table 3-1 provides a summary of the factors used to determine the appropriate quantity of samples, and the procedures necessary to meet the objectives of the site investigation, and to establish a basis for future action at this site.

The samples will be analyzed using EPA SW-846 methods, including Update III Methods where applicable, as presented in Chapter 4.0 in this SFSP and Table 6-1 in the QAP. Data will be reported and evaluated in accordance with Corps of Engineers South Atlantic Savannah (CESAS) Level B criteria (USACE, 1994) and the stipulated requirements for the generation of definitive data (Section 3.1.2 of the QAP). Chemical data will be reported via hard copy data packages by the laboratory using Contract Laboratory Program (CLP)-like forms. These packages will be validated in accordance with EPA National Functional Guidelines by Level III criteria.

3.2 Data Users and Available Data

The intended data users and available data related to the site investigation at the Autocraft Shop/Former DPDO Building 1800 site, presented in Table 3-1, have been used to formulate a site-specific conceptual model. This conceptual model was developed to support the development of this SFSP, which is necessary to meet the objectives of these SI activities and to establish a basis for future action at the site. The data users for the data and information generated during field activities are primarily the EPA, USACE, ADEM, FTMC, and the USACE supporting contractors. This SFSP, along with the necessary companion documents, has been designed to provide the regulatory agencies with sufficient detail to reach a determination as to the adequacy of the scope of work. The program has also been designed to provide the level of defensible data and information required to confirm or rule out the existence of residual chemical contamination in site media, and if needed, determine the nature and extent of PSSC.

Table 3-1

Summary of Data Quality Objectives
Site Investigation

Autocraft Shop/Former DPDO Building 1800
Fort McClellan, Calhoun County, Alabama

| Potential Data Users | Available Data | Conceptual Site Model | Media of Concern | Data Uses and Objectives | Data Types | Analytical Level | Data Quantity |
|---|---|---|---|---|---|---|---|
| EPA, ADEM USACE, DOD FTMC, IT Corporation Other Contractors Possible future land users | Minimal UST Removal Sample Data | <p><u>Contaminant Source</u> Former Motor Pool Facility, <u>Migration Pathways</u></p> <ul style="list-style-type: none"> Infiltration to subsurface soil Infiltration and leaching to groundwater Runoff and erosion to surface water <p><u>Potential Receptors</u> groundskeepers, construction workers, youthful visitor, residents terrestrial and aquatic organisms</p> <p><u>PSSC</u> Diesel fuel, waste oil, other petroleum products; possibly PCBs, solvents and metals</p> | Soils Groundwater Surface Water Sediment Depositional Soil | <p>SI to confirm the presence or absence of PSSC in the site media.</p> <p>Definitive quality data for future decision making</p> | <p><u>Surface soil</u> TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides</p> <p><u>Subsurface Soil</u> TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides</p> <p><u>Groundwater</u> TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides</p> <p><u>Surface Water</u> TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides</p> <p><u>Sediment</u> TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides TOC, Grain Size</p> <p><u>Depositional Soil</u> TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides</p> | <p>Definitive data in CESAS Level B data packages</p> | <p>2 direct push soil samples + QC</p> <p>6 direct push soil samples + QC</p> <p>2 direct-push groundwater samples + QC and 4 existing monitoring well samples + QC</p> <p>3 surface water samples + QC</p> <p>3 sediment samples + QC</p> <p>3 depositional samples + QC</p> |

ADEM - Alabama Department of Environmental Management.
CESAS - Corps of Engineers South Atlantic Savannah.
DOD - U.S. Department of Defense.
EPA - U.S. Environmental Protection Agency.
FTMC - Fort McClellan.
PSSC - Potential site-specific chemical.
QC - Quality control.
VOC - Volatile organic compound.

SVOC - Semivolatile organic compound.
TAL - Target analyte list.
TCL - Target compound list.
USACE - U.S. Army Corps of Engineers.
TOC - Total organic carbon.

3.3 Conceptual Site Exposure Model, Human Health Evaluation

The conceptual site exposure model (CSEM) provides the basis for identifying and evaluating the potential risks to human health in the risk assessment. The CSEM includes the receptors appropriate to all plausible scenarios, and the potential exposure pathways. Graphically presenting possible pathways by which a potential receptor may be exposed, including sources, release and transport pathways, and exposure routes, facilitates consistent and comprehensive evaluation of risk to human health, and helps to ensure that potential pathways are not overlooked. The elements necessary to construct a complete exposure pathway and develop the CSEM include:

- Source (i.e., contaminated environmental) media
- Contaminant release mechanisms
- Contaminant transport pathways
- Receptors
- Exposure pathways.

Contaminant release mechanisms and transport pathways are not relevant for direct receptor contact with a contaminated source medium.

The Autocraft Shop/Former DPDO Building 1800 consists of a large building with several bays and areas used for auto repair and maintenance. USTs were used to store waste oil and heating fuels. Some part of the building had been used for PCB storage (transformer, capacitors, etc., some of which may have leaked). Potential contaminants include petroleum products and chemicals, other chemicals associated with automotive repair and maintenance, and PCBs. Primary contaminant release was probably to surface and subsurface soil, and, in some cases, by floor drains to storm sewers, which discharge to South Branch of Cane Creek. Potential Contaminant transport pathways include infiltration to subsurface soil, infiltration and leaching to groundwater, runoff and erosion to an intermittent stream behind the building.

