FINAL
Preliminary Assessment Report McCrady Training Center, Eastover, South Carolina

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

October 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
amsl	above mean sea level
AOI	Area of Interest
AR	Alcohol Resistant
ARNG	Army National Guard
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CSM	conceptual site model
EDR™	Environmental Data Resources, Inc.™
ft	feet
FTA	fire training area
HA	Health Advisory
MTC	McCrady Training Center
NPDES	National Pollution Discharge Elimination System
PA	Preliminary Assessment
PFAS	per- and poly-fluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
SCARNG	South Carolina Army National Guard
SI	Site Inspection
UCMR3	Unregulated Contaminant Monitoring Rule 3
US	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
VSI	visual site inspection

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 McCrady Training Center (MTC) (also referred to as the "facility") in Eastover, South Carolina, to assess potential PFAS release areas and exposure pathways to receptors. MTC is an enclave of US Army Fort Jackson and is leased to the South Carolina ARNG (SCARNG). Occupation of the property by SCARNG began in 1984, and the licensing term has been extended indefinitely since 1998. The performance of this PA included the following tasks:

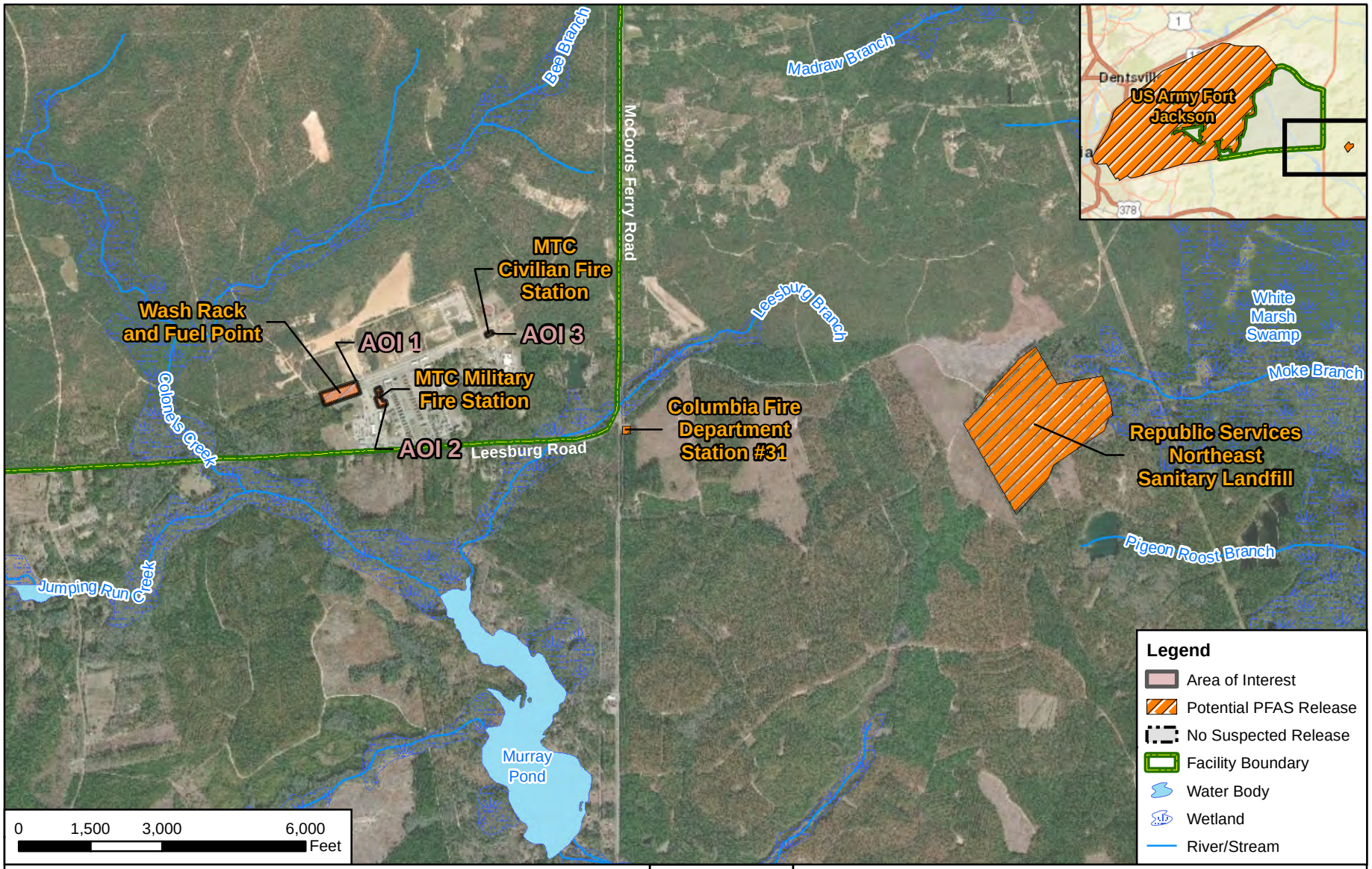
- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)™ report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility;
- Conducted a site visit on 1 October 2019 and completed visual site inspections at locations where PFAS-containing materials were suspected of being stored, used, or disposed;
- Interviewed current SCARNG MTC personnel and the McCrady Fire and Emergency Services Fire Chief during the site visit;
- 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 a potential PFAS release were identified at MTC during the PA. The AOIs are shown on **Figure ES-1** and described in **Table ES-1** below:

Table ES-1: AOIs at MTC

Area of Interest	Name	Used by	Potential Release Date
AOI 1	Wash Rack and Fuel Point	SCARNG	2012
AOI 2	MTC Military Fire Station	SCARNG	Mid-1990s to present
AOI 3	MTC Civilian Fire Station	McCrady Fire and Emergency Services/ SCARNG	2013 to 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 MTC, which presents the potential receptors and media impacted, is shown on **Figure ES-2**. Based on the United States (US) Environmental Protection Agency (USEPA) Unregulated Contaminant Monitoring Rule 3 (UCMR3) data, it was indicated that no PFAS were detected in a public water system above the USEPA's lifetime Health Advisories (HAs) within 20 miles of the facility. The HA is 70 parts per trillion for PFOS and PFOA, individually or combined. 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.



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PROJECT	Preliminary Assessment for PFAS at McCrady Training Center, SC			
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SCALE	1:577,095	CHK BY	ST	4/14/2020
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	4/14/2020

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Summary of Findings

AECOM 12420 Milestone Center Drive Germantown, MD 20876

Figure ES-1

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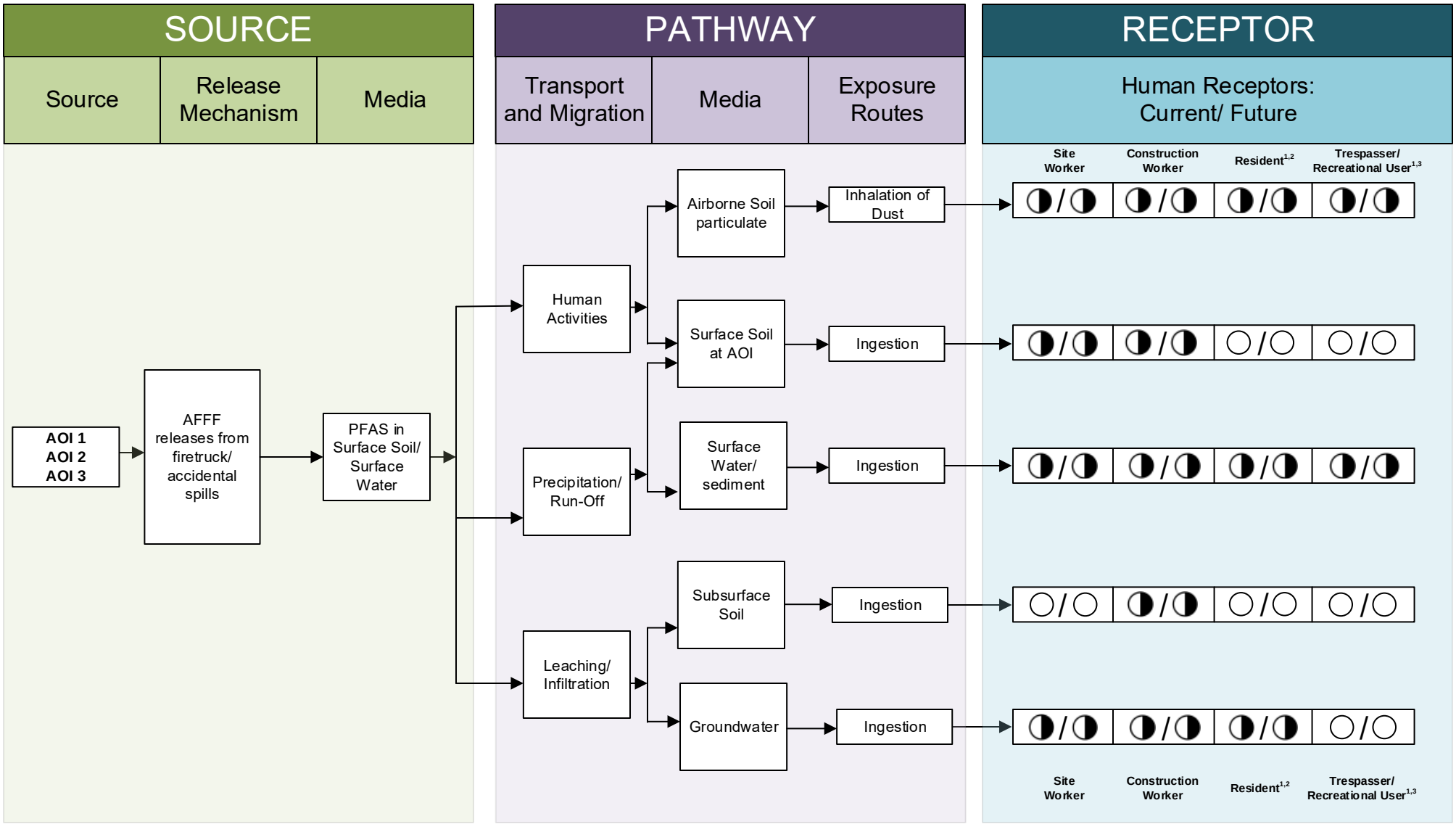


LEGEND

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

NOTES

1. The resident and recreational users refer to off-site receptors.
2. Inhalation of dust for off-site receptors is likely insignificant.
3. Human consumption of fish potentially affected by PFAS is possible.

Figure ES-2
Preliminary Conceptual Site Model
McCrady Training Center, SC

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) (a suite of related chemicals), 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. The HA is 70 parts per trillion for PFOS and PFOA, individually or combined.

