

FINAL Preliminary Assessment Report Camp Shelby Joint Forces Training Center, Mississippi

Perfluorooctanesulfonic Acid (PFOS) and Perfluorooctanoic
Acid (PFOA) Impacted Sites
ARNG Installations, Nationwide

September 2020

Prepared for:



Army National Guard Bureau
111 S. George Mason Drive
Arlington, VA 22204

UNCLASSIFIED

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Acronyms and Abbreviations

°F	degrees Fahrenheit
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
AOI	Area of Interest
ARFF	Aircraft Rescue and Firefighting
ARNG	Army National Guard
AS GSU	Assault Strip Geographically Separated Unit
bgs	below ground surface
Camp Shelby	Camp Shelby Joint Forces Training Center
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CSM	conceptual site model
DOD	Department of Defense
EDR™	Environmental Data Resources, Inc.™
FTA	fire training area
HA	Health Advisory
MSANG	Mississippi Air National Guard
MSARNG	Mississippi Army National Guard
msl	mean sea level
NGWA	National Ground Water Association
OWS	Oil Water Separator
PA	Preliminary Assessment
PFAS	per- and poly-fluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFTeA	perfluorotetradecanoic acid
ppt	parts per trillion
SI	Site Inspection
US	United States
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventative Medicine
USAEHA	United States Army Environmental Hygiene Agency
USDAFS	United States Department of Agriculture, Forest Service
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USGS	United States Geological Survey
VSI	visual site inspection
WWTP	Wastewater Treatment Plant

Executive Summary

The Army National Guard (ARNG) is performing Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide. A PA for per- and polyfluoroalkyl substances (PFAS)-containing materials was completed for Camp Shelby Joint Forces Training Center (Camp Shelby; also referred to as the “facility”) in Mississippi, to assess potential PFAS release areas and exposure pathways to receptors. Camp Shelby is constructed on a parcel of land comprised of several owners such as the state of Mississippi, the Department of Defense, US Forest Service, and private landowners through leases. The performance of this PA included the following tasks:

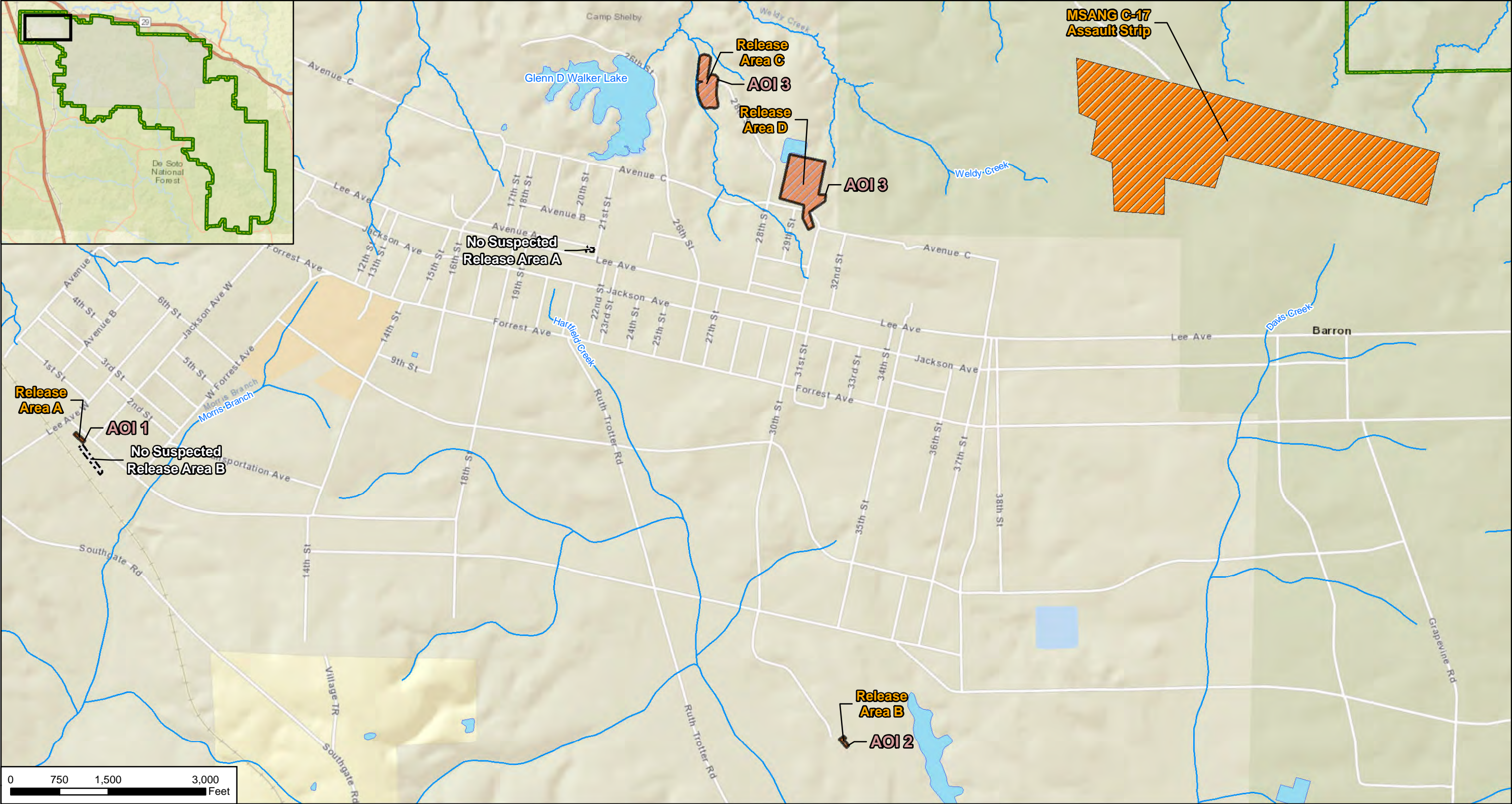
- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)TM report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility;
- Conducted a site visit on 14 March 2019 and completed visual site inspections at locations where PFAS-containing materials were suspected of being stored, used or disposed;
- Interviewed current and former MSARNG Camp Shelby personnel during the site visit and MSARNG environmental managers and operations staff;
- Identified Area(s) of Interest (AOIs) and developed a preliminary conceptual site model (CSM) to summarize potential source-pathway-receptor linkages of potential PFAS in soil, groundwater, surface water, and sediment for each AOI.

Three AOIs related to potential PFAS releases were identified at Camp Shelby during the PA. The AOIs are shown on **Figure ES-1** and described in **Table ES-1** below:

Table ES-1: AOIs at Camp Shelby

Area of Interest	Name	Used by	Potential Release Dates
AOI 1	Release Area A	MSARNG	1980s - 2004
AOI 2	Release Area B	MSARNG	1980s – 2004
AOI 3	Release Areas C & D	MSARNG	1969 - present

Based on potential PFAS releases at these AOIs, there is potential for exposure to PFAS contamination in media at or near the facility. The preliminary CSM for Camp Shelby, which presents the potential receptors and media impacted, is shown on **Figure ES-2**. Based on the US Environmental Protection Agency (USEPA) Unregulated Contaminant Monitoring Rule 3 data, it was indicated that no PFAS were detected in a public water system above the USEPA's lifetime Health Advisory level within 20 miles of the facility. PFAS analyses performed in 2016 had method detection limits that were higher than currently achievable. Thus, it is possible that low concentrations of PFAS were not detected during the UCMR3 but might be detected if analyzed today.



CLIENT	ARNG				
PROJECT	Preliminary Assessment for PFAS at Camp Shelby, MS				
REVISED	7/15/2020	GIS BY	MS	7/15/2020	
SCALE	1:18,000	CHK BY	PD	7/15/2020	
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	RG	7/15/2020	

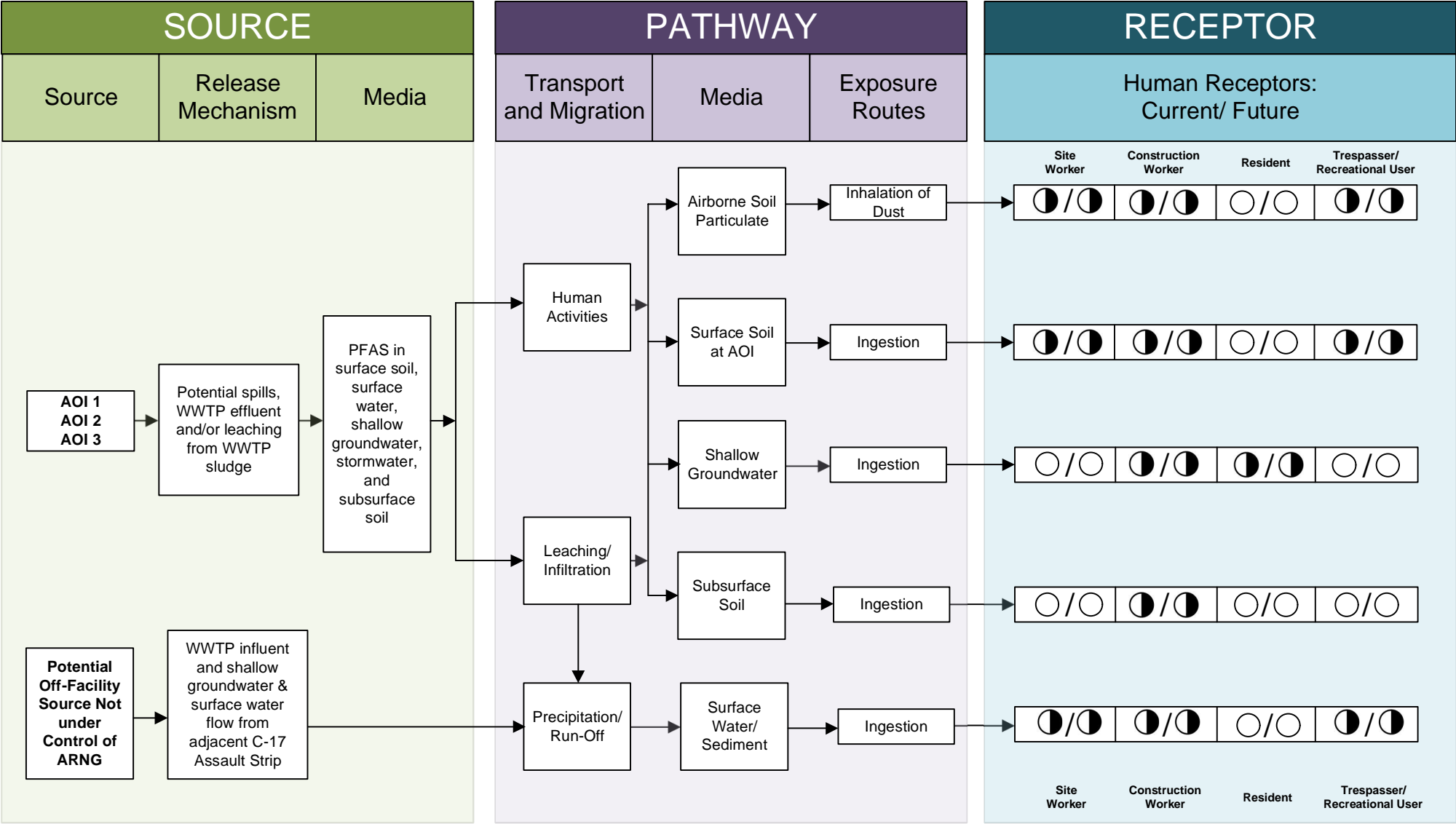
- Area of Interest
- Potential PFAS Release
- No Suspected Release
- Facility Boundary
- Water Body
- Wetland
- River/Stream



Summary of Findings

AECOM 12420 Milestone Center Drive
Germantown, MD 20876

Figure ES-1



LEGEND

- Flow-Chart Stops
- Flow-Chart Continues
- Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Complete Pathway

Notes:

1. The resident and recreational user receptors refer to an off-facility resident and off-facility recreational user.

2. Dermal contact exposure pathway is incomplete for PFAS.

Figure ES-2
Preliminary Conceptual Site Model
Camp Shelby

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1. Introduction

1.1 Authority and Purpose

The Army National Guard (ARNG) G9 is the lead agency in performing *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) at Impacted Sites at ARNG Facilities Nationwide*. This work is supported by the United States (US) Army Corps of Engineers (USACE) Baltimore District and their contractor AECOM Technical Services, Inc. (AECOM) under Contract Number W912DR-12-D-0014, Task Order W912DR17F0192, issued 11 August 2017.

The ARNG is assessing potential effects on human health related to processes at facilities that used per- and poly-fluoroalkyl substances (PFAS), primarily in the form of aqueous film forming foam (AFFF) released as part of firefighting activities, although other PFAS sources are possible. In addition, the ARNG is assessing businesses or operations adjacent to the ARNG facility (not under the control of ARNG) that could potentially be responsible for a PFAS release.

PFAS are classified as emerging environmental contaminants that are garnering increasing regulatory interest due to their potential risks to human health and the environment. PFAS formulations contain highly diverse mixtures of compounds. Thus, the fate of PFAS compounds in the environment varies. The regulatory framework at both federal and state levels continues to evolve. The US Environmental Protection Agency (USEPA) issued lifetime Drinking Water Health Advisories (HAs) for PFOA and PFOS in May 2016, but there are currently no promulgated national standards regulating PFAS in drinking water.

This report presents the findings of a PA for PFAS-containing materials at Joint Forces Training Center (Camp Shelby; also referred to as the “facility”) in Mississippi, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations [CFR] Part 300), and Army requirements and guidance.

This PA documents the locations where PFAS may have been released into the environment at Camp Shelby. The term PFAS will be used throughout this report to encompass all PFAS chemicals being evaluated, including PFOS and PFOA, which are key components of AFFF.

1.2 Preliminary Assessment Methods

The performance of this PA included the following tasks:

- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)TM report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility;
- Conducted a site visit on 14 March 2019 and completed visual site inspections (VSIs) at locations where PFAS-containing materials were suspected of being stored, used, or disposed;
- Interviewed current and former Mississippi ARNG (MSARNG) Camp Shelby personnel during the site visit and MSARNG environmental managers and operations staff;
- Identified Area(s) of Interest (AOIs) and developed a preliminary conceptual site model (CSM) to summarize potential source-pathway-receptor linkages of potential PFAS in soil, groundwater, surface water, and sediment for each AOI.

