FINAL
Preliminary Assessment Report
Army Aviation Support Facility
Concord
Concord, New Hampshire

Perfluorooctane-Sulfonic Acid (PFOS) and
Perfluorooctanoic Acid (PFOA) Impacted Sites
ARNG Installations, Nationwide

November 2019

Prepared for:

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

U.S. Army Corps of Engineers, Baltimore District
2 Hopkins Plaza
Baltimore, MD 21201

Prepared by:

AECOM
12420 Milestone Center Drive, Suite 150
Germantown, MD 20876
aecom.com

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Acronyms and Abbreviations

°F	degrees Fahrenheit
AASF	Army Aviation Support Facility
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
AGQS	ambient groundwater quality standard
amsl	above mean sea level
AOI	area of interest
ARNG	Army National Guard
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSM	conceptual site model
EDR	Environmental Data Resources, Inc.
FTA	fire training area
HA	Health Advisory
MCL	maximum contaminant level
NGB	National Guard Bureau
NHARNG	New Hampshire Army National Guard
NHDES	New Hampshire Department of Environmental Services
NHDOS	New Hampshire Department of Safety
OWS	oil-water separator
PA	Preliminary Assessment
PFAS	per- and poly-fluoroalkyl substances
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
ppt	parts per trillion
SI	Site Inspection
SMR	State Military Reservation
UCMR 3	Third Unregulated Contaminant Monitoring Rule
US	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VSI	visual site inspection

Executive Summary

The United States (US) Army Corps of Engineers (USACE) Baltimore District, on behalf of the Army National Guard (ARNG)-Installations and Environment Division, Cleanup Branch, contracted AECOM Technical Services, Inc. (AECOM) to perform *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide*. The ARNG is assessing potential effects on human health-related to processes at facilities that used per- and poly-fluoroalkyl substances (PFAS), primarily in the form of aqueous film forming foam (AFFF) released as part of firefighting activities, although other PFAS sources are possible.

AECOM completed a PA for PFAS at the Army Aviation Support Facility (AASF) in Concord, New Hampshire, to assess potential PFAS release areas and exposure pathways to receptors. The performance of this PA included the following tasks:

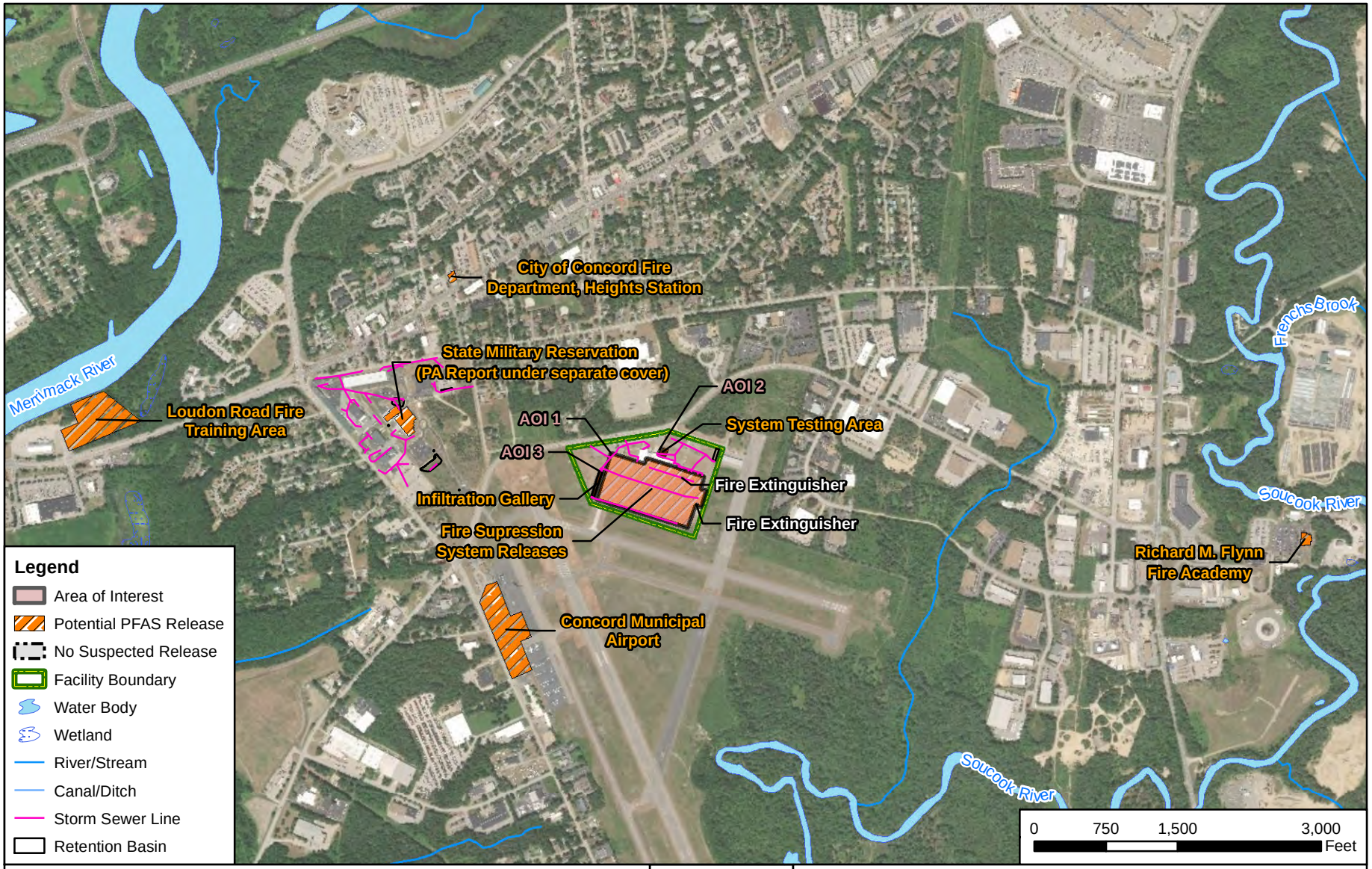
- Reviewed data resources to obtain information relevant to suspected PFAS releases;
- Conducted a site visit on 22 April 2019;
- Interviewed current New Hampshire ARNG (NHARNG) personnel at AASF Concord, NHARNG environmental managers and operations staff, and former AASF employees during the site visit;
- Completed visual site inspections (VSIs) at known or suspected PFAS release locations and documented with photographs; and
- Developed preliminary conceptual site models (CSMs) to outline the potential release and pathway of PFAS for the Areas of Interest (AOIs) and the facility (**Figure ES-1**).

Three AOIs related to potential PFAS release were identified at the AASF Concord during the PA. These AOIs are shown on **Figure ES-1** and described in **Table ES-1** below:

Table ES-1: AOIs at AASF Concord

Area of Interest	Name	Used by	Release Dates
AOI 1	Fire Suppression System Releases	NHARNG	2005 - 2019
AOI 2	System Testing Area	NHARNG	2005
AOI 3	Infiltration Gallery	NHARNG	2005

Based on actual and potential AFFF releases at these AOIs, there is a potential for exposure to PFAS contamination in media at or near the facility. The preliminary CSM for the Concord AASF, which presents the potential receptors and media impacted, is shown on **Figure ES-2**.



CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at AASF Concord, NH			
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SCALE	1:18,000	CHK BY	AM	10/29/2019
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	10/29/2019

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TITLE

Summary of Findings

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12420 Milestone Center Drive
Germantown, MD 20876

Figure ES-1

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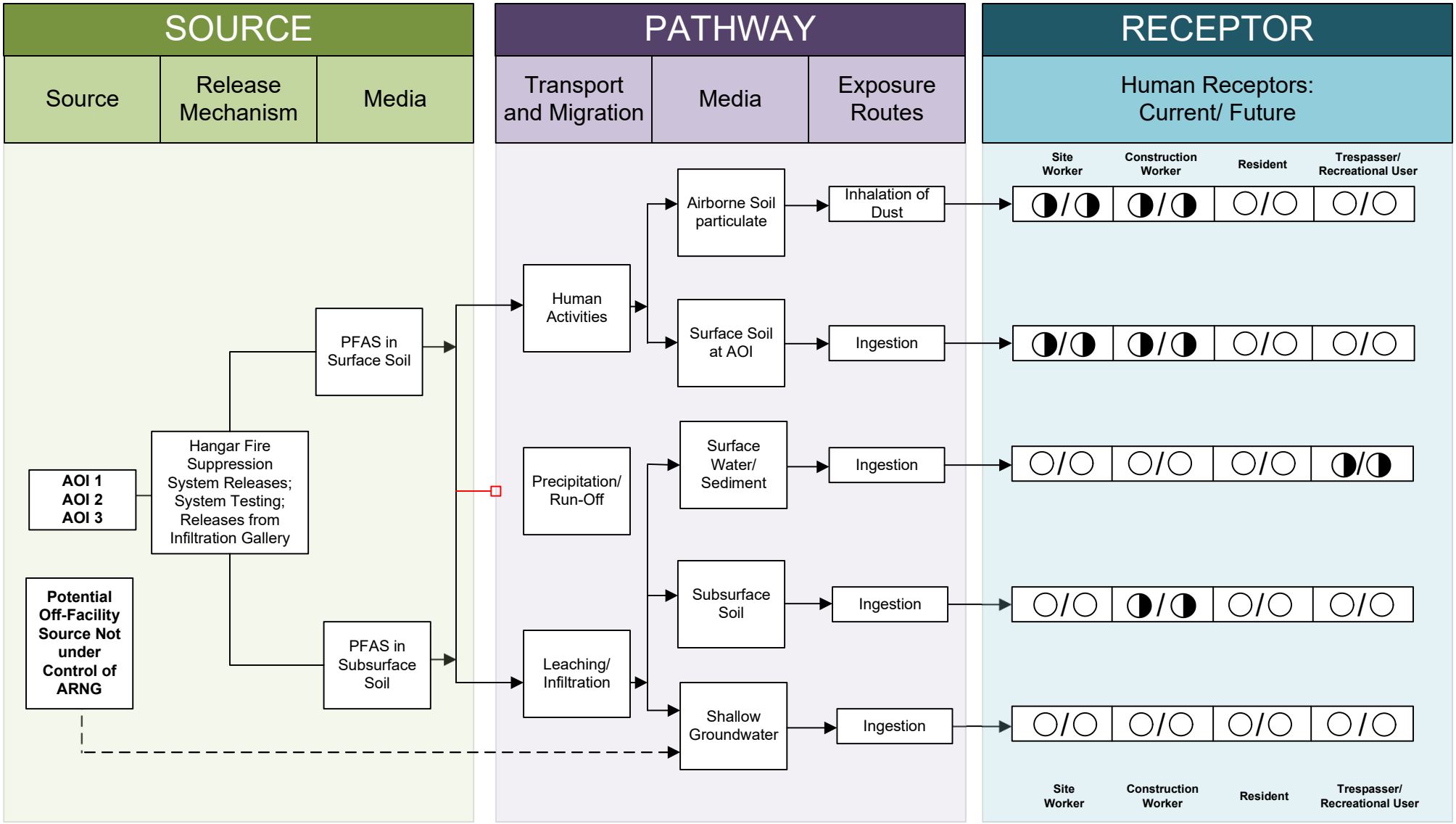


LEGEND

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

NOTES

1. The resident receptor refers to an off-site resident.
2. No surface water bodies were identified at the facility, but the surface water/sediment pathway is considered potentially complete for offsite recreational users due to the potential for groundwater interaction with the downgradient river.
3. Human consumption of fish potentially affected by PFAS from the downgradient river is possible.

Figure ES-2
Preliminary Conceptual Site Model
AASF Concord

1. Introduction

1.1 Authority and Purpose

The United States (US) Army Corps of Engineers (USACE) Baltimore District, on behalf of the Army National Guard (ARNG)-Installations and Environment Division, Cleanup Branch, contracted AECOM Technical Services, Inc. (AECOM) to perform *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide* under Contract Number W912DR-12-D-0014, Task Order W912DR17F0192, issued 11 August 2017, and Modification 01 issued 30 September 2017. The ARNG is assessing potential effects on human health related to processes at facilities that used per- and poly-fluoroalkyl substances (PFAS), primarily in the form of aqueous film forming foam (AFFF) released as part of firefighting activities, although other PFAS sources are possible. In addition, the ARNG is assessing businesses or operations adjacent to the ARNG facility (not under the control of ARNG) that could potentially be responsible for a PFAS release.

PFAS are classified as emerging environmental contaminants that are garnering increasing regulatory interest due to their potential risks to human health and the environment. PFAS formulations contain highly diverse mixtures of compounds. Thus, the fate of PFAS compounds in the environment varies. The regulatory framework at both federal and state levels continues to evolve. The US Environmental Protection Agency (USEPA) issued Drinking Water Health Advisories (HAs) of 70 parts per trillion (ppt), individually or combined, for PFOA and PFOS in May 2016, but there are currently no promulgated national standards regulating PFAS in drinking water (USEPA, 2016a; USEPA, 2016b). In the absence of federal maximum contaminant levels (MCLs), some states have adopted their own drinking water standards for PFAS. In June 2019, the New Hampshire Department of Environmental Services (NHDES) issued Final Proposed MCLs and Ambient Groundwater Quality Standards (AGQSs) for four PFAS compounds. The drinking water rule amendments were subsequently adopted by the New Hampshire Joint Legislative Committee on Administrative Rules to be effective on 30 September 2019 (New Hampshire Code of Administrative Rules, 2019). The MCLs/AGQSs are as follows:

- PFOA: 12 ppt
- PFOS: 15 ppt
- PFHxS: 18 ppt
- PFNA: 11 ppt

This report presents findings of a PA for PFAS at the Army Aviation Support Facility (AASF; also referred to as the “facility”) in Concord, New Hampshire, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; USEPA, 1980), as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations Part 300; USEPA, 1994), and USACE requirements and guidance.

