

SECTION 3

AREAS REQUIRING ENVIRONMENTAL EVALUATION

The objectives of this section are to document areas where hazardous materials either are now or were previously managed and to identify known or potential releases of those materials into the environment and their likely migration pathways. Documented characterization/cleanup activities are also indicated. Table 3-1 provides a listing of all AREEs by number and the appropriate figure numbers in which they appear. The locations of the AREEs are shown in Figures 3-1a through 3-1h for the Main Post and in Figure 3-1i for Pelham Range. Facility-wide AREEs, as outlined in Subsection 3.3 and Subsection 3.10, are not shown due to their extensive nature.

3.1 FACILITIES/MAINTENANCE OPERATIONS

3.1.1 MAINTENANCE FACILITIES

3.1.1.1 Directorate of Engineering and Housing

3.1.1.1.1 Description

The Directorate of Engineering and Housing Area (shown as AREE 1 in Figure 3-1d) is used for vehicle maintenance. Buildings 202 and 215 use Safety Kleen 140 Solvent as a solvent degreaser. This solvent contains 99.9+ percent mineral spirits, 0.003 percent dye, and 1.0 ppm antistatic agent. Prior to using Safety Kleen 140 Solvent, a safety solvent containing mineral spirits and 1,1,1-TCA was used as a solvent degreaser. No spills or leaks were observed by WESTON at these areas.

Waste oil is collected in a 2,000-gallon underground storage tank (UST) located behind Building 202. The fill pipe to this tank (see Photograph 3) is locked to prevent the addition of any unauthorized materials. An area about 3 feet in diameter around the fill pipe was oil stained.

The serviceable bulk petroleum storage area (see Photograph 4) is located behind Building 202. It is a curbed concrete area that contains both empty and full 55-gallon drums of hydraulic oil, gear lubricant, lube oil, and mineral spirits. Drip pans are used under drums with spigots to catch any drips. No spills or leaks were observed by WESTON at this area.

Table 3-1

List of AREEs,
Fort McClellan, Alabama

AREE No.	Description	Figure No.
1	Directorate of Engineering and Housing Area	3-1d
2	Autocraft Shop	3-1d
3	Ordnance Motor Repair Area	3-1b
4	Alabama Army National Guard UTES #1 Site	3-1b
5	Motor Pool Areas	3-1d
6	Small Weapons Repair Shop	3-1d
7	Radiator Repair Shop	3-1b
8	Battery Maintenance Areas	3-1b
9	Boiler Plants	3-1b, 3-1d
10	Vehicle Wash Racks	3-1b, 3-1d, 3-1i
11	Training Areas and Ranges	3-1b to 3-1i
12	Chemical Decontamination Training Facility	3-1f
13	Fire Training Pit	3-1b
14	Ordnance OB/OD Area	3-1i
15	Detection and Identification Area	3-1d
16	Area T-4	3-1c
17	Area T-5	3-1d
18	Area T-6	3-1d
19	Area T-31	3-1b
20	Area T-38	3-1b
21	Area T-24A	3-1h
22	Old Toxic Training Area	3-1d
23	Range I	3-1i
24	Range J	3-1i
25	Range K	3-1i
26	Range L (Lima Pond)	3-1i
27	Old Water Hole	3-1i
28	HD Spill/Burial Sites	3-1b, 3-1d, 3-1i
29	Security Operational Test Site	3-1i
30	Underground Storage Tanks	Not shown
31	Aboveground Storage Tanks	Not shown
32	Former Landfill No. 1	3-1d
33	Former Landfill No. 2	3-1b
34	Former Landfill No. 3	3-1b
35	Active Sanitary Landfill No. 4	3-1b

Table 3-1

List of AREEs
(continued)

AREE No.	Description	Figure No.
36	Quarries and Borrow Pits	3-1b, 3-1c, 3-1f, 3-1g
37	U.S. Army Hospital Incinerator	3-1b
38	Chemical Decontamination Training Facility Incinerator	3-1f
39	Pesticide Mixing and Storage Facility	3-1d
40	Golf Course Pesticide Mixing and Storage Facility	3-1b
41	Forestry Compound	3-1i
42	Pesticide/Herbicide Storage Facility	3-1b
43	PCB Storage Facility	3-1b
44	Temporary Transformer Storage/Staging Area	3-1b
45	DRMO Storage Facility	3-1b
46	Contractor Laydown Area	3-1b
47	Waste Chemical Storage Area	3-1b
48	Fog Oil Drum Storage Areas	3-1h, 3-1i
49	Former Pentachlorophenol Dip Tank	3-1d
50	Wastewater Treatment Plant	3-1b
51	Radiological Facilities: Former U.S. Army Chemical Center and School	3-1d
52	Other Buildings	Not shown
53	Iron Mountain (Rattlesnake Gulch)	3-1c
54	Rideout Field	3-1i
55	Bromine Field	3-1d
56	Alpha Field	3-1d
57	Former Radiological Area	3-1i
58	U.S. Army Chemical School Laboratory Sump	3-1b
59	Printing Plant	3-1d
60	Multi-Craft Shop	3-1d
61	Training Aids Building	3-1d
62	Former Dry Cleaning Area	3-1d
63	U.S. Army Hospital	3-1d
64	Asbestos	Not shown
65	PCB Transformers	Not shown
66	Pesticides and Herbicides	Not shown
67	Radon	Not shown

Fort McClellan



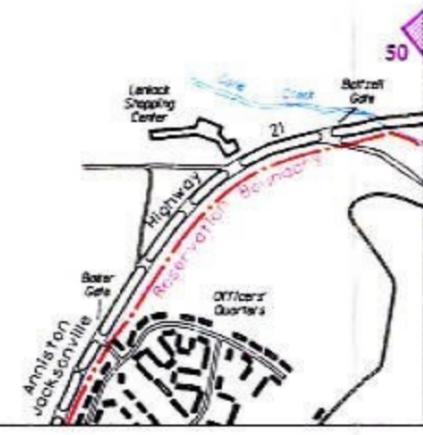
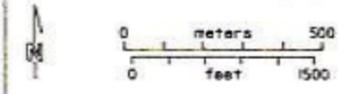
Pelham Range Main Post

Locations of map sheets within Pelham Range and Main Post of Fort McClellan.

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Fort McClellan
Fort McClellan, AL - September 1990

Figure 3-1a Areas Requiring Environmental Evaluation

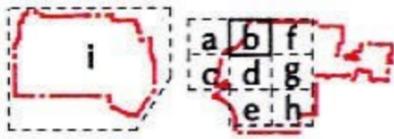
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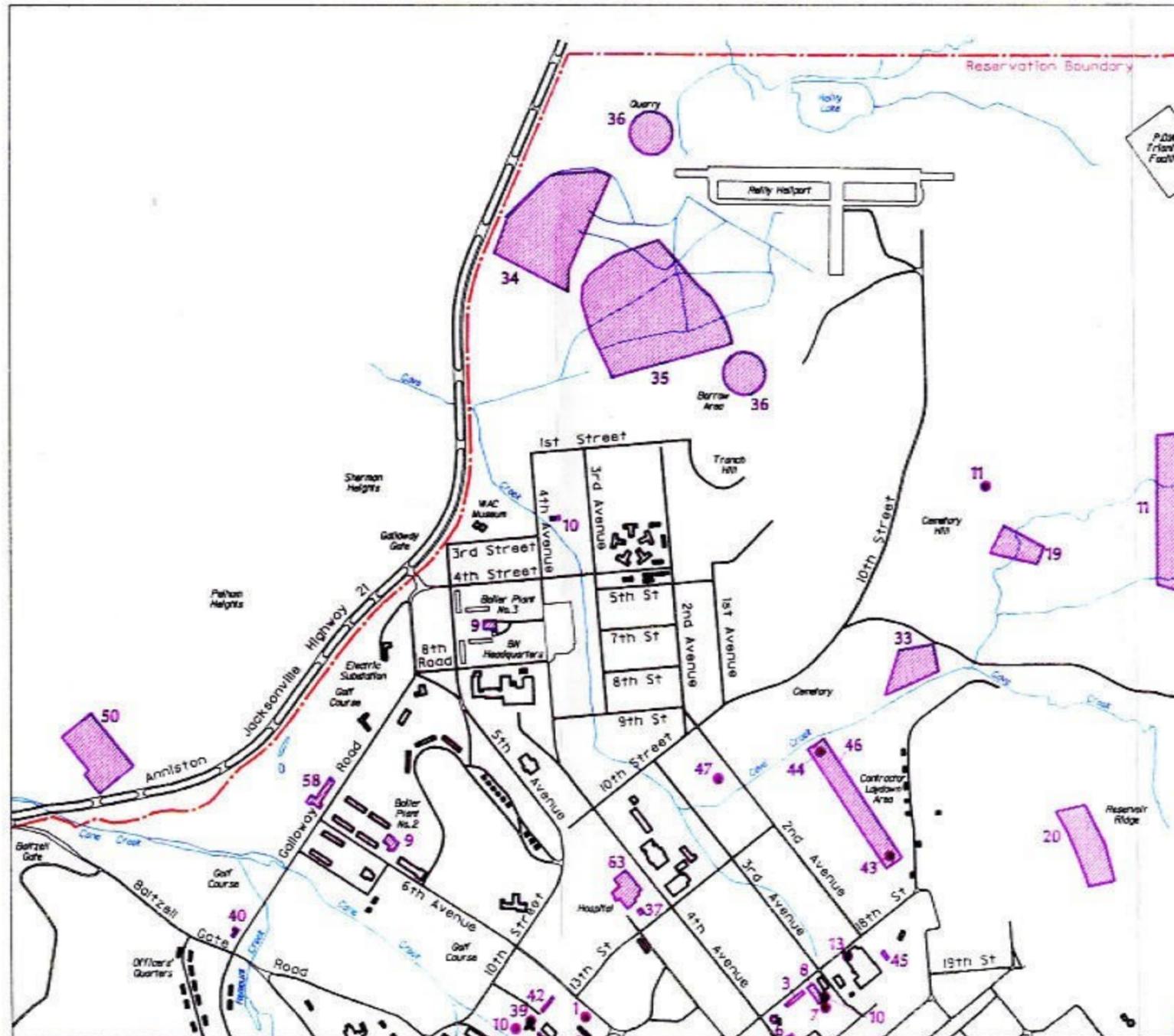
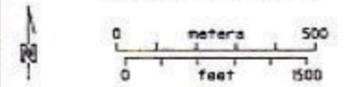
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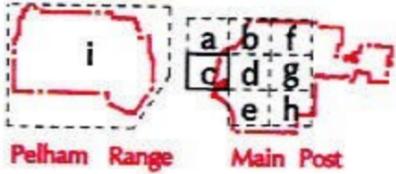
Figure 3-1b Areas Requiring Environmental Evaluation

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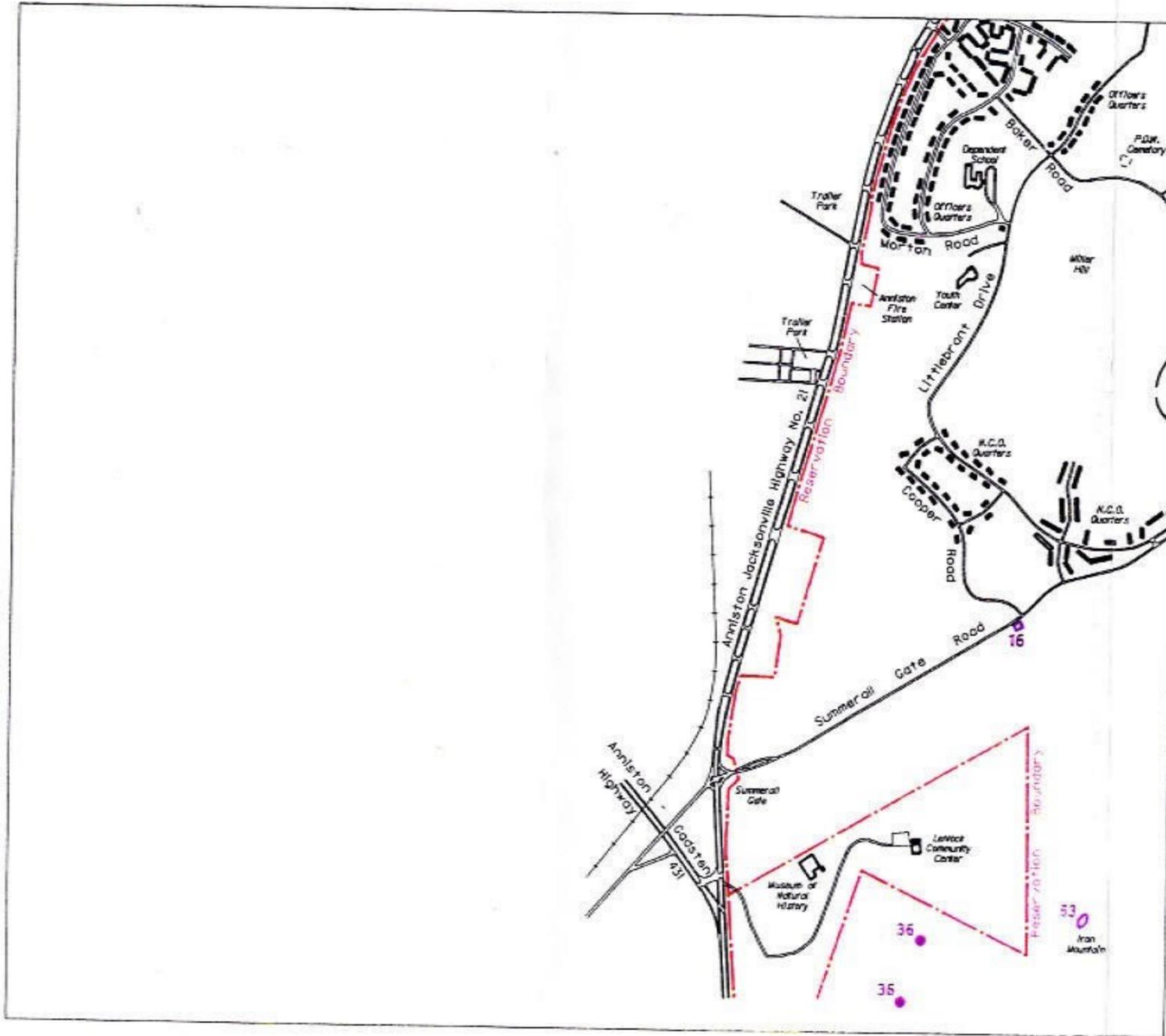
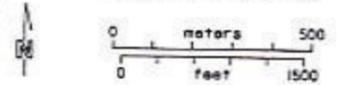


Locations of map sheets within Pelham Range and Main Post of Fort McClellan.

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Fort McClellan, AL - September 1990

Figure 3-1c
Areas Requiring
Environmental Evaluation

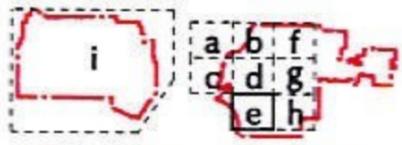
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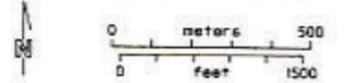


Pelham Range Main Post
 Locations of map sheets within Pelham Range and Main Post of Fort McClellan.