This report presents the findings of a PA for PFAS-containing materials at the McCrady Training Center (MTC) (also referred to as the “facility”) in Eastover, South Carolina, 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 MTC. 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)™ 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 1 October 2019 and completed visual site inspections (VSIs) at locations where PFAS-containing materials were suspected of being stored, used, or disposed;
- Interviewed current South Carolina ARNG (SCARNG) MTC personnel and the McCrady Fire and Emergency Services Fire Chief during the site visit;

- 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** – **Preliminary Conceptual Site Model:** describes the pathways of PFAS transport and receptors for the 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

MTC occupies approximately 15 thousand acres in Eastover, Richland County, South Carolina. The facility is an enclave of US Army Fort Jackson, occupying the eastern portion of the Fort Jackson installation. MTC is located approximately 18 miles east of Columbia, South Carolina and 6 miles northeast of McEntire Joint National Guard Base. The main gate is located along Leesburg Road, due west of US Route 601. The Cantonment is located near the main gate within the southeast portion of the facility. **Figure 1-1** illustrates the location of MTC.

The facility is used by SCARNG for professional military education, infantry training, and maintenance for vehicles and equipment. SCARNG began occupation of the property in 1984, and the licensing term has been extended indefinitely since 1998. Licensing agreements are included in **Appendix A**.

1.5 Facility Environmental Setting

MTC is located in the Upper Coast Plain physiographic province. The topography is characterized as a fairly high, rolling to hilly plateau, which is largely dictated by where streams are most

numerous and have cut valleys (US Department of Agriculture [USDA], 1918). The range in elevations in the Cantonment is from 173 to 258 feet (ft) above mean sea level (amsl) with a general topographic gradient to the south/southeast. The area surrounding MTC is predominantly undeveloped, wooded land with scattered residential homes.

1.5.1 Soil

As indicated in the 2019 EDR™ report (**Appendix A**), the surface soils at MTC are from the Lakeland, Fuquay, Blanton, Pelion, and Johnstown associations. With the exception of the Johnstown soil association, these soils are characterized by a sandy to loamy sand texture and are very well-drained to moderately well-drained. The Johnstown soil has a loam texture and is poorly drained.

1.5.2 Geology

MTC sits on the Atlantic Coastal Plain, a geologic province defined by passive continental margin Tertiary and Quaternary sedimentation. The coastal plain consists of a thick, eastward-dipping wedge of clastic and carbonate strata sourced from the Appalachian Mountains to the west (Katuna et al., 1997). These strata were deposited from the late Cretaceous to the present, the type of coastal deposition over time being controlled by periodic sea level rise and fall (Cooke, 1936). MTC lies in the Upper Coastal Plain, near the boundary between the unconsolidated sediments of the coastal plain and the crystalline rocks of the Piedmont. Because of this location, deposits in the area are sand dominated and associated with a relatively stable Cretaceous beach depositional environment (Cain et al., 2000). As the coastal plain progressed seaward, rivers coming off the Appalachian Mountains began to shape the landscape, resulting in fluvial sedimentation consisting of sandy channels and clayey floodplains and swamps (**Figure 1-2**).

1.5.3 Hydrogeology

The coastal plain has gently-dipping layered aquifers separated by confining units. The water bearing units consist of unconsolidated sand and occasionally permeable limestone. The Middendorf aquifer is the major aquifer under Richland County, and it is composed largely of coarse sand of Cretaceous age (Newcome, 2003). This aquifer is semi-confined, but not enough to produce artesian flow conditions, as Richland County is located where the Middendorf Formation begins to outcrop at the surface.

An EDR™ report conducted a well search for a 1-mile radius surrounding the facility (**Appendix A**). Using additional online resources, such as state and local Geographic Information System databases, wells were researched to a 4-mile radius of the facility. MTC is serviced by four on-facility potable wells. The facility potable wells were sampled in 2017 and displayed some low-level detections of PFAS, but none of the results exceeded the USEPA HAs for PFOS/PFOA (see **Appendix A**). Several domestic, irrigation, and/or public supply wells exist within 4 miles to the north, east, south, and southwest. The USEPA Unregulated Contaminant Monitoring Rule 3 (UCMR3) data indicate that PFOS/PFOA were not detected in a public water system above the USEPA HA within a 20-mile radius of the facility. The HA is 70 parts per trillion for PFOS and PFOA, individually or combined. 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. Based on topographic and hydrologic features, the inferred groundwater flow direction is to the south/southeast. Groundwater features are presented in **Figure 1-2**.

1.5.4 Hydrology

The majority of the facility lies within the Upper and Lower Colonels Creek Watersheds and is drained by Colonels Creek and its tributaries. The Cantonment sits at a topographic high point and is drained on the west side by Colonels Creek and on the east side by Leesburg Branch. Both creeks flow south and lead into Murray Pond, which eventually drains to the Wateree River, located approximately 6 miles to the southeast. The western and eastern borders of Richland County are shaped by the Congaree River and Wateree River, respectively, and join at a confluence that drains into Lake Marion. Lake Marion is approximately 27 miles southeast of the facility and is a source of drinking water for surrounding communities and towns. Lake Marion has not been sampled for PFAS as of this PA (Peterson, 2019).

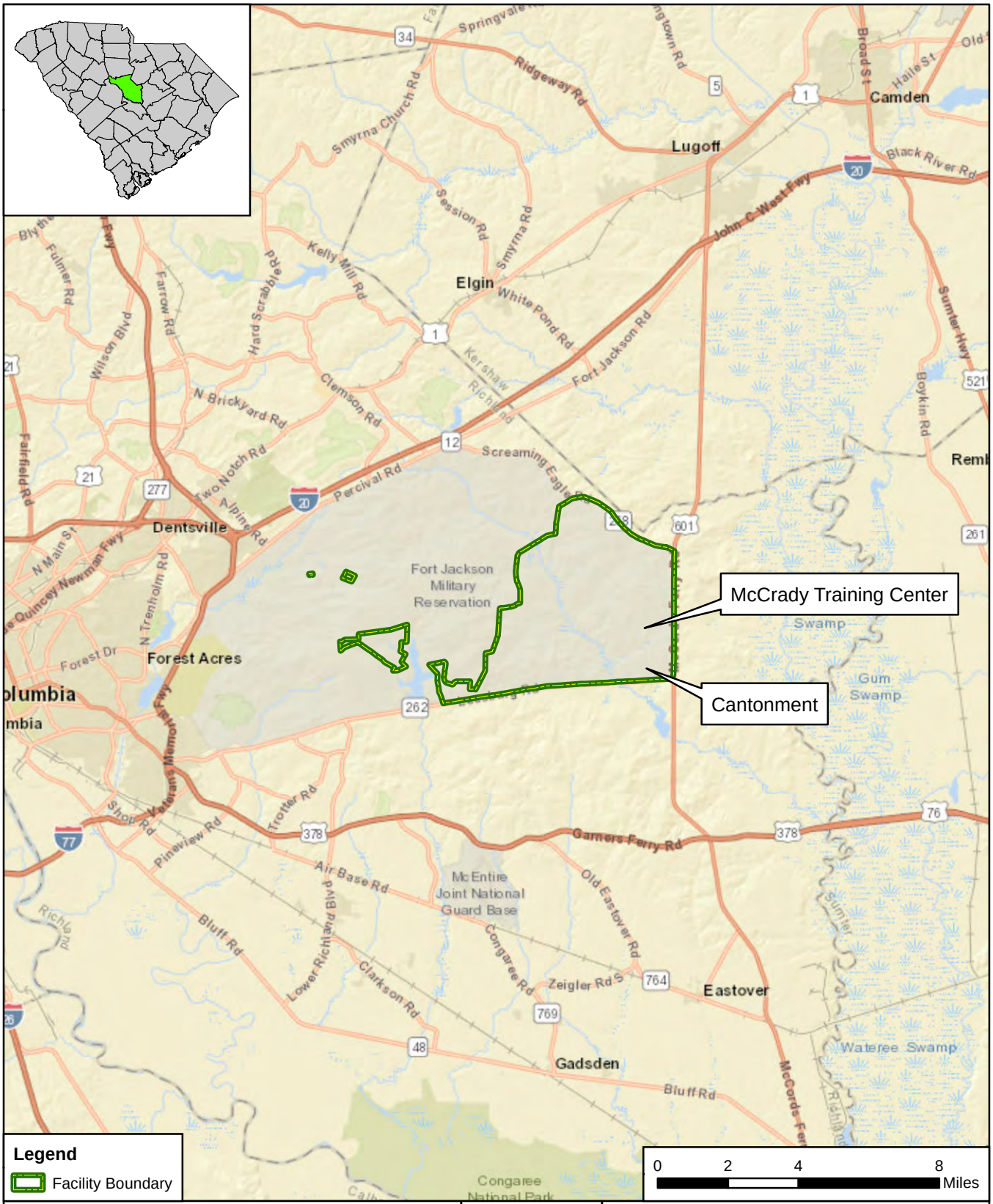
The wash rack area in the Cantonment is drained by a series of settling basins that release into an on-facility stormwater retention pond. The outfall associated with the stormwater retention pond (Outfall 001) is regulated under a National Pollution Discharge Elimination System (NPDES) permit for discharge to Colonels Creek and Wateree River (**Appendix A**). Surface water features are presented in **Figure 1-3**.

1.5.5 Climate

MTC is in a humid subtropical climate zone characterized by long and warm summers and short and mild winters. Rainfall is generally greater during the summer months but otherwise well distributed year-round, with a normal annual precipitation of 44.6 inches. Summer temperatures peak in July, with an average high of 93 degrees Fahrenheit (°F) and an average low of 72 °F. Winter temperatures are lowest in January, with an average high of 56 °F and an average low of 34 °F. Snowfall is rare, and the region typically receives only about 1.5 inches of snowfall annually (National Weather Service Forecast Office, 2018).

1.5.6 Current and Future Land Use

The facility is used by SCARNG for professional military education, infantry training, and maintenance for vehicles and equipment. The different organizational units at MTC include the Unit Training Equipment Site, Cantonment, Maintenance Shop, and US Marine Corp Reserve (Synterra, 2018). Related infrastructure includes vehicle maintenance shops, open training areas, live fire ranges, pistol ranges, two fire stations, a wash rack, and a water point. Reasonably anticipated future land use is not anticipated to change from the current land use.