This PA documents the known locations where PFAS may have been released into the environment at the AASF. 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 data resources to obtain information relevant to suspected PFAS releases;
- Conducted a site visit on 22 April 2019;
- Interviewed current New Hampshire ARNG (NHARNG) personnel at AASF Concord, NHARNG environmental managers and operations staff, and former AASF employees during the site visit;
- Completed visual site inspections (VSIs) at known or suspected PFAS release locations and documented with photographs; and
- Developed preliminary conceptual site models (CSMs) to outline the potential release and pathway of PFAS for the Area(s) of Interest (AOIs) and the facility.

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:

- **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, if present.
- **Section 3** – **Non-Fire Training Areas:** describes other locations of PFAS releases at the facility identified during the site visit.
- **Section 4** – **Emergency Response Areas:** describes areas of AFFF release at the facility, specifically in response to emergency situations, if present.
- **Section 5** – **Adjacent Sources:** describes sources of 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

The AASF Concord is located at 26 Regional Drive in Concord, Merrimack County, New Hampshire (**Figure 1-1**). The facility is near the southeastern city limits, east of Interstate 93 and south of Interstate 393. The approximate center of the property is located at geographic coordinates 43°12'33.50"N; 71°30'8.21”W longitude at 346 feet above mean sea level (amsl).

The NHARNG, by and through the Office of the Adjutant General, entered a lease with the city of Concord in 2002 for the use and occupancy of 26 acres of land adjacent to the Concord Municipal Airport for 50 years (**Appendix A**). Prior to this time, the property was an undeveloped section of the Concord Municipal Airport. The current AASF building was constructed between 2003 and 2004, and in 2004, the NHARNG moved AASF operations to the newly-constructed AASF from the previous location at the State Military Reservation (SMR). The AASF building occupies 98,900 square feet and consists of administrative offices, a hangar for the storage and maintenance of helicopters, a building for the maintenance and storage of fueling trucks, a jet fuel storage and filling area, and a hangar apron connected to the Concord Municipal Airport airfield (Tighe & Bond, 2018).

The AASF Concord is home to two Aviation Regiments and an Operational Support Airlift Detachment, which operates rotary-winged aircraft such as helicopters for the NHARNG. Operations at the AASF Concord include aviation training and maintenance, modification, and repair of rotary-winged aircraft. The AASF is a closed facility to the public, with a 6-foot chain-link fence surrounding the facility. Access to the facility is through a locked gate that requires an electronic security badge.

1.5 Facility Environmental Setting

The AASF Concord is located within the Merrimack Valley in southern New Hampshire, within the Eastern New England Upland Physiographic Province of the Appalachian Highlands. The New England Upland consists of a maturely-dissected plateau with narrow valleys, and the entire area was greatly modified by glaciation. The city of Concord developed along the Merrimack River and lies fully within the Merrimack River watershed. The city of Concord has a population of approximately 43,000 people, according to the 2017 census (US Census, 2018).

The topography of the facility and in the surrounding area is relatively flat. The topographic high of the facility (approximately 345 feet amsl) is located west of the main hangar, on a hill constructed for aircraft landing practice. Much of the facility is paved with either asphalt or concrete, with unpaved grassy areas along the boundaries of the facility.

The following sections describe the environmental setting of the subject property and include information on geology, hydrogeology, hydrology, climate, and current and future land use.

1.5.1 Geology

Regional geology consists of unconsolidated glacial material overlying igneous and metamorphic rocks that was deposited during the Wisconsin stage of glaciation, of the Pleistocene Epoch during the Quaternary Period. The weight of the ice caused differential depressions of the land surface during the Pleistocene Epoch. The southeastward flow of glacial ice scoured the rock surface, and as the ice melted, it deposited a thick blanket of glacial till in many areas. Meltwater streams deposited a variety of ice-contact sands and gravels upon portions of the till sheet (USAEHA, 1993). Geologic features in the vicinity of the facility are shown on **Figure 1-2**.

The unconsolidated material, which is mainly ground moraine, was originally subglacial till that was left scattered over the ground after the ice melted. A ground moraine consists of scattered boulders, combined with cobbles, gravel, pebbles, sand, silt, and clay, with some areas of ice-contact stratified drift. This stratified drift was derived from englacial and subglacial meltwater streams that also carried gravel, sand, silt, and clay. The shallowest layer is an approximately 25- to 50-foot-thick lacustrine deposit consisting of very dense, thinly interbedded silt, silt and clay, and fine sand. This stratum is overlain by an approximately 50- to 60-foot-thick section of glacial till consisting of very dense, fine to medium sand with clayey silt and gravel. Lacustrine sediments similar to those underlying the glacial till overlie the glacial till with thicknesses ranging from about

15 to 40 feet. Outwash deposits consisting predominantly of fine sand top the overburden stratigraphy with a thickness ranging from about 50 to 85 feet (GZA GeoEnvironmental, Inc., 2010).

Bedrock in the vicinity consists predominantly of moderately fractured, medium-grained, two-mica granite of the Concord Granite Formation. Additional nearby formations (Lower Rangley, Upper Rangley, and Perry Mountain Formations) consist of metasedimentary phyllite, schist, and quartize. The bedrock surface generally slopes downward from west to east (GZA GeoEnvironmental, Inc., 2010).

1.5.2 Hydrogeology

Based on investigations at the adjacent Former Vishay Sprague Site, groundwater in the vicinity is expected to be 30 and 50 feet below ground surface (bgs) and to have overburden flow to the west/southwest toward the Merrimack River, which is located approximately 1 mile west/southwest of the facility (GZA GeoEnvironmental, Inc., 2018). Groundwater features in the vicinity of the facility are shown on **Figure 1-2**.

The overburden hydrogeology in the area generally consists of a dual hydrogeologic unit system separated by the glacial till stratum. The upper unit consists of the saturated lacustrine and/or outwash deposits overlying glacial till, whereas the lower unit consists of the lacustrine deposits underlying the glacial till. Hydraulic communication between the upper and lower units is likely, with the glacial till forming only a partial aquitard. The upper overburden unit is unconfined, with the resultant groundwater surface at a pressure equal to atmospheric. The lower unit is partially confined by the glacial till, with the resultant groundwater surface potentiometric (at pressure greater than atmospheric). Groundwater elevations within the upper unit are typically observed to be about 10 to 15 feet higher than those of the lower unit, indicating a loss in total head through the glacial till aquitard and a vertically downward component of groundwater flow (GZA GeoEnvironmental, Inc., 2010).

The Environmental Data Resources, Inc. (EDR) Radius Map report did not identify any public supply wells at the AASF or within a 1-mile radius (EDR, 2019). One domestic well and one commercial well were identified by the EDR Radius Map approximately 0.5 miles to the east of the facility. Locations of the wells are shown on **Figure 1-2**.