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Figure 3-1e
Areas Requiring
Environmental Evaluation

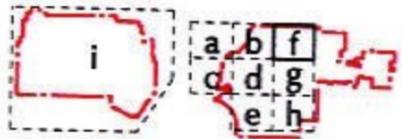
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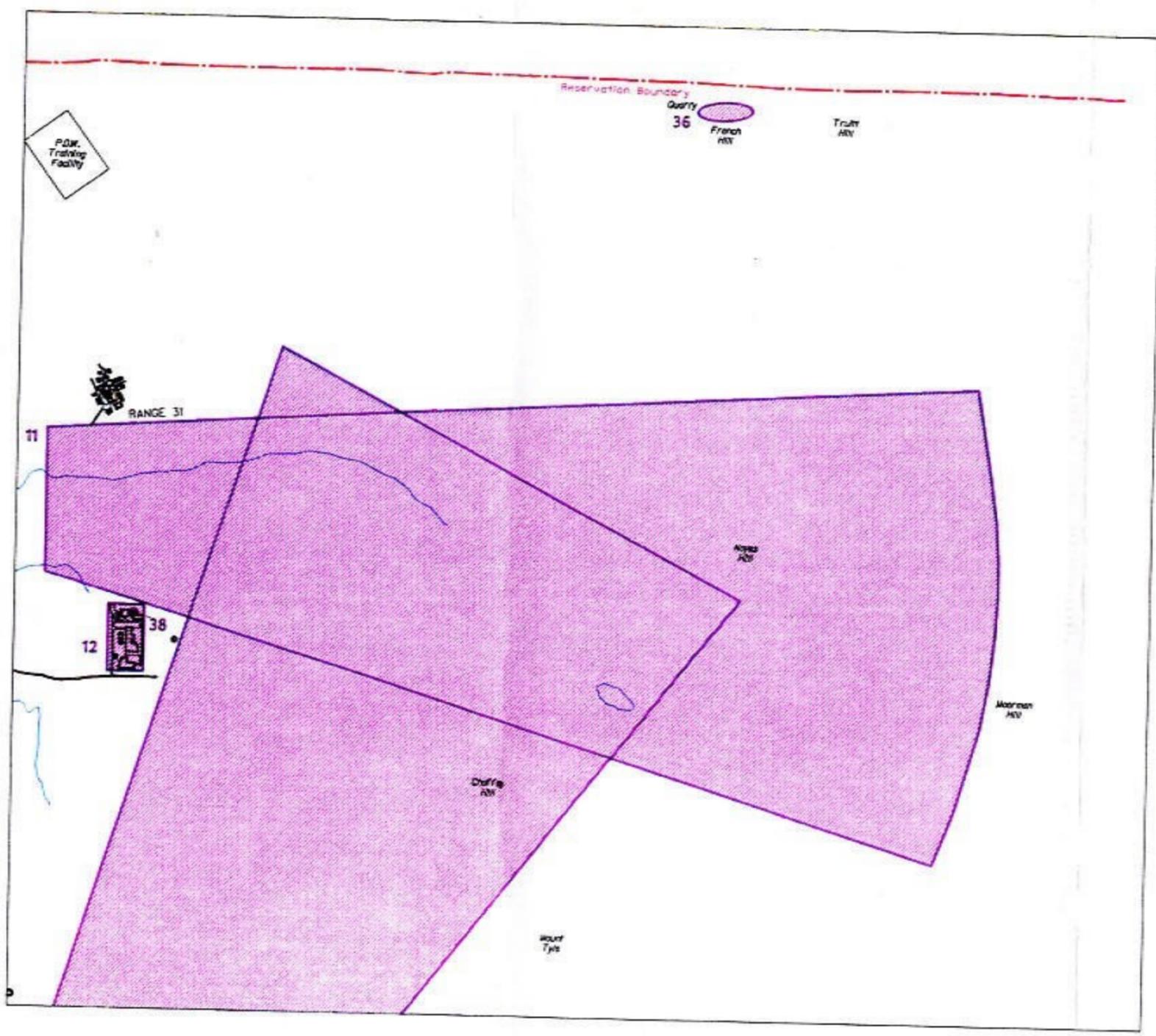
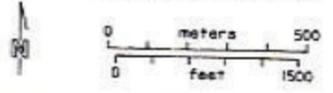
Pelham Range Main Post

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Figure 3-1f
Areas Requiring
Environmental Evaluation

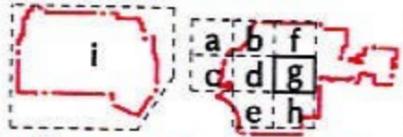
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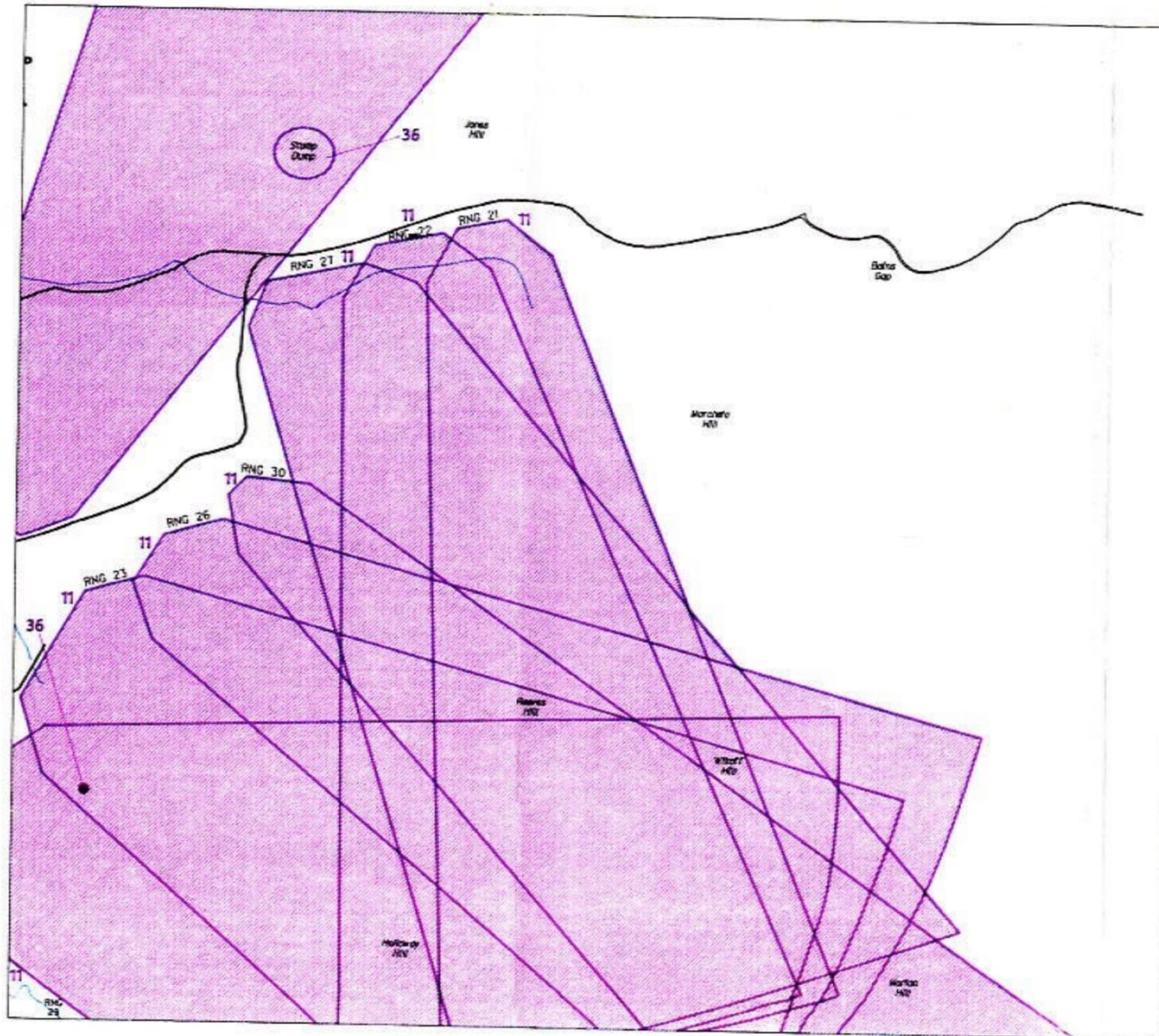
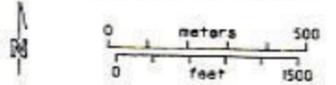
Pelham Range Main Post

Locations of map sheets within Pelham Range and Main Post of Fort McClellan.

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Figure 3-1g Areas Requiring Environmental Evaluation

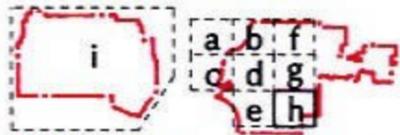
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Fort McClellan



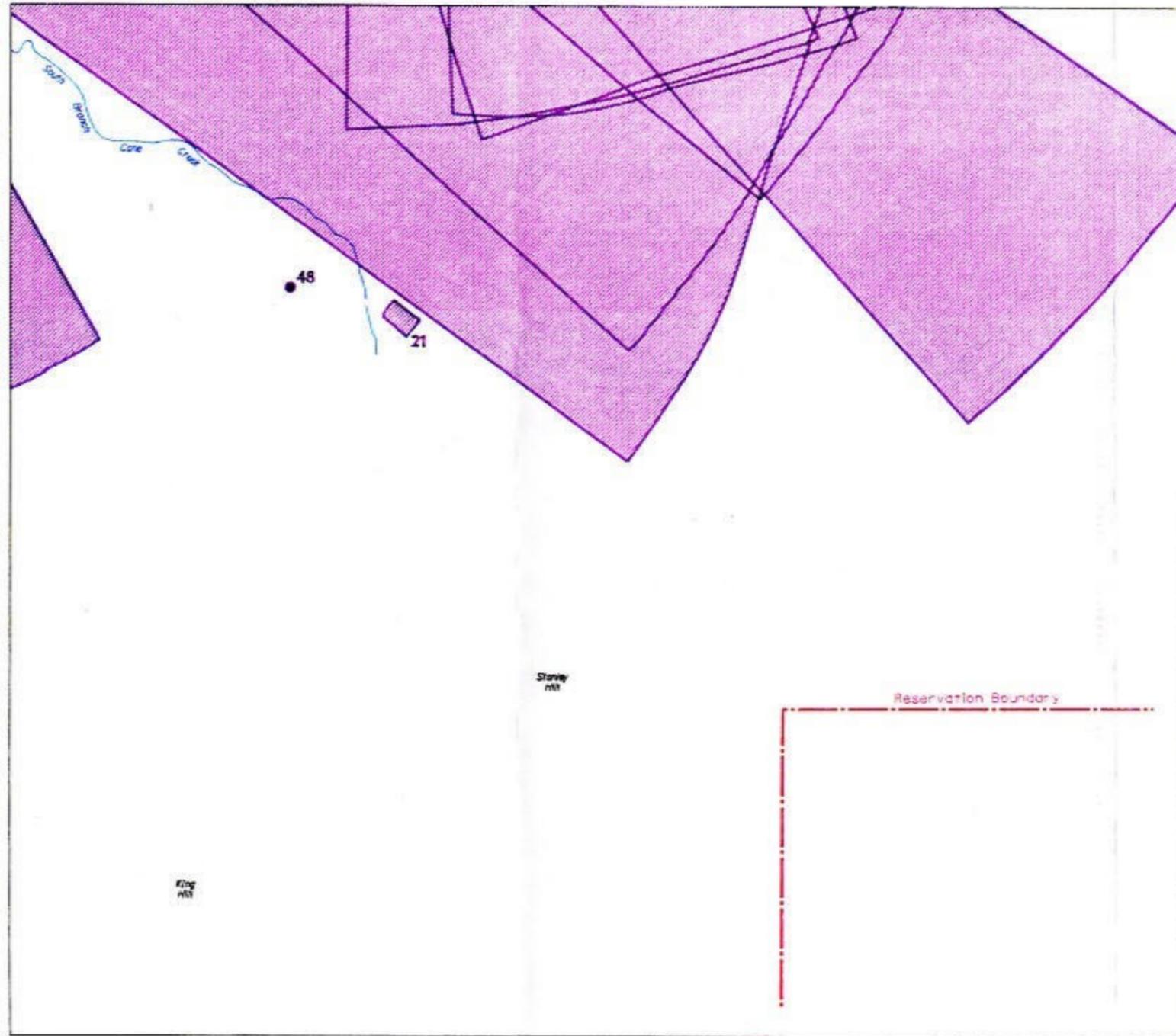
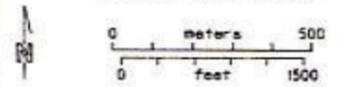
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Figure 3-1h Areas Requiring Environmental Evaluation

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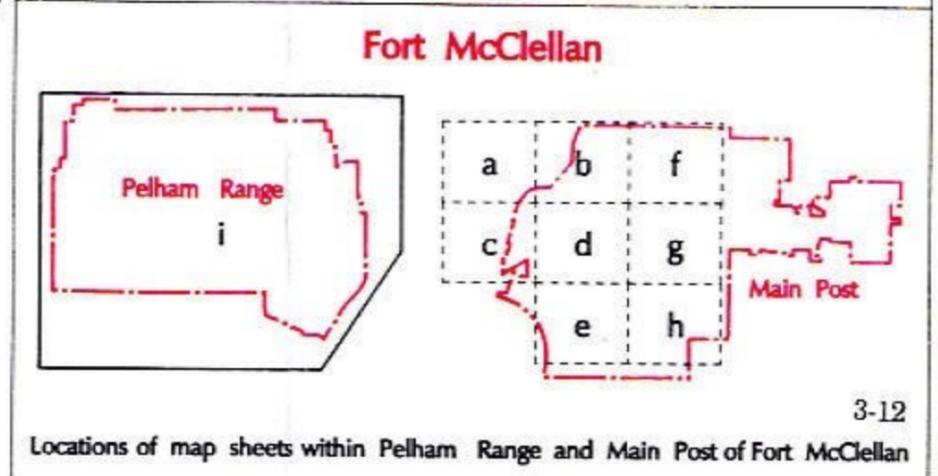
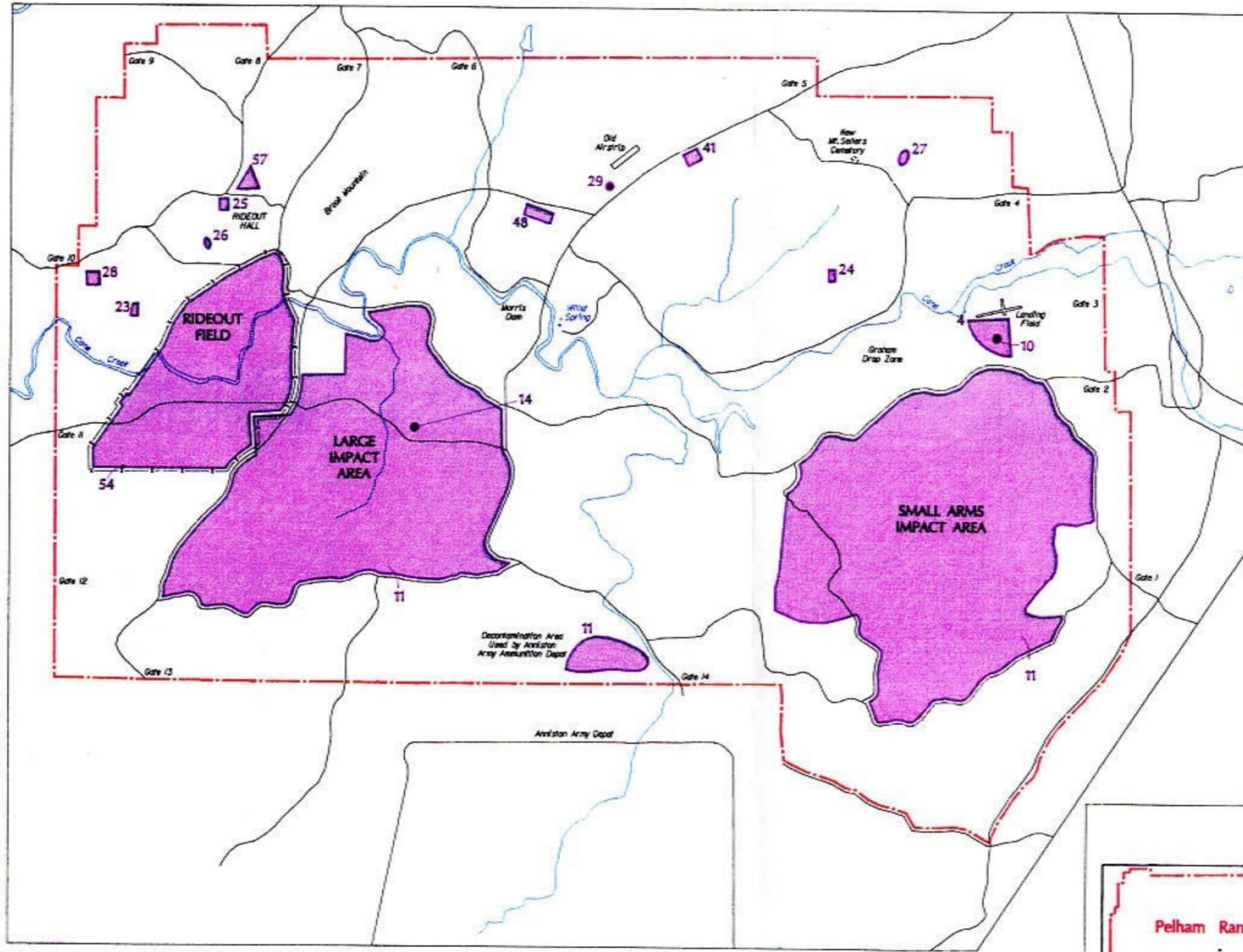
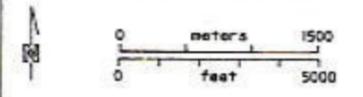


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Figure 3-1i
 Areas Requiring
 Environmental Evaluation
 Pelham Range

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A 55-gallon drum of antifreeze is stored in a caged area behind Building 202 (see Photograph 5). No spills or leaks were observed by WESTON at this area.