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Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	4/14/2020

Facility Location

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 1-1

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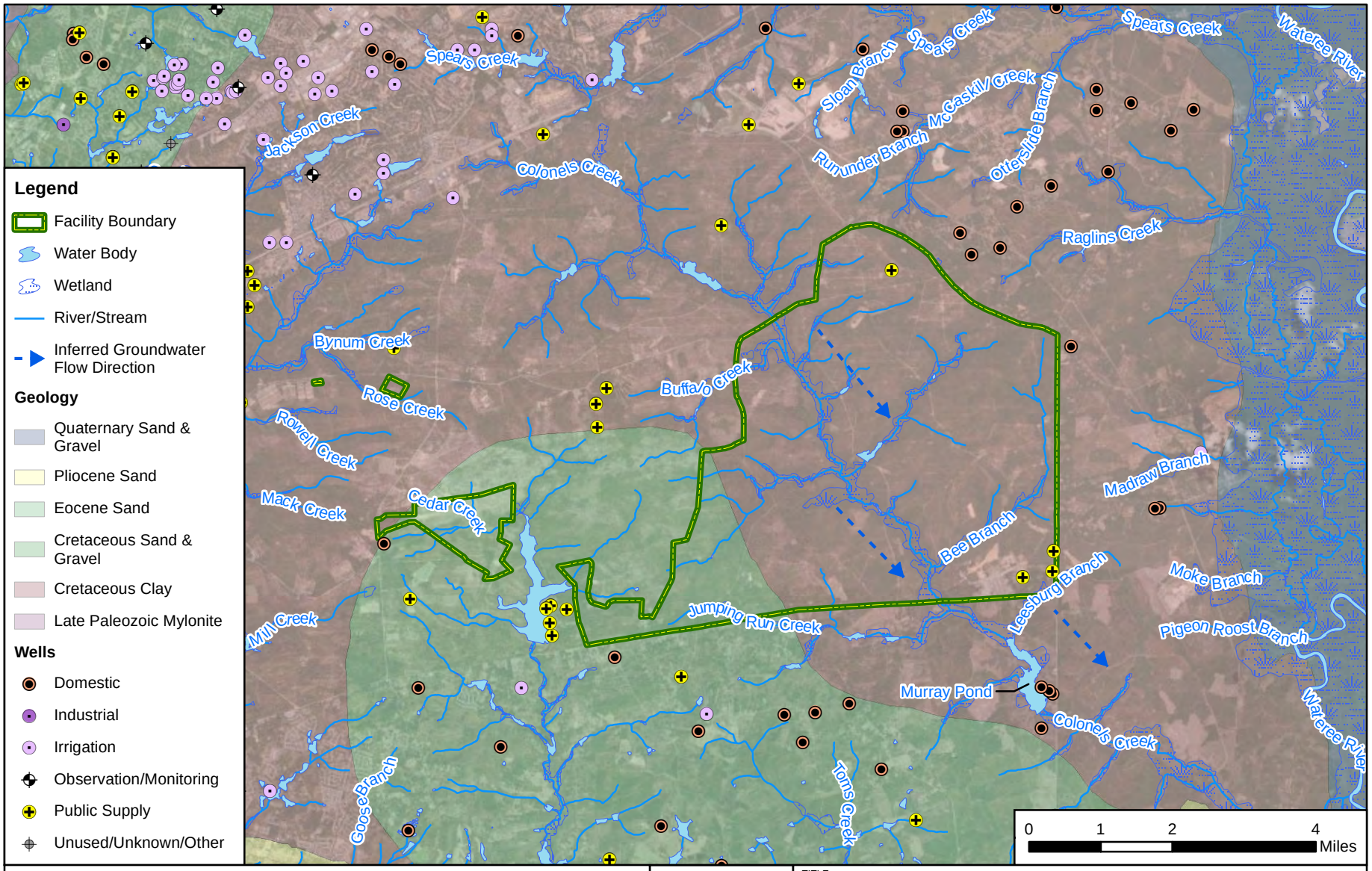

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Groundwater Features

AECOM 12420 Milestone Center Drive Germantown, MD 20876

Figure 1-2

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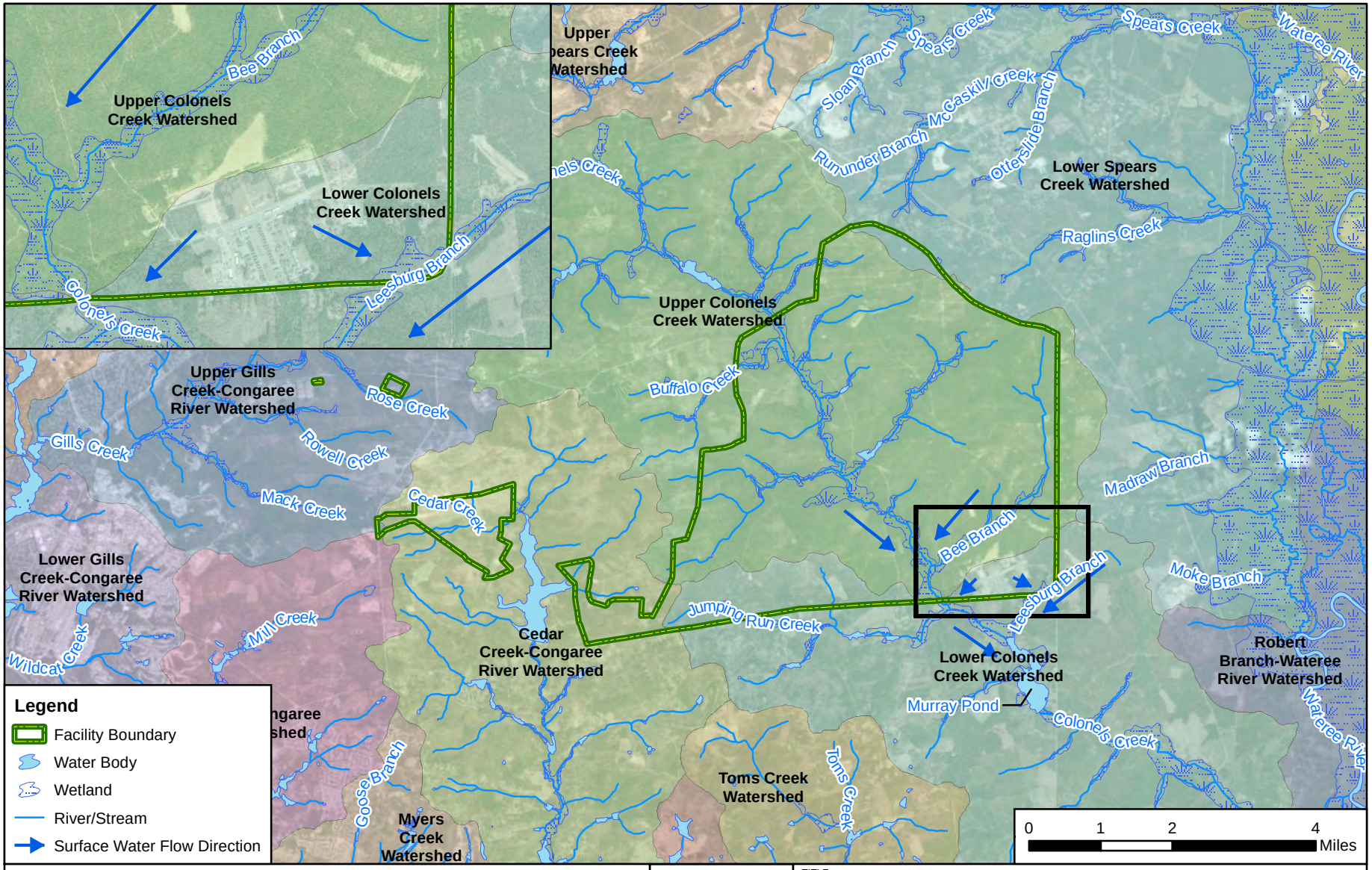

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Suface Water Features

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Figure 1-3

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2. Fire Training Areas

No FTAs where AFFF may have been potentially released were identified through record reviews and interviews during the PA. SCARNG personnel stated during interviews that they train with water only within the facility. All live fire training, typically only involving water, is conducted off-facility, approximately 20 miles away, at either the South Carolina Fire Academy or the Columbia Fire Department Training Academy in Columbia, South Carolina. According to the 266th Engineer Detachment (SCARNG) Station Chief, there was a training event in 2017 at the Columbia Fire Department Training Academy, where foam, potentially AFFF, from the SCARNG firetrucks was used to suppress a fuel tank fire used for training. The nozzles were cleaned afterwards at the Columbia Fire Department Training Academy. A photograph of SCARNG fire training activities at the off-facility South Carolina Fire Academy is presented in **Appendix C**.

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**. Three 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 the non-FTAs are shown on **Figure 3-1**.

3.1 MTC Civilian Fire Station

The MTC Civilian Fire Station is located within the Cantonment on SCARNG property. The civilian fire station, which was established in 2013, is the location of the McCrady Fire and Emergency Services under authority of the Columbia-Richland Fire Department. The McCrady Fire and Emergency Services Fire Chief, whose knowledge extends the entire civilian fire station operational period (2013 - present), was interviewed during the PA, and the following information was gathered from the interview and site visit.

There are two 50-gallon capacity foam tank firetrucks stationed at the MTC Civilian Fire Station that are currently equipped with AFFF. Three 5-gallon buckets of Buckeye Platinum 3%-6% Alcohol Resistant (AR) AFFF are also stored within the civilian fire station. The two firetrucks were filled with AFFF at the off-facility Columbia Fire Department Station #31 (see **Section 5.2**) in 2013, prior to the establishment of the MTC Civilian Fire Station. There were reportedly no spills in the filling process, and the firetrucks do not have any known history of leakage. AFFF has never been used by the McCrady Fire and Emergency Services for training or any other purposes. The McCrady Fire and Emergency Services also operated out of the MTC Military Fire Station for approximately 1 year prior to the construction of the civilian fire station. The MTC Civilian Fire Station is considered a potential PFAS release area due to the storage of AFFF within the firetrucks and fire station.

3.2 MTC Military Fire Station

The MTC Military Fire Station is located at two adjacent buildings within the Cantonment, one of which is used solely for vehicle storage including firetrucks. The MTC Military Fire Station is home to five engineer detachments: the 264th through the 268th. Two of these detachments, the 264th and 268th, were previously stationed at SCARNG's Allendale Armory. According to several interviewed unit soldiers, the firefighting units have been stationed at MTC since the mid-1990s or early 2000s.

There are three tankers and five fire engines, collectively referred to as "firetrucks", with either 50-gallon or 30-gallon foam tank capacities at the military fire station. The 266th Engineer Detachment Station Chief, whose tenure extends back to 2006, recalled an event in 2012, where the firetrucks were filled with an unknown amount of AFFF in the paved lot behind the adjacent vehicle storage building. There were reportedly no spills in the process, and the firetrucks do not have any known history of leakage. Firetruck nozzles are cleaned and tested with only water in the same paved lot behind the adjacent vehicle storage building. It was unknown if the vehicles were carrying AFFF during the VSI. Trench drains were also observed during the VSI within the MTC Military Fire Station; however, it is unknown where the trench drains lead to.