The AASF is serviced by municipal water from the city of Concord. Third Unregulated Contaminant Monitoring Rule (UCMR 3) data were reviewed as part of the PA. PFAS were nondetect for the Concord Water Department treatment plant, which is located 4.3 miles northwest of the facility on the west side of the Merrimack River (USEPA, 2017). The primary water source for the Concord community is Penacook Lake, located 4.5 miles northwest of the facility near the Concord Water Department treatment plant. During dry periods, the lake is supplemented with water from Contoocook River Pump Station, which is located further northwest of Penacook Lake. Additionally, a groundwater well field adjacent to the Soucook River in Pembroke is maintained as an emergency water source (city of Concord, 2019c). The Pembroke well field is approximately 1.2 miles southeast of the facility, on the opposite side of the Soucook River. None of these drinking water resources are anticipated to be hydraulically downgradient from the subject property.

1.5.3 Hydrology

The AASF Concord is located within the central portion of the Merrimack River watershed, which stretches from central New Hampshire into Northeastern Massachusetts. The nearest major surface water bodies are the Merrimack River, located approximately 1 mile to the west/southwest of the facility, and the Soucook River, located approximately 0.6 miles to the south/southeast. The

Merrimack River is popular for recreational use, including boating, canoeing, rowing, and fishing (NHDES, 2017). Based on the depth of the Merrimack River (5 to 40 ft or more; Concord Monitor, 2013) and the depth to groundwater in the area (estimated to be 30 to 50 ft bgs), it is possible that groundwater to surface water discharge may occur at points along the river downgradient of the site. No wetlands exist within the vicinity of the facility. Surface water features in the vicinity of the facility are shown on **Figure 1-3**.

Stormwater at the facility is collected from the parking lots, main apron, and landscaped areas around the buildings and is discharged into a stormwater pre-treatment system, followed by a three-tiered underground infiltration gallery before infiltration to groundwater. The stormwater treatment system is located on the west side of the hangar apron. Stormwater from the roof of the AASF building is discharged to a separate infiltration gallery located in the northeast corner of the property (Tighe & Bond, 2018).

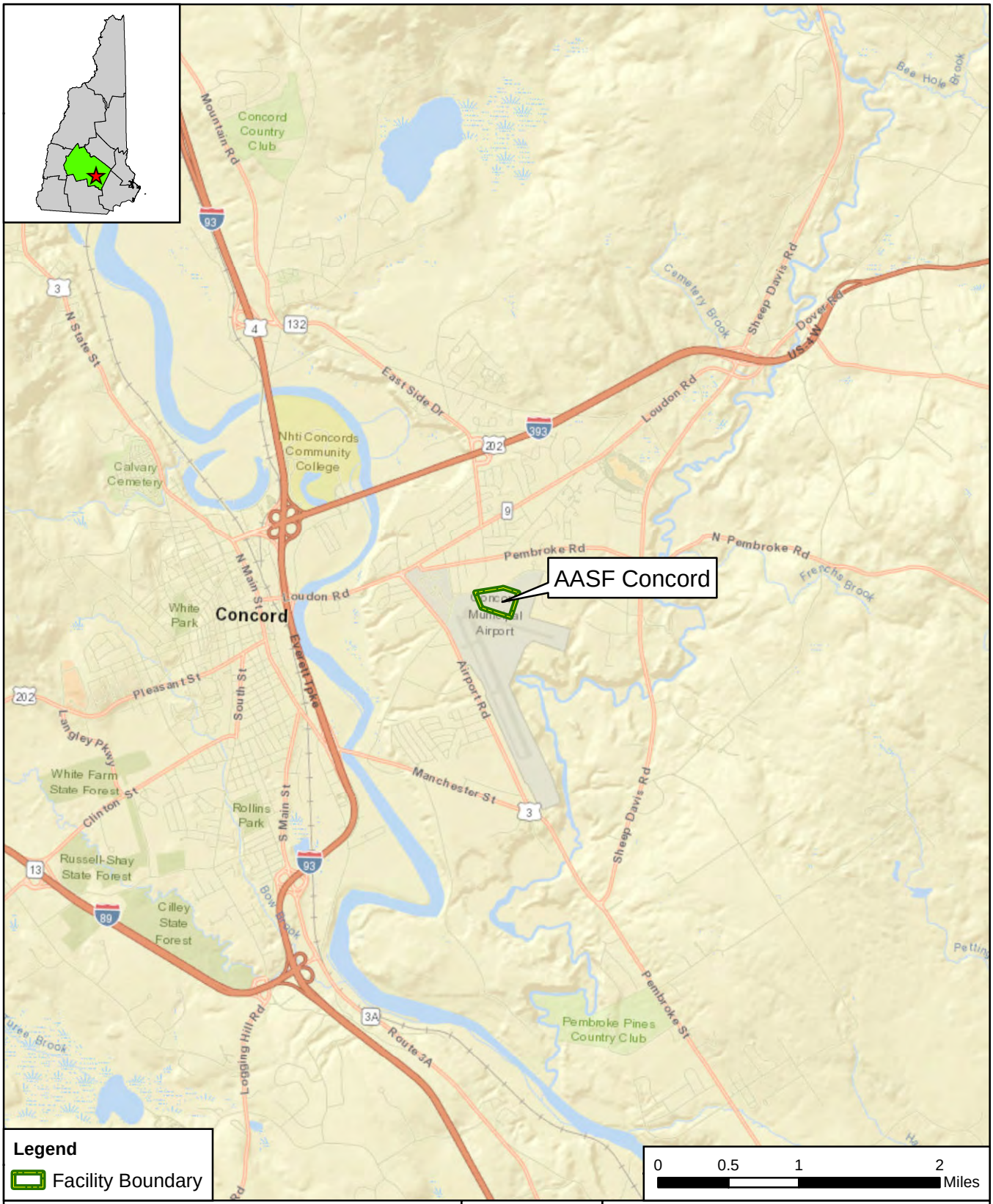
1.5.4 Climate

The facility lies within the humid continental climate zone, which is characterized by long, cold, snowy winters, very warm (and at times humid) summers, and relatively brief autumns and springs. The monthly daily average temperature ranges from a high of 31 degrees Fahrenheit (°F) in January to 82°F in July. In winter, successive storms deliver light to moderate snowfall amounts, contributing to the relatively reliable snow cover. Summer can bring stretches of humid conditions as well as thunderstorms, and there is an annual average of 12 days of 90°F highs. Average annual precipitation is approximately 41 inches (US Climate Data, 2019).

1.5.5 Current and Future Land Use

The AASF Concord property is zoned “industrial” by the city of Concord. Much of the facility is paved with either asphalt or concrete, with unpaved grassy areas along the boundaries of the facility. West of the main hangar, there is a hill constructed for aircraft landing practice. The AASF is responsible for various training activities and aircraft maintenance with an active ARNG lease until 2052. Activities and land use within the facility are not expected to change.

The area surrounding the AASF includes residential and commercial properties to the north, the Concord Municipal Airport to the south, commercial and light industrial properties to the east, and additional portions of the Concord Municipal Airport and the SMR to the west. Conservation/Public Lands are located approximately 0.45 miles to the southeast, adjoining the Soucook River. No additional mapped priority resources are located within a half-mile radius (Tighe & Bonde, 2018). Future land use of the surrounding area is anticipated to remain the same.