Plausible receptors under the current site scenario include a groundskeeper and a construction worker, exposed to soil inside the fence, and a youthful visitor, exposed to surface water and sediment in the small intermittent streams next to the site. Future plans call for use of the site by the National Guard, but the fate of Building 1800 is unclear (FTMC, 1997). Future development for residential use, although not currently planned, is possible and would represent a more conservative scenario. Plausible future receptors include a groundskeeper, construction worker, and resident. It is assumed that groundwater may be developed as a source of potable water. The youthful visitor scenario is not quantified under the future site use scenario because the resident

would provide the upper bound risk estimate on exposure to soil, surface water, and sediment. The contaminant release and transport mechanisms, source and exposure media, receptors, and exposure pathways are summarized in Figure 3-1.

Assessment of potential ecological risk associated with sites or parcels (e.g., surface water and sediment sampling, specific ecological assessment methods, etc.) will be addressed in a separate document to be issued as the Habitat-Specific Screening Ecological Risk Assessment Work Plan.

3.4 Decision-Making Process, Data Uses, and Needs

The decision-making process consists of a seven-step process that is presented in detail in Sections 3.2 and 4.3 of the WP and will be followed during the site investigation at the Autocraft Shop/Former DPDO Building 1800 Site. Data uses and needs are summarized in Table 3-1.

3.4.1 Risk Evaluation

Confirmation of contamination at the Autocraft Shop/Former DPDO Building 1800 will be based on comparing detected site PSSC to site-specific screening levels developed in the WP. EPA definitive data with CESAS Level B data packages will be used to achieve detection limits sufficient to determine whether or not the established guidance criteria are exceeded in site media. Definitive data will be adequate for confirming the presence of site contamination and for supporting a feasibility study and risk assessment.

3.4.2 Data Types and Quality

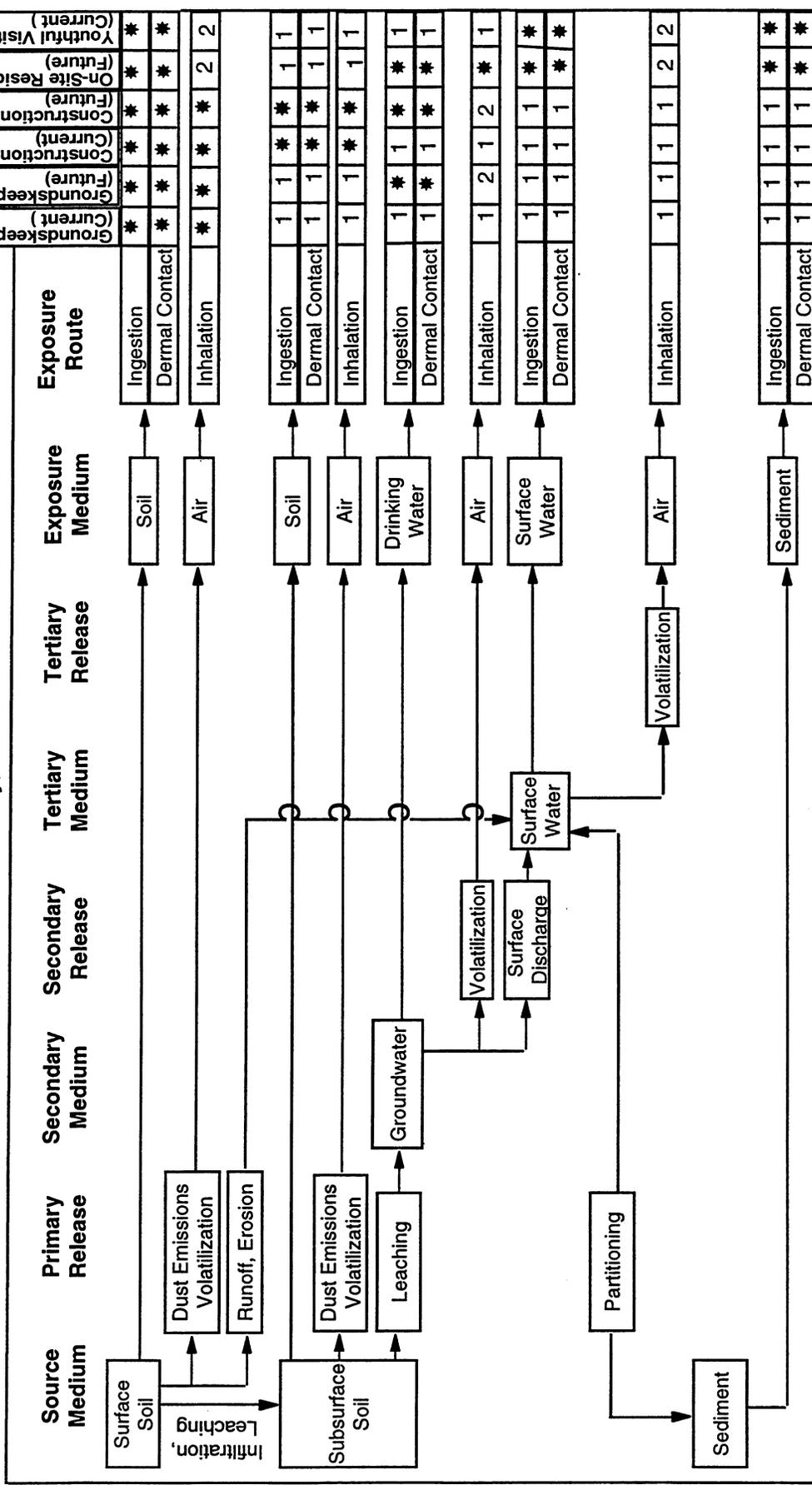
Surface and subsurface soil, groundwater, surface water and sediment will be sampled and analyzed to meet the objectives of the SI at the Autocraft Shop/Former DPDO Building 1800 Site. Quality assurance/quality control (QA/QC) samples will be collected for all sample types as described in Chapter 4.0 of this SFSP. Samples will be analyzed by EPA-approved SW-846 methods, where available; comply with EPA definitive data requirements; and be reported using hard copy data packages. In addition to meeting the quality needs of this SI, data analyzed at this level of quality are appropriate for all phases of site characterization, remedial investigation, and risk assessment.