1.3 Report Organization

This report has been prepared in accordance with the USEPA *Guidance for Performing Preliminary Assessments under CERCLA* (USEPA 1991). The report sections and descriptions of each are as follows:

- **Section 1 – Introduction:** identifies the project purpose and authority and describes the facility location, environmental setting, and methods used to complete the PA
- **Section 2 – Fire Training Areas:** describes the fire training areas (FTAs) at the facility identified during the site visit
- **Section 3 – Non-Fire Training Areas:** describes other locations of potential PFAS releases at the facility identified during the site visit
- **Section 4 – Emergency Response Areas:** describes areas of potential PFAS release at the facility, specifically in response to emergency situations
- **Section 5 – Adjacent Sources:** describes sources of potential PFAS release adjacent to the facility that are not under the control of ARNG
- **Section 6 – Conceptual Site Model:** describes the pathways of PFAS transport and receptors for the Areas of Interest (AOIs) and the facility
- **Section 7 – Conclusions:** summarizes the data findings and presents the conclusions of the PA
- **Section 8 – References:** provides the references used to develop this document
- **Appendix A – Data Resources**
- **Appendix B – Preliminary Assessment Documentation**
- **Appendix C – Photographic Log**

1.4 Facility Location and Description

Camp Shelby is located in southeastern Mississippi, in Perry, Forrest, and George Counties (**Figure 1-1**). Currently, the facility comprises 248 operational ranges encompassing approximately 132,195 acres. Camp Shelby is composed of property belonging in four different categories: Department of Defense (DoD), State, US Forest Service (USFS) and Private Land. The State of Mississippi owns and manages 7,927 acres of Camp Shelby, 7,268 acres are owned by the DoD, and the USFS has jurisdiction over roughly 117,000 acres, which fall within the De Soto National Forest. The DoD and state lands are managed by the MSARNG in support of the military mission. Private land is leased to MSARNG for military use, which includes low impact training in these leased areas. The main part of Camp Shelby's training area belongs to the USFS and is operated under a Special Use Permit from the USFS granted in 2007 for 20 years. In 2007, the Final Environmental Impact Statement for Renewal of Special Use Permit on the DeSoto National Forest and Implementation of Installation Mission Support Activities at Camp Shelby, Mississippi were completed to allow military training to continue on National Forest Lands. Approximately 88 percent of Camp Shelby is within the De Soto National Forest. The USFS still is the land manager for these lands (MSARNG, 2014).

The ARNG has designated Camp Shelby as a Maneuver Training Center-Heavy, and both ARNG and Army Reserve use the installation. Additionally, the Mississippi Air National Guard (MSANG) is a tenant via the C-17 Assault Strip Geographically Separated Unit (AS GSU) on Camp Shelby. The C-17 AS GSU is used primarily for short runway takeoff and landing training and includes a runway, taxiway, control tower, fire/rescue station, and maintenance bay/administrative building

(BB&E, 2016). Training activities at Camp Shelby include troop bivouacking, wheeled vehicle maneuvers, small arms training, artillery firing exercises, and tank training maneuvers. US Highway 49 and Highway 98, located west and north of the installation, respectively, are major access routes to Camp Shelby.

1.5 Facility Environmental Setting

Camp Shelby is characterized by gently rolling to hilly topography, with rounded ridges and broad, mature drainage plains. Topographic relief ranges from 60 to 120 feet between depressions and ridgetops. Elevation ranges from 280 feet above mean sea level (msl) in the cantonment area to 150 feet above msl in Black Creek Valley (MSARNG, 2001).

1.5.1 Geology

Camp Shelby is underlain by limestone, sandstone, and interbedded fine- to coarse-grained sediments, including terrace and alluvial deposits.

The Tertiary Chickasawhay Limestone marks the top of the thickest marine deposit in Mississippi. The Chickasawhay Limestone is a massive limestone unit located approximately 300 to 2,320 feet below ground surface (bgs). The Cypress Creek Salt Dome lies beneath the Chickasawhay Limestone north of Camp Shelby and imparts a south-southwest dip to the overlying formations (US Army Environmental Hygiene Agency [USAEHA], 1991). The formation's dip is approximately 20 to 45 feet per mile (USACHPPM, 1999).

Overlying the Chickasawhay Limestone is the Miocene Catahoula Formation. The Catahoula consists of interbedded clay, silt, sand, and gravel, and is approximately 240 to 640 feet thick at a depth of 600 to 700 feet.

The Miocene Hattiesburg and Pascagoula Formations overlie the Catahoula Formation, and are composed of lenticular clay layers, silts, sands, and gravels. The lower portion of the Hattiesburg Formation contains two water-bearing sand units, informally known as the upper and lower Hattiesburg sands. Though the upper sand serves locally as an aquifer in some areas, the lower sand unit (approximately 90 feet thick) serves as a major aquifer in the Camp Shelby area. Overlying the lower sand layer are several hundred feet of interbedded massive clays, clayey silts, and sandy silts. The Hattiesburg Formation thickness ranges from 1 to 600 feet and depths range from 0 to 400 feet bgs. The formation outcrops in the northern portion of the installation and within local stream valleys. The Pascagoula Formation is a series of lenticular clays, silts, and sands. It ranges in thickness from 1 to 730 feet (USACHPPM, 1999; USAEHA, 1991).

The youngest deposits exposed at Camp Shelby are the Pliocene Citronelle Formation, Pleistocene terrace deposits, and recent alluvial deposits. The Citronelle Formation is predominantly cross-bedded sand and gravel with some clay interbeds. This formation is exposed primarily along hilltops in this region (Roth and Patrick, 2002). The terrace deposits and alluvial deposits comprise lenticular sands, gravels, and clays exposed along major stream valleys, including Leaf River to the northwest, and along several small creeks exiting the installation to the southwest (USAEHA, 1991). The terrace and alluvial deposits range from 0 to 100 feet thick (USACHPPM, 1999). A Pleistocene river channel lies beneath parts of the Leaf River northwest of Camp Shelby. This river channel is approximately 80 feet deep and comes into contact with the Hattiesburg Formation's upper sand unit in this area (Brown, 1944).

1.5.2 Hydrogeology

1.5.2.1 Aquifer System

The three major aquifers beneath Camp Shelby are, in ascending order, the confined Catahoula Formation, the lower and upper sands of the Hattiesburg Formation, and the unconfined Citronelle aquifer. Together, the Hattiesburg aquifer and the Catahoula aquifer comprise the Neogene aquifer system and serve as the source for domestic, municipal, and industrial water supplies in the area (ARNG and the US Department of Agriculture Forest Service [USDAFS], 2007; USACHPPM, 1999).

The uppermost aquifer, the unconfined Citronelle, consists of up to 150 feet of unconsolidated sands and sparse silty clay and gravel deposits. The lower portions of this aquifer are used for agricultural and domestic water wells. The upper portion of the Hattiesburg Formation contains several hundred feet of massive clays, clayey silts, and sandy silts. The relatively impermeable sediments confine the underlying water-bearing units (upper and lower Hattiesburg sands) within the lower portion of the Hattiesburg Formation. The upper sand unit is thin and discontinuous but serves as a minor aquifer in some areas, while the lower sand unit serves as a major aquifer for potable water, including the Camp Shelby water supply. The lower sand unit is separated from the underlying water-bearing sands of the Catahoula Formation by impermeable, clayey confining layers (USACE, 2009).

Groundwater Depths

Depths to the water table at Camp Shelby are shallowest at lower elevations in the stream valleys and deeper in the elevated regions. Based on the water elevations presented in an unsaturated zone water quality study at Camp Shelby, depths to groundwater range from less than 2 feet to approximately 8 feet bgs in the Citronelle aquifer. These wells are located near the stream valleys around the duded impact area (Slack, Mirecki, and Lemire, 2004). According to the geohydrologic study of firing points and the duded impact area at Camp Shelby, depths to the potentiometric level of the confined Hattiesburg aquifer are less than 50 feet bgs (USACHPPM, 1999).

Groundwater Flow

Without any installation-wide groundwater elevations at Camp Shelby, it is not possible to accurately determine groundwater flow direction (**Figure 1-2**). The shallow groundwater flow direction in the Citronelle and Hattiesburg Formations is expected to vary due to local topography and lithology. Groundwater infiltrates readily into the permeable Citronelle Formation, migrating downward and downslope until it reaches less permeable clay layers. Several seeps are present in the valleys at the base of the Citronelle Formation, indicating that groundwater is discharging at the top of these clays. The clay layers are relatively impermeable, preventing shallow groundwater from reaching the Hattiesburg aquifer (the Hattiesburg Formation upper and lower sands), and the shallow groundwater in both formations (Citronelle and Hattiesburg) discharges to seeps and streams around Camp Shelby (USACHPPM, 1999). The Hattiesburg and the Catahoula aquifers are separated by several hundred feet of impermeable clay layers, so the two units are not hydraulically connected.

A shallow groundwater divide is assumed to run northwest to southeast across the northern region of Camp Shelby. Northeast of this divide, the shallow groundwater flows to the north, toward Leaf River, and southwest of this divide, groundwater flows south to the Black Creek. The Pascagoula, Hattiesburg, and Catahoula Formations' aquifers are not hydraulically connected to the shallow groundwater beneath Camp Shelby. Because the shallow groundwater discharges to surface water in the stream valleys, the potential groundwater receptor zone stops at the surface water

bodies in which shallow groundwater is discharging to surface water. Because the Hattiesburg aquifer is confined beneath clay layers, no potential groundwater receptors exist for this aquifer.

Recharge/Discharge

Recharge occurs at topographic highs, whereas discharge occurs in adjacent topographic lows. The presence of numerous wetlands surrounding the creeks at Camp Shelby, considered with shallow groundwater measurements in the monitoring wells installed near Middle Creek, Pearces Creek, and Poplar Creek, indicate that groundwater is very shallow in these areas and discharges to the surface water. Natural recharge to the Citronelle aquifer in the Camp Shelby area is primarily through surface infiltration. Though the Pascagoula and Hattiesburg Formations are also exposed at Camp Shelby, the Pascagoula Formation does not contain an aquifer, and the Hattiesburg aquifer has an upward gradient and is confined beneath clay layers. Therefore, surface water infiltrating the Pascagoula or uppermost Hattiesburg Formations where they are exposed at Camp Shelby is not expected to reach the Hattiesburg aquifer (or the deeper Catahoula Formation aquifer, which is also confined and has an upward gradient). Discharge from the Citronelle and Hattiesburg aquifers includes pumping from wells for water supply.

Groundwater Use

Groundwater uses downgradient of Camp Shelby operational areas to the north, northeast, west, and southwest of the installation are primarily domestic and public water supply from the Citronelle, Hattiesburg, and Catahoula aquifers. Groundwater use in the Camp Shelby area consists of private (domestic) wells and public supply wells that draw water from all three aquifers. Well depths range from 30 to 900 feet bgs for the private wells and 180 to 1,090 feet bgs for the public supply wells (USGS, 1992). Six active water supply wells exist on Camp Shelby (four in the cantonment area and 2 in the operation area). The supply well near the aerial gunnery range is located on the east side of the installation. The wells are between 400 and 1200 feet deep and draw water from the lower sand of the Hattiesburg Formation.

Data provided by the ARNG indicate that samples from Camp Shelby drinking water wells were taken on 29 March 2017 and analyzed for 18 different PFAS analytes (**Appendix A**). Only one analyte, Perfluorotetradecanoic acid (PFTeA), was detected (1.73 parts per trillion [ppt]). However, the field reagent blank associated with that sample also had a detection for PFTeA at 0.680 J ppt. All other analytes sampled for were non-detect, and three other samples had field reagent blank detections as well.

Based on the USEPA's Unregulated Contaminant Monitoring Rule 3 data, it was indicated that no PFAS were detected in a public water system above the HA level within 20 miles of the facility. PFAS analyses performed in 2016 had method detection limits that were higher than currently achievable. Thus, it is possible that low concentrations of PFAS were not detected during the UCMR3 but might be detected if analyzed today.

1.5.3 Hydrology

Camp Shelby lies within the Pascagoula River basin. The major sub basins in the region are the Leaf River near the north and northeast boundaries of Camp Shelby, and Black Creek to the south. There are 744.2 miles of streams on Camp Shelby. Several streams, including Garraway, Denham, Milky, Coleman, Carter, and Little Creeks, drain into the Leaf River. Black Creek tributaries drain 90 percent of Camp Shelby. The primary Black Creek tributaries on Camp Shelby include Chaney, Middle, Davis, Hartfield, Poplar, Pearces, Cypress, and Hickory Creeks. The southeastern portion of Camp Shelby is drained by Whiskey Creek, which flows into the Pascagoula River. Garraway, Denham, Milky, Coleman, extreme lower Poplar, and lower Hickory

Creeks are intermittent streams (ARNG and USDAFS, 2007). A 1999 USACHPPM study found that stream water at Camp Shelby is fairly acidic with low hardness (USACHPPM, 1999).

Lakes located on the installation include Dogwood Lake in the northwest corner of the operational area, and Walker Lake, north of the operational area. These lakes are used primarily for recreation by active, Reserve, and retired military members and their families. Recreational activities include fishing, swimming, and boating. Janney Lake is located on the western edge of the duded impact area buffer zone, but it is off limits to recreational use (MSARNG, 2001; ARNG and USDAFS, 2007).

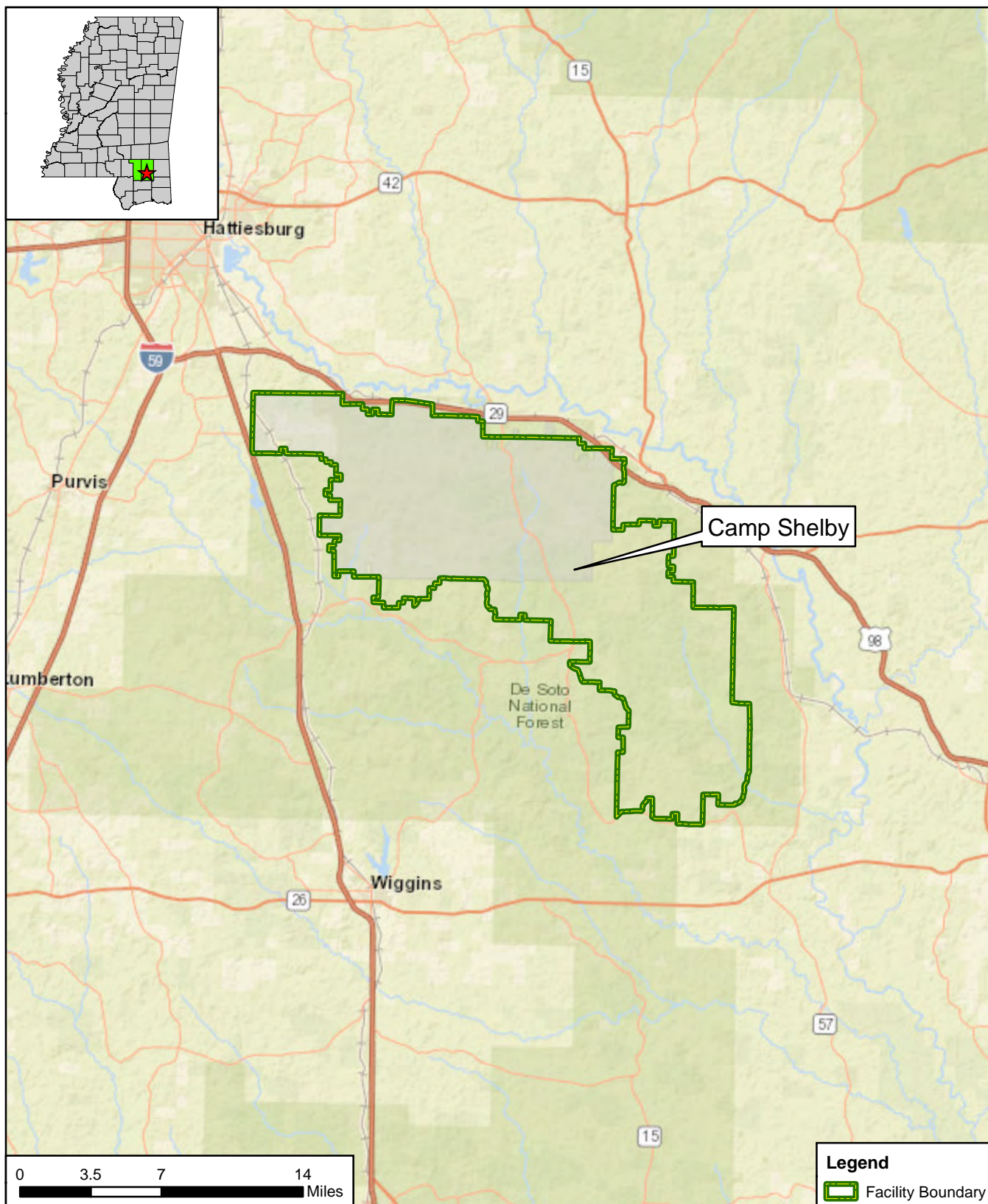
A 21-mile section of Black Creek is federally designated as a Scenic River (ARNG and USDAFS, 2007; USDAFS, n.d.), so it was considered a sensitive environment for the Phase I Assessment. The Leaf and Pascagoula Rivers are within the 15-mile downstream surface water receptor zone for Camp Shelby. Both rivers are considered high-quality recreational-use streams. The major streams, flow directions, and water bodies within and surrounding the study area at Camp Shelby are shown in **Figure 1-3**.