Northwest of Building 211, which is used as the Pesticide Storage Area (see Sub-section 3.6.1), 55-gallon drums are stored. Thirteen empty 55-gallon drums (see Photograph 6) supposedly have been washed out and are ready for use. However, their former contents are unknown. At least 20 other empty 55-gallon drums are stored there. Some are on wooden pallets and some are not (see Photograph 7). Their former contents are also unknown. No spills or leaks were observed by WESTON at this area.

In addition, eight full 55-gallon drums are stored on wooden pallets northwest of Building 211. A full blue drum with a plastic cover over it (see Photograph 8) is labeled as an unknown corrosive, but its cover has "Danger-Contains Asbestos Fibers" printed on it. In addition, the contents of the blue, blue and white, and red and white drums (see Photograph 8) are unknown. Furthermore, a full 55-gallon and a full 30-gallon yellow salvage drum with unknown contents and two full 55-gallon drums, one containing contaminated fuel and the other an unidentified waste, are stored there. No spills or leaks were observed by WESTON at this area.

3.1.1.1.2 Known and Suspected Releases

The oil-stained area around the waste oil tank fill pipe indicates that minor spills have occurred in this area.

3.1.1.2 Autocraft Shop

3.1.1.2.1 Description

The Autocraft Shop (Building 1800, shown as AREE 2 in Figure 3-1d) is where Army personnel work on their private motor vehicles. Besides having several bays for maintenance and motor vehicle repair, this shop has a paint spray booth with a floor drain to the sanitary sewer and vents to the atmosphere (see Photograph 9).

A waste oil UST is located just outside Building 1800. Oil stains around the unloading and vent pipes of this tank (see Photograph 10) were observed by WESTON. The stains ran about 30 feet downgradient from these pipes. A contractor pumps out the tank when it is full.

Oil stains were observed by WESTON in the Parts Laydown Area in back of Building 1800 (see Photograph 11). Overflow oil from this area drains to an intermittent stream behind the building (see Photograph 12). WESTON observed

that the sediment in this stream was oil stained near the discharge of the Parts Laydown Area.

About 12 waste oil 55-gallon drums are stored adjacent to the Parts Laydown Area (see Photograph 13) and behind the storage area. Oil stains were observed by WESTON around these drums. In addition, two gas cylinders are stored alongside the waste oil drums and near the acetylene storage area.

3.1.1.2.2 Known and Suspected Releases

The oil-stained soil around and downgradient of the waste oil UST indicates that spills have occurred in this area. However, the quantity of waste oil spilled is unknown. In addition, the oil-stained soil and sediment near and behind the Parts Laydown Area also indicate that spills have occurred in this area. Again, the quantity of waste oil spilled is unknown.

3.1.1.3 Ordnance Motor Repair Area

3.1.1.3.1 Description

WESTON observed two 55-gallon drums on a rack located next to Building 339 in the Ordnance Motor Repair Area (see Photograph 14 and shown as AREE 3 in Figure 3-1b). The contents of these drums are unknown.

The Small Weapons Repair Shop, Radiator Repair Shop, Battery Maintenance Area, and Boiler Plant are located in the Ordnance Motor Repair Area and are discussed in Subsections 3.1.3, 3.1.4, 3.1.5, and 3.1.6, respectively.

3.1.1.3.2 Known and Suspected Releases

There is no evidence of any past or present spills in the area around the rack located next to Building 339.

3.1.1.4 Alabama Army National Guard UTES #1

3.1.1.4.1 Description

The Alabama Army National Guard Unit Training Equipment Site (UTES) #1 site, located on Pelham Range (see AREE 4 in Figure 3-1i), is used for maintenance of tanks and armored personnel carriers. Waste oil for this operation was formerly collected in a 1,000-gallon UST. This tank was removed and replaced with a new 500-gallon UST, which is not yet operational. The old waste oil tank is stored at the UTES #1 site along with about 40 55-gallon drums of waste oil (see Photograph 15). Until the new waste oil tank is operational, waste oil from

the this site is stored in these drums [I-1]. Oil stains around the old waste oil tank and the 55-gallon waste oil drums were observed by WESTON.

3.1.1.4.2 Known and Suspected Releases

The oil-stained areas around the old waste oil tank and the 55-gallon waste oil drums indicate that spills have occurred in this area. However, the quantity of waste oil spilled here is unknown.

3.1.2 MOTOR POOL AREAS

3.1.2.1 Description

Six motor pool locations are on the Main Post, shown as AREE 5 in Figure 3-1d. Two motor pools were observed by WESTON to be no longer in use. One of them is located near Building 1693. Here an abandoned gas pump and two service islands were noted (see Photograph 16). The other motor pool no longer in use is located near Buildings 894 and 895. Here a MOGAS pump and a diesel pump were found to be in fairly good condition (see Photograph 17).

A recent report noted evidence of spills at two of the four active motor pools [R-27]. That report noted that the ground near Building 3294 is stained in the area where fuel is transferred. It is also stained in spots along the fence on the eastern side of the motor pool. In addition, the report noted that two small tributaries east of the motor pool have oil sheens and the banks of the tributaries have oil on them.

The same report noted that some oil is being spilled at the oil changing rack at Building 3148. The report stated that used oil is drained from the trucks into a pipe leading to a UST and that spilled oil goes directly to the ground. The report also stated that there are stains on the ground at storm drains around the perimeter of the motor pool.

Fuel pumps are also located at the PX Service Station (Building 2109) and at Building 265. Six fuel pumps are located at Building 265, including two diesel and four MOGAS-no lead pumps (see Photograph 18). WESTON observed three unlabeled 55-gallon drums at this building. In addition, a recent report [R-27] noted that the fuel pumps at Building 265 do not have automatic shutoffs and that small spills occur frequently. That report also noted that the area is not bermed, so fuel spillage runs off onto the ground and into a nearby stream. WESTON also noted a loading platform (Building 264) located west and adjacent to Building 265 (see Photograph 19). This platform has four loading arms: one for MOGAS-no lead, one for diesel-2, and two for diesel.

3.1.2.2 Known and Suspected Releases

A recent report [R-27] noted stains around some of the motor pools. This indicates that spills have occurred in these areas. However, the quantity of petroleum products spilled is unknown.

3.1.3 SMALL WEAPONS REPAIR SHOP

3.1.3.1 Description

In the Small Weapons Repair Shop (Building 335, shown as AREE 6 in Figure 3-1d), weapons such as M-16 rifles were degreased with TCA in a vapor degreaser and then stripped with caustic [R-24]. However, now most degreasing operations are conducted in Safety-Kleen tanks from which the spent solvents are removed periodically [R-29]. In addition, blueing/parkerizing operations were conducted in the shop [R-24]. Furthermore, there are two older cleaning units in the shop: a shot blaster and a bead blaster. Neither has been used in more than 3 years [R-29].

In a recent report [R-29], unused beads were noted on the floor and around the bead blaster. The report also noted that the shot blaster and bead blaster generated a particulate waste that was piped through two separate hoses into 5- and 10-gallon buckets. Both of these buckets were half full and uncovered. In addition, the report noted that a large metal conduit (approximately 10 inches in diameter) ran from the two blasters to the outside of the building and into two separate but adjacent baghouses. Under one baghouse was an irregularly shaped piece of waste approximately 1 gallon in volume, and under the other one was a small pile of particulate waste of about 0.5 gallon. Neither was containerized nor protected from wind dispersion or rain.

3.1.3.2 Known and Suspected Releases

According to an earlier report [R-24], some wastes generated from the operations at the Small Weapons Repair Shop may have discharged to the storm sewer drain. Discharged wastes may have included phosphoric acid, chromic acid, preservative oils, alkaline solutions, black oxide, and rinse waters.

3.1.4 RADIATOR REPAIR SHOP

3.1.4.1 Description

Radiators are repaired in the Radiator Repair Shop (Building 338, shown as AREE 7 in Figure 3-1b) by first descaling them with an aqueous solution of sodium hydroxide. Waste sodium hydroxide solutions used in this operation are often contaminated with heavy metals, especially lead [R-24].

3.1.4.2 Known and Suspected Releases

According to an earlier report [R-24] the waste sodium hydroxide solutions may have been discharged to the open floor drain located in the shop bay. This drain supposedly discharges to the sanitary sewer. However, this could not be verified by WESTON.

3.1.5 BATTERY MAINTENANCE AREAS

3.1.5.1 Description

The Transportation Motor Pool Lead-Acid Battery Maintenance Shop is located in Building 234 (shown as AREE 8 in Figure 3-1b). Until 1981 approximately 300 batteries per year were drained in this building. The electrolyte was neutralized and flushed to a floor drain that ultimately discharged to Cane Creek [R-24].

The DOL Lead-Acid Battery Maintenance Shop is located in Building 338 (shown in Figure 3-1b). Past activities at this building may have involved neutralization of battery electrolyte and possible discharge to a floor drain with an unknown discharge point [R-24].

3.1.5.2 Known and Suspected Releases

Lead-acid battery electrolyte has been found to contain Extraction Procedure (EP) toxic levels of both lead and cadmium. Therefore, the possibility exists that heavy metals may be present in the sediment of Cane Creek, especially at the discharge point for the floor drain in Building 234 [R-24]. Heavy metals may also be present at the discharge point for the floor drain in Building 338.

3.1.6 BOILER PLANTS

3.1.6.1 Description

Boiler Plants Nos. 1, 2, 3, and 4, are located in Buildings 3176, 2278, 1076, and 1876, respectively, (shown as AREE 9 in Figures 3-1b and 3-1d) and are steam generating facilities. Wastes are generated from blowdown operations from the descaling of the boilers and are generally of a caustic nature. These wastes are discharged to the sanitary sewer. Boiler Plants Nos. 1, 2, and 3 operate under ADEM permit numbers 3-01-0017-Z008, 3-01-0017-Z002, and 3-01-0017-Z001, respectively. Boiler Plant No. 4 does not have a specific permit number because it operates as a grandfathered structure [R-24].

Another boiler plant was located in Building 336 (see Figure 3-1b) in the Ordnance Motor Repair Area. This plant is out of operation and not permitted.

A chemical storage area is located east of Boiler Plant No. 1. The area is a bermed concrete pad that is used as a pickup and delivery point for sodium hydroxide and as a pickup point for used oil. An outlet drain pipe with a valve is located at one end of the pad. This pipe drains onto the hillside about 1 foot above a concrete drainage ditch. A recent report [R-27] noted that the soil located at the end of the pipe is covered with oil and soil on one side of the concrete pad is stained.

3.1.6.2 Known and Suspected Releases

No spills have been reported at any of the boiler plants. However, a recent report [R-27] noted that the soil on the downslope side of the concrete pad located east of Boiler Plant No. 1 is oil stained. This indicates that spills have occurred in this area. However, the quantity of oil spilled is unknown.

3.1.7 VEHICLE WASH RACKS

3.1.7.1 Description

Nine vehicle wash racks are located on the Main Post [R-24] (see AREE 10 in Figures 3-1b and 3-1d) and one on Pelham Range at Alabama Army National Guard UTES #1 (see AREE 10 in Figure 3-1i and Photograph 20). Eight of these wash racks discharge to either the storm sewer or the sanitary sewer, depending on which way their divert boxes are valved. However, the other vehicle wash rack, which is in Building 1298, discharges only to the sanitary sewer. The liquids from washing activities are drained on concrete pads to adjacent oil/water separators (see Photograph 21) and retention sumps. Vehicles are placed on concrete pads so that all runoff is directed toward the oil/water separators. Any oils that are removed by the oil/water separators are collected in retention sumps until they are handpumped into 55-gallon drums. The waste oil is then sold to Auburn University for fuel blending [R-25].

Except for the oil/water separator at UTES #1, the water from the oil/water separators discharges to the sanitary sewer [R-24]. The water from the oil/water separator at UTES #1 discharges to an unnamed tributary to Cane Creek. This discharge is permitted by NPDES Permit No. AL0057665 [I-1]. In addition, when the eight vehicle wash racks with divert boxes are not in use, they discharge to the storm sewer.

The 5 May 1978 General Plan of Fort McClellan shows a wash pad at Building 546 (see Figure 3-1b). However, the water hookup for this pad is gone, and it has not been used in about 10 years [T-2]. In addition, an earlier report [R-24] listed a wash rack at Building 3283, which is a bus waiting shelter. Its existence could not be verified by WESTON.

3.1.7.2 Known and Suspected Releases

A recent report [R-29] noted that some 15 gallons of "dilute" Dursban, an insecticide and termiticide, had spilled in a base vehicle. This mixture of Dursban and water was washed out of the vehicle at a wash rack located at Building 214.

Because this wash rack was plugged, the wash water bypassed its oil/water separator and flowed through the outfall system into Cane Creek on the Main Post. A sediment sample from the Cane Creek discharge point for the vehicle wash rack at Building 214 was reportedly analyzed for pesticides and none were found [R-52]. A uniformed guard claimed that this release had caused a "fish kill." However, another report [R-25] noted that no releases from vehicle wash racks have been identified.

3.2 TRAINING/RANGE AREAS

3.2.1 TRAINING AREAS AND RANGES

3.2.1.1 Description

As an integral part of a facility for training Army personnel, Fort McClellan provides ranges and other training areas to develop necessary skills. Based on a 1983 report [R-22], there are 16 training areas on the Main Post and 6 training areas as well as 8 bivouacs (temporary encampment areas) on Pelham Range. There are 18 ranges on the Main Post and 4 ranges at Pelham Range. In addition, Pelham Range contains 12 artillery firing points and 10 mortar firing points. There are two impact areas at Pelham Range -- a Large (Artillery) Impact Area and a Small Impact Area. The Main Post contains two Dud Impact Areas. These areas are described in Appendix C. AREEs 11 in Figures 3-1b through 3-1i show the ranges and impact areas.

3.2.1.2 Known and Suspected Releases

Past and present uses of the training areas and ranges have resulted in releases to the environment. Many of the specific chemical agent releases are addressed in the following subsections. Ammunition firing can also result in releases to the environment. Photograph 22 shows conditions at the former skeet range. Photograph 23 shows how firing ranges are designed to stop the bullets, and Photograph 24 shows the spent materials containing lead shot. Photograph 25 shows a typical target range layout for M16s. Photograph 26 shows Range 22, where M16s are fired.

Large and Small Impact and Dud Impact Areas contain unexploded ordnance (UXO), which pose explosive hazards. Photograph 27 shows a typical posting at the boundary of an impact area.

3.2.2 CHEMICAL DECONTAMINATION TRAINING FACILITY

3.2.2.1 Description

The Chemical Decontamination Training Facility (CDTF) is located in the western portion of the Main Post (shown as AREE 12 in Figure 3-1f). The building was designed and is used to train from 3,500 to 5,000 military personnel per year in toxic chemical agent decontamination procedures. Binary chemical agents are currently used, and DS-2 (decontamination solution 2) is employed in decontamination. The building provides seven chemical agent training bays and is operated on a negative pressure basis.

Areas that have been previously identified [R-25] at the CDTF include the following:

- Air filtration system -- a series of nine air filters that employ carbon units and monitoring devices. The nine air filters are manifolded into one filter that also has a monitoring device. Spent carbon filters are disposed of in the onsite incinerator.
- Liquid wastewater collection sump -- an 800-gallon capacity sump that receives rinse water from the seven chemical agent training bays and the laundry facilities. The sump is enclosed within the building and is constructed of concrete with an epoxy coating. The sump is piped to the holding tank.
- Wastewater Holding Tank -- a stainless steel aboveground storage tank (AST) with a capacity of 20,000 gallons. Quantities of sulfuric acid and caustic reagents are added to the Wastewater Holding Tank from 4,000-gallon stainless steel tanks. The tanks are located on a concrete pad with a 4-foot high concrete and epoxy-coated dike. After the pH of the liquid is balanced, the liquid is pumped to the CDTF Incinerator for disposal (see Subsection 3.5.2).
- Used equipment storage bay -- a building used to store the protective overgarments that have been worn in the chemical agent training bays. The garments are double bagged and placed in this storage bay with a concrete floor to be ultimately disposed of in the CDTF Incinerator.
- CDTF Incinerator -- an incinerator used for disposal of wastewaters, garments, and fillers generated at the CDTF. The incinerator is an AREE which is addressed in Subsection 3.5.2.

3.2.2.2 Known and Suspected Releases

The areas became operational in 1987. The incinerator is operated under permit, and no releases have been identified in the file information.

The carbon filters have been identified as a hazardous waste, so proper disposal must be reviewed.

In addition, a toxic chemical agent detection kit is employed at the CDTF. A mercuric cyanide ampule that comes with the detection kit is not used at the CDTF, but is handled as a hazardous waste. These ampules are cut from the kit and collected in 55-gallon drums. The drums are collected by DRMO for proper disposal [R-29].