3.4.3 Precision, Accuracy, and Completeness

Laboratory requirements of precision, accuracy, and completeness for this site investigation are provided in Chapter 9.0 of the QAP.

Figure 3-1

Human Health Conceptual Site Exposure Model
 Autocraft Shop/Former DPDO, Building 1800, Parcels 100(7), 20(7), and 47(7)
 Fort McClellan, Calhoun County, Alabama



* = Complete exposure pathway evaluated in baseline risk assessment
 1 = Incomplete exposure pathway.
 2 = Although theoretically complete, this pathway is judged to be insignificant.

4.0 Field Activities

4.1 Utility Clearances

Prior to performing any intrusive sampling, a utility clearance will be performed at all locations where soil and groundwater samples will be collected, using the procedure outlined in Section 4.2.6 of the SAP. The site manager will mark the proposed locations with stakes, coordinate with the installation to clear the proposed locations for utilities, and obtain digging permits. Once the locations are cleared, the stakes will be labeled as cleared.

4.2 Environmental Sampling

The environmental sampling program at the Autocraft Shop/Former DPDO Building 1800 site includes the collection of surface and subsurface soil, groundwater, surface water, sediment, and depositional soil samples for chemical analyses. These samples will be collected and analyzed to provide data for characterizing the site to determine the environmental condition and any further action to be conducted at the site. The following is a brief discussion concerning areas where samples will be collected to determine the presence or absence of PSSC.

4.2.1 Surface Soil Sampling

Surface soil samples will be collected from two of the six soil borings proposed to be installed at the Autocraft Shop/Former DPDO Building 1800 site.

4.2.1.1 Sample Locations and Rationale

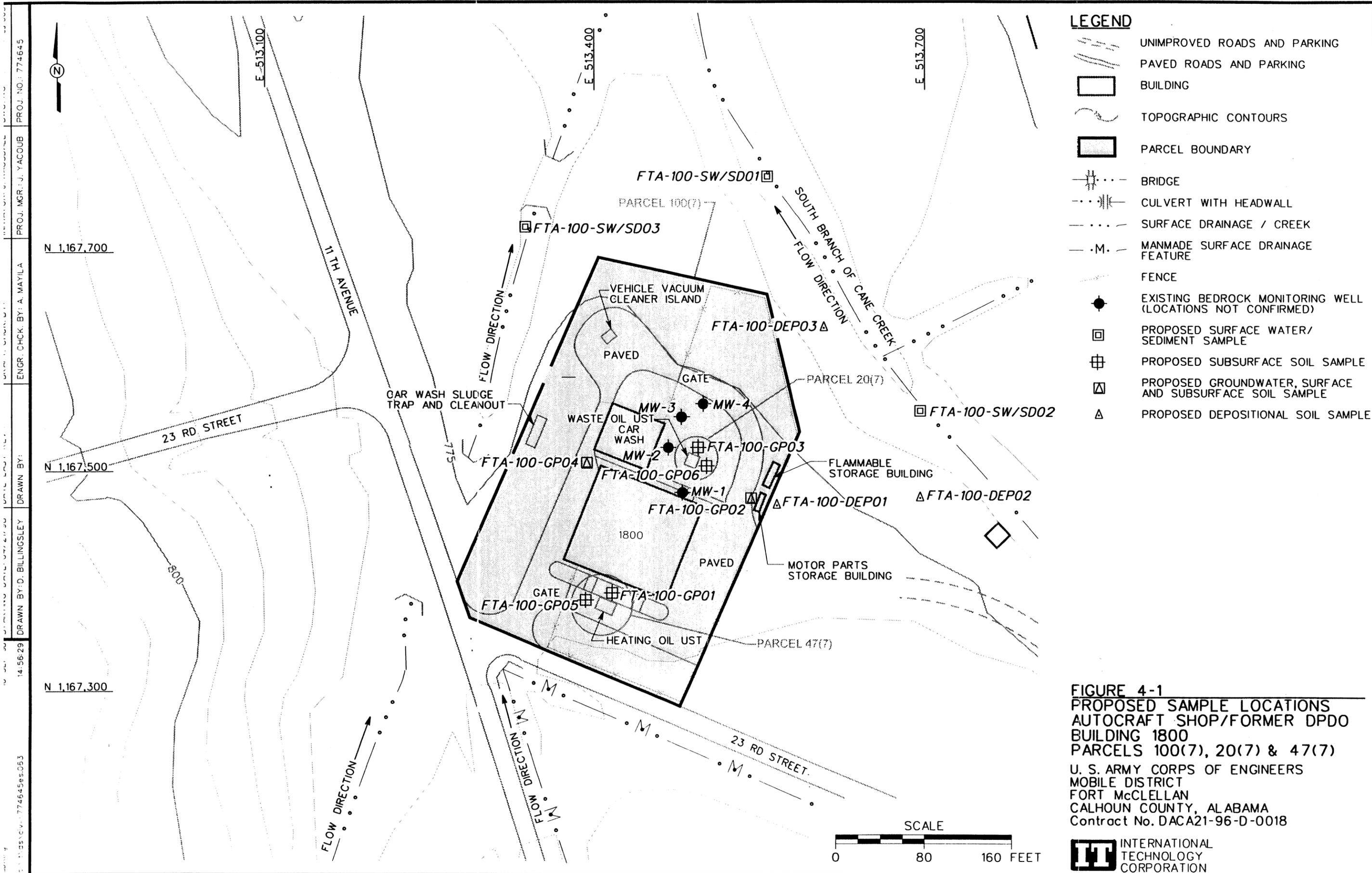
Surface soil sampling rationale is presented in Table 4-1. Proposed sampling locations are shown on Figure 4-1. Surface soil sample designations, depths, and required QA/QC sample quantities are listed in Table 4-2. The exact soil boring sampling locations will be determined in the field by the on-site geologist based on actual field conditions.