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Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	5/31/2019

Facility Location

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 1-1

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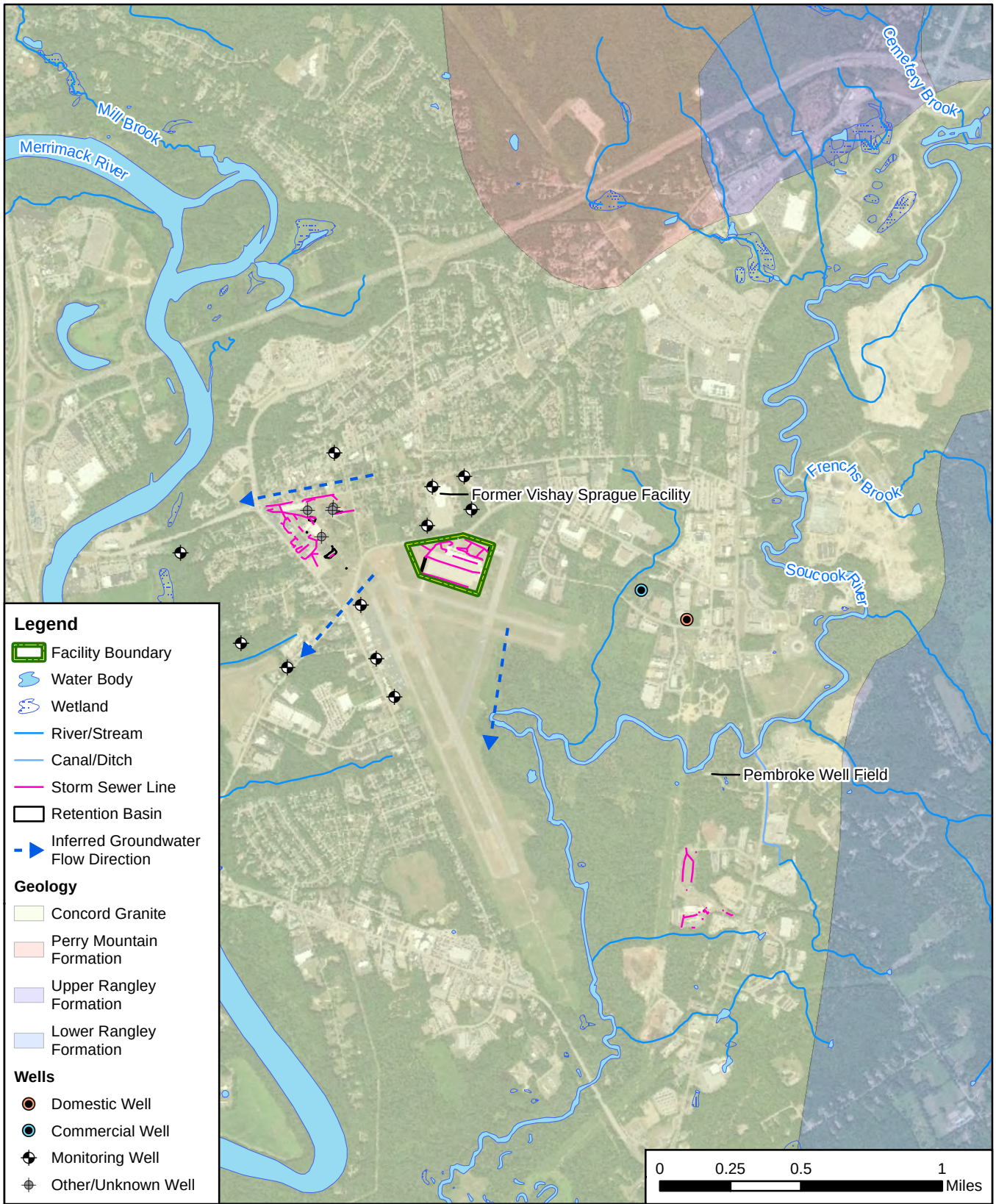

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Groundwater Features

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Figure 1-2

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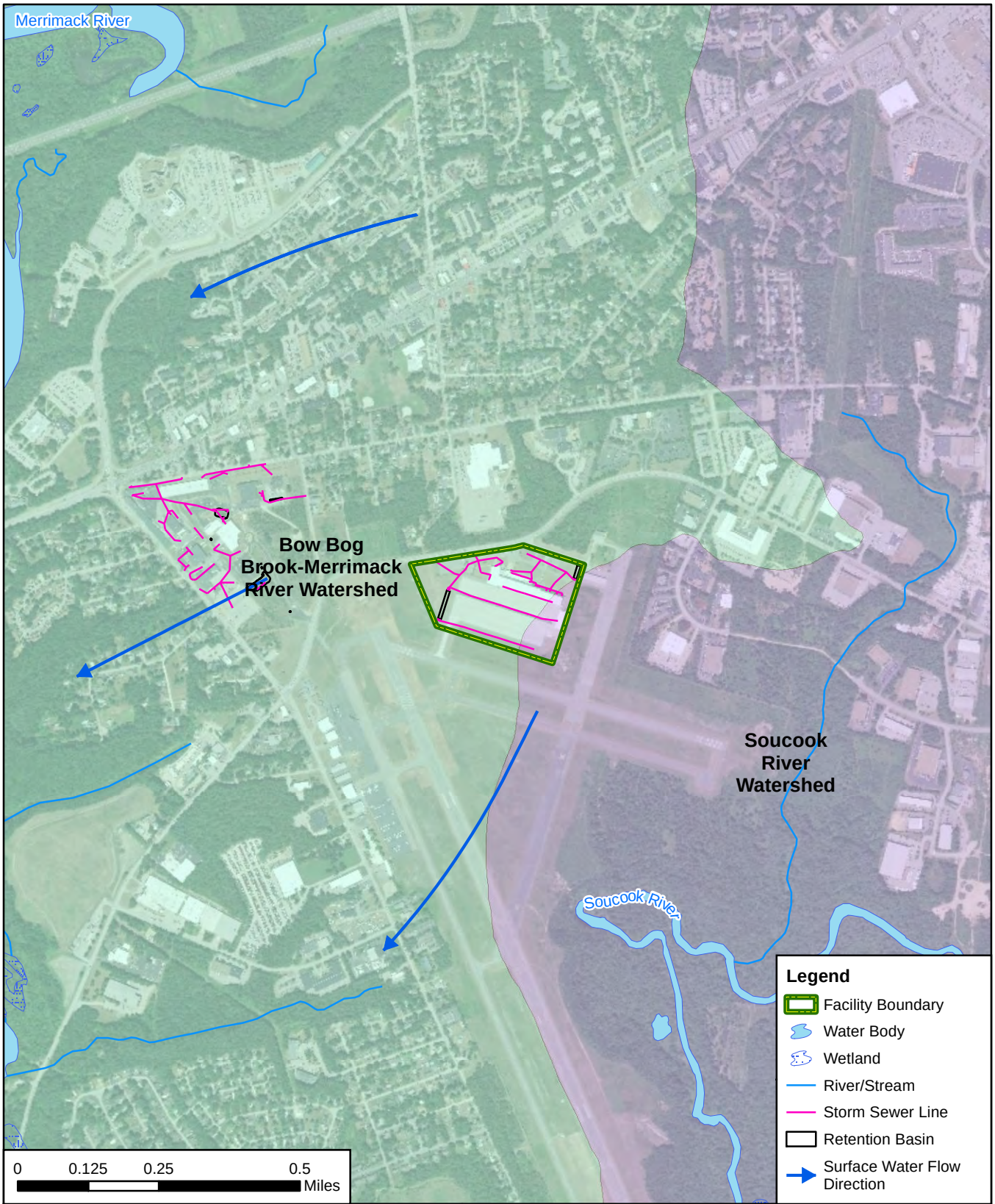

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Surface Water Features

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Figure 1-3

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2. Fire Training Areas

No FTAs were identified at the AASF Concord during the PA. Interviewees confirmed that the facility is supported by the City of Concord Fire Department and that firefighting training has never occurred on the property (**Appendix B**).