3.2.3 FIRE TRAINING PIT

3.2.3.1 Description

A concrete-lined Fire Training Pit was formerly located on the Main Post near 18th Street (shown as AREE 13 in Figure 3-1b). The pit was identified as approximately 30 feet in diameter and 6 inches deep [R-25]. The area had been used once a year for firefighting exercises. Waste oils and contaminated fuels were added to water and ignited. As the flammable materials were burned, fire-retardant foams were added. The unit was designed with an overflow that allowed for discharge of rain water to a nearby storm water drain.

3.2.3.2 Known and Suspected Releases

The discharge of unburned oils and fuels may also have occurred during rain water discharge. In addition, onsite storage of drums containing waste oil, contaminated fuels, and possibly other solvents was a common practice [R-24].

3.2.4 ORDNANCE OB/OD AREA

3.2.4.1 Description

An Open Burning/Open Detonation (OB/OD) Area is located on Pelham Range (shown as AREE 14 in Figure 3-1i). The area is used for demolition training and the demolition of grenades, small arms ammunition, artillery rounds, land mines, and pyrotechnics [R-24]. Approximately 3,600 pounds of unserviceable ammunition was demilitarized in calendar year 1989. Two 55-gallon drums, which have been punched with holes, are used for burning the ammunition. The ammunition is placed in the drums. Diesel fuel is then poured into the drums and remotely ignited. The remaining metal debris (ash and shell casings) is dumped nearby [R-27].

A RCRA Part B Permit Application for the OB/OD Area was submitted to the Alabama Department of Environmental Management (ADEM) on 4 November 1988.

3.2.4.2 Known and Suspected Releases

The thermal treatment of explosive ordnance may deposit explosive and heavy metal contaminants to surrounding soil. Groundwater in this area is thought to be very shallow (about 5 feet below ground surface), as evidenced by standing water in nearby craters [R-27].

3.2.5 DETECTION AND IDENTIFICATION AREA

3.2.5.1 Description

Detection and Identification (D and I) Area is located on the Main Post (shown as AREE 15 in Figure 3-1d). This 1.1-acre site was used from the 1950s to 1972 for BG testing (see Appendix D). The Navy may have used HD at the site in the late 1950s. It has been reported that agent simulants CK, GC, CX, and AC were also used in the training area [R-24]. Decontaminants STB (super tropical bleach) and DS-2 were used on surface soils [R-25]. A pit was dug on the site in which all training aids from this site and a building from Area T-4 (see Subsection 3.2.6) were burned twice and buried. The remains are still located in the pit. According to the USATHAMA waste site report, pockets of live agents may also persist in the subsoils. This site was declared "clean" in 1973. Based on the relatively small quantities of chemical agent used, on the fact that SOPs for decontamination have been followed, and on the absence of reported spills, there appears to be no significant risk for surface activity [R-51]. No sampling has been conducted at the site.

3.2.5.2 Known and Suspected Releases

The pit containing the burned materials is identified by Stake F (see Appendix E). The area was limited to surface use in the event that pockets of live agents still exist in subsurface areas.

3.2.6 AREA T-4

3.2.6.1 Description

Area T-4 was a Biological Simulant Test Area located on the Main Post (see AREE 16 in Figure 3-1c). Records indicate that this 0.25-acre site was used between 1965 and 1971 for biological simulants (BG and SM) training. Appendix D provides a description of agents, and Appendix E provides a schematic of the

area. Decontamination of the agents or the surface soils was performed by adding STB and DS-2 [R-25].

3.2.6.1 Known and Suspected Releases

The site may have been the possible location (either Area T-4 or Area T-5) of a 110-gallon HD spill in 1955, although this has not been confirmed. Surface soil samples collected in April and July 1973 did not detect any contamination from HD. However, subsurface soil samples were not taken at that time. The use of the area was limited to surface activity in the unlikely event that some HD may have been used at the site, and therefore, subsurface contamination may exist [R-24].

3.2.7 AREA T-5

3.2.7.1 Description

Area T-5 is the Toxic Hazards Detection and Decontamination Training Area located between Sunset Hill and Howitzer Hill (see AREE 17 in Figure 3-1d). The 11.4-acre site was used between 1961 and 1973 to train students in the methods of detecting and decontaminating toxic agents (HD and HX) [R-24]. GB is reported as being used as well [R-25]. Appendix D provides a description of the agents, and Appendix E provides a schematic of the area. Training sites were decontaminated and checked at the end of each exercise. Decontamination of the agents on residual soils was performed by adding STB and/or DS-2.

3.2.7.2 Known and Suspected Releases

In addition to HD, HX, and GB used during training, the site may have been the location of a 110-gallon HD spill. Available evidence indicates that the contaminated soil was chemically decontaminated, removed, and ultimately disposed of at Range J (Pelham Range). Surficial soil samples were taken at the unit in December 1972, April 1973, and July 1973 and analyzed for chemical agents HD, GB, and VX, with all results being below detection limits [R-25]. The area was permitted for surface use only.

3.2.8 AREA T-6

3.2.8.1 Description

Area T-6 was an Agent Decontamination Training Area (also referred to as Naylor Field) located near the base of the eastern slope of Howitzer Hill (see AREE 18 in Figure 3-1d). The 7.5-acre site was used until 1973 for training in techniques of decontaminating chemical agents, including HD [R-24]. The area contained eight training sites that consisted of concrete pads on which equipment was parked. The equipment was contaminated with not more than 40 mL of HD

during each exercise. Decontaminants STB and DS-2 were employed during the exercises. Appendix D provides a description of the agents, and Appendix E provides a schematic of the area.

3.2.8.2 Known and Suspected Releases

Random surface soil samples taken at the site in March 1973 revealed no agent contamination, and the area was cleared for surface activity. Subsurface use of the area has not been permitted due to the possible persistence of isolated pockets of buried live agents.

3.2.9 AREA T-31

3.2.9.1 Description

Area T-31 (Technical Escort Reaction Area) was a toxic hazard training area located on the Main Post (see AREE 19 in Figure 3-1b) near Range 31. The 3.4-acre site was used between 1957 and 1969 for training with GB and HD. Six different sites within Area T-31 were used for training exercises. Training aids used at the site were moved to Area T-38. Area T-31 was used to store undetermined types of chemical agents. Appendix D provides a description of the agents used at the site during training exercises, and Appendix E provides a schematic of the area.

3.2.9.2 Known and Suspected Releases

Several spills were reported to have occurred onsite from these stored materials. No information is available on quantities of materials spilled. The types and quantities of decontaminants used to treat residual soils contaminated with agents are currently unavailable, but are believed to have included STB and DS-2. No sampling has been conducted at this site. The 1984 Reassessment [R-3] concluded that subsurface contamination may exist, with no surface contamination present if decontamination SOPs were followed.

3.2.10 AREA T-38

3.2.10.1 Description

Area T-38 (Technical Escort Reaction Area) is located on the Main Post west of Reservoir Hill (shown as AREE 20 in Figure 3-1b). This 6-acre site was used between 1961 and 1972 for training escort personnel in techniques of eliminating toxic hazards caused by mishaps to chemical munitions during transport. The area was also used for storage of toxic agents and munitions, including GB, VX, and HD. Storage included four 1-ton HD containers. In addition, unspecified decontaminants (likely STB and DS-2) were stored on at least two sites and were

used for demonstration purposes. Appendix D provides a description of agents, and Appendix E provides a schematic of the area.

3.2.10.2 Known and Suspected Releases

Extensive decontamination was conducted on this site for reported spills and for contaminated training aids. Residual surface contamination with HD was reported in January 1973. Subsequent sampling in March 1973 indicated that Area T-38 was free from surface contamination. No subsurface sampling or water quality monitoring has occurred at this site.

3.2.11 AREA T-24A

3.2.11.1 Description

Area T-24A was a Chemical Munitions Disposal Training Area located on the Main Post south of Holloway Hill (see AREE 21 in Figure 3-1h). Photograph 28 shows the general conditions at the site. This 1.5-acre site was used until 1973 for chemical munitions disposal training with CG, BZ, GB, and HD. Two square burning pits, each 16 feet on a side, were used for training exercises and were enclosed by a fenced area measuring 40 x 80 meters. The depths of the pits are unknown; however, SOPs recommended a depth of 6 feet. At closure, the pits were reportedly filled with soil, although some depressions were observed in 1988 [R-25]. Appendix E provides a schematic of the area. Decontamination of agents on residual soils was performed with STB and DS-2.

3.2.11.2 Known and Suspected Releases

The site may have had a large HD spill in the past, although this has not been confirmed. Surface sampling conducted in April and July 1973 in the proximity of the pits was negative for the agents in question. Sample depths ranged from 3 to 10 centimeters, and therefore, may not have represented the depths at which agents may have been in the training pits.

In addition, a March 1990 report [R-27] identified an unauthorized dump at the western end of the fenced area. Metal poles, wood, old lights, two small empty drums, an old car, and six or more 55-gallon drums were identified.

3.2.12 OLD TOXIC TRAINING AREA

3.2.12.1 Description

The Old Toxic Training Area is located on the Main Post behind Building 3183 (shown as AREE 22 in Figure 3-1d). This 10,000-square-foot area was used during the 1950s for training exercises in the identification and detection of HD.

Other agents may also have been used in this area. According to facility personnel, the chemicals were placed on the ground surface. Decontaminants such as STB and DS-2 were likely used on surficial soils, but their quantities are unknown. Appendix D provides a description of agents, and Appendix E provides a schematic of the area.

3.2.12.2 Known and Suspected Releases

Chemical agents appear to have been placed on the ground surface and likely decontaminated with STB and DS-2. No sampling has been conducted at the Old Toxic Training Area.

3.2.13 RANGE I

3.2.13.1 Description

Range I was an Agent Shell Tapping Area located on Pelham Range (see AREE 23 in Figure 3-1i). Photograph 29 shows the general conditions at the site. The 0.5-to 1-acre site was used between 1963 and 1964 for chemical agent shell tapping purposes. The agent used onsite is assumed to have been HD. The area has been physically rearranged, with the top 2 feet of soil having been removed to an unknown location. Appendix D provides a description of the agents, and Appendix E provides a schematic of the range.

3.2.13.2 Known and Suspected Releases

Field tests showed no evidence of surface contamination. The 1984 Reassessment [R-3] concluded that no apparent surface problem existed; however, subsurface use is not permitted due to possible persistence of isolated pockets of live agents.

3.2.14 RANGE J

3.2.14.1 Description

Range J was an Agent Training Area located on Pelham Range (see AREE 24 in Figure 3-1i). Photograph 30 shows the general conditions at the site. The 139- by 50-foot area was used until 1963 for training and agent disposal. The agents used at the site are unknown but believed to be HD. The site was also reportedly used for disposal of a 110-gallon HD spill that occurred on the Main Post in 1955. The depth at which this material was buried is unknown. During the site visit, rusted drums were seen within the fenced area (see Photograph 31). Appendix D provides a description of the agents, and Appendix E provides a schematic of the range.

3.2.14.2 Known and Suspected Releases

Limited monitoring has been conducted onsite. These data indicate that no surface contamination exists. The 1984 Reassessment [R-3] indicated subsurface use is not permitted due to possible persistence of isolated pockets of live agents.

3.2.15 RANGE K

3.2.15.1 Description

Range K was an Agent Training Area located on Pelham Range (see AREE 25 in Figure 3-1i). Photograph 32 shows the general conditions at the site. The 2-acre area was used for agent training. Limited information on the site is available, including time of operation and agents used. The site was physically rearranged (bulldozed). Records indicate the site was cleared in 1967. A ponded area was observed during the site visit (see Photograph 33). Appendix D provides information on the agents, and Appendix E provides a schematic of the range.

3.2.15.2 Known and Suspected Releases

Surface monitoring was conducted in 1980; no surface contamination was detected. No subsurface testing has been conducted.

3.2.16 RANGE L (LIMA POND)

3.2.16.1 Description

Range L was a Chemical Munitions Disposal Area located on Pelham Range (see AREE 26 in Figure 3-1i). Photograph 34 shows the general conditions at the site, with Lima Pond in the background. The 0.5-acre site was reportedly used for the disposal of captured World War II munitions, including chemical munitions. According to base personnel, a shallow man-made pond (Lima Pond) was the dump site for these munitions [I-2].

3.2.16.2 Known and Suspected Releases

Three water samples were collected from Lima Pond in 1982 and analyzed for HD, VX, and GB. All analytical results were below detection limits of 2 milligrams per liter (mg/L) for HD, 1.14 mg/L for VX, and 0.5 mg/L for GB. However, no determination has been made on the presence or absence of munitions, and no pond sediment samples have been taken for analyses. Surface soil sampling at Range L indicated no detectable surface soil contamination. The 1984 Reassessment [R-3] stated that the water sample data may not represent a valid evaluation of the contamination potential in the pond.

3.2.17 OLD WATER HOLE

3.2.17.1 Description

The Old Water Hole is reportedly a disposal site located between New Mt. Sellers Cemetery and the prisoner of war (POW) camp on Pelham Range (see AREE 27 in Figure 3-1i), although the precise location is not known. Base personnel reported that a variety of munitions, including chemical agents, may have been disposed of at a possible sinkhole. Efforts to locate the site have been unsuccessful.

3.2.17.2 Known and Suspected Releases

The site is reportedly a sinkhole, which would not have any release controls.

3.2.18 HD SPILL/BURIAL SITES

3.2.18.1 Description

A variety of HD spills and burial sites have been reported on both the Main Post and Pelham Range. Many of these areas have been previously addressed. Other areas where spills/burial are documented include:

- Near 6th Street and PX Road (see Figure 3-1b).
- Along the western side of 10th Ave on either side of 21st Street (see Figure 3-1d).
- Along the eastern side of 13th Ave. (see Figure 3-1d).
- Southeast of the intersection of 13th Ave. and 23rd Street (see Figure 3-1d).
- Toxic Gas Area near the western property line of Pelham Range, north of Cane Creek (see Figure 3-1i).

Some of these areas may subsequently have been paved.

3.2.18.2 Known and Suspected Releases

No documented information exists on these spills. Assuming that the SOP was followed carefully, these sites would have been decontaminated.

3.2.19 SECURITY OPERATIONAL TEST SITE

3.2.19.1 Description

The Security Operational Test Site is used for anti-terrorist training activities. This area is shown as AREE 29 in Figure 3-1i.

3.2.19.2 Known and Suspected Releases

It is reported that during one training exercise, a "sticky foam" was placed on a concrete pad, and methyl ethyl ketone (MEK) was used to break down the foam to render the foam "inoperative" [R-29]. Wipe samples and soil samples were collected following cleanup, and no MEK was detected.

3.3 STORAGE TANKS

3.3.1 UNDERGROUND STORAGE TANKS

3.3.1.1 Description

USTs have been identified as AREE 30. Appendix F presents the information available on the USTs at Fort McClellan. The testing of USTs and their associated lines to ensure that they are tight (not leaking) has been expedited, and a large portion of the tanks are scheduled for retrofit or removal (based on the need to maintain the tank in service). Most tanks held or continue to hold petroleum products (heating oil, gasoline, etc.). A recent (February 1990) listing of USTs appears in Appendix F, Table F.1. Other tanks that are not currently listed but that have been identified in past reports appear in Appendix F, Tables F.1 through F.7. These tanks are assumed to be underground. It is not clear whether these tanks had been removed in the past, associated with other building numbers (i.e., Building 263 rather than Building 265), or were inadvertently left off the current listing.

Review of radiologic information shows two USTs (100 and 1,500 gallons) near the Hot Cell (see Subsection 3.8.1) and one holding tank (believed to be underground) at Bromine Field (see Subsection 3.8.5).

A completely accurate listing of the USTs at Fort McClellan is hampered by the extensive area and the age of the facilities. Photograph 35 shows the POL Point where petroleum products are off-loaded and stored in bulk form. Some tanks have been closed in place, and others (such as those associated with former Building 598 as seen by the piping in Photograph 36) are no longer suited to the purpose for which they were originally installed. State-of-the-art tanks are being

installed for locations where USTs will be maintained, as shown in Photograph 37.

3.3.1.2 Known and Suspected Releases

UST testing and replacement at Fort McClellan is concentrating on preventing future leaking tank problems. Some past tank leaks can be identified by available tank test data; others, where data do not exist, could have had the soil screened when the tank was removed or visually inspected. Details of past tank removals were not available. Table 3-2 presents the tanks and/or associated piping that are known to have leaked. A summary of those tanks follows.

POL Point

Due to the large number and sizes of USTs at the POL Point (Building 265 as shown in Figure 3-1d) and the documentation of three leaking tanks, petroleum products are known to have been released or suspected of having been released from other tanks as well. Spillage at the fill pipes was noted.