1.5.4 Climate

Camp Shelby has a temperate to subtropical climate that is influenced primarily by warm, humid conditions of the Gulf of Mexico. Persistent humidity, moderate to heavy precipitation, and mild temperatures are typical in this region. Hurricane conditions may occur during the summer and fall. The average annual high temperature in Hattiesburg, Mississippi is 76.3 degrees Fahrenheit (°F), and the average annual low temperature is 55.8°F. The area receives an average of 61.61 inches of rain per year (US Climate Data, 2020).

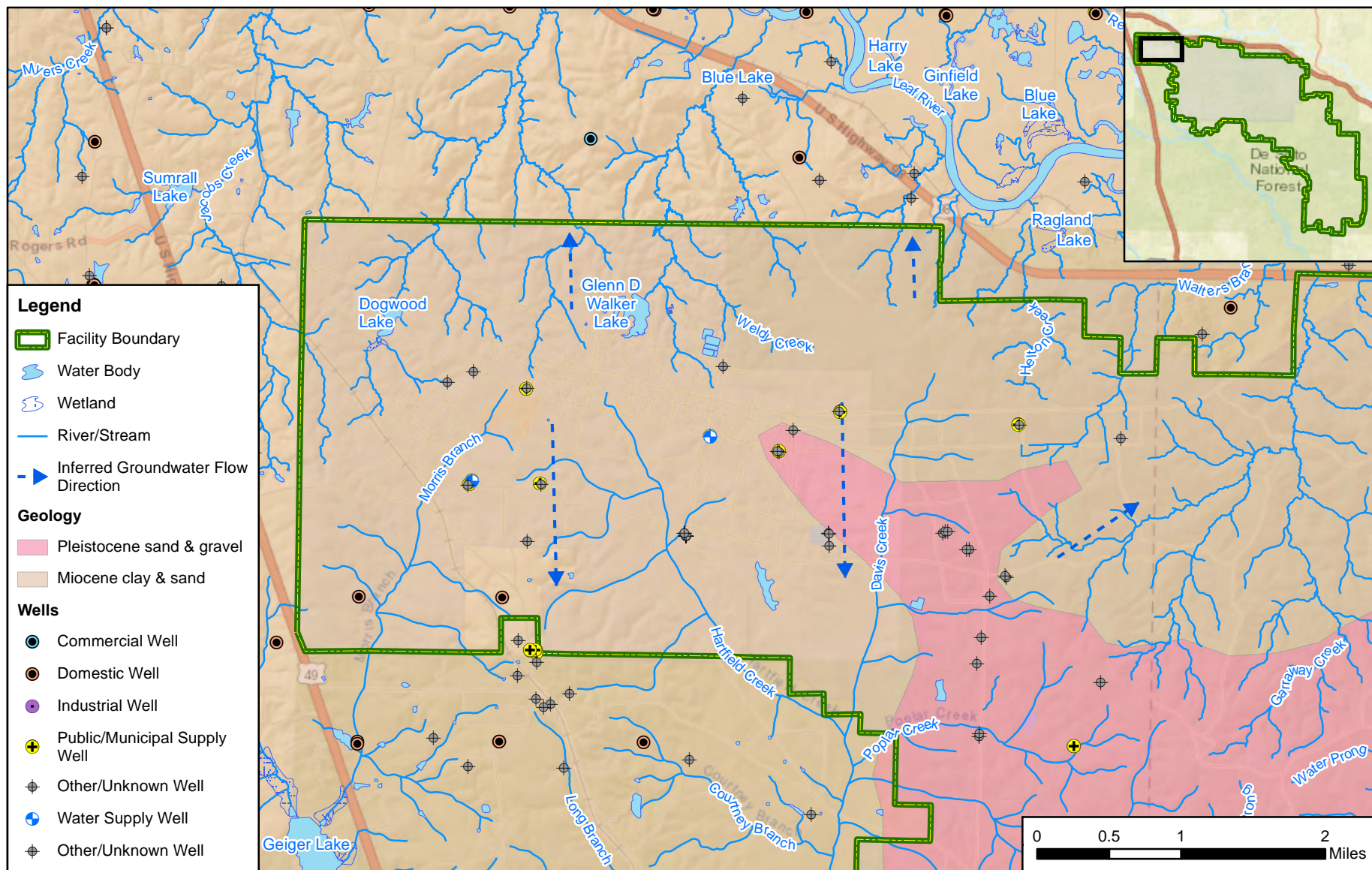
1.5.5 Current and Future Land Use



Camp Shelby is one of the largest state-owned US Army training sites in the nation. Camp Shelby serves as a Training Site for active and reserve Army component units, hosting National Guardsmen and Reservists throughout the country. Training activities at the facility include troop bivouacking, wheeled vehicle maneuvers, small arms training, artillery firing exercises, and tank training maneuvers. Reasonably anticipated future land use is not expected to change from the current land use.



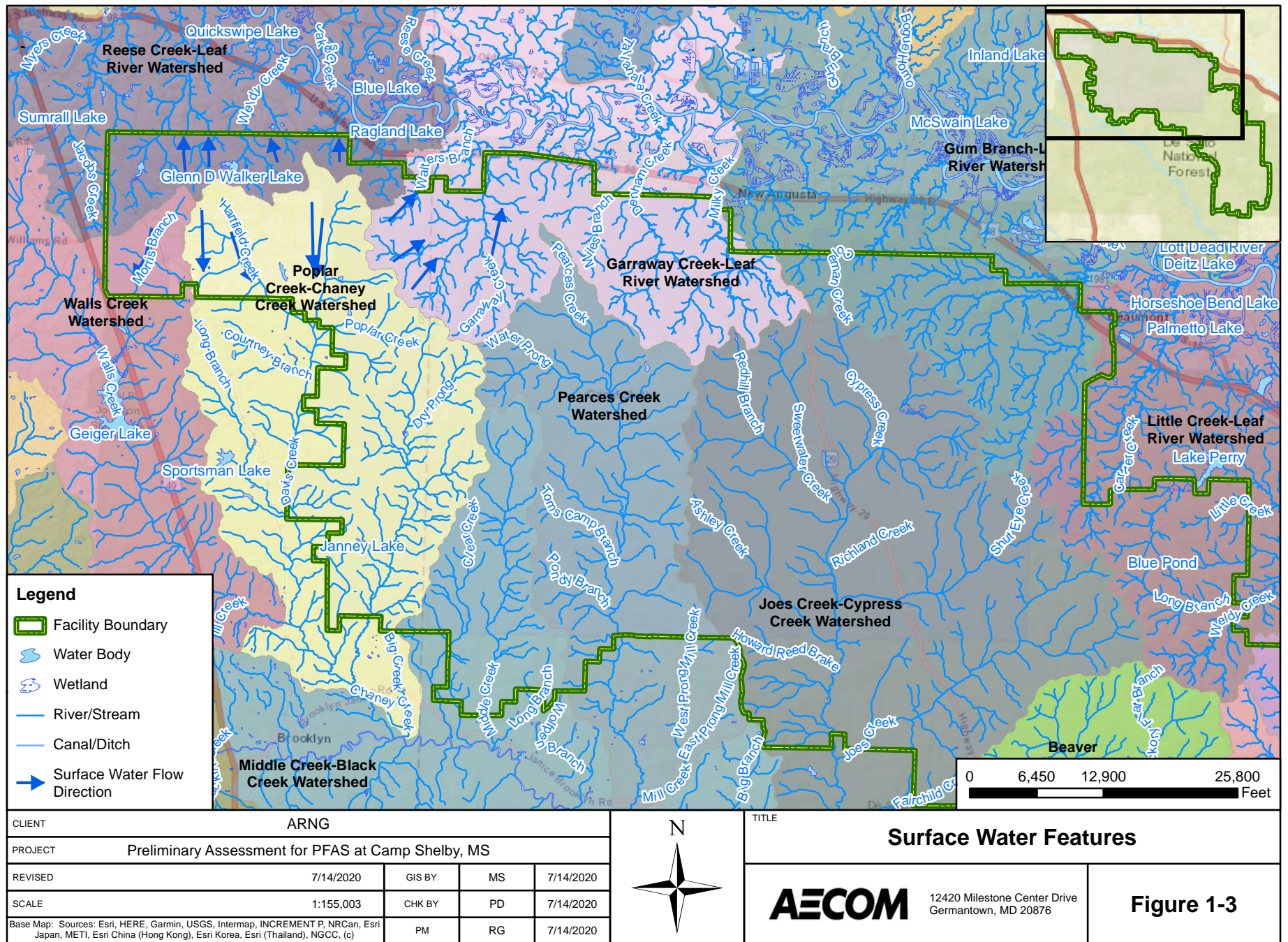
CLIENT					ARNG			Facility Location		
PROJECT Preliminary Assessment for PFAS at Camp Shelby, MS								 12420 Milestone Center Drive Germantown, MD 20876	Figure 1-1	
REVISED		8/27/2020		GIS BY		MS				8/27/2020
SCALE		1:443,520		CHK BY		PD				8/27/2020
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,				PM		RG				8/27/2020

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CLIENT					<div><div>N</div></div>	TITLE		
ARNG						Groundwater Features		
Preliminary Assessment for PFAS at Camp Shelby, MS								
REVISED	7/14/2020	GIS BY	MS	7/14/2020			12420 Milestone Center Drive Germantown, MD 20876	Figure 1-2
SCALE	1:63,360	CHK BY	PD	7/14/2020				
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	RG	7/14/2020				

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2. Fire Training Areas

No FTAs were identified at Camp Shelby during the PA through interviews (**Appendix B.1**) or Environmental Data Resource Reports (**Appendix A**). All reported nozzle testing is performed with water.

3. Non-Fire Training Areas

In addition to FTAs, the PA evaluated areas where PFAS-containing materials may have been broadly used, stored, or disposed. This may include buildings with fire suppression systems, paint booths, AFFF storage areas, and areas of compliance demonstrations. Information on these features obtained during the PA are included in **Appendices A** and **B**. Five non-FTAs where AFFF was stored and/or potentially released were identified during the PA. A description of each non-FTA is presented below and shown on **Figure 3-1**.

3.1 No Suspected Release Area A – Current Fire Station

The Current Fire Station is located on the north end of the installation. According to aerial imagery, the Current Fire Station was built between 2012 and 2013. There have been no reported AFFF releases at the building. During the VSI, two 5-gallon buckets of AFFF were noted in storage on one of the firetrucks. Personnel at the station reported no knowledge of AFFF releases during the entirety of the Current Fire Station's existence.

3.2 Release Area A – Old Fire Station

The Old Fire Station is located on the southwestern end of the installation. According to aerial imagery the Old Fire Station has been demolished within the last six years. According to interviews with site personnel, the Old Fire Station had floor drains that led to the storm sewer system. It was reported that bulk AFFF was stored in 5-gallon buckets at the station during its operation.

According to the former Fire Inspector and Emergency Services Coordinator and the current Fire Chief, the Old Fire Station housed one firetruck that held between 150 to 200 gallons of AFFF until 2004. Enough AFFF 5-gallon buckets were stored at the station to be able to refill the truck. There were no reported historical releases or spills of AFFF, but there is uncertainty given the regular handling of AFFF that reportedly occurred. Nozzle testing was performed with water. During the VSI, a storm drain was noted in the corner of the parking lot adjacent to the footprint of the former building, as well as a cement-lined drainage ditch. Storm drains in the vicinity of the Old Fire Station discharge to an unnamed tributary to Geiger Lake (MSARNG, 2017).

3.3 Release Area B – Old Hagler Airfield Fire Station

The Old Hagler Airfield Fire Station is located on the southern end of the installation, at the Hagler Airfield. According to aerial imagery, the building was expanded between 1996 and 2004. According to the former Fire Inspector and Emergency Services Coordinator and the current Fire Chief, the Old Hagler Airfield Fire Station housed two emergency response vehicles that stored AFFF until 2004. These trucks reportedly never leaked, and nozzle testing with AFFF did not occur, but the trucks likely contained AFFF for readiness purposes. There were no reported historical releases or spills of AFFF, but there is uncertainty regarding the handling of AFFF while filling the trucks. Storm drains at the Old Hagler Airfield Fire Station lead to Hartfield Creek (MASRNG, 2017).

The Old Hagler Airfield Fire Station now functions as an operations and drone hangar building. During the VSI, seven Halon fire extinguishers were noted on the drone flight line adjacent to the building. No AFFF was present in the building during the VSI.