3. Non-Fire Training Areas

Non-FTAs where AFFF was stored and/or potentially released were identified during the PA. A description of each non-FTA is presented below and shown on **Figure 3-1**.

3.1 Fire Suppression System Releases

As described in **Section 1.4**, construction on the current AASF hangar building was completed in 2004, after which operations moved from the SMR. The AASF comprises of administrative offices, the AASF hangar, a wash rack, and a Fuel Truck Storage building. The hangar and the Fuel Truck Storage Building are currently equipped with AFFF fire suppression systems. The fire suppression system in the hangar, which currently includes a 900-gallon tank of Ansulite 3% AFFF, is housed in a room on the north side of the hangar near the loading dock. The fire suppression system in the Fuel Truck Storage building, which currently includes a 200-gallon tank of Ansulite 3% AFFF, is housed in a room in the central portion of the west side of the building. The geographic coordinates of the hangar are 43°12'33.50"N; 71°30'8.21”W, and the geographic coordinates of the Fuel Truck Storage building are 43°12'30.6"N; 71°30'04.3"W (**Figure 3-1**).

Both fire suppression systems (in the main hangar and the Fuel Truck Storage Building) were originally charged with Aer-O-Lite 3% AFFF in 2005. The system in the main hangar was tested once after initial installation (see **Section 3.2** below). In 2008, AASF personnel discovered the AFFF in both fire suppression systems did not meet military specifications, and the Aer-O-Lite 3% AFFF was subsequently removed and replaced with Ansulite 3% AFFF. Twelve 55-gallon drums of Aer-O-Lite 3% AFFF were removed from the site and donated to local Fire Departments. Prior to disposal, the drums were stored in the hangar Hazardous Materials storage room. The system was not tested again after the change to Ansulite 3%. Interviewed personnel indicated that a contractor currently manages system inspections, and the interviewees were not familiar with the frequency of inspections.

Two releases of AFFF from the fire suppression systems at the AASF have occurred. The first release of AFFF occurred on the weekend of February 5 to 6, 2005, when the AASF was hit by lightning during a storm, and stray voltage triggered the fire suppression system. It was estimated that less than 10 gallons of Aer-O-Lite 3% AFFF were released from the AASF hangar and that approximately 3.4 gallons were released from the Fuel Truck Storage Building. After the release, the doors of the hangar and Fuel Truck Storage Building were opened, and the foam was washed out of the hangar and onto the apron, from where it was either washed into the drain at the center of the apron or onto the grass surrounding the apron. Interviewees also noted foam on the grass on the west side of the building, near the AASF offices. Foam washed into the drain at the center of the apron would drain west to an underground basin, then into an underground storm water treatment system, and then an underground infiltration gallery (**Figure 3-1**). The infiltration gallery is located approximately at geographic coordinates 43°12'33.1"N; 71°30'19.2"W (National Guard Bureau [NGB], 2002a; NGB, 2002b).

Some foam may have also been rinsed down the trench drains in the hangar bay and wash rack. Foam and wastewater washed into the trench drains would have been contained and treated by the onsite wastewater management system. Wastewater would have drained into an onsite oil-water separator (OWS), from where the residual water would have entered a holding tank that fed into a membrane ultra-filtration system. After passing through the filtration system, the wastewater would have then been held in onsite wastewater holding tanks. The concentrate from the membrane filtration system, the residual from the OWS, and the wastewater in the holding tanks were removed by a contracted disposal facility. No foam or wastewater were discharged to the municipal sanitary sewer system.

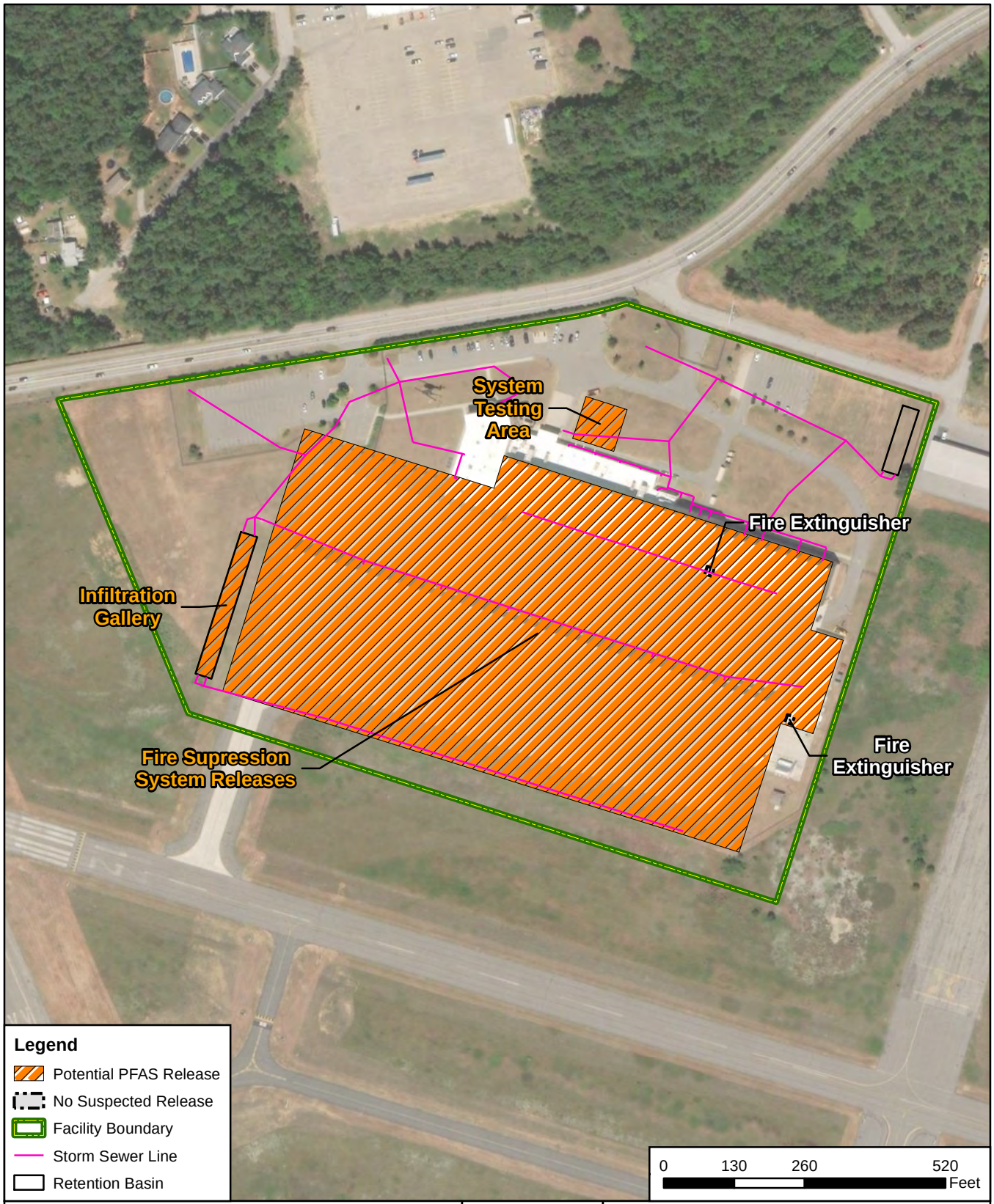
The second release occurred in January 2019, when a fire suppression system pipe in the AASF hangar wash rack froze and burst. During this release, the foam extended from the wall to about half the width (to the center drain) and half the length of the 8,745-square foot wash rack. The exact quantity of Ansulite 3% AFFF released was unknown. The foam was contained inside the wash bay and was rinsed down the center trench drain by AASF personnel, after which it would have been contained in the current AASF wastewater holding tanks, as described above.