WAC Museum

A 1,000-gallon steel tank containing heating oil for the WAC Museum (Building 1077, as shown in Figure 3-1b) was removed in January 1990. The ADEM has required the installation of monitoring wells around the location. These wells have not yet been installed.

PX Service Station

A 10,000-gallon steel tank containing gasoline at the PX Service Station (Building 2109, as shown in Figure 3-1d) is documented as leaking. Tanks in this area are scheduled for replacement in 1990.

Fuel Oil Tanks

The following were determined to be leaking fuel, based on the tank and line testing conducted in June 1989, as indicated:

- Boiler Plant No. 3 (Building 1076, Tank 1) -- tank leaking.
- Dental Clinic (Building 1929) -- line test failed.
- Boiler Plant No. 1 (Building 3176, Tanks 1 and 2) -- tanks failed.
- Recreation Center (Building 3213) -- line test failed.
- Chapel (Building 3293) -- line test failed.

Table 3-2
Known Leaking Underground Storage Tanks*
Fort McClellan, Alabama

Tank Location	Tank Size (gallons)	Tank Material	Date Installed	Status and Contents	Tank Test Data
265-4	12,000	Fiberglass	1987	Active - gasoline	Tightness tested 11/89--tank leaking.
265-5	12,000	Steel	1987	Active - gasoline	Tightness tested 11/89--tank leaking.
265-7	12,000	Fiberglass	1987	Active - diesel	Tightness tested 11/89--tank leaking.
1076-1 (Boiler Plant No. 3)	15,000	Steel	1953	Active - boiler fuel	Tightness tested 6/89--tank leaking, line passed test
1077-2 (WAC Museum)	1,000	Steel	1977	Inactive - removed January 1990	Tests indicated leak; closed and removed 1990.
1929 (Dental Clinic)	15,000	Steel	1976	Active - heating oil	Tightness tested 6/89--tank passed and line failed test.
2109 (PX Service Sta.)	10,000	Steel	1968	Active - gasoline	Tightness tested 6/89 and 11/89--tank leaking.
3176-1 (Boiler Plant No. 1)	18,000	Steel	1953	Active - boiler fuel	Tightness tested 6/89--tank failed and line passed test.
3176-2 (Boiler Plant No. 1)	18,000	Steel	1953	Active - heating oil	Tightness tested 6/89--tank failed and line passed test.
3213 (Rec. Center)	4,000	Steel	1980	Active - heating oil	Tightness tested 6/89--tank passed and line failed test.
3293 (Chapel)	4,000	Steel	1980	Active - heating oil	Tightness tested 6/89--tank passed and line failed test.

*Based on Fort McClellan Underground Storage Tank Summary Report--8 February 1990. (Appendix F, Table F-1)

Radiological Storage Tanks

Two USTs (100 and 1,500 gallons) and a waste disposal pit are likely to still exist in the area of the Hot Cell, as discussed in Subsection 3.8.1. A 1984 Radiation Protection Study [R-30] revealed that the tank or tanks may have leaked low-level radioactive contamination that had spread west of the Hot Cell but may not have reached monitoring wells at the site. No information is available on the holding tanks at Bromine Field, but due to the short half-life of the bromine 82 isotope, no radioactivity is expected to remain.

3.3.2 ABOVEGROUND STORAGE TANKS

3.3.2.1 Description

ASTs have been identified as AREE 31. Table 3-3 presents the information available on the ASTs listed by Fort McClellan. With the exception of the tanks at the CDTF, ASTs are currently maintained by Johnson Controls--Pan Am World Services.

Additional ASTs not listed by Fort McClellan but identified either in documents or during onsite visits are as follows:

- Two Propane Storage Tanks (Building 3217, as shown in Photograph 38).
- 2,000- and 5,000-gallon tanks storing gasoline and diesel fuel, respectively, at the Pelham Range UTES #1 site (see Photograph 39).
- 20,000-gallon Wastewater Holding Tank at CDTF [R-31].
- Building 4438 (near PCB Storage Area) has aboveground fuel oil storage.

3.3.2.2 Known and Suspected Releases

The only information available on releases from ASTs is referenced to the Building 296 aboveground fuel storage area, as shown in Figure 3-1d and Photograph 40. A report [R-25] noted that a 2- to 5-foot high concrete dike was present on the side where fuel is loaded into vehicles. Oil stains were present on the dike and the adjacent concrete parking area, which slopes toward a nearby stream. Staining was also observed on the gravel area beneath the tank [R-25].

Table 3-3
Aboveground Storage Tank Inventory
Fort McClellan, Alabama
February 12, 1990

Tank Location	Building Use	Tank Size (gallons)	Tank Material	Date Installed	Tank Contents	Status and Contents	Comments
Range 18-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Range 16-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Range 19-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Range 13-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Range 19B-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Range 32A-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Range 24A-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Range 28-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Range 26-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Range 20-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Range 27-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Range 22-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Range 21-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Range 24-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Range 25-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Range 32-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Range 31-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
EOCT-Main Post	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Pelham - POW Camp	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Pelham-Land Navigation	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Pelham-Range 56	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Pelham-Willet Spring	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Pelham-Range 23A	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Pelham-Range 51	Training	500	Steel	1986	Diesel No. 2	Active-heating oil	Maintained by PanAm
Site 296-1	Bulk fuel storage	25,000	Steel	Unknown	Diesel No. 2	Active-bulk fuel storage	Maintained by PanAm
Site 296-2	Bulk fuel storage	25,000	Steel	Unknown	Diesel No. 4	Active-bulk fuel storage	Maintained by PanAm
Site 296-3	Bulk fuel storage	25,000	Steel	Unknown	Diesel No. 4	Active-bulk fuel storage	Maintained by PanAm
Site 296-4	Bulk fuel storage	25,000	Steel	Unknown	Diesel No. 4	Active-bulk fuel storage	Maintained by PanAm
Site 296-5	Bulk fuel storage	25,000	Steel	Unknown	Diesel No. 4	Active-bulk fuel storage	Maintained by PanAm
Site 296-6	Bulk fuel storage	25,000	Steel	Unknown	Diesel No. 4	Active-bulk fuel storage	Maintained by PanAm
Site 296-7	Bulk fuel storage	10,000	Steel	Unknown	Empty???	Inactive-empty???	Maintained by PanAm
CTDF	Training	40,000	Steel	1985	Diesel No. 2	Heating	Tank being phased out
CTDF	Training	4,000	Stainless steel	1985	Sulfuric acid	Acid storage	Tank being phased out
CTDF	Training	4,000	Stainless steel	1985	Caustics	Caustic storage	Tank being phased out

3.4 LANDFILLS

3.4.1 FORMER LANDFILL NO. 1

3.4.1.1 Description

Former Landfill No. 1 operated as the base sanitary landfill between 1945 and 1947. The landfill covers approximately 2 acres and is located between 16th Avenue and Avery Drive in the floodplain of an unnamed intermittent stream draining into Remount Creek (see AREE 32 in Figure 3-1d). Photograph 41 shows the eastern face of the landfill. Photograph 42 shows the top of the landfill and an associated culvert.

No information exists concerning the operation or content of the landfill. There is no evidence the landfill has been lined.

3.4.1.2 Known and Suspected Releases

No known or suspected releases have been documented. No evidence of releases (leachate seeps) was observed during the WESTON site inspection. No sampling has been conducted. The potential exists for groundwater contamination due to leachate infiltration.

3.4.2 FORMER LANDFILL NO. 2

3.4.2.1 Description

Former Landfill No. 2 was the base sanitary landfill after the closure of Former Landfill No. 1 and was active from 1947 to an unknown date. This landfill covers approximately 4 acres and is located west of the southern tip of Cemetary Hill, between 2nd Avenue and 10th Street. This site is in the floodplain of Cave Creek, which is an intermittent stream south-southeast of the landfill (see AREE 33 in Figure 3-1b).

This landfill was reportedly used for disposal of waste during deactivation of the installation [R-24]. WESTON observed two rusted drums, smaller containers (5-gallon can and bottles), and assorted building materials at the site. Photograph 43 shows the toe of the landfill (looking northeast). There is no evidence that this landfill has been lined.

3.4.2.2 Known and Suspected Release

No known or suspected releases have been documented. No evidence of releases (leachate seeps) was observed during the WESTON site inspection. No sampling

has been conducted. The potential exists for groundwater contamination due to leachate infiltration.

3.4.3 FORMER LANDFILL NO. 3

3.4.3.1 Description

Former Landfill No. 3 was the base sanitary landfill in operation between 1946 and 1967. This landfill was operated using the trench and fill method, with trenches trending northwest to southeast. Traces of these trenches due to settling over the old landfill cells have been observed in previous studies [R-32] as well as during the recent WESTON site inspection. These linear depressions could result in the ponding of water and subsequent accelerated leachate generation.

This landfill covers approximately 22 acres and is located east of State Route 21 and north of Cave Creek. This location is northwest of and adjacent to Active Sanitary Landfill No. 4 (see AREE 34 in Figure 3-1b).

Five monitoring wells (shown in Figure 3-2) were installed within or adjacent to Former Landfill No. 3 in 1986 [R-32]. Water levels measured at that time indicate northwestwardly groundwater flow exiting Fort McClellan along State Route 21. Groundwater sampling of these wells was initiated in 1986 and has continued on a quarterly basis to the present. Groundwater is analyzed for pesticides/PCB, BNA, VOC, metals, and standard landfill parameters (chloride, sulfate, nitrate/nitrite, total dissolved solids, specific conductance, chemical oxygen demand, phenols, and pH). A typical monitoring well within Former Landfill No. 3 was observed by WESTON during the site visit (see Photograph 45). This well, labeled W2 (monitoring well 2), is located very close to the center of the former landfill.

3.4.3.2 Known and Suspected Releases

Analysis of the initial (1986) groundwater sampling results indicated limited groundwater contamination. These results confirm that iron, manganese, and low pH were in excess of National Secondary Drinking Water Regulation criteria. In addition, six organic compounds were detected by this analyses. These compounds are presented in Table 3-4.

3.4.4 ACTIVE SANITARY LANDFILL NO. 4

3.4.4.1 Description

Active Sanitary Landfill No. 4 was opened in 1967 and is still in use. This unlined landfill is operated in the trench method, with trenches trending east-northeast to west-southwest [I-3].

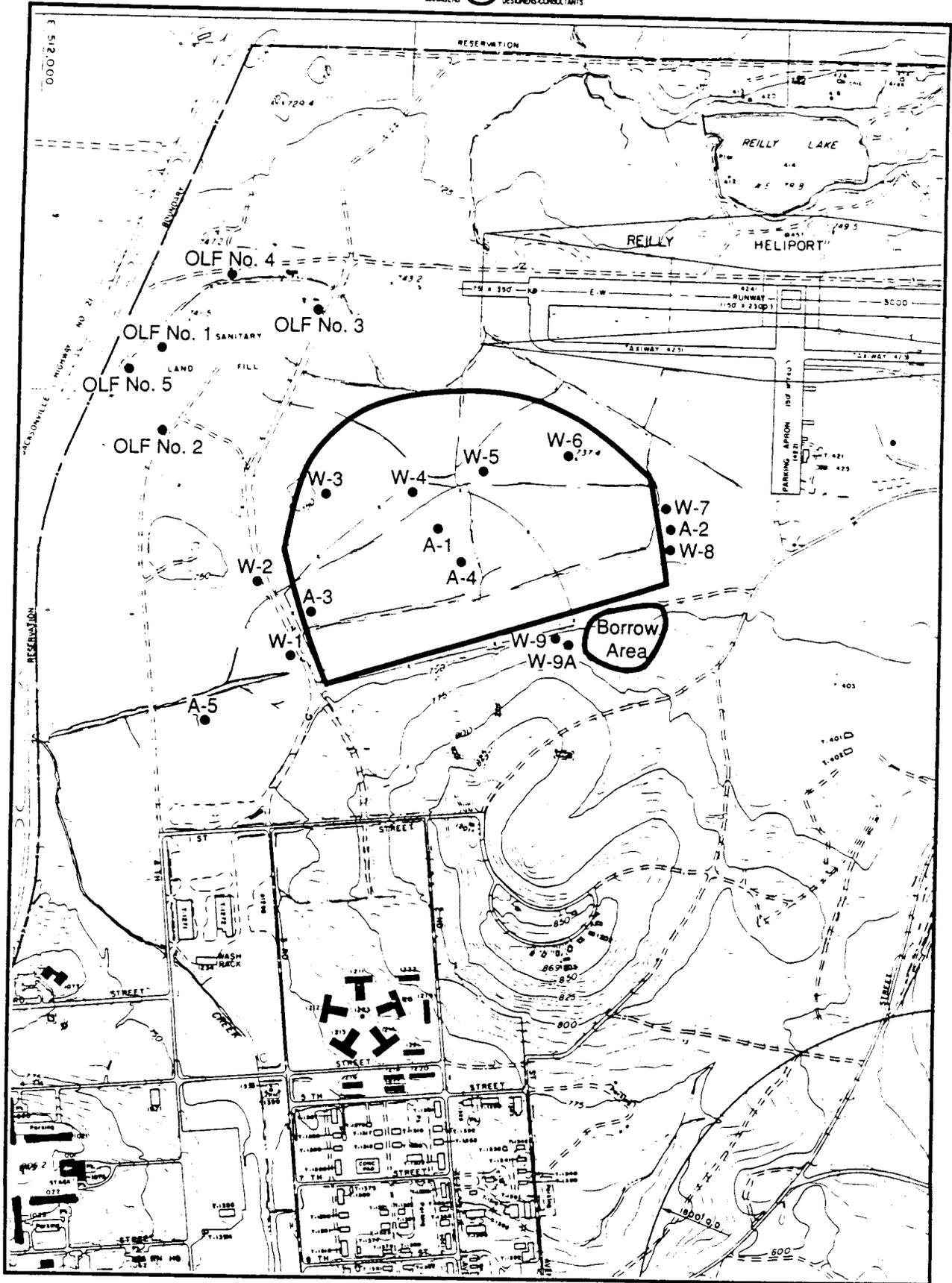


FIGURE 3-2 SITE MAP SHOWING LOCATIONS OF MONITORING WELLS AT LANDFILLS 3 AND 4 FORT McCLELLAN, ALABAMA

Table 3-4

Positive Results of Analyses for Organic Compounds
at Former Landfill No. 3 - Groundwater Sampled
26 to 28 June 1986

Organic Compound	Micrograms per Liter ($\mu\text{g/L}$)	Well Number
Tetrachloroethene	50	OLF No. 3
Tetrachloroethene	12	OLF No. 4
Tetrachloroethene	110	OLF No. 5
Methylene chloride	9	OLF No. 4
1,1-Dichloroethane	18	OLF No. 4
trans-1,2-Dichloroethene	24	OLF No. 4
Benzene	4	OLF No. 4
Bis(2-ethylhexyl) phthalate*	20	OLF No. 1
Bis(2-ethylhexyl) phthalate*	40	OLF No. 2
Bis(2-ethylhexyl) phthalate*	10	OLF No. 3

*Phthalates commonly occur in laboratory analyses, and this particular compound should not cause concern.

This landfill covers approximately 53 acres and is located southeast of Former Landfill No. 3 and southwest of Reilly Heliport, within floodplains of Cave and Dothard Creeks (see AREE 35 in Figure 3-1b). Photograph 46 shows the typical site characteristics.

In addition to residential refuse, the landfill was used for the disposal of decontaminated materials, including dead animals resulting from agent training exercises. In the past, trichloroethene (TCE) sludge and POL products were reportedly disposed of in the landfill [R-24]. Around 1974 this area was used for open burning. A burn pit was used for a firefighting exercise [R-25]. A wood salvage yard was attempted at this site but ceased operation due to trash being mixed with the wood. Past violations of State and Federal requirements have included standing water in trenches and lack of adequate compaction, both of which may contribute to leachate production [R-33].

Five 2-inch wells were emplaced within or adjacent to the current landfill in 1976 [R-33]. An inspection of these wells in 1982 indicated that these wells are no longer suitable for sampling because of inadequate grout seals and other construction irregularities [R-34].

Ten 4-inch monitor wells were installed outside the perimeter of the landfill boundaries in 1982. Landfill expansion since 1982 has resulted in the inclusion within the landfill of the four downgradient wells that were located north of the landfill. One of these wells has been damaged and is no longer used for sampling. Currently, there are no monitoring wells located between the landfill face and Reilly Lake.

Current groundwater monitoring is limited to those 4-inch wells (shown in Figure 3-2) emplaced in 1982 and occurs quarterly. Groundwater is analyzed for pesticides/PCB, BNA, VOC, metals, and standard landfill parameters.

3.4.4.2 Known and Suspected Releases

A review of data through 1978 in a previous study [R-3] found that several parameters (manganese (Mn), lead (Pb), iron (Fe), and chromium (Cr)) exceeded current drinking water criteria on a regular basis.