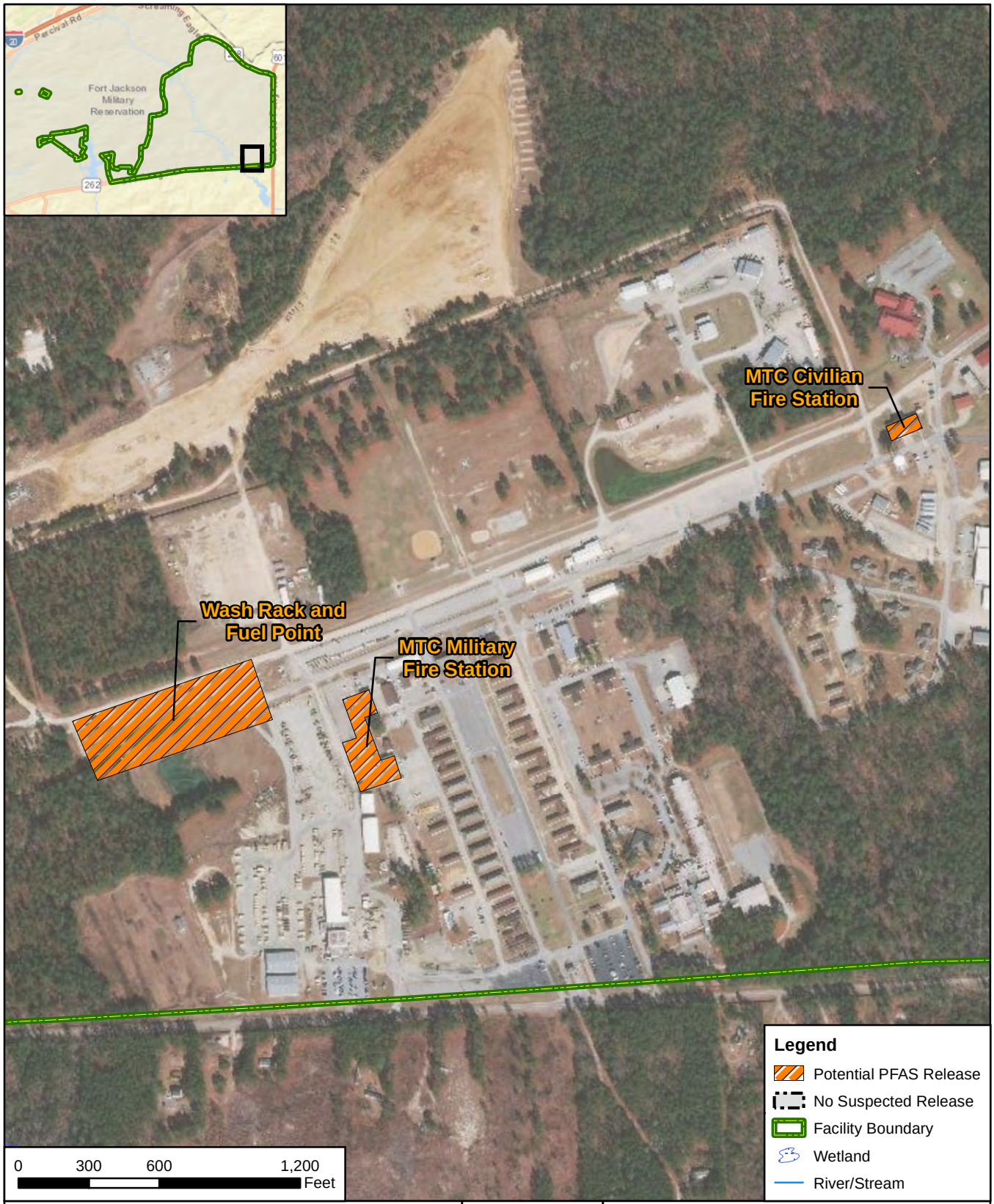
Approximately ten 5-gallon buckets of AFFF are currently stored at the military fire station. The AFFF is of the brand and type Buckeye Platinum 3%-6% AR AFFF. The station chief estimated that approximately 40 5-gallon buckets have been procured during his tenure (approximately since 2006) There is no inventory or procurement system to track AFFF usage, so the current

storage of AFFF may not reflect the amount of AFFF that has been potentially used or disposed. There are no known spills occurring from this AFFF storage. The MTC Military Fire Station is considered a potential PFAS release area due to the storage of AFFF within the firetrucks and fire station and limitation of interviewee knowledge

3.3 Wash Rack and Fuel Point

According to the 266th Engineer Detachment Station Chief, there was an accidental spill of AFFF that occurred in 2012 near a fire hydrant at the fuel point. The MTC engineer detachments were conducting a demonstration of how to backflush a hose on a firetruck when the foam line was accidentally opened. An estimated 5 to 10 gallons of diluted AFFF were released to the pavement during the incident. After discussion with Fort Jackson environmental personnel, the MTC engineer detachments attempted to flush out the spill with copious amounts of water, and the rinsate flowed west downhill into the wash rack area.

The wash rack is located west of the fuel point and is used by the MTC engineer detachments for vehicle servicing and nozzle checks of the tankers and engines. All routine activities at the wash rack involve only water (under direction of Fort Jackson environmental personnel); no additives, even detergents, are allowed to be used. The wash rack drains into a series of connected ponds. Wash water first enters a concrete pond and subsequently overflows into an earthen pond, both of which act as settling basins. The earthen pond has a valve that allows for manual discharge into a stormwater retention pond located south of the wash rack area. The stormwater retention pond discharges to Colonels Creek and Wateree River under an NPDES permit (**Appendix A**). The location of the wash rack and fuel point is considered a potential PFAS release area due to the accidental spill of AFFF in 2012.



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Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	4/14/2020

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Non-Fire Training Areas

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Figure 3-1

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4. Emergency Response Areas

Emergency responses to crashes sometimes require flame suppression, which may result in the release of PFAS to the environment in the form of AFFF. No emergency response areas were identified within MTC facility during the PA through interviews with MTC personnel, although it was reported that there have been small brush fires responded to with water. Prior to the establishment of the civilian McCrady Fire and Emergency Services, the MTC Military Fire Station was the primary emergency responder for the facility. Prior to the MTC Military Fire Station, the Fort Jackson fire department was the primary responder. Currently, the MTC Military Fire Station is only deployed under state-operated emergencies, and its detachments are often deployed overseas to areas of active engagement. Fire protection services for MTC are provided by the McCrady Fire and Emergency Services, Fort Jackson Fire Department, and Columbia-Richland Fire Department via mutual aid agreements. The mutual aid agreements are provided in **Appendix A**.

5. Adjacent Sources

Three potential off-facility sources of PFAS adjacent to MTC, not under the control of the SCARNG, were identified during the PA. A description of each adjacent source is presented below, and the adjacent sources are shown on **Figure 5-1**.

5.1 US Army Fort Jackson

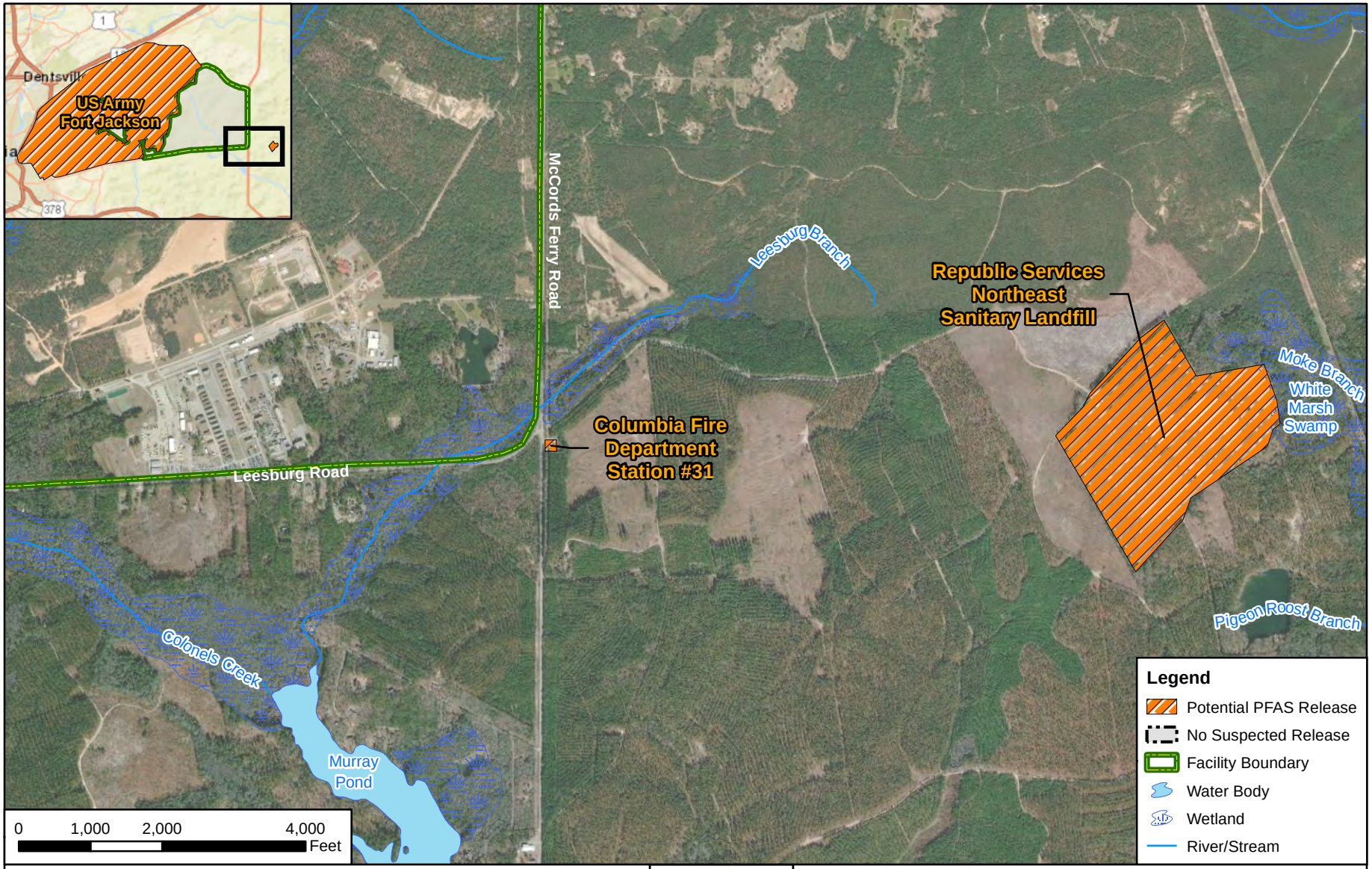
Fort Jackson is a large US Army installation that encompasses the border of MTC. The installation was originally established in 1917 and has become the “largest and most active initial entry training center in the US Army.” (Militarybases.us, n.d.). A separate PFAS PA for Fort Jackson is being conducted by the US Army. A PA site visit for Fort Jackson was conducted in November 2018 by Arcadis US, Inc. in support of the USACE and US Army Environmental Command. The results of the PA report have not yet been made available as to date of this report. Fort Jackson is considered a potential PFAS release area due to the implications of an ongoing PFAS investigation at the installation.