4.2.1.2 Sample Collection Procedures

Surface soil samples will be collected from the upper 1 foot of soil by direct-push technology using the methodology specified in Section 4.7.1.1 of the SAP. Collected soil samples will be screened using a photoionization detector (PID) in accordance with Section 4.15 of the SAP. Sample containers, sample volumes, preservatives, and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1, of the QAP. Sample documentation and chain-of-custody will be recorded as specified in Section 4.13 of the SAP. The samples will be analyzed for the parameters listed in Section 4.5 of this SFSP.

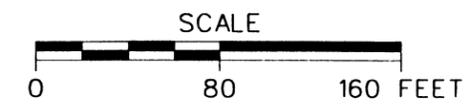
Sample Locations And Rationale
Autocraft Shop/Former DPDO Building 1800
Fort McClellan, Calhoun County, Alabama

| Sample Location | Sample Media | Sample Location Rationale |
|-----------------|--|---|
| FTA-100-GP01 | Subsurface soil | Soil boring will be placed on the northeast side of the heating oil UST in grass area and adjacent the UST. Sample date will indicate if UST is leaking or if contaminated soil exists from previous tank removal. |
| FTA-100-GP02 | Surface soil, subsurface soil, and groundwater | Soil boring will be placed adjacent to the motor parts laydown shed. Sample data will indicate if petroleum products were released from parts storage activities and oil overflow from concrete pad area. |
| FTA-100-GP03 | Subsurface soil | Soil boring will be placed on the north side and adjacent to the waste oil UST. Sample date will indicated if UST is leaking or if contaminated soil exists from previous tank removal. |
| FTA-100-GP04 | Surface soil, subsurface soil, and groundwater | Soil boring will be placed to the north of the paint booth roll up doors between paint booth door and door to car wash pumps. Sample data will indicate if paint booth materials were released to the outside area from potential spills. |
| FTA-100-GP05 | Subsurface soil | Soil boring will be placed on the west side of the heating oil UST and adjacent the UST. Sample date will indicate if UST is leaking or if contaminated soil exists from previous tank removal. |
| FTA-100-GP06 | Subsurface soil | Soil boring will be placed on the east side and adjacent to the waste oil UST. Sample date will indicated if UST is leaking or if contaminated soil exists from previous tank removal. |
| FTA-100-MW01 | Groundwater | Groundwater sample from an existing monitoring well installed after waste oil tank removal as part of the ADEM requirements. Sample data will indicate if groundwater has been affected by potentially contaminated soil since waste oil UST removal. |
| FTA-100-MW02 | Groundwater | Groundwater sample from an existing monitoring well installed after waste oil tank removal as part of the ADEM requirements. Sample data will indicate if groundwater has been affected by potentially contaminated soil since waste oil UST removal. |
| FTA-100-MW03 | Groundwater | Groundwater sample from an existing monitoring well installed after waste oil tank removal as part of the ADEM requirements. Sample data will indicate if groundwater has been affected by potentially contaminated soil since waste oil UST removal. |
| FTA-100-MW04 | Groundwater | Groundwater sample from an existing monitoring well installed after waste oil tank removal as part of the ADEM requirements. Sample data will indicate if groundwater has been affected by potentially contaminated soil since waste oil UST removal. |
| FTA-100-SW/SD01 | Surface water and sediment | Sample location is a potential, downgradient sink for COPC from the site to accumulate. Evidence of COPC mobility at any point within the site would likely be reflected in sample data from this location. |
| FTA-100-SW/SD02 | Surface water and sediment | Sample location is a potential, downgradient sink for COPC from the site to accumulate. Evidence of COPC mobility at any point within the site would likely be reflected in sample data from this location. |
| FTA-100-SW/SD03 | Surface water and sediment | Sample location is a potential, downgradient sink for COPC from the site to accumulate. Evidence of COPC mobility at any point within the site would likely be reflected in sample data from this location. |
| FTA-100-DEP01 | Depositional Soil | Sample location represents a lower elevation area where surface water runoff could collect, and potentially percolate into the substratum, or potentially deposit suspended materials after evaporation. |
| FTA-100-DEP02 | Depositional Soil | Sample location represents a lower elevation area where surface water runoff could collect, and potentially percolate into the substratum, or potentially deposit suspended materials after evaporation. |
| FTA-100-DEP03 | Depositional Soil | Sample location represents a lower elevation area where surface water runoff could collect, and potentially percolate into the substratum, or potentially deposit suspended materials after evaporation. |



- LEGEND**
- UNIMPROVED ROADS AND PARKING
 - PAVED ROADS AND PARKING
 - BUILDING
 - TOPOGRAPHIC CONTOURS
 - PARCEL BOUNDARY
 - BRIDGE
 - CULVERT WITH HEADWALL
 - SURFACE DRAINAGE / CREEK
 - MANMADE SURFACE DRAINAGE FEATURE
 - FENCE
 - EXISTING BEDROCK MONITORING WELL (LOCATIONS NOT CONFIRMED)
 - PROPOSED SURFACE WATER/ SEDIMENT SAMPLE
 - PROPOSED SUBSURFACE SOIL SAMPLE
 - PROPOSED GROUNDWATER, SURFACE AND SUBSURFACE SOIL SAMPLE
 - PROPOSED DEPOSITIONAL SOIL SAMPLE

FIGURE 4-1
PROPOSED SAMPLE LOCATIONS
AUTOCRAFT SHOP/FORMER DPDO
BUILDING 1800
PARCELS 100(7), 20(7) & 47(7)
 U. S. ARMY CORPS OF ENGINEERS
 MOBILE DISTRICT
 FORT McCLELLAN
 CALHOUN COUNTY, ALABAMA
 Contract No. DACA21-96-D-0018