Groundwater sampled in 1982 and 1983 from the 1982 (4-inch) monitoring wells was analyzed for chemical oxygen demand, phenols, chloride, toluene, manganese, arsenic, iron, lead, cadmium, TCE, PCE, and nitrate. Toluene, chloride, and magnesium were found to be above background levels [R-35].

Monitoring well A-4, a centrally located 1976 (2-inch) well, was observed in 1982 to be actively venting landfill gas to the atmosphere [R-34].

3.4.5 QUARRIES AND BORROW PITS

3.4.5.1 Description

As seen in Figure 3-1c (AREEs 36), a quarry is identified adjacent to the northern property boundary of the Main Post. It was reported in a telephone interview [T-1] with Fort DNR personnel that the quarry was used in the past to mine gravel and rock. It was also reported that the quarry has since been reclaimed and reseeded. This area is currently used as a training site. In addition to the quarry, several (at least seven) borrow pits have been identified, located randomly across the Main Post (see Figures 3-1b, 3-1f, and 3-1g). Reconnaissance was conducted at three of the seven borrow pits. The remaining four borrow pits were identified subsequent to the site assessment visit and therefore were not visited. The borrow pit adjacent to Range 27 (see Figure 3-1f) is also referred to as the "Stump Dump." It was found to contain construction and vegetation debris, mattresses, and a few dried paint cans (see Photograph 47). According to fort personnel, some unauthorized dumping may occur in this area.

Two other borrow pits visited by WESTON are located within 0.5 mile east and west of the active sanitary landfill (see Figure 3-1b). The borrow pit located east of the sanitary landfill is shown in Photograph 48. Borrow material from these pits is used as fill/cover in landfill operations. (Notice darker gray/black soil piles deposited in foreground.) The remaining four known borrow pits are not characterized in any of the documentation available to WESTON at the time of this writing.

3.4.5.2 Known and Suspected Releases

Only in the "Stump Dump" pit is there any evidence of disposal activities. Based on the available documentation, conversations with the base personnel, and the site reconnaissance, there are no known or suspected releases. However, this does not preclude the possibility of releases from any materials that may have been deposited in the borrow pits.

3.5 INCINERATORS

3.5.1 U.S. ARMY HOSPITAL INCINERATOR

3.5.1.1 Description

In Building 292, located adjacent to the U.S. Army Hospital (shown as AREE 37 in Figure 3-1b and Photograph 49), an infectious/pathological waste incinerator

was in operation from 1972 to 1989. The unit is a gas-fired Consumat Systems, Inc. Model C-32-P incinerator designed to burn 85 pounds per hour with a 350,000-Btu/hr afterburner. The incinerator was used for the destruction of infectious and potentially infectious waste, as well as pathological wastes. The hospital generates approximately 2,000 to 2,400 pounds per week of infectious waste, which is identified by red containers (see Photograph 50). Incineration operations ceased in 1989 due to mechanical problems. Wastes are currently disposed of by a contractor (American Medical Waste of Birmingham, Alabama). The installation may replace the existing incinerator with a new one [I-4].

3.5.1.2 Known and Suspected Releases

The incinerator was operating under a Letter of Authorization by the State of Alabama (see Appendix G). Ash generated from the incinerator was disposed of in the installation's sanitary landfill. As shown in Photograph 51, some ash still remains in bags in the building. No sampling data for the incinerator ash are available. Installation of a new incinerator would require an air permit application.

3.5.2 CHEMICAL DECONTAMINATION TRAINING FACILITY INCINERATOR

3.5.2.1 Description

The CDTF (shown as AREE 38 in Figure 3-1f) is used for training military personnel in techniques of detection and decontamination of nerve agents (see Subsection 3.2.2). The facility uses the incinerator to dispose of generated wastes. The unit became operational in February 1987 and operates under a State Air Permit.

Gases generated through combustion are filtered through the air filtration system, a series of carbon units, prior to discharge to the atmosphere. The solid residue is double bagged and sent to the active landfill for disposal [R-25].

3.5.2.2 Known and Suspected Releases

Releases to the atmosphere are addressed with the State Air Permit.

The incinerator treats wastewater, used filters, and personnel protection clothing and does not require a RCRA permit, according to facility personnel. The used filters have not been handled and managed as hazardous waste during storage. However, according to the Army policy [Army Environmental Office, ENVR-EH, Subject: Army Policy--Treatment, Storage and Disposal of ASC (Whetlerite) Activated carbon, 20 Oct 89], the used activated carbon filters are hazardous

[R-27]. Data were not available to confirm that ash generated by the facility is non-hazardous waste.

3.6 TOXIC/HAZARDOUS MATERIALS HANDLING AND STORAGE AREAS

3.6.1 PESTICIDE/HERBICIDE MIXING AND STORAGE AREAS

3.6.1.1 Pesticide Mixing and Storage Facility

3.6.1.1.1 Description

The Pesticide Mixing and Storage Facility (Building 211, shown as AREE 39 in Figure 3-1d) stores and mixes pesticides for pest control at Fort McClellan (see Photograph 52). The areas immediately surrounding the facility are paved. The pesticide mixing pad is attached to the facility and constructed of concrete (see Photograph 53). The pad is sloped to the center to provide containment should a spill occur. In addition, the pad is equipped with a sump to collect vehicle rinse water for subsequent carbon filtration [R-24].

A list of pesticides currently used at Fort McClellan is included as Appendix H.1. WESTON noted that these pesticides are stored in Building 211. WESTON also noted that several other pesticides not on the list were stored in this building. These pesticides include the following: Dursban, Xtraban Roach Concentrate, Diazinon 4E, Sevin, Malathion, Dow DMA-4 Herbicide, Killmaster II, and Prohibit Insecticide. Many of the pesticides not on the list of pesticides currently used at Fort McClellan appear on a list of pesticides used at Fort McClellan in 1976. This list is included as Appendix H.2.

3.6.1.1.2 Known and Suspected Releases

Soil sampling for pesticides and herbicides was conducted in 1985 in areas adjacent to the macadam surrounding the Pesticide Mixing and Storage Facility. Analytical results showed that some insecticide residues (chlordane metabolites; methoxychlor; hexachlorobenzene (HCB); p,p'-DDT; and dieldrin) were present in the soil samples. Analyses for herbicides were not possible due to the buffering capacity of the soil.

Detected levels of insecticides ranged from 0.03 parts per million (ppm) for HCB to 19.15 ppm for the metabolized chlordane/total constituents (see Appendix H.3 for pesticides analyzed and detection limits). Based on an earlier report [R-24], these levels are not considered to be high enough to be of human health or environmental concern. In addition, chlordane is very persistent in the environment. The fact that the detected chlordane was found in a metabolized state indicates

that the detected chlordane was from past activities. Had a large spill occurred, much higher levels of chlordane in a non-metabolized state would have been detected [R-24].

3.6.1.2 Golf Course Pesticide Mixing and Storage Facility

3.6.1.2.1 Description

The Golf Course Pesticide Mixing and Storage Facility (Building S 2252, shown as AREE 40 in Figure 3-1b) has been in operation since 1985. It is used to store and mix pesticides intended for application on the golf course at Fort McClellan [R-24]. The storage room is not curbed, and the outdoor mixing area is not paved or curbed [R-27].

3.6.1.2.2 Known and Suspected Releases

No reported spills have occurred at the Golf Course Pesticide Mixing and Storage Facility, and no sampling has been conducted. In the past, neither the individuals in charge of application nor supervisory personnel at the golf course were certified in the application of pesticides [R-27]. However, the individual applying pesticides at the golf course now is certified for pesticide application [R-52].

3.6.1.3 Forestry Compound

3.6.1.3.1 Description

The Forestry Compound (Building T08519 at Pelham Range, shown as AREE 41 in Figure 3-1i) is used to store herbicides and fungicides (see Photograph 54). It is a small wooden structure with a dirt floor. This structure was reported to be completely inadequate for storage of herbicides and fungicides [R-27].

3.6.1.3.2 Known and Suspected Releases

In the past, pesticides were applied by forestry technicians uncertified in pesticide application [R-27]. However, they are now DOD-certified in pesticide application [R-52].

3.6.1.4 Pesticide/Herbicide Storage Facility

3.6.1.4.1 Description

The Pesticide/Herbicide Storage Facility (Building 208, shown as AREE 42 in Figure 3-1b) has been in operation for at least 20 years. It is used to store limited amounts of herbicides. A paved surface surrounds the facility [R-24]. Pesticides for the Forestry Section were also reportedly stored here [R-28].

3.6.1.4.2 Known and Suspected Releases

No reported spills have occurred at the Pesticide/Herbicide Storage Facility, and no sampling has been conducted.

3.6.2 PCB STORAGE AREAS

3.6.2.1 PCB Storage Facility

3.6.2.1.1 Description

Polychlorinated biphenyls (PCB) and PCB-contaminated transformers are stored in the PCB Storage Facility, which is located at the northeastern portion of the Main Post (see AREE 43 in Figure 3-1b). This facility consists of a covered, bermed concrete slab, which is enclosed by a cyclone fence (see Photograph 55). Transformers are stored within the facility until disposal can be accomplished.

In an earlier report [R-24] it was noted that some transformers have been stored outside of the slab but within the fenced area. That report also noted that the facility was used for the temporary storage of lab chemicals removed from the Chemical School Laboratory.

WESTON observed that besides two transformers, several other drums were stored in the PCB Storage Facility. These drums included (see Photograph 56): three 10-gallon drums of Dursban Termenticide Concentrate; one 55-gallon drum of pesticide liquid carbon filters; one black drum of formic acid/water mix; three black drums of paint remover; and a gray 55-gallon non-PCB salvage drum.

3.6.2.1.2 Known and Suspected Releases

Soil sampling and subsequent analyses for PCB content were conducted within the fenced area of the PCB Storage Facility. No PCB were detected above a 1 ppm detection limit [R-24]. No leaking transformers or drums were observed by WESTON in the PCB Storage Facility.

3.6.2.2 Temporary Transformer Storage/Staging Area

3.6.2.2.1 Description

The Temporary Transformer Storage/Staging Area is used for the temporary storage or staging of transformers removed from service (see Photograph 57). It is located at the northeastern portion of the Main Post within the old Coal Storage Yard and adjacent to Building S-4437 (shown as AREE 44 in Figure 3-1b). Transformers are held in this facility until testing for PCB concentration is

accomplished. Those found to have greater than 50 ppm are moved to the PCB Storage Facility for storage until disposal can be accomplished [R-24].

3.6.2.2 Known and Suspected Releases

Soil samples were obtained from the Temporary Transformer Storage/Staging Area for PCB analyses. All samples were negative for PCB above a 1 ppm detection limit [R-24]. No leaking transformers were observed by WESTON in the Temporary Transformer Storage/Staging Area.

3.6.3 DRMO STORAGE FACILITY

3.6.3.1 Description

The DRMO Storage Facility is a satellite storage operation of DRMO activities located at Anniston Army Depot. It is located near Building T-344 on the Main Post, shown as AREE 45 in Figure 3-1b. WESTON observed that empty 5-gallon sulfuric acid cans and empty 55-gallon drums are stored here (see Photograph 58). WESTON also observed that old appliances, brass recycling bins (see Photograph 59), and old jeeps with radon instrument dials are stored here.

WESTON noted that the former RCRA Interim Status Storage Area at the DRMO Storage Facility had been closed under RCRA (see Photograph 60). It is awaiting confirmation by ADEM. The area was used for the temporary storage (90 days or less) of hazardous waste/hazardous materials prior to disposal. It consisted of two conexes situated on top of two interlocking aluminum panels [R-24]. Hazardous wastes included corrosives, lead, pesticides, and POL wastes [R-25].

The DRMO Storage Facility also had a Battery Storage Area and a Transformer Storage Area. Used batteries were stacked in the Battery Storage Area two to three high on wooden pallets that rested on a gravel surface. Transformers were stored on wood pallets near the entrance to the facility [R-25].

3.6.3.2 Known and Suspected Releases

Soil samples were collected adjacent to the aluminum panels in the RCRA Interim Status Storage Area in 1985. Samples were analyzed for priority pollutants. Results of the analyses indicated the presence of pentachlorophenol (PCP), 2,4,6-trichlorophenol, naphthalene, and phenanthrene at ppm levels. Samples were not collected under the aluminum panels. Based on the sampling results, it was believed that some type of discharge had occurred in this area and that it may have occurred either during or prior to the use of the area as a satellite waste storage area [R-24]. In addition, in another report [R-25] some oily stains were noted on the soils beneath vehicles near the Transformer Storage Area and in the Scrap Metal Yard.

3.6.4 CONTRACTOR LAYDOWN AREA

3.6.4.1 Description

The Contractor Laydown Area is located in the western portion of the former Coal Storage Yard on the Main Post, shown as AREE 46 in Figure 3-1b. This area is used to store contractor materials and equipment. WESTON noted a step van full of cans of polyurethane varnish and other paint-related materials stored here (see Photograph 61). Outside of this van are paint cans on a pallet and a half-full 55-gallon drum of mineral spirits. In addition, in the vicinity of the step van, a one-quarter full 55-gallon drum of VM+P naphtha is located.

In the southeastern portion of the Contractor Laydown Area, WESTON noted over 200 empty 55-gallon fog oil drums stacked on their sides (see Photograph 62). A recent report [R-27] noted that the soil adjacent to these drums is stained. In addition, WESTON noted several other full 55-gallon drums stored upright and next to the fog oil drums. Some of these drums are identified as motor oil and gear oil. One of the drums is labeled cleaner/degreaser (alkaline) and one-quarter full. Several drums are vented and punctured and full of what appears to be water.

Next to the upright full drums, WESTON noted five old USTs on the ground: two 20,000-gallon, one 10,000-gallon, and two 2,000-gallon capacity tanks (see Photograph 63). Some of these tanks have holes in them and contain what appears to be water. Alongside of the USTs are two old yellow gas pumps.

North of the USTs, WESTON noted a Telephone Pole Storage Area (see Photograph 64). Removed telephone poles are stored here on steel racks. Creosote drippings from these poles appear to have stained the underlying gravel and soil.

The center of the Contractor Laydown Area is a POL Landfarming Area. Here fuel-contaminated soil is remediated. The soil is placed in four rectangular piles about 2 feet high. These piles are bermed and covered with a plastic liner. A recent report [R-27] noted that some fuel is leaking out over the berm, especially when new material is added. However, the fuel does not appear to have migrated off the asphalt on which the piles are located. Nevertheless, the potential exists.

3.6.4.2 Known and Suspected Releases

A recent report [R-27] noted that the soil adjacent to the empty Fog Oil Drum Storage Area is stained. This indicates that spills have occurred in this area. However, the quantity of fog oil spilled since these drums have been stored here is unknown. The report also noted that the potential exists for soil contamination by leaking fuel from the POL Landfarming Area. In addition, WESTON noted

creosote drippings on the gravel and soil in the Telephone Pole Storage Area. The quantity of creosote spilled is unknown.

3.6.5 WASTE CHEMICAL STORAGE AREA

3.6.5.1 Description

The Waste Chemical Storage Area was located in former Building 598 on the Main Post (see AREE 47 in Figure 3-1b). On 17 March 1989, this building burned to the ground, leaving only metal 55-gallon drums and other metal contents of the building in the ruins (see Photograph 65), which have been removed. At the time it burned, the building contained pesticides, grass seed, fertilizer, map cabinets, and other items. In a letter to the ADEM [R-36], the following materials were listed as being in the building at the time it burned:

Post	10 gallons
Treflan	70 gallons
Surflan	50 gallons
Hi-Far X	4 gallons
Rodeo	5 gallons
Weed 'n Feed	1 ton
Weed Hoe	50 gallons
Round-up	10 gallons
2,4-D	120 gallons
Tordon 101	70 gallons
Cutrine Plus	30 gallons

The runoff from firefighting activities went into a wetlands area southwest of Building 598 (see Photograph 66). These wetlands are a part of Cave Creek, which is located approximately 50 to 75 feet away from the building. A trip report for a RCRA Compliance Inspection [R-29] noted that a single composite sample was taken from this creek's sediment at the point where the runoff from the building enters the creek. None of the chemicals tested for were detected.

An earlier report [R-25] noted that Building 598 stored RCRA-regulated wastes, even though it was not permitted as a RCRA storage unit. The report mentioned that this unit handled shelf-life-expired chemicals, degradation materials, and broken packages. It also mentioned that drums of waste were stored on a concrete floor near the building entrance and that the length of time materials were stored here was not available.

WESTON noted that within the ruins of Building 598 are two grease pits that are full of water (see Photograph 67). This indicates an earlier use of this building as a motor pool. WESTON also noted that east of the building are USTs (see

Photograph 68). In addition, a cap protruding from the ground on the northern side of Building 598 was observed by WESTON (see left center of Photograph 65).