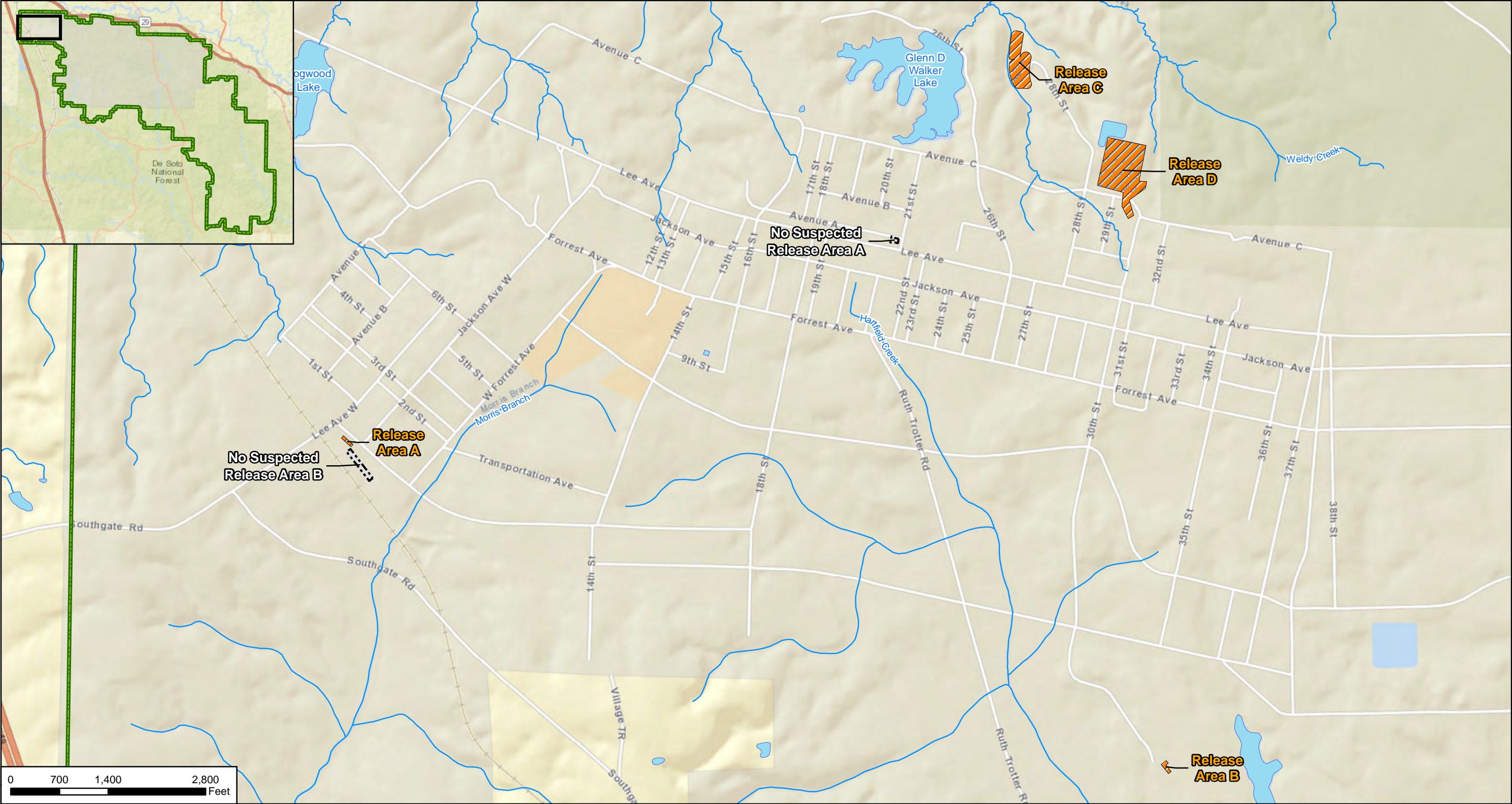
3.4 No Suspected Release Area B – Warehouse – Building 6519

The Warehouse – Building 6519 is located on the southwestern end of the installation, near the Old Fire Station. During the VSI, a stock of 5-gallon buckets of Vulcan and Ansulite 3% AFFF was noted in the Warehouse; approximately 675-gallons were observed. There was no evidence of leaks or spills noted during the VSI, and drains were not present in the building. The building has a wooden floor, which is elevated about 3 feet above ground surface. Site personnel reported no knowledge of leaks or spills of AFFF in the Warehouse from at least 1985 to present.

3.5 Release Areas C & D – Waste Water Treatment Plant & Sludge Drying Beds

The Waste Water Treatment Plant (WWTP) is located on the north end of the Cantonment area. Prior to 2008, the WWTP was a Class IV system with sludge drying beds (Release Area C). After 2008, the current WWTP, which is a Class II aerated system, began operating (Release Area D). After 2008, sludge was no longer produced by the WWTP. The Class II system currently discharges to the Leaf River after treatment, while the old Class IV system historically discharged to a tributary to Weldy Creek.

The 2016 MSANG PA report, which included the C-17 Assault Strip at Camp Shelby, noted that releases of AFFF have occurred consistently via Aircraft Rescue and Firefighting (ARFF) vehicle washing inside the C-17 fire station. These releases entered the floor drains and went to the oil water separator (OWS). Beginning in 2011, the OWS was diverted to the Camp Shelby sanitary sewer system, which leads to the WWTP.



CLIENT ARNG					<div><div><div> Potential PFAS Release</div><div> River/Stream</div></div><div><div> No Suspected Release</div><div> Facility Boundary</div><div> Water Body</div><div> Wetland</div></div></div>	<div><div>N</div></div>	Non-Fire Training Areas	
PROJECT Preliminary Assessment for PFAS at Camp Shelby, MS							<div><div>12420 Milestone Center Drive Germantown, MD 20876</div></div>	Figure 3-1
REVISED	7/15/2020	GIS BY	MS	7/15/2020				
SCALE	1:16,800	CHK BY	PD	7/15/2020				
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)			PM	RG			7/15/2020	

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4. Emergency Response Areas

No emergency response areas were identified at Camp Shelby during the PA through interviews (**Appendix B.1**) or Environmental Data Resource Reports (**Appendix A**). The Camp Shelby Fire Department is responsible for responding to emergencies at the facility.

5. Adjacent Sources

One potential off-facility source of PFAS adjacent to Camp Shelby, not under control of the MSARNG, was identified during the PA. A description of the adjacent source is presented below, and the adjacent source location is shown on **Figure 5-1**.

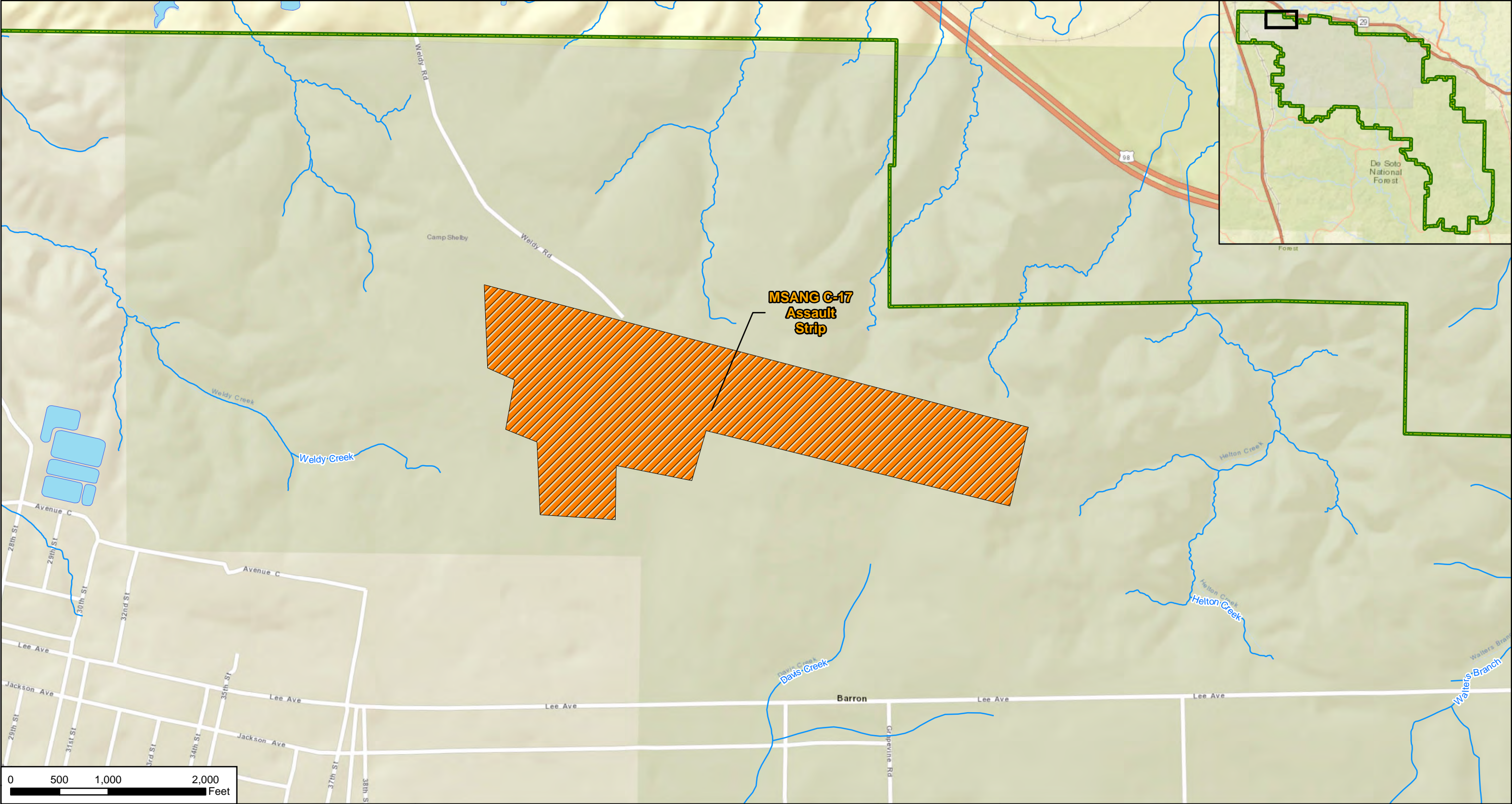
5.1 MSANG C-17 Assault Strip

The C-17 Assault Strip is a 210-acre area operated by the MSANG and owned by the US Air Force. This parcel of MSANG land is located in the northeast part of the Cantonment area of Camp Shelby (which is in the northwest corner of the installation) and consists of an airstrip and associated Fire Station.

The Fire Station at the C-17 Assault Strip became active in 2007. AFFF is used in the ARFF vehicles. During a PA in 2016, two P-19 vehicles were present at the station as well as a foam-carrying trailer (BB&E, 2016). The vehicles each carried 130 gallons of AFFF, and the Foam Trailer carried 1,000 gallons of AFFF. ARFF vehicles are washed consistently inside the C-17 Fire Station or on the ramp on the north side of the building. Floor drains inside the station lead to an OWS and subsequently to the Camp Shelby sanitary sewer system, which leads to the WWTP. Since 2008, the WWTP has been discharging effluent to the Leaf River; therefore, potential PFAS releases to the C-17 Assault Strip OWS may have entered the Camp Shelby WWTP and eventually discharged to the Leaf River. Prior to 2011, the floor drains led to a leach field to the east of the building.

MSANG personnel also remembered seeing foam once in front of the station either from nozzle testing or a leak. Personnel also reported occasional leaks from the ARFF vehicles within the station, which would have been left to dissipate. Stormwater drainage at the C-17 Assault Strip is directed through grass and cement-lined ditches and eventually discharges to the south towards Camp Shelby property. The 2016 PA report made the recommendation to proceed to an SI focusing on soil, groundwater, surface water, and sediment at the MSANG C-17 Assault Strip area (BB&E, 2016).

AFFF entering stormwater drains via ditches to the south would likely discharge to Davis Creek or another surface water feature on Camp Shelby property. AFFF in shallow groundwater from the leach field would also likely flow to the south, onto Camp Shelby property, toward Davis Creek. However, given the pattern of radial surface water drainage around the C-17 Assault Strip, the groundwater divide likely passes underneath the area, and shallow groundwater flow in other directions is possible.



CLIENT

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Preliminary Assessment for PFAS at Camp Shelby, MS

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SCALE

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Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)

PM

RG

7/15/2020

Potential PFAS Release

River/Stream

Facility Boundary

Water Body

Wetland

N

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Figure 5-1

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6. Preliminary Conceptual Site Model

Based on the PA findings, three AOIs were identified at Camp Shelby: AOI 1 Release Area A, AOI 2 Release Area B, and AOI 3 Release Area C & D. The AOIs are shown on **Figure 6-1**. The following sections describe the conceptual site model (CSM) components and the specific preliminary CSMs developed for each AOI. The conceptual site model identifies the three components necessary for a potentially complete exposure pathway: (1) source, (2) pathway, (3) receptor. If any of these elements are missing, the pathway is considered incomplete.

6.1 Pathways

In general, the potential PFAS exposure pathways are ingestion and inhalation. Human exposure via the dermal contact pathway may occur, and current risk practice suggests it is an insignificant pathway compared to ingestion; however, exposure data for dermal pathways are sparse and continue to be the subject of PFAS toxicological study (National Ground Water Association, 2018).

AFFF releases identified at Camp Shelby occurred on both surface soil and paved surfaces. Releases to the paved surfaces could have migrated a short distance onto the surrounding surface soil. Ground-disturbing activities in these grassy areas, as well as beneath the paved surfaces, may result in potential exposure to surface soils via ingestion and inhalation of dust particles. AFFF releases to the paved surfaces could have infiltrated the subsurface via cracks in the pavement or joints between areas that are paved with different materials. Ground-disturbing activities may result in potential exposure to subsurface soils and groundwater via ingestion.

PFAS are water soluble and can migrate readily from soil to groundwater via leaching. A water supply well is located 0.5 miles to the east of AOI 1; however, the Camp Shelby water supply uses the lower portion of the Hattiesburg Formation, which is generally protected by overlying confining units; therefore, it is unlikely that this supply well would be impacted. There are several domestic supply wells and public/municipal supply wells to the south and north within 2-3 miles of Camp Shelby. The domestic wells have the potential to draw water from the surficial Citronelle aquifer; therefore, there is a potentially complete pathway for off-site residents drinking groundwater.

Given the potential for PFAS to have entered the streams and creeks located throughout Camp Shelby, there is a potentially complete pathway via surface water and sediment ingestion.

6.2 Receptors

Receptors include site workers, construction workers, trespassers, off-facility residents, and off-facility recreational users. These receptors, as they pertain to the facility, are described below:

- Site workers typically work at or use the site and may come into contact with the surface soils. Site workers may also come into contact with surface water and sediment in the streams and creeks located throughout Camp Shelby.
- Construction workers are considered workers who represent a utility worker or other worker who would be exposed to surface and/or subsurface conditions through ground-disturbing activities.
- A trespasser is typically identified as a person who has infrequent access to the site. Trespassers could be exposed to surface soils, surface water, and sediment while on Camp Shelby.

- Off-facility recreational users typically identify a person who has infrequent use of the streams or creeks that exit Camp Shelby. Off-facility recreational users could be exposed to surface water and sediment during recreational activities in the stream and creeks.
- Off-facility residents identify receptors who occupy properties outside of Camp Shelby. Off-facility residents may come into contact with groundwater using unregistered, private, domestic wells.

The preliminary CSM for Camp Shelby indicates which specific receptors could potentially be exposed to PFAS. The preliminary CSM for all AOIs is shown on **Figure 6-2**. Potential PFAS exposure pathways resulting from releases at AOI 1, AOI 2, and AOI 3 are described in **Table 6-1**.

Table 6-1 Exposure Pathways at AOI 1, AOI 2, and AOI 3

Pathway	Receptor
Surface Soil	Considered a potentially complete pathway to site workers, construction workers, and trespassers via ingestion or inhalation of dust.
Subsurface Soil	Considered a potentially complete pathway to construction workers via ingestion or inhalation of dust.
Surface Water and Sediment	Considered a potentially complete pathway to site workers, construction workers, trespassers, and recreational users via ingestion.
Groundwater	Considered a potentially complete pathway to construction workers and off-facility residents via ingestion.

6.3 AOI 1 Release Area A

AFFF was handled regularly at the station, and there is the potential for historical releases of AFFF to have occurred until firefighting operations moved out of the building in 2004. The Old Fire Station is located in the cantonment area. No remediation activities have occurred at AOI 1.