PROJ. NO.: 774645
 PROJ. MGR.: J. YACOUB
 ENGR. CHK. BY: A. MAYLA
 DRAWN BY: D. BILLINGSLEY
 14.56.29
 774645es.053

Table 4-2

Surface, Subsurface, and Depositional Soil Sample Designations and QA/QC Sample Quantities
 Autocraft Shop/Former DPDO Building 1800
 Fort McClellan, Calhoun County, Alabama

| Sample Location | Sample Designation | Sample Depth (ft) | QA/QC Samples | | MS/MSD | Analytical Suite |
|-----------------|------------------------------|-------------------|---------------------------|---------------------------|---|--|
| | | | Field Duplicates | Field Spills | | |
| FTA-100-GP01 | FTA-100-GP01-DS-CV0001-REG | a | FTA-100-GP01-DS-CV0002-FD | FTA-100-GP01-DS-CV0003-FS | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-GP02 | FTA-100-GP02-SS-CV0004-REG | 0-1 | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-GP03 | FTA-100-GP02-DS-CV0005-REG | b | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-GP04 | FTA-100-GP03-DS-CV0006-REG | a | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-GP05 | FTA-100-GP04-SS-CV0007-REG | 0-1 | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-GP06 | FTA-100-GP04-DS-CV0008-REG | b | | | FTA-100-GP04-DS-CV0008-MS FTA-100-GP04-DS-CV0008-MSD | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-GP07 | FTA-100-GP05-DS-CV0009-REG | a | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-GP08 | FTA-100-GP06-DS-CV0010-REG | a | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-DEP01 | FTA-100-DEP01-DEP-CV0011-REG | 0-1 | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-DEP02 | FTA-100-DEP02-DEP-CV0012-REG | 0-1 | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-DEP03 | FTA-100-DEP03-DEP-CV0013-REG | 0-1 | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |

^a Depth of sample to be immediately below the estimated bottom of the UST.

^b Actual sample depth selected for analysis will be at the discretion of the on-site geologist and will be based on field observations.

QA/QC - Quality assurance/quality control.
 VOC - Volatile organic compound.
 SVOC - Semivolatile organic compound.
 TAL - Target analyte list.
 TCL - Target compound list.
 PCB - Polychlorin
 REG - Field Sample.
 FD - Field duplicate.
 FS - Field split.
 MS/MSD - Matrix spike/matrix spike duplicate.

4.2.2 Subsurface Soil Sampling

Subsurface soil samples will be collected from six soil borings installed at the Autocraft Shop/Former DPDO Building 1800 site.

4.2.2.1 Sample Locations and Rationale

Subsurface soil samples will be collected from the six soil borings shown on Figure 4-1. Subsurface sampling rationale is presented in Table 4-1. Subsurface soil sample designations, depths, and required QA/QC sample quantities are listed in Table 4-2. The exact soil boring sampling locations will be determined in the field by the on-site geologist based on actual field conditions.

4.2.2.2 Sample Collection Procedures

Subsurface soil samples will be collected from soil borings at a depth greater than 1 foot below the ground surface in the unsaturated zone. The soil borings will be advanced and soil samples collected using the direct-push sampling procedures specified in Section 4.7.1.1 of the SAP.

Sample documentation and chain-of-custody will be recorded as specified in Section 4.13 of the SAP. Sample containers, sample volumes, preservatives, and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1, of the QAP. The samples will be analyzed for the parameters listed in Section 4.5 of this SFSP.

Soil samples will be collected continuously to 12 feet below ground surface, or until either groundwater or refusal is reached. A detailed lithologic log will be recorded by the on-site geologist for each borehole. At least one subsurface sample from each borehole will be selected for analyses. The collected subsurface soil samples will be field screened using a photo-ionization detector (PID) in accordance with Section 4.15 of the SAP to measure samples exhibiting elevated readings above background. Typically, the sample showing the highest reading will be selected and sent to the laboratory for analysis. If none of the samples collected indicate elevated readings above background (reading in ambient air) using the PID, then the deepest interval collected will be submitted to the laboratory for analysis. Subsurface soil samples will be selected for analyses from any depth interval if the on-site geologist suspects potential PSSCs at the interval. Site conditions such as lithology may also determine the actual sample depth interval submitted for analyses. More than one subsurface soil sample will be

collected if field measurements and observations indicate a possible layer of PSSCs and/or additional sample data would provide insight to the existence of any PSSC.

4.2.3 Direct-Push Groundwater Sampling

Groundwater samples will be collected from two direct-push temporary wells installed at the site.

4.2.3.1 Sample Locations and Rationale

Two groundwater samples will be collected from direct-push temporary wells installed at the site. Groundwater samples will be collected from the temporary wells shown on Figure 4-1. Groundwater sampling rationale is presented in Table 4-1. The groundwater sample designations and required QA/QC sample quantities are listed in Table 4-3. The exact sampling locations will be determined in the field by the on-site geologist based on actual field conditions.

4.2.3.2 Sample Collection Procedures

Groundwater samples will be collected in accordance with the procedures specified in Section 4.7.1.1 of the SAP. The direct-push temporary well at each location will be advanced to the water table surface (to a depth where sufficient water is encountered) to collect a groundwater sample.

Sample documentation and chain-of-custody will be recorded as specified in Section 4.13 of the SAP. Sample containers, sample volumes, preservatives, and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1, of the QAP. The samples will be analyzed for the parameters listed in Section 4.5 of this SFSP.

4.2.4 Monitoring Well Groundwater Sampling

Groundwater samples will be collected from the four existing monitoring wells located around the waste oil UST at the north end of Building 1800.