3.6.5.2 Known and Suspected Releases

A release of pesticides and other shelf-life-expired chemicals, including products of incomplete combustion, occurred when the Waste Chemical Storage Area burned to the ground on 17 March 1989. Runoff from the firefighting activities entered a wetlands southwest of this area and possibly Cave Creek. Prior to this, no releases were observed or identified [R-25].

3.6.6 FOG OIL DRUM STORAGE AREAS

3.6.6.1 Description

The Fog Oil Drum Storage Area on the Main Post is located near Range 24A (see Photograph 69 and AREE 48 in Figure 3-1h). It holds about 300 55-gallon drums used for camouflage smoke. The drums are stacked on their sides. The storage area has a concrete pad (approximately 60 by 60 feet) that slopes to a surface drain. It leads to an underground tank designed to collect any leakage and precipitation from the storage area.

A 5-foot high concrete berm completely surrounds the storage area. A 6- by 6-foot drum staging area is located on the upgradient side and is filled with dirt. Any overflow from the drums in this area drains to the underground tank via pipelines. An earlier report [R-25] noted oily stains on the lower side of the storage area and outside of the concrete diking. These stains were also observed by WESTON (see Photograph 70). The report also noted that the outfall of the storage area to the nearby intermittent stream was stained.

A Fog Oil Drum Storage Area is also located near Range 4A on Pelham Range (see Photograph 71 and Figure 3-1i). Its construction is similar to the one on the Main Post near Range 24A. WESTON observed oil spills in the drum staging area at this location. This observation was documented in an earlier report [R-25] that noted that soils outside of the drum staging area were stained.

Both Fog Oil Drum Storage Areas have oil/water separators that discharge to nearby surface water. Both of these discharges are covered by an NPDES permit.

3.6.6.2 Known and Suspected Releases

Oil stains were noted in an earlier report [R-25] and observed by WESTON at both Fog Oil Drum Storage Areas. For the Fog Oil Drum Storage Area on the Main Post, these stains were located on the lower side of this area and outside of the concrete diking. In addition, the outfall from the area into a nearby

intermittent stream was stained. For the Fog Oil Drum Storage Area at Pelham Range, soils outside of the drum staging area were stained. The stained areas indicate that spills have occurred in the Fog Oil Drum Storage Areas. However, the quantity of fog oil spilled is unknown.

3.6.7 FORMER PENTACHLOROPHENOL DIP TANK

3.6.7.1 Description

The former Pentachlorophenol Dip Tank was located on the Main Post in the DEH Maintenance Yard (shown as AREE 49 in Figure 3-1d). It was constructed of steel and had a capacity of 2,500 gallons. The tank was rectangular with dimensions of 4 x 5 x 18 feet and was set in the ground with a concrete collar. The tank held wood-treating chemicals that were used to preserve lumber. It reportedly held a mixture of diesel fuel, water, and pentachlorophenol, which is a listed hazardous waste (U242) [R-25].

The former Pentachlorophenol Dip Tank had its contents pumped into 55-gallon drums and disposed of offsite by a contractor in May 1986. Sampling of the contents indicated the presence of pentachlorophenol (PCP) but no dioxins [R-24]. In addition, the tank was cleaned. However, shortly after cleaning, it filled with rainwater. Subsequent sampling of the tank indicated that the contents were non-hazardous. Therefore, a vacuum truck pumped the contents into the sanitary sewer [R-25].

The tank and concrete slab were removed from the ground and disposed of by a contractor in October 1987. The excavation was backfilled with clean fill dirt. Sampling and analyses of the surrounding backfill and soils for PCP showed less than the detection limit of 1 milligram per kilogram (mg/kg). Therefore, the area of excavation was deemed not to be contaminated [R-25].

3.6.7.2 Known and Suspected Releases

An earlier report [R-24] noted that an inspection of the former Pentachlorophenol Dip Tank revealed that it had probably leaked in the past, discharging PCP to the soil beneath the tank. However, a later report [R-25] noted that soil sampling indicated that the area of excavation was not contaminated.

3.7 WASTEWATER TREATMENT PLANT

3.7.1 DESCRIPTION

The Fort McClellan Wastewater Treatment Plant (WWTP) is located on 7.08 acres of Fort McClellan property just west of the Main Post along the Anniston-Jacksonville Highway 21 (see AREE 50 in Figure 3-1b). The original plant was

constructed in 1941 to treat wastewater from the fort. The WWTP was leased on 1 January 1974 to the Water Works and Sewer Board of the city of Anniston, which continues to lease and operate the plant under NPDES Permit No. AL0024520, with discharge to Cane Creek. A 31 August 1989 study [R-37] indicated the Army generates approximately 91 percent of the sewage treated at the WWTP. A NPDES permit application for a new Cane Creek WWTP has been submitted; however, due to possible closure of the fort, construction of the plant will not move forward.

3.7.2 KNOWN AND SUSPECTED RELEASES

Due to the age of the Fort McClellan WWTP, the ability of the plant to meet ADEM effluent limits is a major concern. Administrative Order No. 90-039-WP was issued by ADEM 19 December 1989 regarding the discharge of pollutants into Cane Creek (see Appendix I.1). In response to possible closure of the fort, ADEM's position was re-evaluated (see Appendix I.2).

Additional items related to WWTP influent and sludge disposal were noted during an Environment Program Review dated March 1990 [R-27] as follows:

- The WWTP receives an excessive amount of inflow during rainfall. The inflow increases the plant flow from the daily normal flow of 1.2 to 1.6 million gallons per day (mgd) to a peak flow of 7 to 10 mgd. This inflow could cause the WWTP to exceed the requirements of the NPDES permit, which are 4.5 mgd. The time it takes for the flow to increase indicates direct inflow into the sanitary sewer and not infiltration. During the survey, three areas were found that contribute to the inflow: a broken manhole, vehicle wash racks, and dining-facility garbage-can wash pads.
- Fort McClellan is in violation of its NPDES permit by allowing oily vehicle wash water to be discharged into creeks that run through the installation.
- Sludge from the WWTP has never been analyzed for possible heavy metals contamination. This sludge is currently given to local farmers, who use it as a soil conditioner.

3.8 RADIOLOGICAL TRAINING/STORAGE/DISPOSAL AREAS

Table 3-5 presents a summary of the areas where radiologic materials were handled in training, storage, or disposal areas, based on documents available for review. Radioactive isotopes used in radiological training are provided in Table 3-6 [R-6].

Table 3-5

Known Former Radiological Facilities and Training Areas,
Fort McClellan, Alabama

Area	Title	Radiologic Material
<u>Radiological Facilities</u>		
Building 3192	Hot Cell Facility*	Co-60
Building 3182	Laboratory/w	Cs-137
		Cs-137
Building 3180	Laboratory/w Vault	Co-60
		Cs-137
		Co-60
		U-233
Building 3181	Pad Radioactive Waste Storage Yard Isotope and Scaler Laboratories	Ra-226
		Sr-Y-90
		Co-60
		Sr-Y-90
		Pu
		Co-60
		Au-186
		Re-198
		Cs-137
<u>Other Facilities</u>		
Building 2281	ACMLS Bradeley Rad. Lab Vault Storage	Unknown
Building 4416		H-3
Building T-812 1/2	Former Storage Vault	Cs-137
		Ra-226
<u>Training Areas</u>		
Iron Mountain (Rattle Snake Gulch)	Burial Grounds	Co-60
		Th-204
		Ra-226
		Cs-137
		Sr-90
Rideout Field	Training Area and Burial Grounds	Co-60
Bromine Field		Br-82
Alpha Field	Training Area	U-233
Former Radiologic Area (1972 to 1972)		U-238
		Unknown

*This facility still contains radiologic materials.

Table 3-6

Radioactive Isotopes Used in Radiological Training,
Fort McClellan, Alabama

Element	Atomic Number	Isotope
Americium	95	Am-241
Antimony	51	Sb-122
Arsenic	33	As-76
Barium	56	Ba-133
Bismuth	83	Bi-210
Bromine	35	Br-82
Calcium	20	Ca-45
Carbon	6	C-14
Cerium	58	Ce-141
Cesium	55	Cs-137
Cobalt	27	Co-57, Co-60
Gold	79	Au-198
Hafnium	72	Hf-181
Lanthanum	57	La-140
Manganese	25	Mn-54
Mercury	80	Hg-203
Niobium	41	Nb-95
Phosphorus	15	P-32
Plutonium	94	Pu-239
Protactinium	91	Pa-234
Rhenium	75	Re-186
Rubidium	37	Rb-86
Ruthenium	44	Ru-106
Samarium	62	Sm-151, Sm-155
Scandium	21	Sc-46
Silver	47	Ag-110m, Ag-111
Sodium	11	Na-22
Strontium	38	Sr-89, Sr-90
Sulfur	16	S-35
Thallium	81	Tl-204
Uranium	92	U-233, U-238
Tungsten	74	W-185
Zinc	30	Zn-65
Rubidium-86-uranium		Rb-86-U
Strontium-yttrium 90		Sr-Y-90

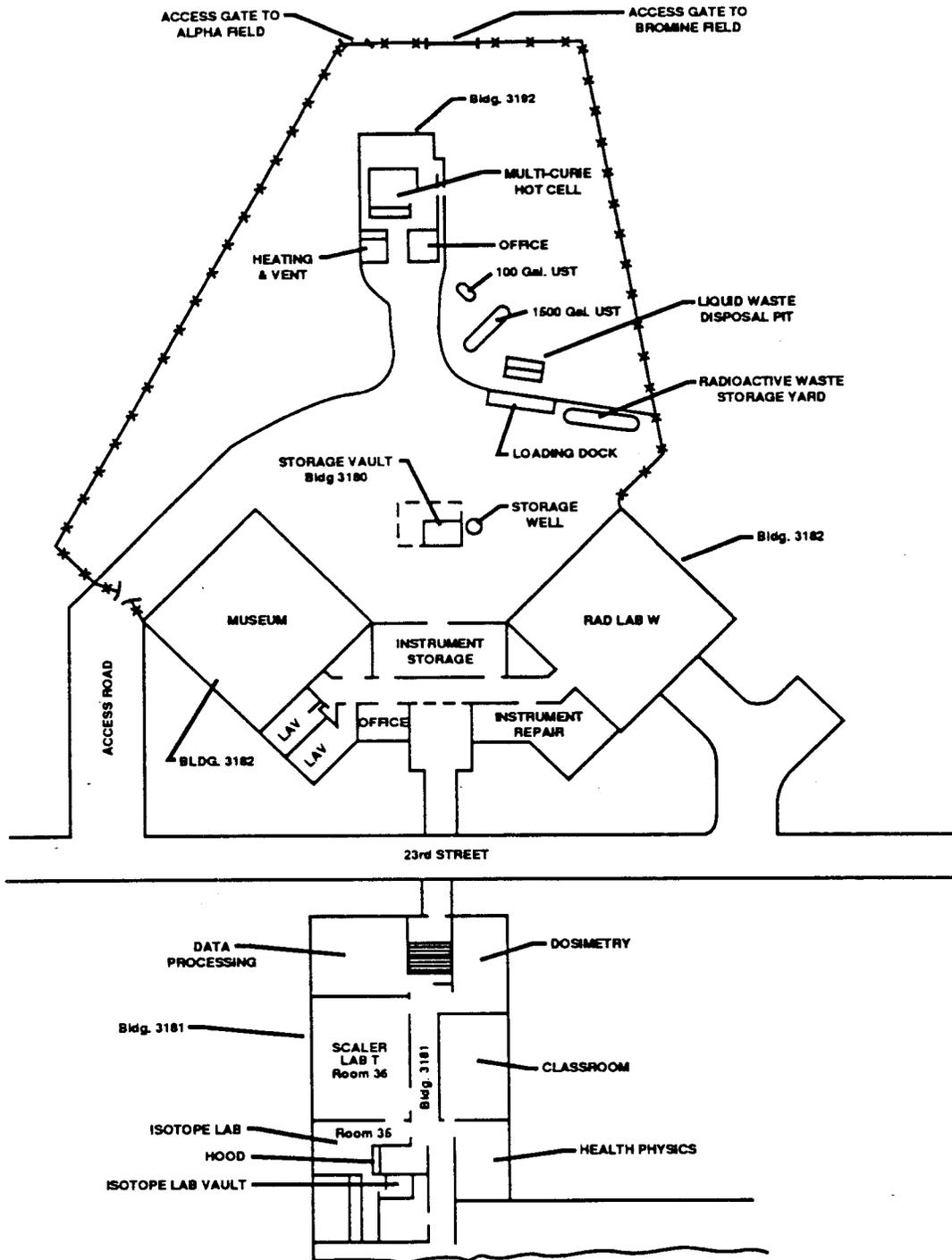
3.8.1 RADIOLOGICAL FACILITIES: FORMER U.S. ARMY CHEMICAL CENTER AND SCHOOL

3.8.1.1 Description

The radiological facilities of the U.S. Army Chemical Center and School were located on the Main Post (see AREE 51 in Figure 3-1d) and are represented schematically in Figure 3-3. These facilities encompass Buildings 3192, 3182, 3181, and 3180.

Based on the Radiation Protection Survey in 1969 [R-38], the following were the materials used and activities performed in each area:

- Hot Cell, Building 3192 (see Photograph 72). Located in the Hot Cell were 620 Co-60 sources of 10 Curies each, authorized under Atomic Energy Commission (AEC) BML 01-02861-01. These were stored in 16 source wells located within the cell. The Hot Cell was equipped with properly functioning interlocks that prevented entry into the Hot Cell after the radiation level within the cell had reached a preset level. With one 10-Curie Co-60 source exposed, the maximum exposure rate measured was less than 0.5 mR/hr.
- Laboratory W, Building 3182. Located in the laboratory was a 106-Curie Cs-137 radial calibrator, model AN/UDM-1A, serial number 86. Also located in the laboratory was a 1-Curie Co-60 radial calibrator, model AN/UDM-1, serial number 70. With the sources in the safe position, the maximum exposure rate measured was less than 0.5 mR/hr.
- Laboratory W Vault, Building 3180. Located in this locked concrete storage room were 115 MX1083 sources, six Cs-137 sources totaling 1.6 Curies, one model M3 source set (serial number C56) containing 35 milliCuries of Co-60, and several U-233 alpha plates. The Cs-137 and U-233 sources were authorized under AEC BML 01-02861-01 and AEC SNM 344, respectively. The MX1083 sources each contained 7 microCuries of Ra-226 and are issued with each AN/PDR 27 radial set. The M3 source set was authorized under AEC BML 19-01826-02, issued to Edgewood Arsenal, Maryland, for Armywide distribution.
- Radioactive Waste Storage Yard. Being held in temporary storage in one 5-ton container and two 3-ton containers were a total of 216 Co-60 sources of 10 Curies each. These sources were authorized under AEC BML 01-02861-01. The yard was enclosed by a fence with locked gates, and all areas were properly posted.



264-1694

FIGURE 3-3 RADIOLOGICAL FACILITIES: FORMER U.S. ARMY CHEMICAL CENTER AND SCHOOL - FORT McCLELLAN, ALABAMA

- Scaler Laboratory T, Room 36, Building 3181. No isotopes were stored in this laboratory, which is used for teaching purposes. Calibration sources were brought into the laboratory before class period and were removed after the class was completed.
- Isotope Laboratory, Room 35, Building 3181. Located in the laboratory was a fume hood where unsealed sources were prepared and stored. With the face of the hood opened to 18 inches, the average velocity across the face was 75 linear feet per minute. Located in a locked storage room within the laboratory were the following sources:
 - Seventeen M6 sources sets for the TS 784 radial set. Each source set contained 22.6 milliCuries of Sr-Y-90 authorized under AEC BML 16-05033-01 issued to Lexington Army Depot, Kentucky, for Armywide distribution.
 - Forty-eight plutonium alpha calibration sources authorized under AEC SNM 344.
 - Sixty locally fabricated Co-60 sources of less than 1 microCurie, each mounted on copper planchets and authorized under AEC BML 01-02861-01.
 - Bulk liquid isotopes consisting of 10 milliCuries Re-186, 50 milliCuries of Au-198, 0.6 milliCuries of Au-198, and 1.41 milliCuries of Co-60, each of which is authorized under AEC BML 01-028861-01.
 - One 25-microCurie Ce-137 source authorized under AEC BML 01-02861-01.

3.8.1.2 Known and Suspected Releases

With the exception of the Hot Cell and the associated underground tanks, documentation appears to show that other areas of the Radiological Facilities were decontaminated or radioactive materials with short half-lives were used. The following areas were noted as closed in place:

- Hot Cell (Building 3192) [R-6].
- Sr-90 spill on 28 July 1959 was covered with 6 inches of concrete [R-39].