Releases at AOI 1 may have occurred on both paved areas and grassy surfaces. Some AFFF releases may have occurred directly onto surface soil but may also have infiltrated to subsurface soil via cracks in pavement or joints between areas that are paved with different materials. Surface water flows into the stream and creeks downgradient of the AOI. Potential PFAS exposure pathways resulting from releases at AOI 1 are described in **Table 6-1**.

6.4 AOI 2 Release Area B

AFFF was handled regularly at the station, and there is the potential for historical releases of AFFF to have occurred until firefighting operations moved out of the building in 2004. The Old Hagler Airfield Fire Station is located on the southern end of the installation, adjacent to the Hagler Airfield.

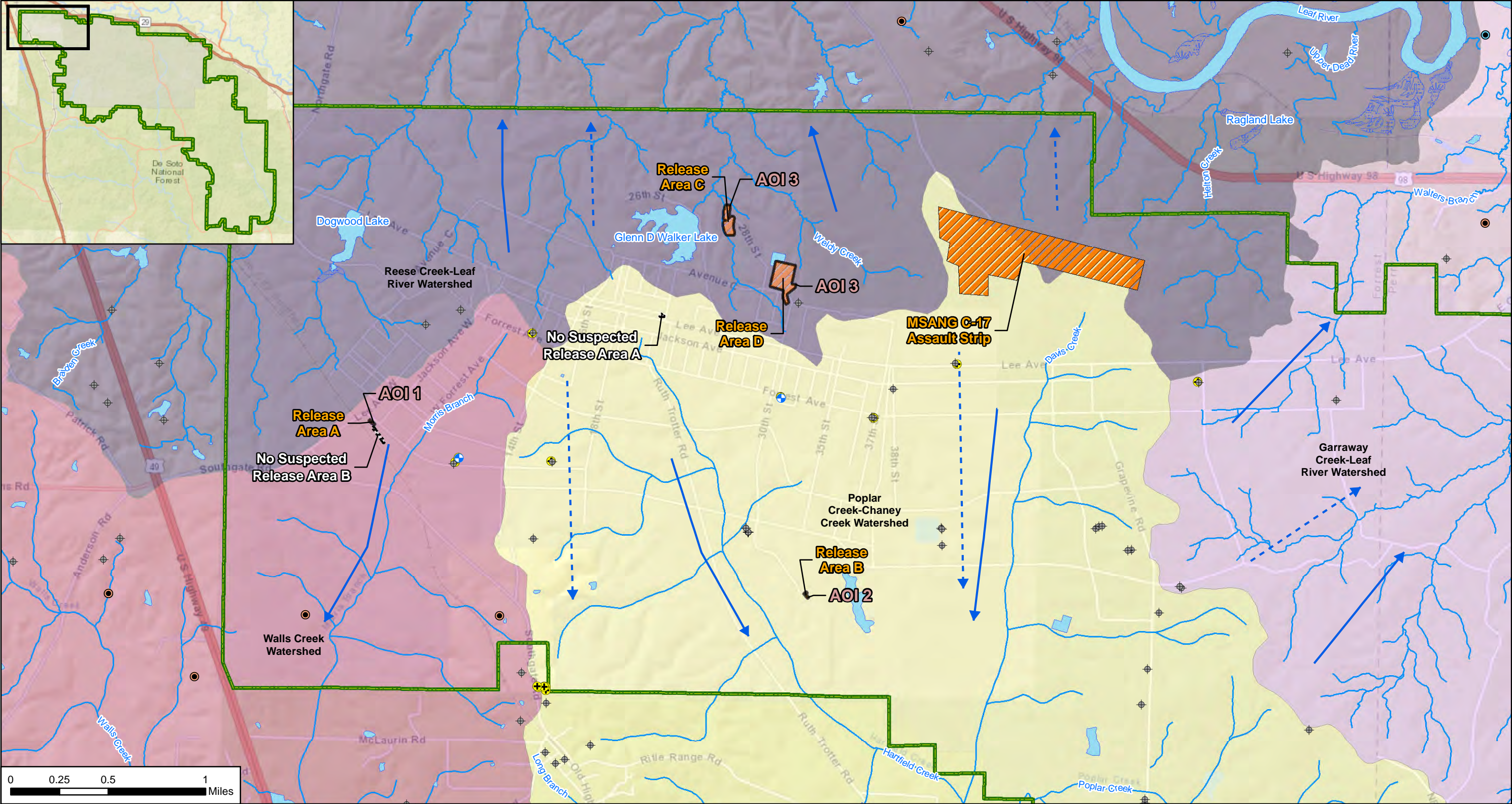
Releases at AOI 2 may have occurred on both paved areas and grassy surfaces. Some AFFF releases may have occurred directly onto surface soil but may also have infiltrated to subsurface

soil via cracks in pavement or joints between areas that are paved with different materials. Surface water flows into the stream and creeks downgradient of the AOI. Potential PFAS exposure pathways resulting from releases at AOI 2 are described in **Table 6-1**.

6.5 AOI 3 Release Areas C & D

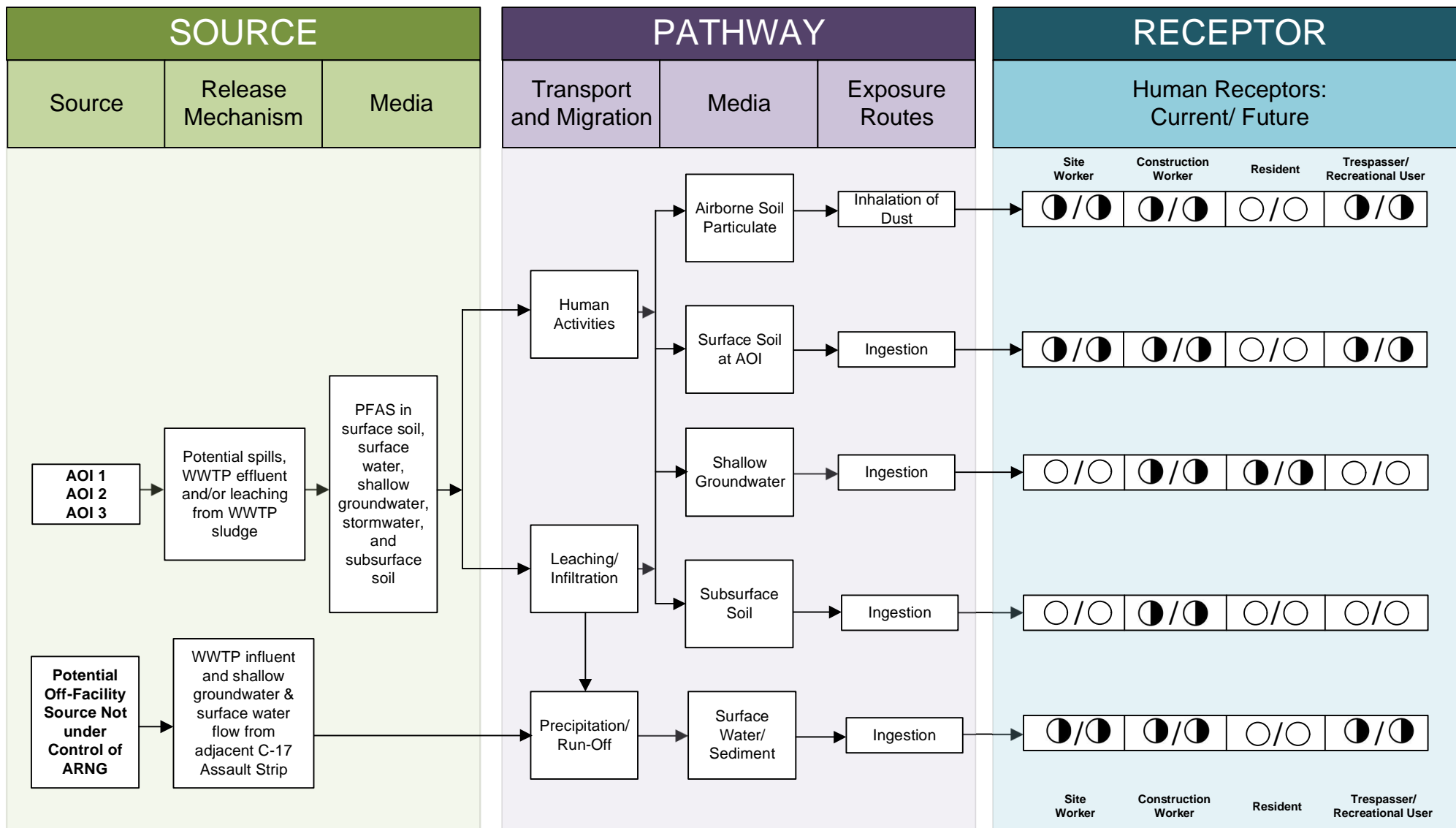
There is the likelihood that documented AFFF releases at the adjacent MSANG C-17 Assault Strip have been directed to the current Class II WWTP. Due to uncertainty surrounding AFFF handling at Camp Shelby, there is the potential for AFFF to have entered the original Camp Shelby Class IV WWTP and associated sludge beds (Release Area C).

PFAS in shallow groundwater would flow to the north, consistent with the assumed groundwater gradient in this area of the base, and eventually discharge to either Weldy Creek or a tributary to Weldy Creek, as most creeks and streams in this area are gaining streams. The WWTP historically discharged effluent, which could have potentially contained PFAS, to a tributary to Weldy Creek. The current system (Release Area D) discharges effluent to the Leaf River. Potential PFAS exposure pathways resulting from releases at AOI 3 are described in **Table 6-1**.



CLIENT ARNG					<div><div><div></div>Area of Interest</div><div><div></div>Potential PFAS Release</div><div><div></div>No Suspected Release</div><div><div></div>Facility Boundary</div></div> <div><div><div></div>Water Body</div><div><div></div>Wetland</div><div><div></div>River/Stream</div><div><div></div>Surface Water Flow Direction</div><div><div></div>Inferred Groundwater Flow Direction</div></div> <div><div><div></div>Commercial Well</div><div><div></div>Domestic Well</div><div><div></div>Public/Municipal Supply Well</div><div><div></div>Other/Unknown Well</div><div><div></div>Water Supply Well</div><div><div></div>Other/Unknown Well</div></div>	<div><div>N</div><div></div></div>	Areas of Interest	
PROJECT Preliminary Assessment for PFAS at Camp Shelby, MS							<div><div><div>AECOM</div><div>12420 Milestone Center Drive Germantown, MD 20876</div></div><div>Figure 6-1</div></div>	
REVISED	7/15/2020	GIS BY	MS	7/15/2020				
SCALE	1:31,680	CHK BY	PD	7/15/2020				
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	RG	7/15/2020				

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LEGEND

- Flow-Chart Stops
- Flow-Chart Continues
- Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Complete Pathway

Notes:

1. The resident and recreational user receptors refer to an off-facility resident and off-facility recreational user.
2. Dermal contact exposure pathway is incomplete for PFAS.

Figure 6-2
Preliminary Conceptual Site Model
AOI 1 Release Area A, AOI 2 Release Area B, and AOI 3 Release Area C and Release Area D

7. Conclusions

This report presents a summary of available information gathered during the PA on the use and storage of AFFF and other PFAS-related activities at Camp Shelby. The PA findings are based on the information presented in **Appendix A** and **Appendix B**.

7.1 Findings

Three AOIs related to potential PFAS releases were identified (**Table 7-1**) at Camp Shelby during the PA. A summary of PA findings is presented in **Figure 7-1**.

Table 7-1: AOIs at Camp Shelby

Area of Interest	Name	Used by	Potential Release Dates
AOI 1	Release Area A	MSARNG	1980s - 2004
AOI 2	Release Area B	MSARNG	1980s – 2004
AOI 3	Release Areas C & D	MSARNG	1969 - present

One potential adjacent source was identified, the MSANG C-17 Assault Strip. AFFF was released to surface soil, asphalt, stormwater ditches, and/or stormwater drains. Stormwater runoff and/or shallow groundwater containing AFFF may have flowed onto Camp Shelby property. Discharge from the OWS, potentially containing residual AFFF, has been directed to the Camp Shelby WWTP since 2011.

Based on the documented PFAS presence at AOIs 1 and 2 and the documented potential PFAS release at AOI 3, there is potential for exposure to PFAS contamination in media at or near the facility. The preliminary CSM for Camp Shelby, which presents the potential receptors and media impacted, is shown on **Figure 6-2**.

7.2 Uncertainties

A number of information sources were investigated during this PA to determine the potential for PFAS-containing materials to have been present, used, or released at the facility. Historically, documentation of PFAS use was not required because PFAS were considered benign. Therefore, records were not typically kept by the facility or available during the PA on the use of PFAS in training, firefighting, or other non-traditional activities, or on its disposition.

The conclusions of this PA are based on all available information, including: previous environmental reports, EDRs™, observations made during the VSI, and interviews. Interviews of personnel with direct knowledge of a facility generally provided the most useful insights regarding a facility's historical and current PFAS-containing materials. Sometimes, the provided information was vague or conflicted with other sources. Gathered information has a degree of uncertainty due to the absence of written documentation, the limited number of personnel with direct knowledge due to staffing changes, the time passed since PFAS was first used (1969 to present), and a reliance on personal recollection. Inaccuracies may arise in potential PFAS release locations, dates of release, volume of releases, and the concentration of AFFF used. There is also a possibility the PA has missed a source of PFAS, as the science of how PFAS may enter the environment continually evolves.

In order to minimize the level of uncertainty, readily available data regarding the use and storage of PFAS were reviewed, retired and current personnel were interviewed, multiple persons were

interviewed for the same potential source area when possible, and potential source areas were visually inspected. **Table 7-2** summarizes the uncertainties associated with the PA.

Table 7-2: Uncertainties

Area of Interest	Source of Uncertainty
General	Although operations at Camp Shelby extend back much further, information from interviews was only able to be obtained covering 1985 – present.
AOI 1 & AOI 2	There is uncertainty regarding the management and storage of AFFF at these AOIs, and it is unclear whether historical releases have occurred.
AOI 3	The quantity of AFFF/PFAS potentially released and the timeline of releases to both of the WWTPs are unclear.