4.2.4.1 Sample Locations and Rationale

Groundwater samples will be collected from the four existing monitoring wells shown on Figure 4-1. Groundwater sampling rationale is presented in Table 4-1. The groundwater sample designations and required QA/QC sample quantities are listed in Table 4-3.

Table 4-3

Direct-Push Groundwater and Existing Monitoring Well Sample Designations and QA/QC Sample Quantities
 Autocraft Shop/Former DPDO Building 1800
 Fort McClellan, Calhoun County, Alabama

| Sample Location | Sample Designation | Sample Depth (ft) | QA/QC Samples | | | Analytical Suite |
|-----------------|----------------------------|--------------------------|---------------------------|---------------------------|---|--|
| | | | Field Duplicates | Field Splits | MS/MSD | |
| FTA-100-GP02 | FTA-100-GP02-GW-CV3001-REG | ^a Water Table | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-GP04 | FTA-100-GP04-GW-CV3002-REG | ^a Water Table | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-MW01 | FTA-100-MW01-GW-CV3003-REG | 5-15 | FTA-100-MW01-GW-CV3004-FD | FTA-100-MW01-GW-CV3005-FS | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-MW02 | FTA-100-MW02-GW-CV3006-REG | 5-15 | | | FTA-100-MW02-GW-CV3006-MS FTA-100-MW02-GW-CV3006-MSD | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-MW03 | FTA-100-MW03-GW-CV3007-REG | 5-15 | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-MW04 | FTA-100-MW04-GW-CV3008-REG | 5-15 | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |

^a Actual groundwater sample depth will depend depth sufficient water is encountered to collect a groundwater sample.

- QA/QC - Quality assurance/quality control.
- VOC - Volatile organic compound.
- SVOC - Semivolatile organic compound.
- TAL - Target analyte list.
- TCL - Target compound list.
- PCB - Polychlorinated biphenyl.
- REG - Field sample.
- FD - Field duplicate.
- FS - Field split.
- MS/MSD - Matrix spike/matrix spike duplicate.

4.2.4.2 Sample Collection Procedures

Groundwater samples will be collected from existing monitoring wells in accordance with the procedures specified in 4.9.1.4 of the SAP. Field measurements of groundwater samples will be collected using the procedures listed in Section 4.15 of the SAP. Sample documentation and chain-of-custody will be recorded as specified in Section 4.13 of the SAP. Sample containers, sample volumes, preservatives and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1, of the QAP. The samples will be analyzed for the parameters listed in Section 4.5 of this SFSP.

4.2.5 Surface Water Sampling

Three surface water samples will be collected from the small creeks near the site: South Branch of Cane Creek on the east side and the small tributary on the west side of the site.

4.2.5.1 Sample Locations and Rationale

The surface water sampling rationale are listed in Table 4-1. Surface water samples will be collected from the locations proposed on Figure 4-1. The surface water sample designations and required QA/QC sample quantities are listed in Table 4-4. The exact sampling locations will be determined in the field based on drainage pathways and actual field observations.

4.2.5.2 Sample Collection Procedures

Surface water samples will be collected in accordance with the procedures specified in Section 4.9.1.3 of the SAP. Sample documentation and chain-of-custody will be recorded as specified in Section 4.13 of the SAP. Sample containers, sample volumes, preservatives, and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1, of the QAP. The samples will be analyzed for the parameters listed in Section 4.5.

4.2.6 Sediment Sampling

Three sediment samples will be collected at the same locations as the three surface water samples presented in Section 4.2.5.

4.2.6.1 Sample Locations and Rationale

The tentative locations for the three sediment samples to be collected are shown in Figure 4-1. Sediment sampling rationale is presented in Table 4-1. Sediment sample designations and required QA/QC sample quantities are listed in Table 4-4. The actual sediment sample points selected will be at the discretion of the ecological sampler based on the drainage pathways and actual field observations.

Table 4-4

Surface Water and Sediment Sample Designations and QA/QC Sample Quantities
 Autocraft Shop/Former DPDO Building 1800
 Fort McClellan, Calhoun County, Alabama

| Sample Location | Sample Designation | QA/QC Samples | | | Analytical Suite |
|-----------------|-------------------------------|------------------|--------------|--------|---|
| | | Field Duplicates | Field Splits | MS/MSD | |
| FTA-100-SW/SD01 | FTA-100-SW/SD01-SW-CV2001-REG | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-SW/SD01 | FTA-100-SW/SD01-SD-CV1001-REG | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides TOC, Grain Size |
| FTA-100-SW/SD02 | FTA-100-SW/SD02-SW-CV2002-REG | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-SW/SD02 | FTA-100-SW/SD02-SD-CV1002-REG | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides TOC, Grain Size |
| FTA-100-SW/SD03 | FTA-100-SW/SD02-SW-CV2003-REG | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides |
| FTA-100-SW/SD03 | FTA-100-SW/SD02-SD-CV1003-REG | | | | TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides TOC, Grain Size |

QA/QC - Quality assurance/quality control.
 VOC - Volatile organic compound.
 SVOC - Semivolatile organic compound.
 TAL - Target analyte list.
 TCL - Target compound list.
 REG - Field sample.
 FD - Field duplicate.
 FS - Field split.
 MS/MSD - Matrix spike/matrix spike duplicate.
 PCB - Polychlorinated biphenyl.

4.2.6.2 Sample Collection Procedures

Sediment sample collection will be conducted in accordance with the procedures specified in Section 4.9.1.2 of the SAP. Sample documentation and chain-of-custody will be recorded as specified in Section 4.13 of the SAP. The sediment samples will be analyzed for the parameters listed in Section 4.5.

4.2.7 Depositional Soil Sampling

Three depositional soil samples will be collected in the drainage pathways east of the site.