- The hood duct remaining in Building 3181 was to be sealed at both ends and the motor dismantled [R-40]. However, this could not be confirmed by WESTON.

A Radiation Protection Study on the Hot Cell contamination in 1984 [R-30] provided the following conclusion:

A review of the findings indicates that a potential health hazard existed at Fort McClellan, Alabama, due to spreading of ionizing radiation producing contamination in and around Building 3192. It was specifically determined that the contaminants had spread west of the controlled area and had been released below the surface.

A Site Investigation Report [R-41] in 1989 indicated the following:

No dispersal pathways from the Hot Cell exist at this time. All drains have been plugged, the entrance has been permanently sealed, and noncontaminated waters removed. Radiation signs have been posted, with access to Building 3192 and surrounding area controlled by the Radiation Protection Officer.

3.8.2 OTHER BUILDINGS

3.8.2.1 Description

The following buildings (AREEs 52) are referenced as containing radioactive materials at one time:

- Building 2281 - ACMLS Bradeley, Rad Lab with radioactive materials storage in a vault [R-42].
- Building 4416 - Storage of any atomic numbers 3 to 83, Cs-137 in sealed sources, and hydrogen-3 [R-42].
- Building T-812 1/2 - Former Radium Storage Vault [R-39].

3.8.2.2 Known and Suspected Releases

Little information is available on these facilities. But according to site personnel, it is likely that the areas were screened following removal of all radioactive waste.

3.8.3 IRON MOUNTAIN (RATTLESNAKE GULCH)

3.8.3.1 Description

Iron Mountain, previously known as Rattlesnake Gulch (see AREE 53 in Figure 3-1c), a radiologic training area used from 1954 to 1971, is located approximately 1 mile from the western property boundary of the Main Post. The training area measured approximately 43 by 24 meters. Radiological materials used in training included Co-60, Th-204, Ra-226, Co-137, and Sr-90.

3.8.3.2 Known and Suspected Releases

"Hot spots" were identified in the old burial grounds in 1973 and subsequently excavated and removed along with contaminated soil. The site was declared decontaminated based on a 1973 survey conducted by Fort McClellan personnel [R-3].

3.8.4 RIDEOUT FIELD

3.8.4.1 Description

Rideout Field, a radiological training area, is located in the northwestern portion of Pelham Range (see AREE 54 in Figure 3-1i). Located at Rideout Field were 184 Co-60 sources of 10 Curies each, authorized under AEC BML 01-02861-01. In addition to Co-60 used in the training activities, a burial site was also located in an enclosed area 3.2 kilometers long and 1.6 kilometers wide. Each source was stored 4 feet underground and was raised above the surface by a pneumatic actuator. The actuator controls are located in Rideout Hall, approximately 2 miles from the field. By raising the sources, a radiation field was established which simulated a fallout field. Students training at the field would make aerial surveys and enter the field on foot to determine isodose lines of various intensities. Perimeters were established with chains and warning signs to prevent direct access to the sources. Towers located at either end of the field provided locations from which supervisors monitored the exercises. Unauthorized personnel were prevented from entering the area by a fence that was properly posted with radiation warning signs.

3.8.4.2 Known and Suspected Releases

Buried wastes had been dug up and removed, and the field was certified clean by AEC. A survey completed in 1977 after decontamination showed radioactive levels within acceptable limits [R-3].

An abandoned radiological site was located in the northern portion of Rideout Field (Area 24C) on 22 January 1985. A Co-60 source was located by the

installation's Health Physics Office on 25 January 1985 at this site and was removed on 26 January 1985 [R-43].

3.8.5 BROMINE FIELD

3.8.5.1 Description

Bromine Field, a radiological decontamination training facility, is located behind the Radiological Facilities (see AREE 55 in Figure 3-1d). Br-82, authorized under AEC BML 01-02861-02, with a 36-hour half-life, was used at this facility to train students in radiological decontamination methods. A concrete pad was employed which was designed in such a manner that any contaminated liquid drained into holding tanks. An airframe, armored personnel carrier, radar trailer, and 3/4-ton truck were located on the pad. Prior to an exercise, these items were sprayed with an aqueous solution of Br-82. Students decontaminated the items until the exposure rate was as low as practicable. All personnel involved in the exercise wore anti-contamination clothing and face masks. Continuous air samples were taken on the downwind side of the pad during the exercise. The contaminated liquid was retained in the holding tanks until it decayed to an allowable level and was released to the sewage system.

3.8.5.2 Known and Suspected Releases

Since the half-life of the Br-82 is only 36 hours, any remaining radiologic material would have rapidly decayed [R-3]. A 1973 Radiation Special Study [R-39] indicated that it was not necessary to remove the hold-up tanks, which would likely be piped to the sanitary sewer. Status of the tanks is unknown.

3.8.6 ALPHA FIELD

3.8.6.1 Description

Alpha Field, a nuclear accident training facility, is located adjacent to and south of the Radiological Facilities (see AREE 56 in Figure 3-1d). Approximately 400 uranium-233 and possibly uranium-238 alpha source plates authorized under AEC SNM 344 were mounted on concrete bases in Alpha Field. Entry to the field by unauthorized personnel was prevented by a high chainlink fence.

3.8.6.2 Known and Suspected Releases

The uranium plates and associated pedestals are believed to have been completely removed from the site and the surrounding area decontaminated. A 1973 survey of the field indicated radiation levels were within AEC limits [R-3].

3.8.7 FORMER RADIOLOGICAL AREA

The Former Radiological Area (1971 to 1972) was identified in the Installation Assessment (1977) as being located just north of Range K [R-6] (see AREE 57 in Figure 3-1i). No other information on this area was available at the time of this review.

3.9 OTHER AREAS

3.9.1 U.S. ARMY CHEMICAL SCHOOL LABORATORY SUMP

3.9.1.1 Description

The U.S. Army Chemical School Laboratory located in Building 2281 (see AREE 58 in Figure 3-1b) provided classroom and laboratory training in basic analytical and laboratory techniques until 1985. Chemicals generated from laboratory exercises included small quantities of various acids, bases, solvents, and inorganic chemicals. A list of those chemicals routinely generated from laboratory exercises is in Table 3-7. These wastes were routinely discharged to laboratory sink drains that were tied into an in-ground sump [R-24].

3.9.1.2 Known and Suspected Releases

The ultimate discharge point of the sump was never determined. Prior to closure of the school, the contents of the sump were tested and determined to be non-hazardous. Upon closure of the school, many of the school's chemicals were poured down the laboratory drains. This caused a chemical reaction at the sump site. The sump was then pumped out, backfilled, and sealed [R-24].

3.9.2 PRINTING PLANT

3.9.2.1 Description

The Printing Plant (Building 3183, shown as AREE 59 in Figure 3-1d) stores and uses solvents, petroleum hydrocarbons, and inks. WESTON noted that Multilith Blankola, which contains PCE and petroleum naphtha, Multilith Cylinder Cleaner, which contains 3 percent nitric acid, and Multilith Electrostatic Solution, which contains potassium ferrocyanide, are stored and used in this plant. All wastes generated in the Printing Plant are disposed of by the DRMO.

3.9.2.2 Known and Suspected Releases

There is no evidence of any past or present spills in this area.

Table 3-7

**List of Chemicals Routinely Disposed of by the
Chemical School Laboratory,
Fort McClellan, Alabama**

Chemical	Quantity*
Ferrous chloride	30 mL
Sodium hydroxide	200 mL and 30 grams
Calcium chloride	90 mL
Ammonium chromate	90 mL
Sodium sulfate	90 mL
Hydrochloric acid	500 mL
Phenolphthalein	30 mL
Potassium phosphate	9 grams
Ethanol	150 mL
Potassium manganate	2 grams
Potassium dichromate	2 grams
Phosphoric acid	30 mL
Potassium chromate	80 mL
Aqueous ammonia	250 mL
Nitric acid	300 mL
Thioacetamide	100 mL
Ammonium nitrate	80 mL
Sulfuric acid	250 mL
Ammonium acetate	100 mL
Acetic acid	100 mL
Potassium ferrocyanide	80 mL
Potassium cyanide	10 grams
Sodium hypochlorite	100 mL
Tin chloride	100 mL
Sodium fluoride	100 mL
Potassium nitrate	100 mL
Ammonium cyanide	100 mL
Hydrogen peroxide	100 mL
Ammonium chromate	200 mL
Ammonium sulfide	200 mL
Sodium chloride	25 grams
Silver nitrate	30 grams
Dichlorofluorescein	10 mL
Dextrin	5 grams

Table 3-7

List of Chemicals Routinely Disposed of by the
Chemical School Laboratory,
Fort McClellan, Alabama
(continued)

Chemical	Quantity*
Benzene	40 mL
Ether	50 mL
Phosphoric acid	40 mL
Sodium hydrocarbonate	40 mL
Paraffin oil	200 mL
Picolinic acid	5 grams
Benzoic acid	20 grams
4,4'-Bis(dimethylamino)benzophenone	10 grams
Benzene sulfonyl chloride	10 mL
2,4-Dinitrophenol	10 grams
Sodium citrate	5 grams
Copper sulfate	10 grams
Dioxane	50 mL
Potassium iodide	10 grams
Aqueous zinc chloride	10 grams
N-Bromosuccinimide	3 grams
Sodium metal	3 grams
Potassium bromide	10 grams
Acetanilide	80 grams
Ethyl acetate	60 mL
n-Butyl acetate	80 mL
Acetic anhydride	

*All quantities listed are per class per student.

[R-24]

3.9.3 MULTI-CRAFT SHOP

3.9.3.1 Description

The Multi-Craft Shop (Building 245, shown as AREE 60 in Figure 3-1d) has areas for ceramics and photography. Materials required for these hobbies are stored and used in this building. WESTON noted that 2 gallons of Photograph-Flo 600 solution and 1 gallon of Poly Toner are stored and used in the building. WESTON also noted that the following ceramic materials are stored and used in the building: pumice, $Al_2O_3 \cdot 4SiO_2$, kiln wash, cornwall stone, alumina oxide calcined, soda ash, desert talc, gerstley borate, TiO_2 , barium carbonate, Albany slip, zinc oxide, Zircopax, gum arabic, nepheline syenite, and dolomite.

3.9.3.2 Known and Suspected Releases

There is no evidence of any past or present spills in this area.

3.9.4 TRAINING AIDS BUILDING

3.9.4.1 Description

A photo lab and a graphics area are contained in the Training Aids Building (Building 267, as shown in Figure 3-1d). The photo lab has four automatic machines that develop color slides, black and white film and prints, and color film and prints. All photographic waste drains to a septic tank located outside and on the northern side of the building (see Photograph 73). The septic tank discharges to the sanitary sewer. The graphics area has two automatic machines. The used hypo from these machines is collected in 5-gallon containers, stored in back of the building (see Photograph 74), and sent to the hospital on the Main Post for silver recovery.

3.9.4.2 Known and Suspected Releases

There is no evidence of any past or present spills in this area.

3.9.5 FORMER DRY CLEANING AREA

3.9.5.1 Description

Building 233 (shown as AREE 62 in Figure 3-1d) was formerly a Dry Cleaning Area. A PCE UST was removed from this area. WESTON noted a flange protruding from the ground in front of Building 233. It is uncertain whether or not this flange is connected to a UST.

3.9.5.2 Known and Suspected Releases

There is no evidence of any past or present spills in this area.

3.9.6 U.S. ARMY HOSPITAL

3.9.6.1 Description

The silver in the X-ray processing fluids from the U.S. Army Hospital (Building 292, shown as AREE 63 in Figure 3-1b) is recovered in the silver recovery unit (see Photograph 75). The effluent from this unit goes to the sanitary sewer. In addition, hazardous materials from hospital operations are stored in the Hazardous Material Storage Area (see Photograph 76) before going to the DRMO. Infectious waste is collected in plastic-bag-lined metal containers and disposed of offsite by a contractor.

Xylenes, acetone, various acids (organic and inorganic), and buffers are used in the blood lab. No formaldehyde or xylenes are used in the pathology lab, and no radioactive chemicals are used in the hospital. However, WESTON noted that some formaldehyde bottles, which are supposed to have been removed, are stored in the morgue.

3.9.6.2 Known and Suspected Releases

There is no evidence of any past or present spills in this area.

3.10 OTHER FACILITYWIDE AREES

3.10.1 ASBESTOS

3.10.1.1 Description

Asbestos has been identified as AREE 64. Identification and sampling of asbestos-containing materials (ACMs) have been conducted at Fort McClellan since 1984. Appendix J provides a summary of available asbestos information. Suspected ACMs were identified at a number of buildings during the site visit. Photographs 77 through 79 show the typical conditions of potential ACMs, as noted at Building 273.

3.10.1.2 Known and Suspected Releases

The following surveying and sampling has been conducted, based on available information:

- An asbestos survey of 94 miscellaneous buildings was conducted by ATC, Inc. in 1987. Friable ACMs were found in 53 of the 94 buildings

surveyed, and 88 of the buildings surveyed contain potential hazards presented by nonfriable suspect material (see Appendix J.1) [R-44].

- An asbestos survey of 56 buildings was conducted by Environmental Management, Inc. at the end of 1986 to early 1987. ACMs were identified in 47 of the 56 buildings. Friable ACMs were identified in 21 of the 56 buildings (see Appendix J.2) [R-45].
- An asbestos survey of 21 buildings was conducted by Environmental Management, Inc. during July 1986. ACMs were identified in all 21 buildings. Four buildings were identified as containing asbestos only in floor tiles (see Appendix J.3) [R-46].
- Other data are also available for samples collected between 1984 and 1989 for various buildings and materials (see Appendix J.4).

3.10.2 PCB TRANSFORMERS

3.10.2.1 Description

PCB Transformers have been identified as AREE 65. As outlined in a Hazardous Waste Management Survey in November 1984 [R-47]:

"The Exterior Electric Branch was responsible for managing all electrical transformers and capacitors on the installation. A very good PCB management program for all transformers and capacitors on this installation had been developed. All inservice transformers and capacitors on the installation were considered to be PCB until removed from service for repair or disposal. A quarterly inspection program was performed on all inservice transformers and capacitors, and a log of these inspections was maintained. Nonleaking transformers removed from service were taken to the installation PCB Storage Building [as discussed in Subsection 3.6.2], where they were sampled and tested for PCB content prior to servicing or disposal. Leaking transformers were placed in drip pans prior to storage in the building and then sampled and tested for PCB content prior to service or disposal. Inspection of the PCB Storage Facility indicated that it met the requirements of 40 CFR 761. The storage facility was routinely inspected once each week. The State of Alabama regulates PCB wastes, such as PCB transformers and capacitors, as special wastes. These wastes carry an Alabama waste identification number of SW01. The State requires that PCBs be manifested and transported as HW [hazardous waste]."

It is not clear that similar arrangements for PCB transformer handling is available at Pelham Range. Since Pelham Range and the Main Post are not contiguous, transfer as hazardous waste should be considered.

3.10.2.2 Known and Suspected Releases

Typical conditions of a transformer in service are shown in Photograph 80. Current monitoring of the transformers across the facility and present handling practices should minimize the potential for future PCB releases to the environment. Past spills of PCB transformer contents cannot readily be identified.

3.10.3 PESTICIDES AND HERBICIDES

3.10.3.1 Description

Pesticide and herbicide use at the application areas have been identified as AREE 66. A variety of pesticides and herbicides have been available and applied at Fort McClellan. Appendix H presents the documentation of pesticides and herbicides known to have been available and likely applied to areas across the Main Post and possibly at Pelham Range and Choccolocco Corridor.

3.10.3.7 Known or Potential Releases

Specific areas where these materials are/were stored and mixed are addressed under Subsections 3.6.1 and 3.6.5. These areas are more likely to reveal concentrations of pesticides and herbicides with potential for environmental impact. However, the use of the pesticides and herbicides in other areas of the Main Post, Choccolocco Corridor, and Pelham Range could lead to low levels of these materials in the soil, surface water, or groundwater. Facility records (specifically DD Form 1532) could provide information on type and quantity of materials used, if accurately maintained.

3.10.4 RADON

3.10.4.1 Description

Radon has been identified as AREE 67. Radon is a naturally occurring radioactive gas that is produced through the normal decay of uranium and thorium found in rocks and soil.

Radon testing has been conducted in various buildings at Fort McClellan, with testing concentrated in the family housing area.

3.10.4.2 Known and Suspected Releases

The EPA has established guidelines for year-round exposure to radon in homes [R-48]. The EPA-suggested average long-term exposure limit is 4 picoCuries/liter. Retesting is suggested for levels obtained between 4 and 20 picoCuries/liter. If



retesting confirms a level above 4 picoCuries/liter, remedial measures are recommended.

Available information on radon sampling results is contained in Appendix K.