5.2 Columbia Fire Department Station #31

The Columbia Fire Department Station #31 is located immediately outside the southeast corner of the facility boundary, at address 1911 McCords Ferry Road, Eastover, South Carolina 29044. In an interview with the McCrady Fire and Emergency Services Fire Chief, it was indicated that the two firetrucks stationed at MTC Civilian Fire Station (**Section 3.1**) were filled with AFFF off-facility at Station #31 in 2013. Interviewees reported that no spills occurred during the process of refilling the tanks. An off-facility VSI was not conducted at Station #31; it is unknown if any fire training activities or AFFF releases have occurred there. Because AFFF is known to have been historically stored and handled at Station #31, it was identified as a potential PFAS release area.

5.3 Republic Services Northeast Sanitary Landfill

The Republic Services Northeast Sanitary Landfill is located approximately 2.3 miles east of the MTC main gate at address 1581 Westvaco Road, Eastover, South Carolina 29044. No off-facility VSI was conducted at the landfill. However, the landfill was identified as a potential PFAS release area, because PFAS may be present in a variety of solid waste materials landfilled and have historically been discovered in landfills, leachates, and landfill gas (USEPA, 2018).



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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	4/14/2020

N

TITLE

Adjacent Sources

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 non-FTAs were identified where PFAS may have been incidentally spilled or discharged to the ground surface. As such, these AOIs may be potential PFAS source areas. The AOIs and preliminary CSMs for the AOIs are shown on **Figure 6-1** and **Figure 6-2**, respectively, and the AOIs are summarized below.

The following AOIs were identified as a potential PFAS source area:

- AOI 1 – Wash Rack and Fuel Point
- AOI 2 – MTC Military Fire Station
- AOI 3 – MTC Civilian Fire Station

The following sections describe the CSM components and the specific preliminary CSMs developed for each AOI. The CSM 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.

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). Receptors for MTC include site workers, construction workers, recreational users, trespassers, and off-facility residents. The preliminary CSMs for the AOIs indicate which specific receptors could potentially be exposed to PFAS.

6.1 AOI 1: Wash Rack and Fuel Point

AOI 1 includes the fuel point and adjacent wash rack. In 2012, AFFF was released accidentally from a firetruck near the fuel point. The release area was subsequently flushed with water that drained towards the wash rack (**Figure 6-1**).

The initial AFFF release occurred on both paved surfaces and directly on grassy areas. Ground-disturbing activities in these grassy areas as well as beneath the pavement may result in potential exposure to surface soils via ingestion and inhalation of dust particles for site workers and construction workers. Nearby off-facility residents, recreational users, and trespassers may also be exposed to airborne soil particles resulting from ground disturbing activities. 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 for construction workers.

PFAS are water soluble and can migrate readily from soil to groundwater via leaching. MTC is serviced by four on-facility potable wells. Based on the topographic features, the inferred groundwater flow is to the south/southeast, cross-gradient to the facility potable wells. The facility potable wells were sampled in 2017 and displayed some low-level detections of PFAS, but no HAs were exceeded (see **Appendix A**). Several domestic, irrigation, and/or public supply wells exist within 4 miles to the north, east, south, and southwest and may be potentially downgradient from the identified AOI, based on the inferred groundwater flow direction. Potential exposure to site workers and off-facility residents may result from the ingestion of groundwater.

Because the AFFF release was flushed away with water, the subsequent runoff was captured by the wash rack, which ultimately drains into a stormwater retention pond. The stormwater retention pond discharges to Colonels Creek, which is a tributary of Wateree River. It is possible that PFAS migrated to these tributaries and may result in potential exposure via ingestion of surface water

and/or sediment to all receptors. Recreational users may also be exposed to PFAS via the consumption of fish potentially affected by PFAS within surface waters. The preliminary CSM for AOI 1 is shown on **Figure 6-2**.

6.2 AOI 2: MTC Military Fire Station

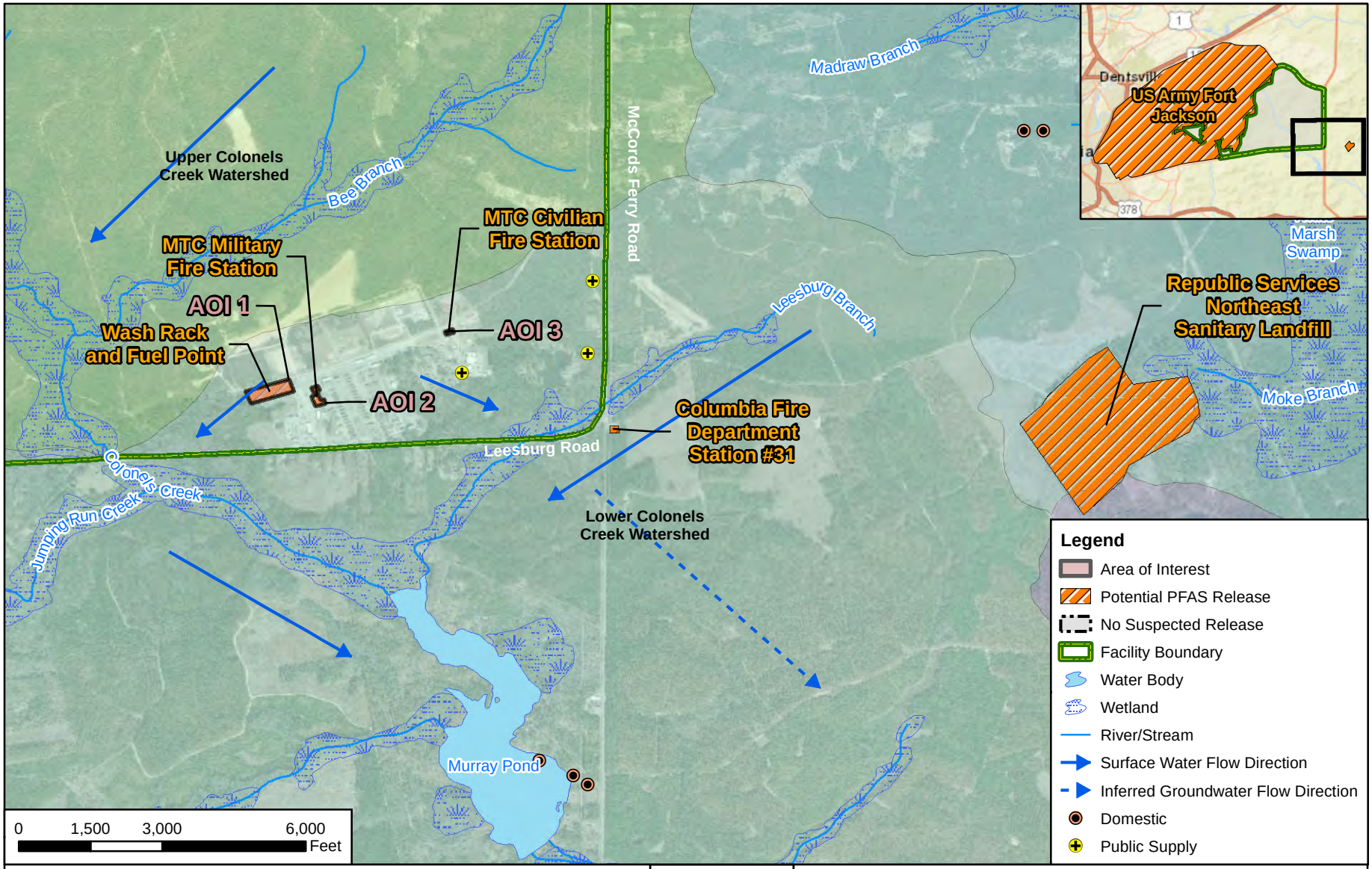
AOI 2 is the MTC Military Fire Station. Although there are no documented AFFF releases from the fire station buildings, a data gap exists between the years when the military fire station was active (estimated mid-1990s or early-2000s) and the extent of interviewee knowledge (after 2005). Because AFFF is stored within both the station and firetrucks within the buildings, it is possible that AFFF may have historically been spilled or released during firefighting activities, training, or product handling within the time period of the data gap.

Any released AFFF within the MTC Military Fire Station buildings may have been captured by trench drains located within the buildings; however, it is unknown where the trench drains lead to. Any expelled AFFF outside of the buildings would have occurred on unpaved and grassy surfaces. AOI 2 is located in close proximity to AOI 1 to the east; surface water runoff likely flows downslope towards the on-facility stormwater retention pond before discharging to Colonels Creek and Murray Pond (Wateree River tributaries). The pathways and receptors for AOI 2 are the same as described in **Section 6.1**. The preliminary CSM for AOI 2 is shown on **Figure 6-2**.

6.3 AOI 3: MTC Civilian Fire Station

AOI 3 is the MTC Civilian Fire Station. Although there are no documented AFFF releases from the fire station building, the fire station has storage of AFFF within the building and firetrucks.

Any released AFFF may have occurred on paved or grassy surfaces outside the MTC Civilian Fire Station. The MTC Civilian Fire Station is surrounded by storm drains, which are routed to the stormwater retention pond that discharges into Colonel Creek and Murray Pond (Wateree River tributaries) (Synterra, 2018). It is possible that released AFFF may have been carried via surface runoff into downslope storm drains. The pathways and receptors for AOI 3 are the same as described in **Section 6.1**. The preliminary CSM for AOI 3 is shown on **Figure 6-3**.