4.2.7.1 Sample Locations and Rationale

Depositional soil samples will be collected in the drainage pathways outside the fence at the northwest corner of the site. The sampling rationale is listed in Table 4-1. The proposed tentative sampling locations are shown in Figure 4-1. The depositional soil sample designations and required QA/QC sample quantities are listed in Table 4-2. The actual depositional soil sample points selected will be at the discretion of the ecological sampler based on the drainage pathways and on actual field observations.

4.2.7.2 Sample Collection Procedures

Depositional soil samples will be collected in accordance with the procedures for surface soil sample collection specified in Section 4.9.1.1 of the SAP. Sample documentation and chain-of-custody will be recorded as specified in Section 4.13 of the SAP. Sample containers, sample volumes, preservatives, and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1, of the QAP. The samples will be analyzed for the parameters listed in Section 4.5, which includes the addition of total organic carbon and grain size analyses.

4.3 Decontamination Requirements

Decontamination will be performed on sampling and nonsampling equipment to prevent cross-contamination between sampling locations. Decontamination of sampling equipment will be performed in accordance with the requirements presented in Section 4.10.1.1 of the SAP. Decontamination of nonsampling equipment will be performed in accordance with the requirements presented in Section 4.10.1.2 of the SAP.

4.4 Surveying of Sampling Locations

Sampling locations will be marked with pin flags, stakes, and/or flagging and will be surveyed using either global positioning system (GPS) or conventional civil survey techniques, as

necessary to obtain the required level of accuracy. Horizontal coordinates will be referenced to the Alabama State Plane Coordinate System, 1983 North American Datum (NAD83). Elevations will be referenced to the North American Vertical Data of 1929 or the North American Vertical Datum of 1988 (soon to be established on site).

Horizontal coordinates for soil, sediment, and surface water locations will be recorded using a GPS to provide accuracy within 1 meter. Because of the need to use temporary wells to collect groundwater samples and to determine water levels, a higher level of accuracy is required. Temporary wells will be surveyed to an accuracy of 0.1 foot for horizontal coordinates and 0.01 foot for elevations, using survey-grade GPS techniques and/or conventional civil survey techniques, as required. Permanent monitoring well locations will be surveyed by a registered professional land surveyor to provide the required accuracy of 0.1 foot for horizontal coordinates and 0.01 foot for elevations.

Procedures to be used for GPS surveying are described in Section 4.3 of the SAP. Conventional land survey requirements are presented in Section 4.19 of the SAP.

4.5 Analytical Program

Samples collected at the locations specified in this chapter of this SFSP will be analyzed for the specific suites of chemicals and elements based on the history of site usage, as well as EPA, ADEM, FTMC, and USACE requirements. Target analyses for samples collected from the Autocraft Shop/Former DPDO Building 1800 site consist of the following analytical suite:

- Target Compound List Volatile Organic Compounds - Method 5035/8260B
- Target Compound List Semivolatile Organic Compounds - Method 8270C
- Target Analyte List Metals - Method 6010B/7000
- Chlorinated Pesticides - Method 8081A
- Polychlorinated Biphenyls - Method 8082
- Chlorinated Herbicides - Method 8051A
- Organophosphorus Pesticides - Method 8141A

In addition, the sediment samples will be analyzed for the following list of parameters:

- Total Organic Carbon - Method 9060
- Grain Size - American Society for Testing and Materials D-421/D-422.

The samples will be analyzed using EPA SW-846 methods, including Update III Methods where applicable, as presented in Table 4-5 of the SFSP and Table 6-1 in the QAP. Data will be reported and evaluated in accordance with CESAS Level B criteria (USACE, 1994) and the stipulated requirements for the generation of definitive data (Section 3.1.2 of the QAP). Chemical data will be reported by the laboratory via hard copy data packages using CLP-like forms. These packages will be validated in accordance with EPA National Functional Guidelines by Level III criteria.

4.6 Sample Preservation, Packaging, and Shipping

Sample preservation, packaging, and shipping will follow the procedures as specified in Section 4.13.2 of the SAP. Completed analysis request/chain-of-custody records will be secured and included with each shipment of coolers to the subcontract laboratory:

Sample Receiving
Quanterra Environmental Services
5815 Middlebrook Pike
Knoxville, Tennessee 37921
Telephone: (423) 588-6401

Field split samples will be shipped to the USACE Laboratory at the following address:

USACE South Atlantic Division Laboratory
Attn: Sample Receiving
611 South Cobb Drive
Marietta, Georgia 30060-3112
Telephone: (770) 919-5270

4.7 Investigation-Derived Waste Management

Management and disposal of the investigation-derived wastes (IDW) will follow procedures and requirements as described in Appendix D of the SAP. The IDW expected to be generated at the Autocraft Shop/Former DPDO Building 1800 site will include decontamination fluids and disposable personal protective equipment. The IDW will be staged in the fenced area surrounding Buildings 335 and 336 while awaiting final disposal.

4.8 Site-Specific Safety and Health

Health and safety requirements for this site investigation are provided in the SSHP attachment for the Autocraft Shop/Former DPDO Building 1800 site. The SSHP attachment will be used in conjunction with the installation-wide SHP.