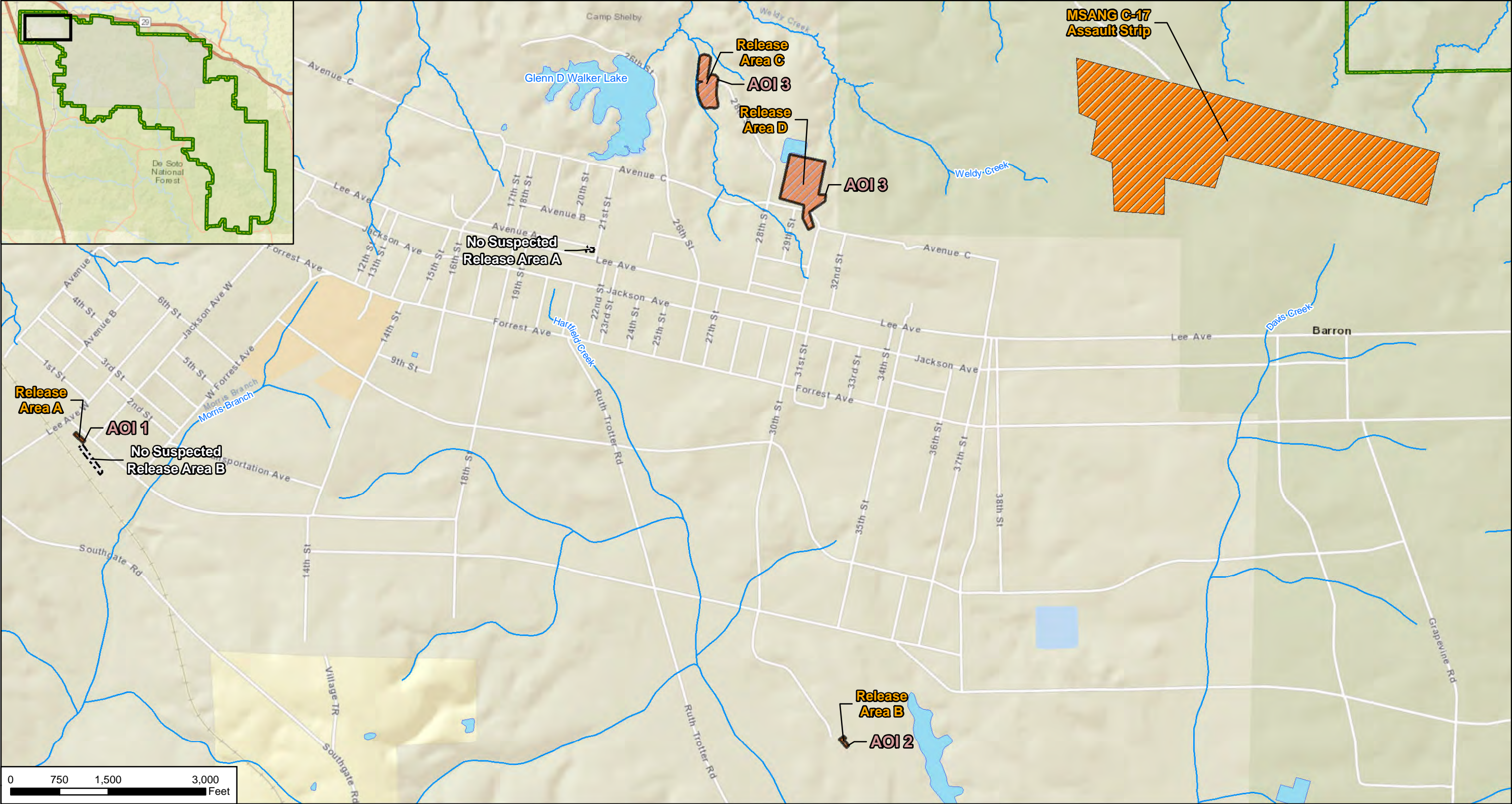
7.3 Potential Future Actions

Interviews and records (covering 1985 to present) indicate that former MSARNG activities may have resulted in potential PFAS releases at AOIs 1, 2, and 3. Based on the preliminary CSM developed for the AOIs, there is potential for receptors to be exposed to PFAS contamination in soil, groundwater, surface water, and sediment. **Table 7-3** summarizes the rationale used to determine if the AOI should be considered for further investigation under the CERCLA process and undergo an SI.

ARNG will evaluate the need for an SI at AOIs 1, 2, and 3 based on the potential receptors, the potential migration of PFAS contamination off the facility, and the availability of resources.

Table 7-3: PA Findings Summary

Area of Interest	Rationale	Potential Future Action
AOI 1 Release Area A	AFFF was stored and held on trucks at AOI 1 from the 1980s – 2004. AFFF may have been spilled or accidentally released.	Proceed to an SI, focus on shallow groundwater, surface soil, subsurface soil, surface water, and sediment.
AOI 2 Release Area B	AFFF was stored and held on trucks at AOI 2 from the 1980s – 2004. AFFF may have been spilled or accidentally released.	Proceed to an SI, focus on shallow groundwater, surface soil, subsurface soil, surface water, and sediment.
AOI 3 Release Areas C & D	AFFF may have entered the Waste Water Treatment Plant via influent and may have exited the Waste Water Treatment Plant via the Sludge Drying Beds, or effluent.	Proceed to an SI, focus on shallow groundwater, surface water, sediment, surface soil, and subsurface soil.



CLIENTARNG					<div><div><div></div>Area of Interest</div><div><div></div>Potential PFAS Release</div><div><div></div>No Suspected Release</div><div><div></div>Facility Boundary</div></div> <div><div></div>Water Body</div> <div><div></div>Wetland</div> <div><div></div>River/Stream</div>
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Appendix A

Data Resources

Data Resources will be provided separately on CD. Data Resources for Camp Shelby include:

Previous Investigations Completed at Camp Shelby or Adjacent Areas

- Final Perfluorinated Compounds Preliminary Assessment Site Visit Report, Mississippi Air National Guard Combat Readiness Training Center, Gulfport, Mississippi and C-17 Assault Strip Adjacent to Camp Shelby, Hattiesburg, Mississippi
- 2014 Integrated Natural Resource Management Plan

Camp Shelby 2019 EDR™ Report

- 2019 Camp Shelby EDR™ Report

Camp Shelby PFAS Drinking Water Sampling Data

- March 2017 Drinking Water PFAS Sampling Results

Appendix B

Preliminary Assessment Documentation

Appendix B.1

Interview Records

PA Interview Questionnaire - Environmental Manager

Facility: Camp Shelby

Interviewer: [redacted]

Date/Time: 3/14/19

Interviewee: [redacted]

Title: Env. Officers

Phone Number: _____

Email: _____

Can your name/role be used in the PA Report? Y or N

Can you recommend anyone we can interview?

Y or N _____

1. Roles or activities with the Facility/years working at the Facility.

[redacted] : 1.5 years
[redacted] : 11.5 years

2. Where can I find previous facility ownership information?

Camp Shelby established in 1917
From 1969- present there has been mostly training here especially involving tanks (M1's) and associated maintenance.
ARNG either owns or leases containment area. Range areas are owned by State, federal, and/or Forest Service and used by ARNG specialty use permit

3. What can you tell us about the history of PFAS including aqueous film forming foam (AFFF) at the Facility? Was it used for any of the following activities, circle all that apply and indicate years of active use, if known? Identify these locations on a facility map.

Maintenance

Fire Training Areas

Firefighting (Active Fire)

Crash

Fire Suppression Systems (Hangers/Dining Facilities)

Fire Protection at Fueling Stations

Non-Technical/Recreational/ Pest Management

Metals Plating Facility

Waterproofing Uniforms (Laundry Facilities)

Other

Storage in warehouse.

Three fire station locations on-site (historic or current)

4. Fill out CSM Information worksheet with the Environmental Manager.

5. Are any current buildings constructed with AFFF dispensing systems or fire suppression systems? What are the AFFF/suppression system test requirements? What is the frequency of testing the AFFF/suppression system? Do you have "As Built" drawings for the buildings?

None w/ AFFF.

Sign-in sheet

PA Interview Questionnaire - Environmental Manager

Facility: Camp Shelby
Interviewer: [REDACTED]
Date/Time: 3/14/19

6. Are fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam? If retrofitted, when was that done?

No knowledge of any with AFFF.

7. How is AFFF procured? Do you have an inventory/procurement system that tracks use?

N/A.

8. What type of AFFF has been/is being used (3%, 6%, Mil Spec Mil-F-24385, High Expansion)? Manufacturer (3M, Dupont, Ansul, National Foam, Angus, Chemguard, Buckeye, Fire Service Plus)?

In storage they have 5-gal buckets of
Ansulite 3% and Vulcan 3%.

9. Where is the AFFF stored? How is it stored (tanks, 55-gallon drums, 5-gallon buckets)? What size are the storage tanks? Is the AFFF stored as a mixed solution (3% or 6%) or concentrated material?

5-gal buckets in warehouse
3% mixture.

10. How many FTAs are/were on this facility and where are they? Locate on a map. How many FTAs are active and inactive? For inactive FTAs, when was the last time that fire training using AFFF was conducted at them?

No knowledge of any.

PA Interview Questionnaire - Environmental Manager

Facility: Camp Shelby

Interviewer: [REDACTED]

Date/Time: 3/14/19

11. When a release of AFFF occurs during a fire training exercise, now and in the past, how is the AFFF cleaned and disposed of? Were retention ponds built to store discharged AFFF? Was the AFFF trickled to the sanitary sewer or left in the pond to infiltrate?

N/A

12. Can you recall specific times when city, county, and/or state personnel came on-post for training? If so, please state which state/county agency or military entity? Do you have any records, including photographs to share with us?

No.

13. Did military routinely or occasionally fire train off-post? List the units that you can recall used/trained at various areas.

N/A.

14. Did individual units come with their own safety personnel, did they also bring their own AFFF? Was training with AFFF part of these exercises? How were emergencies handled under these circumstances?

Forest Service would put out any large range fires just using water buckets.

15. Are there specific emergency response incident reports (i.e., aircraft or vehicle crash sites and fires)? If so, may we please copy these reports? Who (entity) was the responder?

No.

PA Interview Questionnaire - Environmental Manager

Facility: Camp Shelby

Interviewer: [REDACTED]

Date/Time: 3/14/19

16. Do you have records of fuel spill logs? Was it common practice to wash away fuel spills with AFFF? Is/was AFFF used as a precaution in response to fuel releases or emergency runway landings to prevent fires?

NO.

17. Was AFFF used for forest fires or fire management on-post/off-post? If so, please describe what happened and who was involved?

Yes. Forest Service sometimes helps with range area fires. Water only.

Clarification from comment from MD/SH: No AFFF has been used by the Forest Service. This comment added by PD on 3/31/2020

18. Are there mutual aid/use agreements between county, city, and local fire department? Please list, even if informal. If formalized, may we have a copy of the agreement?

Unknown.

19. Can you provide any other locations where AFFF has been stored, released, or used (i.e. hangars, buildings, fire stations, firefighting equipment testing and maintenance areas, emergency response sites, storm water/surface water, waste treatment plants, and AFFF ponds)?

NO. Just storage shed. Not sure about fire stations.

20. Are you aware of any other creative uses of AFFF? If so, how was AFFF used? What entities were involved?

NO.

PA Interview Questionnaire - Environmental Manager

Facility: Camp Shelby

Interviewer: [REDACTED]

Date/Time: 3/14/19

21. Are there past studies you are aware of with environmental information on plants/animals/groundwater/soil types, etc., such as Integrated Cultural Resources Management Plans or Integrated Natural Resources Management Plans?

No. We have some electronic files from [REDACTED].

22. What other records might be helpful to us (environmental compliance, investigation records, admin record) and where can we find them?

N/A.

23. Do you have or did you have a chrome plating shop on base? What were/are the years of operation of that chrome plating shop?

No.

24. Do you know whether the shop has/had a foam blanket mist suppression system or used a fume hood for emissions control? If foam blanket mist suppression was used, where was the foam stored, mixed, applied, etc.?

N/A.

25. How is off-spec AFFF disposed (used for training, turned in, or given to a local Fire Station)? If applicable, do you know the name of the vendor that removes off-spec AFFF? Do you have copies of the manifest or B/L?

N/A. No disposal records.

PA Interview Questionnaire - Environmental Manager

Facility: Camp Shelby

Interviewer: [REDACTED]

Date/Time: 3/14/19

26. Do you recommend anyone else we can interview? If so, do you have contact information for them?

Yes. They set up all other interviews.

PA Interview Questionnaire - Other

Facility: Camp Shelby
 Interviewer: [REDACTED]
 Date/Time: 3/14/19

ⓧ phone interview

Interviewee: [REDACTED] Title: <u>Fire Inspector/Em. Serv. Coord.</u> Phone Number: [REDACTED] Email: _____	Can your name/role be used in the PA Report? <u>Y</u> or N Can you recommend anyone we can interview? Y or N _____
Roles or activities with the Facility/Years working at the Facility:	
<u>Fire Inspector and Emergency Services Coordinator</u> <u>From 2001 - 2016</u>	
PFAS Use: Identify accidental/intentional release locations, time frame of release, frequency of releases, storage container size (maintenance, fire training, firefighting, buildings with suppression systems (as built), fueling stations, crash sites, pest management, recreational, dining facilities, metals plating, or waterproofing). How are materials ordered/purchased/disposed/shared with others?	
<u>At old fire station they had one Amarex truck that held between 150-200 gal of foam.</u>	Known Uses
<u>P4 crash vehicle trucks also held foam at Hagler Airfield. Later replaced with a Titan.</u>	Use
<u>- Never leaked, never trained with foam.</u>	Procurement
<u>- No knowledge of foam releases.</u>	Disposition
<u>- Nozzle testing done with water</u>	Storage (Mixed)
<u>- Enough bulk storage was kept to be able to recharge the trucks if needed. Stored in warehouse by old fire station.</u>	Storage (Solution)
<u>- Trained with foam in Hattiesburg, MS.</u>	Inventory, Off-Spec
<u>- 40 gal of foam given to City of Hattiesburg once.</u>	Containment
<u>- Hagler Airfield had Halon extinguishers.</u>	SOP on Filling
<u>- Paint booths = water fire suppression.</u>	Leaking Vehicles
<u>- No longer have P4 P4 or Titan trucks.</u>	Nozzle and Suppression System Testing
	Dining Facilities
	Vehicle Washing
	Ramp Washing
	Fuel Spill Washing and Fueling Stations
	Chrome Plating or Waterproofing

PA Interview Questionnaire - Other

Facility: Camp Shelby
Interviewer: [REDACTED]
Date/Time: 3/14/19

City of Hattiesburg and County Volunteer Fire Dept.
have mutual aid agreements with each other.

- Structural and wildland fires

- would only use water

PA Interview Questionnaire – Fire Station

Facility: Camp Shelby

Interviewer: [REDACTED]

Date/Time: 3/14/19

☒ phone interview

Interviewee: [REDACTED]
 Title: Fire Chief
 Phone Number: [REDACTED]
 Email: [REDACTED]

Can your name/role be used in the PA Report? ☒ or N
 Can you recommend anyone we can interview?
 Y or N [REDACTED]

1. Roles or activities with the Facility/years working at the Facility.

Fire Chief.
A+ base 2004 - present.

2. What can you tell us about the history of AFFF at the Facility? Was it used for any of the following activities, circle all that apply and indicate years of active use, if known? Identify these locations on a facility map.

Foam Stored. No reports of use.

Maintenance (e.g., ramp washing)
 Fire Training Areas
 Firefighting (Active Fire)
 Crash
 Fire Suppression Systems (Hangers/Dining Facilities)
 Fire Protection at Fueling Stations
 Non-Technical/Recreational/ Pest Management

3. Are any current buildings constructed with AFFF dispensing systems or fire suppression systems? What are the AFFF/suppression system test requirements? What is the frequency of testing at the AFFF/suppression systems?

No.

4. Are fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam?

No.