3.2 System Testing Area

According to AASF personnel, the company that installed the fire suppression system in the hangar tested the system once after the initial installation to ensure proper mixing of AFFF and water flow and pressure. Testing was conducted outside the north side of the building by the loading dock, and the mixture was discharged to the grass at approximate geographic coordinates 43°12'35.2"N; 71°30'09.9"W. At the time, the system was charged with Aer-O-Lite 3% AFFF. The quantity of AFFF released was unknown. The location of the system testing area is shown on **Figure 3-1**.

3.3 Fire Extinguishers

Currently, the fire extinguishers inside the AASF Concord and on the apron are ABC extinguishers (potassium bicarbonate). Portable ABC extinguishers are present on the apron near the helicopter pads and are maintained by AASF Concord. Interviewees confirmed that this type of fire extinguisher has been used since the facility opened in 2004.



CLIENT	ARNG			
Preliminary Assessment for PFAS at AASF Concord, NH				
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SCALE	1:3,120	CHK BY	AM	10/25/2019
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	10/25/2019

Non-Fire Training Areas

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 3-1

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4. Emergency Response Areas

No emergency response areas were identified within the facility during the PA through interviews or EDR Reports. The City of Concord Fire Department would handle any potential fire or emergency response incident at the Concord AASF.

5. Adjacent Off-Facility Sources

Five potential off-facility sources of PFAS adjacent to the AASF Concord were identified during the PA. One of these facilities, the SMR, is under the control of the NHARNG, while the remaining four are not under the control of the NHARNG. Descriptions of the off-facility sources are presented below and are shown on **Figure 5-1**. Interview records are included in **Appendix B**.

5.1 State Military Reservation

The NHARNG SMR is located 0.5 miles east of the AASF Concord at 1 Minuteman Way, Concord, New Hampshire. The geographic coordinates for the SMR are 43°12'37.9"N; 71°30'46.9"W. The SMR is owned by the state of New Hampshire and is used for State operations of the NHARNG. Currently, no AFFF is stored or used on site, and the City of Concord Fire Department would handle any potential fire or emergency response incident. However, the former AASF Concord was located at the SMR, and AFFF was used and stored here between 1994 and 2004. The ARNG conducted a PFAS PA of the SMR under separate title and cover as part of Contract Number W912DR-12-D-0014, Task Order W912DR17F0192, issued 11 August 2017, and known releases of AFFF were identified (AECOM, 2019). Please refer to the PA Report for the SMR for details of those releases. Because the SMR has potential releases of PFAS and is located outside the boundary of the AASF Concord, it is considered a potential adjacent off-facility source of PFAS. **Figure 5-1** shows the location of the SMR in relation to the AASF Concord.

5.2 Concord Municipal Airport

The Concord Municipal Airport is located directly adjacent to the AASF Concord at 71 Airport Road, Concord, New Hampshire. The geographic coordinates for the approximate center of the airport property are 43º12’9.838”N; 071º30’08.228”W. The airport is a 614-acre general aviation facility and features two runways (Runway 17-35 and Runway 12-30). Runway 12-30 is directly south of the AASF, and a closed runway is directly east of the AASF. The airport has one fixed base operator, Concord Aviation Services, which offers aircraft services and fueling (City of Concord, 2019a). The airport has 35,000 square feet of heated hangars and a dozen private T-hangars (City of Concord, 2019b). It is not known if these hangars have fire suppression systems charged with AFFF. According to interviews with the NHARNG, the City of Concord Fire Department is responsible for responding to any potential fires or emergency response incidents at the Concord Municipal Airport. There is no Aircraft Rescue and Firefighting (ARFF) truck housed at the airport.

Municipal Airport personnel were not interviewed during the PA because the focus of the assessment was to evaluate potential PFAS related activities and sources at NHARNG properties, not formally assess adjacent sources. Therefore, it is not known if AFFF is used or stored at the airport currently or historically. Because the presence or absence of AFFF at the airport cannot be confirmed, the Concord Municipal Airport has been identified as a potential offsite PFAS source area. **Figure 5-1** shows the location of the Concord Municipal Airport (as a potential PFAS source area) in relation to the AASF Concord.

5.3 City of Concord Fire Department

The City of Concord Fire Department Heights Station is located 0.5 miles northwest of the AASF at 127 Loudon Road, Concord, New Hampshire. The geographic coordinates for the Heights Station are 43°12'52.6"N; 71°30'40.3"W. The current facility was dedicated in 1966 and is currently the oldest fire station in the city. The Heights Station is in the Concord Heights District and protects an area that encompasses the entire city east of Interstate 93 and north to the area

of Sewalls Falls Road, including the Concord Municipal Airport. The Heights District also includes the Merrimack and Soucook Rivers, Interstate 93 from Exits 14 through 17, and the majority of Interstate 393 (City of Concord, 2019d). The City of Concord Fire Department is responsible for responding to any potential fires or emergency response incidents at the AASF Concord.

Concord Fire Department personnel were not interviewed during the PA; therefore, it is not known if AFFF is used or stored at the Heights Station currently or historically. Because the presence or absence of AFFF at the station cannot be confirmed, the Concord Fire Department has been identified as a potential offsite PFAS source area. **Figure 5-1** shows the location of the Heights Station (as a potential PFAS source area) in relation to the AASF Concord.

5.4 Richard M. Flynn Fire Academy

The Richard M. Flynn Fire Academy, also known as the New Hampshire Fire Academy, is located 1.3 miles due east of the AASF at 98 Smokey Bear Boulevard, Concord, New Hampshire. The geographic coordinates for the Fire Academy are 43°12'27.8"N; 71°28'39.1"W.