**Analytical Samples
Site Investigation
Autocraft Shop/Former DPDO Building 1800
Fort McClellan, Calhoun County, Alabama**

| Parameters | Analysis Method | Sample Matrix | TAT Needed | Field Samples | | QA/QC Samples ^a | | | Quanterra Total No. Analysis | QA Lab Total No. Analysis | | | | | | | |
|--|------------------|---------------|------------|--|---------------|----------------------------|------------------|------------------------|------------------------------|---------------------------|-------------|---------------------|-------------------------|---|----|-----|----|
| | | | | No. of Sample Points | No. of Events | No. of Field Samples | Field Dups (10%) | Spills w/ QA Lab (10%) | | | MS/MSD (5%) | Trip Blank (1/ship) | Eq. Rinse (1/wk/matrix) | | | | |
| Autocraft Shop/Former DPDO Building 1800: 9 water matrix samples (6 groundwater and 3 surface water); 14 soil matrix samples (2 surface soil, 6 subsurface soil, 3 sediment, 3 depositional soil) | | | | | | | | | | | | | | | | | |
| TCL VOCs | 8260B | water | normal | 9 | 1 | 9 | 1 | 1 | 1 | 3 | 1 | 16 | 1 | | | | |
| TCL SVOCs | 8270C | water | normal | 9 | 1 | 9 | 1 | 1 | 1 | 1 | 1 | 13 | 1 | | | | |
| Cl Pesticides | 8081A | water | normal | 9 | 1 | 9 | 1 | 1 | 1 | 1 | 1 | 13 | 1 | | | | |
| PCBs | 8082 | water | normal | 9 | 1 | 9 | 1 | 1 | 1 | 1 | 1 | 13 | 1 | | | | |
| OP Pesticides | 8141A | water | normal | 9 | 1 | 9 | 1 | 1 | 1 | 1 | 1 | 13 | 1 | | | | |
| Cl Herbicides | 8151A | water | normal | 9 | 1 | 9 | 1 | 1 | 1 | 1 | 1 | 13 | 1 | | | | |
| Tot. TAL Metals | 6010B/7000 | water | normal | 9 | 1 | 9 | 1 | 1 | 1 | 1 | 1 | 13 | 1 | | | | |
| TCL VOCs | 8260B | soil | normal | 14 | 1 | 14 | 1 | 1 | 1 | 1 | 1 | 18 | 1 | | | | |
| TCL SVOCs | 8270C | soil | normal | 14 | 1 | 14 | 1 | 1 | 1 | 1 | 1 | 18 | 1 | | | | |
| Cl Pesticides | 8081A | soil | normal | 14 | 1 | 14 | 1 | 1 | 1 | 1 | 1 | 18 | 1 | | | | |
| PCBs | 8082 | soil | normal | 14 | 1 | 14 | 1 | 1 | 1 | 1 | 1 | 18 | 1 | | | | |
| OP Pesticides | 8141A | soil | normal | 14 | 1 | 14 | 1 | 1 | 1 | 1 | 1 | 18 | 1 | | | | |
| Cl Herbicides | 8151A | soil | normal | 14 | 1 | 14 | 1 | 1 | 1 | 1 | 1 | 18 | 1 | | | | |
| TAL Metals | 6010B/7000 | soil | normal | 14 | 1 | 14 | 1 | 1 | 1 | 1 | 1 | 18 | 1 | | | | |
| TOC | 9060 | sediment | normal | 3 | 1 | 3 | | | | | | 3 | 0 | | | | |
| Grain Size | ASTM D-421/D-422 | sediment | normal | 3 | 1 | 3 | | | | | | 3 | 0 | | | | |
| | | | | Autocraft Shop/Former DPDO Building 1800: | | | | | | | 167 | 14 | 14 | 3 | 14 | 226 | 14 |

^a Field duplicate, QA split, and MS/MSD samples were calculated as a percentage of the field samples collected per site and were rounded up to the nearest whole number. Trip blank samples will be collected in association with water matrix samples for VOC analysis only. Assumed four field samples per day to estimate trip blanks. Equipment blanks will be collected once per event whenever sampling equipment is field decontaminated and re-used. They will be repeated weekly for sampling events that are anticipated to last more than 1 week. Assumed 20 field samples will be collected per week to estimate number of equipment blanks.

Ship samples to: Quanterra Environmental Services
5815 Middlebrook Pike
Knoxville, Tennessee 37921
Attn: John Reynolds
Tel: 423-588-6401
Fax: 423-584-4315

USACE Laboratory split samples are shipped to: USACE South Atlantic Division Laboratory
Attn: Sample Receiving
611 South Cobb Drive
Marietta, Georgia 30060-3112
Tel: 770-919-5270

QA/QC - Quality assurance/quality control.
MS/MSD - Matrix spike/matrix spike duplicate.
VOC - Volatile organic compound.
SVOC - Semivolatile organic compound.
TAL - Target analyte list.
TCL - Target compound list.
PCB - Polychlorinated biphenyls.
Pest - Pesticides.
Cl - Chlorinated.
OP - Organophosphorus.
TOC - Total organic carbon.

5.0 Project Schedule

The project schedule for the site investigation activities will be provided by the IT project manager to the Base Closure Team on a monthly basis.

6.0 References

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Environmental Science and Engineering, Inc. (ESE), 1998, *Final Environmental Baseline Survey, Fort McClellan, Alabama*, prepared for U.S. Army Environmental Center, Aberdeen Proving Ground, Maryland, January.

Fort McClellan (FTMC), 1997, *Fort McClellan Comprehensive Reuse Plan*, Fort McClellan Reuse and Redevelopment Authority of Alabama, prepared under contract to the Calhoun County Commission, November.

IT Corporation (IT), 1998a, *Final Installation-Wide Sampling and Analysis Plan, Fort McClellan, Calhoun County, Alabama*, August.

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U.S. Environmental Protection Agency (EPA), 1996, *Drinking Water Regulations and health Advisories*, office of Water, Washington, DC, October.

U.S. Environmental Protection Agency (EPA), 1993, *Data Quality Objectives Process for Superfund, Interim Final Guidance*, EPA 540-R-93-071, September.

Roy F. Weston, Inc. (Weston), 1990, *Final USATHAMA Task Order 11, Enhanced Preliminary Assessment, Fort McClellan, Anniston, Alabama*, prepared for U.S. Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, Maryland, December.