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Area of Interest

AECOM 12420 Milestone Center Drive Germantown, MD 20876

Figure 6-1

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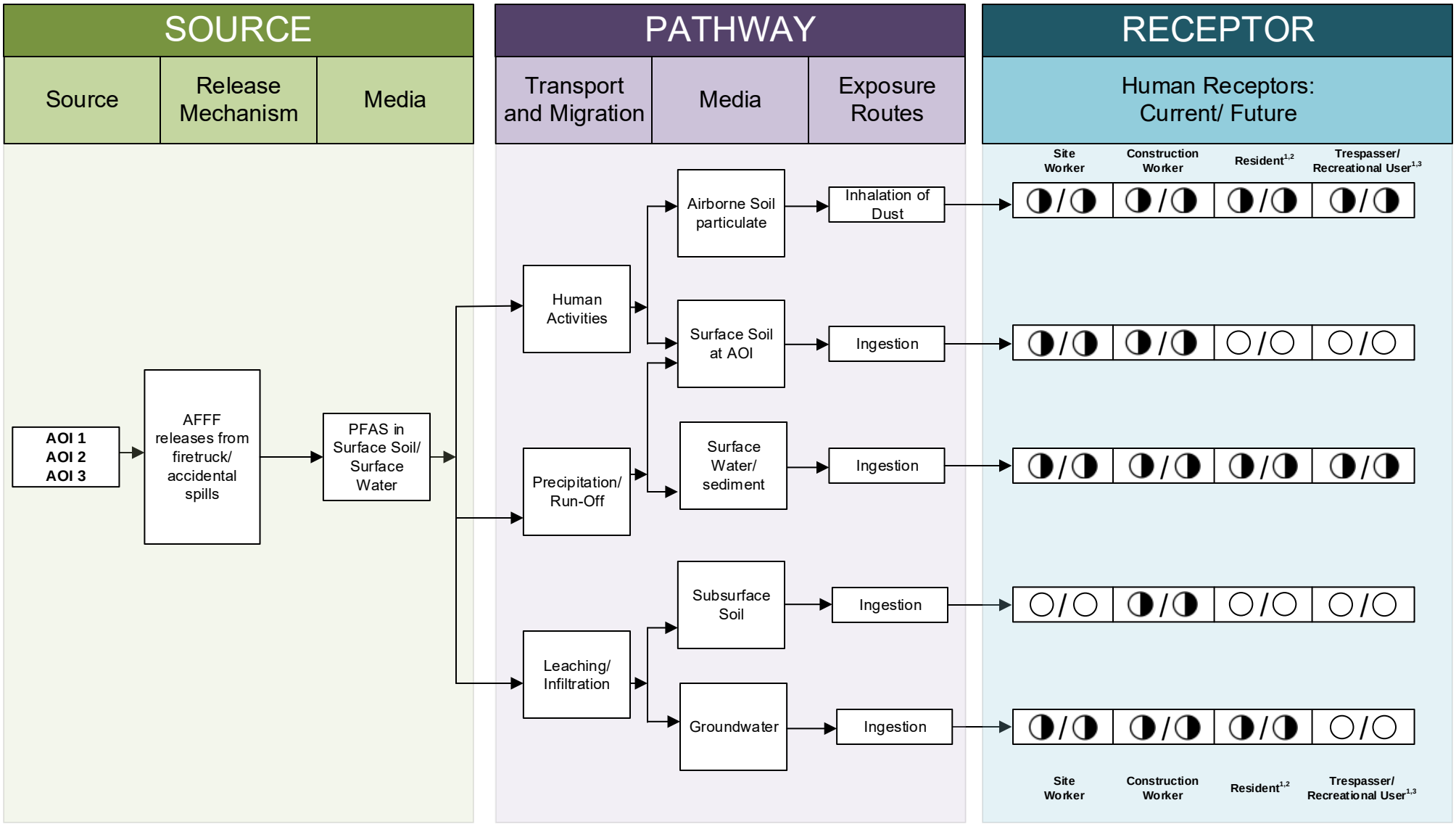


LEGEND

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

NOTES

1. The resident and recreational users refer to off-site receptors.
2. Inhalation of dust for off-site receptors is likely insignificant.
3. Human consumption of fish potentially affected by PFAS is possible.

Figure 6-2
Preliminary Conceptual Site Model
McCrady Training Center, SC

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 MTC. The PA findings are based on the information presented in **Appendix A** and **Appendix B**.

7.1 Findings

Three AOIs related to potential PFAS release were identified (**Table 7-1**) at MTC during the PA (**Figure 7-1**):

Table 7-1: AOIs at MTC

Area of Interest	Name	Used by	Potential Release Date
AOI 1	Wash Rack and Fuel Point	SCARNG	2012
AOI 2	MTC Military Fire Station	SCARNG	Mid-1990s to present
AOI 3	MTC Civilian Fire Station	McCrady Fire and Emergency Services/ SCARNG	2013 to 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 MTC is shown on **Figure 6-2**, which presents the potential receptors and media impacted.

Three potential off-facility sources of PFAS (US Army Fort Jackson, Columbia Fire Department Station #31, and Republic Services Northeast Sanitary Landfill) were considered as potential PFAS releases in the local area based on interviews, review of previous environmental investigations, or known historical/current activities. Fort Jackson is being investigated for PFAS under a separate PA, but the results of the PA report have not been made available as of the date of this report.

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, 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 site observations. 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 were 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, current personnel were interviewed, multiple persons were interviewed for the same potential source area, and potential source areas were visually inspected.

The following **Table 7-2** summarizes the uncertainties associated with the PA:

Table 7-2: Summary of Uncertainties

Location	Source of Uncertainty
AOI 1: Wash Rack and Fuel Point	The exact amount of AFFF released and the volume of water used to flush is unknown.
AOI 2: MTC Military Fire Station	The exact dates of use as an active fire station are unknown and are estimated to be between mid-1990s or early 2000s. Knowledge prior to 2005 was not available during the PA and limited staff were available to interview due to active deployment; thus, there is a possible gap in data. It is unknown if the firetrucks currently carry AFFF and where the trench drains within the fire station lead to. The amount of AFFF filled within the firetrucks in 2012 is unknown, and because there is no inventory or procurement system to track AFFF usage, the current storage of AFFF may not reflect the amount of AFFF that has been potentially used or disposed.
AOI 3: MTC Civilian Fire Station	The information gathered from the interview with the McCrady Fire and Emergency Services Fire Chief could not be confirmed by more than one interviewee. Thus, there is a lack of robust institutional knowledge.
US Army Fort Jackson (adjacent source)	The results of the PA report for Fort Jackson have not yet been made available as to date of this report.
Columbia Fire Department Station #31 (adjacent source)	An off-facility VSI was not conducted at Station #31, and it is unknown if any fire training activities or AFFF releases have occurred there.
Republic Services Northeast Sanitary Landfill (adjacent source)	An off-facility VSI was not conducted at the landfill, and it is unknown if PFAS-containing waste is present at the landfill.
General	The facility has been operated by SCARNG since 1984, but first-hand interviewee knowledge only extends as far back as 2005 and may include timeline gaps due to occasional deployment.

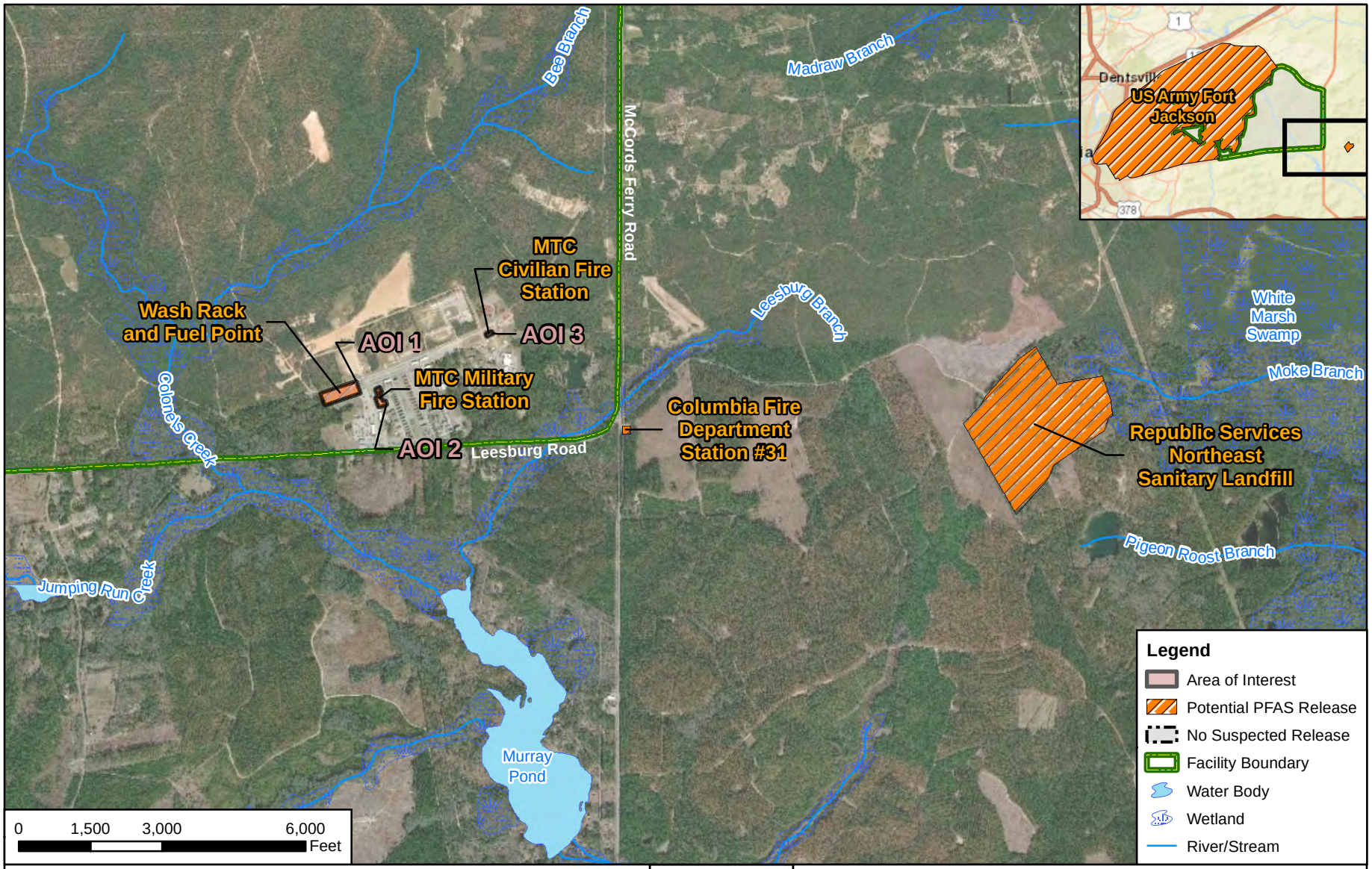
7.3 Potential Future Actions

Interviews with current SCARNG facility staff whose first-hand knowledge at MTC span 2005 - present indicate that ARNG activities may have resulted in a potential PFAS release at the three AOIs identified during the PA. Based on the preliminary CSMs developed for the AOIs, there is potential for receptors to be exposed to PFAS contamination in soil, groundwater, surface water, and sediment at the three AOIs. **Table 7-3** summarizes the rationale used to determine if the AOIs should be considered for further investigation under the CERCLA process and undergo an SI.