5. How is AFFF procured? Do you have an inventory/procurement system that tracks use?

N/A

PA Interview Questionnaire – Fire Station

Facility: Camp Shelby
Interviewer: [REDACTED]
Date/Time: 3/14/19

6. What type of AFFF has been/is being used (3%, 6%, Mil Spec Mil-F-24385, High Expansion)?
Manufacturer (3M, Dupont, Ansul, National Foam, Angus, Chemguard, Buckeye, Fire Service Plus)?

Not sure. Stored in warehouse.

7. Is AFFF formulated on base? If so, where is the solution mixed, contained, transferred, etc.?

N/A.

8. Where is the AFFF stored? How is it stored (tanks, 55-gallon drums, 5-gallon buckets)? What size are the storage tanks? Is the AFFF stored as a mixed solution (3% or 6%) or concentrated material?

Warehouse by old fire station.

9. How is the AFFF transferred to emergency response vehicles, suppression systems, flightline extinguishers? Is/was there a specified area on the facility where vehicles are filled with AFFF and does this area have secondary containment in case of spills? How and where are vehicles storing AFFF cleaned/decontaminated?

If needed, an inductor on the side of the truck would be used. Foam not kept on trucks since 2004. Foam never needed or trained with.

10. Provide a list of vehicles that carried AFFF, now and in the past, and where are/were they located?

None from 2004 onward.

11. Any vehicles have a history of leaking AFFF? Do you/did you test the vehicles spray patterns to make sure equipment is working properly? How often are/were these spray tests performed and can you provide the locations of these tests, now and in the past?

N/A.

Nozzle testing with water.

PA Interview Questionnaire – Fire Station

Facility: Camp Shelby
Interviewer: [REDACTED]
Date/Time: 3/14/19

12. How many FTAs are/were on this facility and where are they? Locate on a map. How many FTAs are active and inactive? For inactive FTAs, when was the last time that fire training using AFFF was conducted at them?

N/A.

13. What types of fuels/flammables were used at the FTAs?

N/A.

14. What was the frequency of AFFF use at each location? When a release of AFFF occurs during a fire training exercise, now and in the past, how is/was the AFFF cleaned and disposed of? Were retention ponds built to store discharged AFFF? Was the AFFF trickled to the sanitary sewer or left in the pond to infiltrate?

N/A.

15. Are there mutual aid/use agreements between county, city, local fire department? Please list, even if informal. If formalized, may we have a copy of the agreement? Can you recall specific times when city, county, state personnel came on-post for training? If so, please state which state/county agency, military entity? Do you have any records, including photographs to share with us?

Occasional training for mutual aid at the ANG
C17 runway. Just using water.

16. Did individual units come on-post with their own safety personnel, did they also bring their own AFFF? Was training with AFFF part of these exercises? How were emergencies handled under these circumstances?

N/A.

PA Interview Questionnaire – Fire Station

Facility: Camp Shelby
Interviewer: [REDACTED]
Date/Time: 3/14/19

17. Did military routinely or occasionally fire train off-post? List units that you can recall used/trained at various areas.

No.

18. Are there specific emergency response incident reports (i.e., aircraft or vehicle crash sites and fires)? If so, may we please copy these reports? Who (entity) was the responder?

Responded to railroad emergency and used foam.
About 15 miles away from base.

19. Do you have records of fuel spill logs? Was it common practice to wash away fuel spills with AFFF? Is/was AFFF used as a precaution in response to fuel releases or emergency runway landings to prevent fires?

No.

20. Was AFFF used for forest fires or fire management on-post/off-post? If so, please describe what happened and who was involved?

No.

21. Can you provide any other locations where AFFF has been stored, released, or used (i.e. hangars, buildings, fire stations, firefighting equipment testing and maintenance areas, emergency response sites, storm water/surface water, waste water treatment plants, and AFFF ponds)?

No releases.

PA Interview Questionnaire – Fire Station

Facility: Camp Shelby
Interviewer: [REDACTED]
Date/Time: 3/14/19

22. Are you aware of any other creative uses of AFFF? If so, how was AFFF used? What entities were involved?

NO .

23. How is off-spec AFFF disposed (used for training, turned in, or given to a local Fire Station)? If applicable, do you know the name of the vendor that removes off-spec AFFF? Do you have copies of the manifest or B/L?

N/A .

24. Do you recommend anyone else we can interview? If so, do you have contact information for them?

—

PA Interview Questionnaire - Other

Facility: Camp Shelby

Interviewer: [REDACTED]

Date/Time: 3/14/19

(*) phone interview

Interviewee: <u>[REDACTED]</u>	Can your name/role be used in the PA Report? (Y) or N
Title: _____	Can you recommend anyone we can interview?
Phone Number: _____	Y or N _____
Email: _____	

Roles or activities with the Facility/Years working at the Facility:

Employed at the base from 1985 - 2007.

Worked with Fire Dept. from 1993 - 2007.

PFAS Use: Identify accidental/intentional release locations, time frame of release, frequency of releases, storage container size (maintenance, fire training, firefighting, buildings with suppression systems (as built), fueling stations, crash sites, pest management, recreational, dining facilities, metals plating, or waterproofing). How are materials ordered/purchased/disposed/shared with others?

- No knowledge of having ever used foam.

• too corrosive, too hard to clean

- No use off-site either

- If it had been used, it would have been at the old fire house - but he doesn't think so.

Known Uses

Use

Procurement

Disposition

Storage (Mixed)

Storage (Solution)

Inventory, Off-Spec

Containment

SOP on Filling

Leaking Vehicles

Nozzle and Suppression System Testing

Dining Facilities

Vehicle Washing

Ramp Washing

Fuel Spill Washing and Fueling Stations

Chrome Plating or Waterproofing

Camp Shelby

[illegible]

Appendix B.2

Visual Site Inspection Checklists

Visual Site Inspection Checklist

Names(s) of people performing VSI: _____

Recorded by: _____

ARNG Contact: _____

Date and Time: 3/14/19

Method of visit (walking, driving, adjacent): Drive and walk

Source/Release Information

Site Name / Area Name / Unique ID: Current Fire Station

Site / Area Acreage: _____

Historic Site Use (Brief Description): Fire Station

Current Site Use (Brief Description): Fire Station

Physical barriers or access restrictions: On base. Escort required.

1. Was PFAS used (or spilled) at the site/area?

Y/N

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014): _____

2. Has usage been documented?

Y/N

2a. If yes, keep a record (place electronic files on a disk): _____

3. What types of businesses are located near the site?

Industrial / Commercial / Plating / Waterproofing / Residential

3a. Indicate what businesses are located near the site _____

4. Is this site located at an airport/flightline?

Y/N

4a. If yes, provide a description of the airport/flightline tenants: _____

Visual Survey Inspection Log

Other Significant Site Features:

1. Does the facility have a fire suppression system?

☒ Y / ☐ N

1a. If yes, indicate which type of AFFF has been used:

1b. If yes, describe maintenance schedule/leaks:

1c. If yes, how often is the AFFF replaced:

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation?

☐ Y / ☐ N

1a. If so, note observation and location:

2. Is there channelized flow within the site/area?

☐ Y / ☐ N

2a. If so, please note observation and location:

3. Are monitoring or drinking water wells located near the site?

☐ Y / ☐ N

3a. If so, please note the location:

4. Are surface water intakes located near the site?

☐ Y / ☐ N

4a. If so, please note the location:

5. Can wind dispersion information be obtained?

☐ Y / ☐ N

5a. If so, please note and observe the location.

6. Does an adjacent non-ARNG PFAS source exist?

☐ Y / ☐ N

6a. If so, please note the source and location.

6b. Will off-site reconnaissance be conducted?

☐ Y / ☐ N

Visual Survey Inspection Log

Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

Y / N

1a. If so, please describe change (ex. Structures no longer exist):

2. Is the site/area vegetated?

Y / N

2a. If not vegetated, briefly describe the site/area composition:

3. Does the site or area exhibit evidence of erosion?

Y / N

3a. If yes, describe the location and extent of the erosion:

4. Does the site/area exhibit any areas of ponding or standing water?

Y / N

4a. If yes, describe the location and extent of the ponding:

Receptor Information

1. Is access to the site restricted?

Y / N

1a. If so, please note to what extent:

2. Who can access the site?

Site Workers / Construction Workers / Trespassers / Residential / Recreational
Users / Ecological

2a. Circle all that apply, note any not covered above:

3. Are residential areas located near the site?

Y / N

3a. If so, please note the location/distance:

4. Are any schools/day care centers located near the site?

Y / N

4a. If so, please note the location/distance/type:

5. Are any wetlands located near the site?

Y / N

5a. If so, please note the location/distance/type:

Visual Survey Inspection Log

Additional Notes Two 5-gal buckets of AFFF stored on the truck
Floor drains in the bays
Fire station personnel report no foam usage in the last 10 years.

Photographic Log

Photo ID/Name	Date & Location	Photograph Description
	11:58	5-gal bucket of foam on truck

Visual Site Inspection Checklist

Names(s) of people performing VSI: _____

Recorded by: _____

ARNG Contact: _____

Date and Time: _____

3/14/19

Method of visit (walking, driving, adjacent): _____

Driving and walking

Source/Release Information

Site Name / Area Name / Unique ID: _____

Old Fire Station

Site / Area Acreage: _____

Historic Site Use (Brief Description): _____

Fire Station

Current Site Use (Brief Description): _____

Empty lot (building demolished)

Physical barriers or access restrictions: _____

On-base. Escort required.

1. Was PFAS used (or spilled) at the site/area? _____

Y/N

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014): _____

No documented releases.

2. Has usage been documented? _____

Y/N

2a. If yes, keep a record (place electronic files on a disk): _____

3. What types of businesses are located near the site? _____

Industrial / Commercial / Plating / Waterproofing / Residential

3a. Indicate what businesses are located near the site _____

4. Is this site located at an airport/flightline? _____

Y/N

4a. If yes, provide a description of the airport/flightline tenants: _____

Visual Survey Inspection Log

Other Significant Site Features:

1. Does the facility have a fire suppression system?

Y / N

1a. If yes, indicate which type of AFFF has been used:

1b. If yes, describe maintenance schedule/leaks:

1c. If yes, how often is the AFFF replaced:

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation?

Y / N

1a. If so, note observation and location:

Storm drain in the corner of old parking lot.

2. Is there channelized flow within the site/area?

Y / N

2a. If so, please note observation and location:

Channelized drainage adjacent to the lot.
(cement lined)

3. Are monitoring or drinking water wells located near the site?

Y / N

3a. If so, please note the location:

4. Are surface water intakes located near the site?

Y / N

4a. If so, please note the location:

5. Can wind dispersion information be obtained?

Y / N

5a. If so, please note and observe the location.

6. Does an adjacent non-ARNG PFAS source exist?

Y / N

6a. If so, please note the source and location.

6b. Will off-site reconnaissance be conducted?

Y / N

Visual Survey Inspection Log

Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

☒ Y ☐ N

1a. If so, please describe change (ex. Structures no longer exist):

Old Fire Station has been demolished.

2. Is the site/area vegetated?

☐ Y ☐ N

2a. If not vegetated, briefly describe the site/area composition:

3. Does the site or area exhibit evidence of erosion?

☐ Y ☐ N

3a. If yes, describe the location and extent of the erosion:

4. Does the site/area exhibit any areas of ponding or standing water?

☐ Y ☐ N

4a. If yes, describe the location and extent of the ponding:

Receptor Information

1. Is access to the site restricted?

☐ Y ☐ N

1a. If so, please note to what extent:

2. Who can access the site?

Site Workers / Construction Workers / Trespassers / Residential / Recreational
Users / Ecological

2a. Circle all that apply, note any not covered above:

3. Are residential areas located near the site?

☐ Y ☐ N

3a. If so, please note the location/distance:

4. Are any schools/day care centers located near the site?

☐ Y ☐ N

4a. If so, please note the location/distance/type:

5. Are any wetlands located near the site?

☐ Y ☐ N

5a. If so, please note the location/distance/type:

Visual Survey Inspection Log

Additional Notes

Photographic Log

Photo ID/Name	Date & Location	Photograph Description
	12:54	old fire station footprint

Visual Site Inspection Checklist

Names(s) of people performing VSI: _____

Recorded by: _____

ARNG Contact: _____

Date and Time: _____

3/14/19

Method of visit (walking, driving, adjacent): _____

Driving and walking

Source/Release Information

Site Name / Area Name / Unique ID: _____

Old Hagler Airfield Fire Station

Site / Area Acreage: _____

Historic Site Use (Brief Description): _____

Fire Station

Current Site Use (Brief Description): _____

Drone hangar.

Physical barriers or access restrictions: _____

On-base. Escort required.

1. Was PFAS used (or spilled) at the site/area?

Y ☒ N

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014): _____

2. Has usage been documented?

Y ☒ N

2a. If yes, keep a record (place electronic files on a disk): _____

3. What types of businesses are located near the site?

Industrial / Commercial / Plating / Waterproofing / Residential

3a. Indicate what businesses are located near the site _____

4. Is this site located at an airport/flightline?

Y / N

4a. If yes, provide a description of the airport/flightline tenants: _____

Visual Survey Inspection Log

Other Significant Site Features:

1. Does the facility have a fire suppression system?

☒ Y / ☐ N

1a. If yes, indicate which type of AFFF has been used:

None. Just water.

1b. If yes, describe maintenance schedule/leaks:

1c. If yes, how often is the AFFF replaced:

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation?

☐ Y / ☐ N

1a. If so, note observation and location:

2. Is there channelized flow within the site/area?

☐ Y / ☐ N

2a. If so, please note observation and location:

3. Are monitoring or drinking water wells located near the site?

☐ Y / ☐ N

3a. If so, please note the location:

4. Are surface water intakes located near the site?

☐ Y / ☐ N

4a. If so, please note the location:

5. Can wind dispersion information be obtained?

☐ Y / ☐ N

5a. If so, please note and observe the location.

6. Does an adjacent non-ARNG PFAS source exist?

☐ Y / ☐ N

6a. If so, please note the source and location.

6b. Will off-site reconnaissance be conducted?

☐ Y / ☐ N

Visual Survey Inspection Log

Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

Y / N

1a. If so, please describe change (ex. Structures no longer exist):

2. Is the site/area vegetated?

Y / N

2a. If not vegetated, briefly describe the site/area composition:

3. Does the site or area exhibit evidence of erosion?

Y / N

3a. If yes, describe the location and extent of the erosion:

4. Does the site/area exhibit any areas of ponding or standing water?

Y / N

4a. If yes, describe the location and extent of the ponding:

Receptor Information

1. Is access to the site restricted?

Y / N

1a. If so, please note to what extent:

2. Who can access the site?

**Site Workers / Construction Workers / Trespassers / Residential / Recreational
Users / Ecological**

2a. Circle all that apply, note any not covered above:

3. Are residential areas located near the site?

Y / N

3a. If so, please note the location/distance:

4. Are any schools/day care centers located near the site?

Y / N

4a. If so, please note the location/distance/type:

5. Are any wetlands located near the site?

Y / N

5a. If so, please note the location/distance/type:

Visual Survey Inspection Log

Additional Notes

Trench drains in old vehicle bays.

Surveillance drones housed here.