Table 7-3: PA Findings Summary

Area of Interest	AOI Location	Rationale	Potential Future Action
AOI 1: Wash Rack and Fuel Point	34°00’39.7” N; 80°43’25.8” W	Location of accidental AFFF release from firetruck in 2012	Proceed to an SI, focus on soil, groundwater, surface water, sediment
AOI 2: MTC Military Fire Station	34°00’39.1” N; 80°43’15.7” W	AFFF may have been spilled or released from historical fire station activities	Proceed to an SI, focus on soil, groundwater, surface water, sediment
AOI 3: MTC Civilian Fire Station	34°00'50.3" N; 80°42'48.6"W	AFFF is stored within the firetrucks and fire station	Proceed to an SI, focus on soil, groundwater, surface water, sediment

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



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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	4/14/2020

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Summary of Findings

AECOM

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Figure 7-1

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Appendix A
Data Resources

Data resources will be provided separately on CD. Data resources for McCrady Training Center include:

ARNG PFAS Data

- 2017 ARNG PFAS Data for McCrady Training Center

Environmental Data Resources, Inc.™ Geocheck Report

- 2019 Environmental Data Resources, Inc.™ Geocheck Report for McCrady Training Center, South Carolina

Miscellaneous Information

- 2013 National Pollutant Discharge Elimination System Permit, South Carolina Army National Guard, McCrady Training Facility
- 2018 Site Visit Summary for McCrady Training Center, South Carolina
- 2018 Spill Prevention, Control, and Countermeasure Plan, Robert L. McCrady Training Center (MTC), South Carolina Army National Guard
- 2019 McCrady Training Center, Range Operations Standard Operating Procedures (SOP)

Safety Data Sheet

- 2004 Material Safety Data Sheet Buckeye Platinum 3% AFFF (BFC-3.1)

SCARNG Leasing Information

- 1986 License No. DACA21-3-85-0910, State of South Carolina, Fort Jackson, South Carolina
- 1991 Modification No. 1 to License No. DACA21-3-85-0910, Fort Jackson, South Carolina
- 1997 Modification No. 2 to License No. DACA21-3-85-0910, Fort Jackson, South Carolina
- 1998 Supplemental Agreement No. 1 License No. DACA21-3-98-3421, Department of the Army License for National Guard Purposes, Fort Jackson, Richland County, South Carolina
- 1999 Supplemental Agreement No. 2 to License No. DACA21-3-98-3421, Fort Jackson, SC
- 2001 Memorandum of Agreement Between Commanding General and the Adjutant General, License Area Conditions and Procedures
- 2003 Supplemental Agreement No. 2 to License No. DACA21-3-98-3421, Fort Jackson, South Carolina
- 2003 Supplemental Agreement No. 3 to License No. DACA21-3-85-0910, Fort Jackson, Richland County, South Carolina

SCARNG Mutual Aid Agreements

- 2015 Intergovernmental Agreement Between the South Carolina Army National Guard and Richland County, South Carolina
- 2019 Department of Army Mutual Aid Agreement for Fire Protection
- 2019 Memorandum of Agreement Between the Secretary of the Army and the Columbia-Richland Fire Department

Appendix B
Preliminary Assessment Documentation

Appendix B.1
Interview Records

PA Interview Questionnaire - Environmental Manager

Facility:___MTC_____
Interviewer:__[redacted]_____
Date/Time:___10/1/19_____

Interviewee:___(see below)_____ **Title:_____** **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] - Environmental Compliance Manager, 10-11 years at ARNG downtown

[redacted] - Range Operations Officer, 2 years

[redacted] - Environmental Program Manager, 22 months at ARNG downtown

2. Where can I find previous facility ownership information?

FMO COL[redacted] should be able to answer majority of facility information.
Property is licensed from Fort Jackson ~15,000 acres.

Operations include training, open areas for munitions, 8 live fire ranges, 2 pistol ranges, 2 fire stations, wash rack, water point for potable water.

Water point is apparently tested every year but is unknown what compounds are tested.

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

   No known releases. TAG building in Columbia, SC had at least on Tri-Max. ARNG is also tenants at McEntire ~8 miles away. MTC has landing zones for helicopters but they are all controlled through Fort Jackson.

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?

Not known.

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?

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

Disposal goes through Defense Logistics Agency (DLA) in Fort Jackson

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)?

According to MAJ [redacted], Chief [redacted] had told him he had AFFF Storage but got rid of it years ago and SDS records did not have PFAS.

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?

Storage at fire stations

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 known FTAs

PA Interview Questionnaire - Environmental Manager

Facility:___MTC_____
Interviewer:__[redacted]_____
Date/Time:___10/1/19_____

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?

N/A

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?

N/A

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?

Not known

PA Interview Questionnaire - Environmental Manager

Facility:___MTC_____
Interviewer:__[redacted]_____
Date/Time:___10/1/19_____

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?

Not known

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?

N/A

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)?

Not known

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:___MTC_____
Interviewer:_[redacted] _____
Date/Time:___10/1/19_____

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?

MAJ [redacted] and Mr. [redacted] stated they would transmit all leasing records and applicable documents for all three SCARNG facilities under investigation

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

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.?

No

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?

PA Interview Questionnaire - Environmental Manager

Facility:___MTC_____
Interviewer:_[redacted] _____
Date/Time:___10/1/19_____

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

COL [redacted]
Chief [redacted]

PA Interview Questionnaire – Fire Station

Facility:___MTC_____
Interviewer:___[redacted]_____
Date/Time:___10/1/19_____

Interviewee:__(see below)_____ **Title:_____** **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] – McCrady Fire and Emergency Services Fire Chief (civilian), 6 ½ year in role starting in January 2013
[redacted]

Duties include overseeing any type of emergencies at MTC. McCrady Fire and Emergency Services was certified in July 2013.

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.

   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

   No releases so far. They have 2 x 50-gal firetrucks (foam capacities) containing AFFF. They also have 3 x 5-gallon buckets of AFFF. There has been no leakage or use. They do simulation exercises at the fuel point. They only train with water. The only time they would ever use AFFF is in a fuel fire or helicopter crash.

   Adjacent sources: International Paper, Fort Jackson

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

Only K12 extinguishers (potassium)

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

N/A

PA Interview Questionnaire – Fire Station

Facility:___MTC_____
Interviewer:___[redacted]_____
Date/Time:___10/1/19_____

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

Purchased through state funding and emergency response reporting. However, system has only tracked purchases after the AFFF was already procured. They put AFFF in the firetrucks in May or June of 2013.

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)?

Mil Spec AR-AFFF Buckeye 3-6%

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

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?

Stored in firetrucks and 5-gallon buckets

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?

Transferred via siphon at Station #31 (municipal fire station). There was no spill in process of transfer

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

Firetrucks are located currently at civilian fire station

PA Interview Questionnaire – Fire Station

Facility:___MTC_____
Interviewer:___[redacted]_____
Date/Time:___10/1/19_____

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?

No

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?

No FTAs

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?

Training on Fort Jackson and McEntire. They are just table top training and extraction exercises. No foam is involved.

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?

Prior to the establishment of McCrady Fire and Emergency Services, ARNG had contract with the Columbia County Richland Fire Station. Prior to that contract, they had appointed guardsmen to respond to emergencies.

They have an agreement with the City of Columbia/Richland Fire Department. This department does contain AFFF but Chief [redacted] is not sure if the ARNG fire station contains AFFF or not. The Richland County EMS operates out of their fire station. They also have an informal agreement with Fort Jackson.

The McCrady Fire and Emergency Services operated out of the ARNG fire station for a year before the facility fire station was built.

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?

No

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

Columbia/Richland fire station has a live fire training center ~20 miles west. No known AFFF usage there, only water

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?

Can't recall any off-facility incidents that would require AFFF. They've only had structural fires or medical related calls, but no agents (water or AFFF) was used.

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

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?

No

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

Readiness Officer at ARNG Fire station

PA Interview Questionnaire - Other

Facility:___MTC_____
Interviewer:__[redacted]_____
Date/Time:__10/1/19_____

Interviewee:_____[redacted] **Title:____Readiness NCO_____** **Phone Number:_[redacted]_____** **Email:__[redacted]**	Can your name/role be used in the PA Report? **Y** or N Can you recommend anyone we can interview? **Y** or N _____

Roles or activities with the Facility/Years working at the Facility:
1 year at facility
Readiness Non-Commission Officer

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 builts), fueling stations, crash sites, pest management, recreational, dining facilities, metals plating, or waterproofing). How are materials ordered/purchased/disposed/shared with others?

Fire station has never used AFFF to his knowledge.	**Known Uses**
They train all over MTC, South Carolina Fire Academy (off-post), and Columbia Fire Academy (off-post) but have only used water.	Use
They store AFFF in 5-gallon buckets.	Procurement
Has firetrucks with foam capacity but thinks they don't currently have any foam on it	Disposition
There are four tankers and four engines with foam capacity.	Storage (Mixed)
There have been no emergency responses with AFFF.	Storage (Solution)
Fire stations houses the 264th – 268th Engineer Detachment which includes ~40 personnel	Inventory, Off-Spec
They never deploy for emergency operations unless it's a state operated emergency.	Containment
Training on-facility does not involve live fire.	SOP on Filling
They have mutual aid agreement with Columbia County. This military fire station used to be an active fire station for entire MTC before the civilian fire station was built.	Leaking Vehicles
Not sure if McEntire has had AFFF releases but the facility does contain AFFF and Tri-Maxes.	Nozzle and Suppression System Testing
They check their nozzles at the wash rack but they don't use detergent. Only water.	Dining Facilities
Picture shown of fire training is believed to be at the South Carolina Fire Academy from the 70s or 80s. He thinks water is shown and not AFFF.	Vehicle Washing

PA Interview Questionnaire - Other

Facility:___MTC_____
Interviewer:_[redacted] _____
Date/Time:__10/1/19_____

Fire station has standard ABC and K fire extinguishers plus water cans.	Ramp Washing
Recommended contacts: [redacted], Fire Chief SG 1st Class, ([redacted] SSG [redacted]	Fuel Spill Washing and Fueling Stations
	Chrome Plating or Waterproofing

PA Interview Questionnaire – Fire Station

Facility:_McCrady Training Center
Interviewer:____[redacted]_____
Date/Time:___10/15/19_____

Interviewee:____SSG [redacted] _____ **Title:_____** **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.

Staff sergeant and started as mechanic. Now is the current station chief of the 266th Engineer Detachment.

Since 2006, station chief since 2014

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.

   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

AFFF used in training events (off-facility) but never in any emergency response. There was a spill in 2012 when someone accidentally opened the foam line during a demonstration of backwashing the hose.

One incident in 2017 where they used foam at the City of Columbia Training Center. They lit a car on fire, which had gas left in the fuel tank. Leftover foam from their tanks was used to suppress the fire. He wasn't sure if this foam was AFFF. They cleaned their nozzles after the training at the training center.

Training events were in South Dakota AFB up near Rapid City. They burned JP-8 and extinguished using AFB foam equipment. This was an annual requirement.

2012 accidental spill in McCrady Training Center was near the wash rack and fuel point or between fuel point and Main Post near fire hydrant. About 5-10 gallons of diluted AFFF was released. Tried to backflush the pump and the foam line was accidentally opened. After discussion with Fort Jackson environmental personnel, they put copious amounts of water into spill area to try to dilute it out. The rinsate went downhill and into the wash rack.

Not allowed to burn anything so no FTAs at facility. They will use water to train on vehicles and then clean nozzles in back lot behind station or anywhere they are authorized. They do annual hose testing and servicing at wash rack. They are not allowed to use soap for any cleaning.

There have been brush fires at McCrady Training Center but these were responded to with only water.

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?

N/A

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

Request put into the state and they ordered 40 x 5-gallon buckets.

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)?

Buckeye, not sure what concentrate.

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

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?

Inside fire station on a pallet of 5-gallon buckets

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?

Recalls they refilled trucks them once in 2012 after procuring AFFF, but unaware if they were refilled after that.

Funnels used to refill vehicles with AFFF. No spills in process. They refilled behind the fire station.

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

5 engines and 3 tankers (8 vehicles in total)

Tankers have a 50-gallom foam capacity
2 x 30-gallon tanks
Not sure if vehicles are full of AFFF currently

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?

No

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?

None on facility

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

PA Interview Questionnaire – Fire Station

Facility:_McCrady Training Center
Interviewer:___[redacted]_____
Date/Time:___10/15/19_____

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?

Before state firefighters were on base, Fort Jackson fire department would respond to emergencies at MTC.

There was a mutual aid agreement between Columbia Richland fire station (Station 31) and ARNG MTC fire department, so Columbia Richland fire station would come on base for emergencies and vice versa.

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

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

They also train at the South Carolina Fire Academy. Not sure if they use AFFF for training there. Possibly they last time he witnessed a foam release there was in 2007.

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?

No

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

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?

1SG [redacted]
([redacted]
([redacted]

1SG [redacted]

PA Interview Questionnaire - Other

Facility:___MTC_____
Interviewer:__[redacted]_____
Date/Time:__10/18/19_____

Interviewee:__1SG [redacted] **Title:_____** **Phone Number:__[redacted]_____** **Email:_____**	Can your name/role be used in the PA Report? Y or N Can you recommend anyone we can interview? **Y** or N 1SG [redacted]

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

Was part of the fire departments at Allendale Armory and McCrady Training Center

@Allendale Armory from 1986 to 2005

@McCrady Training Center from 2005-2010

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 builts), fueling stations, crash sites, pest management, recreational, dining facilities, metals plating, or waterproofing). How are materials ordered/purchased/disposed/shared with others?

At McCrady Training Center, never used foam because the environmental person ([redacted]) would not allow them to use it.	**Known Uses**
At Allendale, historically there were four units. 264th Engineer Detachment (firefighting), 265th-267th Water Purification Company. The 268th Engineer Detachment was stationed at McCrady Training Center. Around 2001-2003, the 264th Engineer Detachment combined with the 268th Engineer Detachment and moved over to MTC. Then they split into more engineer detachments (264th – 268th). The water purification companies stayed in Allendale.	Use
At Allendale, never used AFFF. The old firetrucks they had didn't even have foam capacity. They got newer firetrucks around 1990, which did have foam tanks but were never used. They stored firetrucks and AFFF in 5-gallon buckets in the maintenance bay. Firetrucks never leaked and AFFF never spilled. Only fire trained and nozzle tested with water. AFFF was also stored in fire department at MTC.	Procurement
Older firetrucks were turned over to Columbia National Guard facility and hauled away. The newer firetrucks may be currently in Fort Rucker, Alabama.	Disposition
	Storage (Mixed)
	Storage (Solution)
	Inventory, Off-Spec
	Containment
	SOP on Filling
	Leaking Vehicles

PA Interview Questionnaire - Other

Facility:___MTC_____
Interviewer:___[redacted]_____
Date/Time:__10/18/19_____

	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:___MTC_____
Interviewer:__[redacted]_____
Date/Time:___10/18/19_____

Interviewee:__1SG [redacted] Centella_____ **Title:_____** **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_____

Roles or activities with the Facility/Years working at the Facility:
Was part of the fire department at McCrady Training Center
@ MTC from February 2008 – October 2016

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 builts), fueling stations, crash sites, pest management, recreational, dining facilities, metals plating, or waterproofing). How are materials ordered/purchased/disposed/shared with others?

	Known Uses
The firefighting unit did not come to MTC until ~ mid 1990s.	
Not aware of any releases during his time at MTC.	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

Appendix B.2
Visual Site Inspection Checklists

Visual Site Inspection Checklist

Names(s) of people performing VSI: [redacted]

Recorded by:

ARNG Contact:

Date and Time: 10/1/19

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

Source/Release Information

Site Name / Area Name / Unique ID: Wash Rack, MTC

Site / Area Acreage:

Historic Site Use (Brief Description): vehicle washing

Current Site Use (Brief Description): Military fire department check nozzles and wash firetrucks ~~at~~ at wash rack but only with water

Physical barriers or access restrictions: MTC gate

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

Industrial Paper, Fort Jackson

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:

Concrete pond → earther pond → retention pond

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:

MTC has DW wells

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.

Industrial Paper, Fort Jackson

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:

grassy areas

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:

three ponds connected to each other

Receptor Information

1. Is access to the site restricted? (Y) / N

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

MTC Gate

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:

retention pond

Visual Survey Inspection Log

Additional Notes

on Oct. 15, 2019

Follow-up interview w/ SSG [redacted], confirmed there was no accidental spill of AFFF near wash rack. Rinsate from clean-up flowed into wash rack.

Photographic Log

Photo ID/Name	Date & Location	Photograph Description

Visual Site Inspection Checklist

Names(s) of people performing VSI: [redacted]

Recorded by: [redacted]

ARNG Contact: [redacted]

Date and Time: 10/1/19

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

Source/Release Information

Site Name / Area Name / Unique ID: Fire Station (civilian), MTC

Site / Area Acreage:

Historic Site Use (Brief Description): fire station for McCrady Fire & Emergency Services

Current Site Use (Brief Description): Same as above

Physical barriers or access restrictions: MTC gate

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

Industrial Paper, Fort Jackson

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:

drains in fire station supposedly go to sanitary sewer, drains outside go to storm sewer

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:

MTC has DW wells

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.

Industrial Paper, Fort Jackson

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:

Grassy areas

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:

MTC gate

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 Site Inspection Checklist

Names(s) of people performing VSI: [redacted]

Recorded by:

ARNG Contact:

Date and Time: 10/1/19

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

Source/Release Information

Site Name / Area Name / Unique ID: MTC Fire Station (military), MTC

Site / Area Acreage:

Historic Site Use (Brief Description): used to active fire station for entire facility prior to building of civilian fire station in 2013

Current Site Use (Brief Description): military fire station for 264th – 268th Engineer Detachment

Physical barriers or access restrictions: MTC gate

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

Industrial Paper, Fort Jackson

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 sewer drains in fire station & outside

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:

MTC has DW wells

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.

Industrial Paper, Fort Jackson

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:

Grassy areas

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:

MTC gate

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

- Contained 5-gallon buckets of AFFF in storage
- has 4 tankers & 4 engines w/ foam capacity
- also store engines in adjacent building

Photographic Log

Photo ID/Name	Date & Location	Photograph Description

Appendix B.3
Conceptual Site Model Information

Preliminary Assessment – Conceptual Site Model Information

Site Name: McCrady Training Center

Why has this location been identified as a site?

Contains an engineering detachment (firefighting unit) and civilian fire station

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

MTC is an enclave of US Army Fort Jackson

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? Towards drainage features

Average rainfall? 44.6 inches annually

Any flooding during rainy season? No

Direct or indirect pathway to ditches? No

Direct or indirect pathway to larger bodies of water? indirect pathway to Lake Marion

Does surface water pond any place on site? Yes

Any impoundment areas or retention ponds? Yes, near wash rack

Any NPDES location points near the site? Yes

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

Preliminary Assessment – Conceptual Site Model Information

Groundwater:

Groundwater flow direction? Southwest

Depth to groundwater? >15 ft bgs

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

Any groundwater treatment systems? No

Any groundwater monitoring well locations near the site? No

Is groundwater used for drinking water? Yes

Are there drinking water supply wells on installation? Yes

Do they serve off-post populations? No

Are there off-post drinking water wells downgradient Yes

Waste Water Treatment Plant:

Has the installation ever had a WWTP, past or present? No

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

Do we understand the fate of sludge waste? N/A

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

Equipment Rinse Water

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

Paved lot behind Building 3980, rinse water goes into ground

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?

Same answer as above

3. Other?

Preliminary Assessment – Conceptual Site Model Information

Identify Potential Receptors:

Site Worker – Yes

Construction Worker - Yes

Recreational User – Yes

Residential - Yes

Child - Yes

Ecological – Yes

Note what is located near by the site (e.g. daycare, schools, hospitals, churches, agricultural, livestock)?
Undeveloped, wooded land with scattered residential homes, US Army Fort Jackson

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	McCrady Training Center	Eastover, SC

Photograph No. 1

Date 10/1/2019

Time 14:28

Description:

The SCARNG Engineering Detachment is shown training at the South Carolina Fire Academy (off-facility) on a mock aircraft. It is believed that the picture depicts water not AFFF being dispersed and is from the 1970s or 1980s.

Orientation:

Not applicable

Photograph No. 2

Date 10/1/2019

Time 14:35

Description:

AFFF is shown stored in 5-gallon buckets at the MTC Military Fire Station. The AFFF is of the brand and type Buckeye Platinum 3%-6% AR AFFF.

Orientation:

Southwest

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	McCrady Training Center	Eastover, SC

Photograph No. 3

Date 10/1/2019
Time 14:36

Description:
The tanker has a 50-gallon foam capacity and is one of three tankers stored at the MTC Military Fire Station. It is unknown if the tanker is currently carrying AFFF.

Orientation:
Northeast

Photograph No. 4

Date 10/1/2019
Time 14:53

Description:
The concrete pond captures drainage from the wash rack. Water is released from the concrete pond via a float discharge into a connecting earthen pond.

Orientation:
Southeast

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	McCrady Training Center	Eastover, SC

Photograph No. 5

Date 10/1/2019
Time 14:54

Description:
The stormwater retention pond captures drainage from the connecting earthen pond and is a NPDES compliance point.

Orientation:
Southwest

Photograph No. 6

Date 10/1/2019
Time 15:00

Description:
Two firetrucks with 50-gallon foam capacity are shown at the MTC Civilian Fire Station.

Orientation:
Northwest

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	McCrady Training Center	Eastover, SC

Photograph No. 7

Date 10/1/2019

Time 15:02

Description:

AFFF is shown stored in 5-gallon buckets at the MTC Civilian Fire Station. The AFFF is of the brand and type Buckeye Platinum 3%-6% AR AFFF.

Orientation:

North