7 non-AFFF extinguishers on the tarmac (Halon)

Photographic Log

Photo ID/Name	Date & Location	Photograph Description

Visual Site Inspection Checklist

Names(s) of people performing VSI: _____

Recorded by: _____

ARNG Contact: _____

Date and Time: 3/14/19

Method of visit (walking, driving, adjacent): Driving and walking

Source/Release Information

Site Name / Area Name / Unique ID: Building 6519

Site / Area Acreage: _____

Historic Site Use (Brief Description): Warehouse

Current Site Use (Brief Description): Warehouse

Physical barriers or access restrictions: On-base. Escort required. Door locked.

1. Was PFAS used (or spilled) at the site/area?

☒ Y ☐ N

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):

2. Has usage been documented?

☐ Y ☐ N

2a. If yes, keep a record (place electronic files on a disk):

3. What types of businesses are located near the site?

Industrial / Commercial / Plating / Waterproofing / Residential

3a. Indicate what businesses are located near the site

4. Is this site located at an airport/flightline?

☐ Y ☐ N

4a. If yes, provide a description of the airport/flightline tenants:

Visual Survey Inspection Log

Other Significant Site Features:

1. Does the facility have a fire suppression system?

Y / N

1a. If yes, indicate which type of AFFF has been used:

1b. If yes, describe maintenance schedule/leaks:

1c. If yes, how often is the AFFF replaced:

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation?

Y / N

1a. If so, note observation and location:

2. Is there channelized flow within the site/area?

Y / N

2a. If so, please note observation and location:

Channelized flow behind building.

3. Are monitoring or drinking water wells located near the site?

Y / N

3a. If so, please note the location:

4. Are surface water intakes located near the site?

Y / N

4a. If so, please note the location:

5. Can wind dispersion information be obtained?

Y / N

5a. If so, please note and observe the location.

6. Does an adjacent non-ARNG PFAS source exist?

Y / N

6a. If so, please note the source and location.

6b. Will off-site reconnaissance be conducted?

Y / N

Visual Survey Inspection Log

Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

☐ Y / ☐ N

1a. If so, please describe change (ex. Structures no longer exist):

2. Is the site/area vegetated?

☐ Y / ☐ N

2a. If not vegetated, briefly describe the site/area composition:

3. Does the site or area exhibit evidence of erosion?

☐ Y / ☐ N

3a. If yes, describe the location and extent of the erosion:

4. Does the site/area exhibit any areas of ponding or standing water?

☐ Y / ☐ N

4a. If yes, describe the location and extent of the ponding:

Receptor Information

1. Is access to the site restricted?

☐ Y / ☐ N

1a. If so, please note to what extent:

2. Who can access the site?

**Site Workers / Construction Workers / Trespassers / Residential / Recreational
Users / Ecological**

2a. Circle all that apply, note any not covered above:

3. Are residential areas located near the site?

☐ Y / ☐ N

3a. If so, please note the location/distance:

4. Are any schools/day care centers located near the site?

☐ Y / ☐ N

4a. If so, please note the location/distance/type:

5. Are any wetlands located near the site?

☐ Y / ☐ N

5a. If so, please note the location/distance/type:

Visual Survey Inspection Log

Additional Notes

AFFF is stored here. Vulcan and Ansulite 3% .
Approx 135 5-gallon jugs.
No evidence of leaks, spills.

Photographic Log

Photo ID/Name	Date & Location	Photograph Description
	12:51	Stockpile of AFFF buckets

Visual Site Inspection Checklist

Names(s) of people performing VSI: _____

Recorded by: _____

ARNG Contact: _____

Date and Time: _____

3/14/19

Method of visit (walking, driving, adjacent): _____

Driving and walking

Source/Release Information

Site Name / Area Name / Unique ID: _____

Waste Water Treatment Plant (WWTP)

Site / Area Acreage: _____

Historic Site Use (Brief Description): _____

WWTP and Sludge Drying Beds

Current Site Use (Brief Description): _____

WWTP and Sludge Drying Beds

Physical barriers or access restrictions: _____

Locked gate.

1. Was PFAS used (or spilled) at the site/area?

☒ YES ☐ NO

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014): _____

2. Has usage been documented?

☐ Y ☒ N

2a. If yes, keep a record (place electronic files on a disk): _____

3. What types of businesses are located near the site?

Industrial / Commercial / Plating / Waterproofing / Residential

3a. Indicate what businesses are located near the site _____

4. Is this site located at an airport/flightline?

☐ Y ☒ N

4a. If yes, provide a description of the airport/flightline tenants: _____

Visual Survey Inspection Log

Other Significant Site Features:

1. Does the facility have a fire suppression system?

NIA

Y/N

1a. If yes, indicate which type of AFFF has been used:

1b. If yes, describe maintenance schedule/leaks:

1c. If yes, how often is the AFFF replaced:

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation?

Y/N

1a. If so, note observation and location:

Eventual drainage to the Leaf River

2. Is there channelized flow within the site/area?

Y/N

2a. If so, please note observation and location:

Flow to drying beds and to Leaf River

3. Are monitoring or drinking water wells located near the site?

Y/N

3a. If so, please note the location:

Unknown.

4. Are surface water intakes located near the site?

Y/N

4a. If so, please note the location:

5. Can wind dispersion information be obtained?

Y/N

5a. If so, please note and observe the location.

6. Does an adjacent non-ARNG PFAS source exist?

Y/N

6a. If so, please note the source and location.

ANG C17 airstrip

6b. Will off-site reconnaissance be conducted?

Y/N

Will visit C17 airstrip

Visual Survey Inspection Log

Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

☒ Y / ☐ N

1a. If so, please describe change (ex. Structures no longer exist):

2. Is the site/area vegetated?

☐ Y / ☒ N

2a. If not vegetated, briefly describe the site/area composition:

Woods around WWTP, ponds, drying beds

3. Does the site or area exhibit evidence of erosion?

☒ Y / ☐ N

3a. If yes, describe the location and extent of the erosion:

4. Does the site/area exhibit any areas of ponding or standing water?

☒ Y / ☐ N

4a. If yes, describe the location and extent of the ponding:

Multiple lagoons / ponds

Receptor Information

1. Is access to the site restricted?

☒ Y / ☐ N

1a. If so, please note to what extent:

On-site, requires escort. Locked gate to ponds.

2. Who can access the site?

☒ Site Workers / ☒ Construction Workers / ☒ Trespassers / ☐ Residential / ☐ Recreational
☐ Users / ☐ Ecological

2a. Circle all that apply, note any not covered above:

3. Are residential areas located near the site?

☐ Y / ☒ N

3a. If so, please note the location/distance:

4. Are any schools/day care centers located near the site?

☐ Y / ☒ N

4a. If so, please note the location/distance/type:

5. Are any wetlands located near the site?

☐ Y / ☒ N

5a. If so, please note the location/distance/type:

Visual Survey Inspection Log

Additional Notes

Multiple lagoons/holding ponds
Discharge eventually to Leaf River
Sludge drying beds downgradient

Photographic Log

Photo ID/Name	Date & Location	Photograph Description
	14:22	Holding ponds/lagoons
	14:28	Sludge drying beds

Appendix B.3

Conceptual Site Model Information

Preliminary Assessment – Conceptual Site Model Information

Site Name: Camp Shelby

Why has this location been identified as a site?

Historical presence of AFFF on-site

Are there any other activities nearby that could also impact this location?

C17 Airstrip owned by ANG is on the Camp Shelby property. They did PA already. SI field work occurred – report not done yet..?

Training Events

Have any training events with AFFF occurred at this site? No

If so, how often? N/A

How much material was used? Is it documented? N/A

Identify Potential Pathways: Do we have enough information to fully understand over land surface water flow, groundwater flow, and geological formations on and around the facility? Any direct pathways to larger water bodies?

Surface Water:

Surface water flow direction? Variable, very large area. Multiple watersheds are within site bounds.

Average rainfall? 61.61 inches

Any flooding during rainy season? Yes

Direct or indirect pathway to ditches? Varied drainage throughout the site

Direct or indirect pathway to larger bodies of water? Leaf River to the north. Black River to the south.

Does surface water pond any place on site? WWTP ponds and Glenn D Walker Lake

Any impoundment areas or retention ponds? Yes at WWTP

Any NPDES location points near the site? Unknown, maybe connected to WWTP

How does surface water drain on and around the flight line? N/A

Preliminary Assessment – Conceptual Site Model Information

Groundwater:

Groundwater flow direction? Unknown

Depth to groundwater? Roughly 100 – 200 feet

Uses (agricultural, drinking water, irrigation)? Drinking water

Any groundwater treatment systems? WWTP. But no drinking water treatment that they know of.

Any groundwater monitoring well locations near the site? Yes

Is groundwater used for drinking water? Yes

Are there drinking water supply wells on installation? Yes

Do they serve off-post populations? Not sure. Does not think so.

Are there off-post drinking water wells downgradient?

Unknown

Waste Water Treatment Plant:

Has the installation ever had a WWTP, past or present? Yes, still operating

If so, do we understand the process and which water is/was treated at the plant?

Do we understand the fate of sludge waste? Yes. Goes to landfill.

Is surface water from potential contaminated sites treated? N/A.

Equipment Rinse Water

1. Is firefighting equipment washed? Where does the rinse water go?

N/A

2. Are nozzles tested? How often are nozzles tested? Where are nozzles tested? Are nozzles cleaned after use? Where does the rinse water flow after cleaning nozzles?

No reported testing with AFFF.

3. Other?

Preliminary Assessment – Conceptual Site Model Information

Identify Potential Receptors:

Site Worker

Construction Worker

Recreational User

Residential

Child

Ecological

Note what is located near by the site (e.g. daycare, schools, hospitals, churches, agricultural, livestock)?

Potential groundwater impacts from adjacent C-17 airstrip (ANG property). Residences, University of Southern Miss, Town of Hattiesburg all nearby.

Documentation

Ask for Engineering drawings (if applicable).

Has there been a reconstruction or changes to the drainage system? When did that occur?

Appendix C

Photographic Log

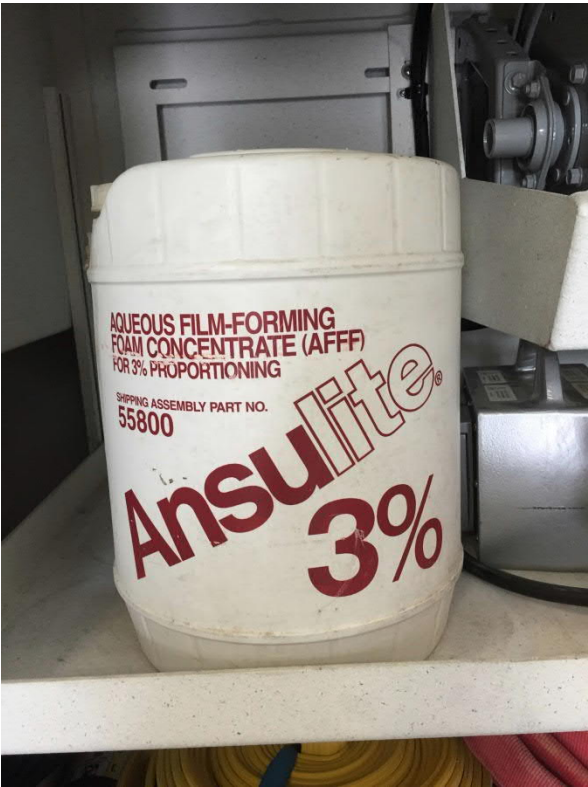
APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Shelby	Hattiesburg, Mississippi
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Photograph No. 1

Description:

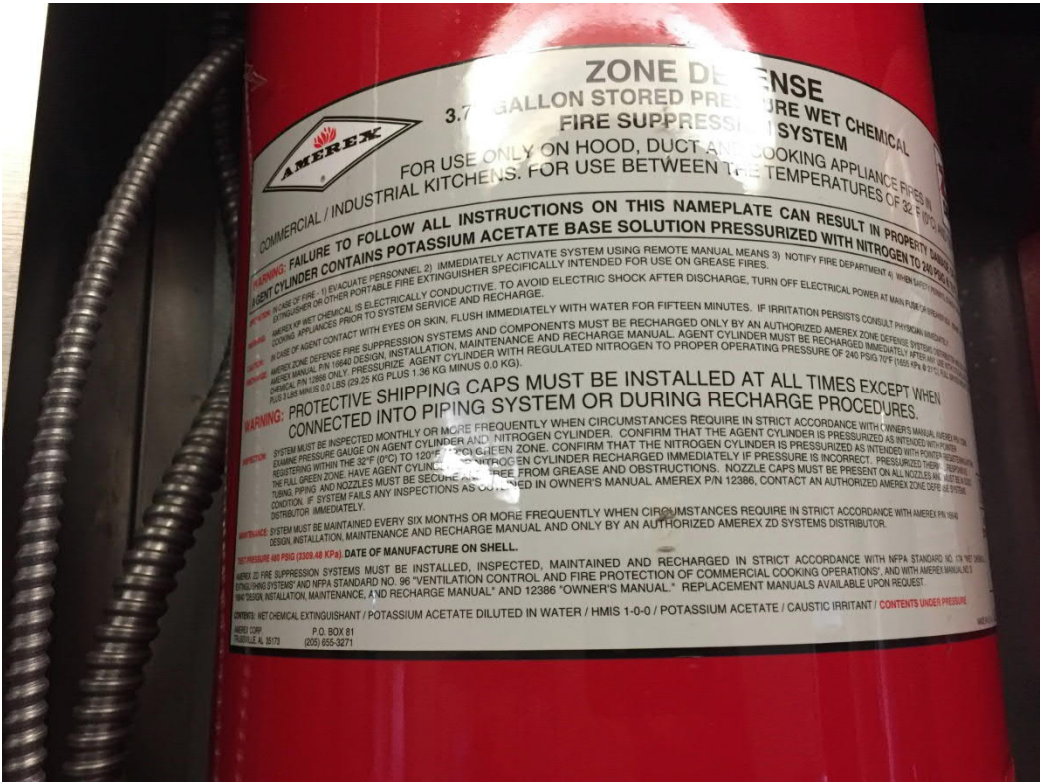
Five-gallon bucket of AFFF
on truck at current fire
station (two buckets total on
vehicle).



Photograph No. 2

Description:

K-Class fire extinguisher
attached to Fire Suppression
System, Mess Hall.



APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Shelby	Hattiesburg, Mississippi
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Photograph No. 3

Description:

Stockpile of AFFF in warehouse (Building 6519) near Old Fire Station location.



Photograph No. 4

Description:

Vulcan AFFF label.



APPENDIX C – Photographic Log

Army National Guard, Preliminary
Assessment for PFAS

Camp Shelby

Hattiesburg, Mississippi

Photograph No. 5

Description:

Ansulite AFFF label.



Photograph No. 6

Description:

Footprint of Old Fire
Station (demolished).



APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Shelby	Hattiesburg, Mississippi
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Photograph No. 7

Description:

Halon fire extinguisher at
Haglar Airfield (current
drone hangar and
heliport).



Photograph No. 8

Description:

Waste Water Treatment
Plant holding ponds.



APPENDIX C – Photographic Log

**Army National Guard, Preliminary
Assessment for PFAS**

Camp Shelby

Hattiesburg, Mississippi

Photograph No. 9

Description:

Sludge Drying Beds area.