The Fire Academy includes an administration/classroom building, an 80-bed dormitory, a four-bay fire station, and training grounds (two burn buildings, a flashover simulator, and other props). The Fire Academy serves as the Northeast regional training facility for aircraft rescue and firefighting personnel (New Hampshire Department of Safety [NHDOS], 2019). Class B foam has been used on the Fire Academy site through approximately 175 training courses dating back to 1994. According to a news interview with the NHDOS, the academy ceased using foam containing PFOS and PFOA in May of 2018 and instead selected a fluorine-free foam for training (Sexton, 2018).

In June and August 2018, environmental samples were collected at the Academy at the request of NHDES. PFOS was detected in groundwater at concentrations ranging from 190 ppt to 18,000 ppt and PFOA was detected at concentrations ranging from 120 ppt to 2,200 ppt, with a maximum total of 20,200 ppt for combined PFOA/PFOS. Elevated concentrations of PFAS compounds were also detected in soil samples and adjacent surface water samples from the Soucook River; however, there are currently no standards for PFAS in soil or surface water in New Hampshire (Nobis Group, 2018).

Fire Academy personnel were not interviewed during the PA; therefore, the types and quantities of AFFF used or stored at the academy currently or historically are not known. However, because the Fire Academy has confirmed releases of PFAS and is located outside the boundary of the AASF Concord, it is considered an adjacent off-facility source of PFAS. **Figure 5-1** shows the location of the Richard M. Flynn Fire Academy in relation to the AASF Concord.

5.5 Loudon Road Fire Training Area

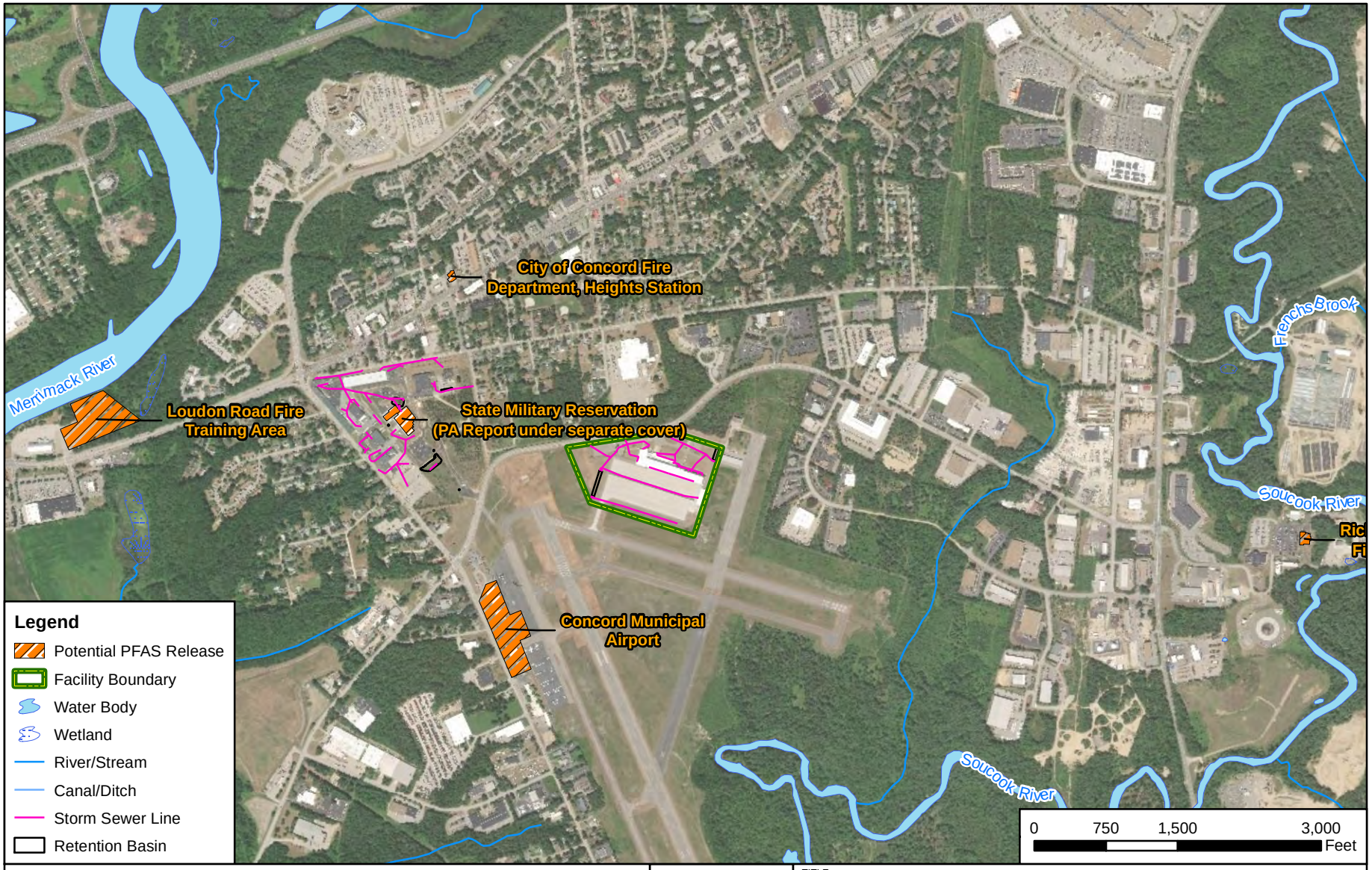
During interviews, NHARNG environmental office personnel indicated that an FTA was formerly located on Loudon Road, next to the Douglas N. Everett Arena, located 1.2 miles west of the AASF at 15 Loudon Road, Concord, New Hampshire. The approximate geographic coordinates for the former FTA are 43°12'36.1"N; 71°31'31.7"W. Interviewees indicated that there was previously a wooden tower at the site that was used for fire training, which was removed in the late 1990s.

Concord Fire Department personnel were not interviewed during the PA; therefore, it is not known if AFFF were used or stored at the Loudon Road FTA historically. Because the presence of AFFF at the FTA cannot be confirmed, it has been identified as a potential offsite PFAS source area.

Figure 5-1 shows the location of the Loudon Road FTA (as a potential PFAS source area) in relation to the AASF Concord. However, because groundwater flow in the area is generally southwest towards the Merrimack River, this area is likely downgradient of the Concord AASF.

5.6 New Hampshire Detections

The NHDES is engaged in an ongoing investigation of PFAS in New Hampshire drinking water and maintains an online, interactive PFAS Sampling Results map (NHDES, 2019). At the time of this PA, the database indicated that PFAS were detected at multiple locations in groundwater, soil, and surface water within a 4-mile radius of the AASF Concord. Data shown indicate PFAS were detected in groundwater in excess of the New Hampshire AGQSs in groundwater in the vicinity of the Richard M. Flynn Fire Academy, approximately 1.3 miles east (side-gradient), near the Old Suncook Road Landfill approximately 1.25 miles to the south-southwest (downgradient), and at an unidentified location approximately 1 mile to the east (side-gradient). PFAS were detected upgradient of the AASF Concord at the Former Vishay Sprague Facility; however, the detections were less than the AGQSs. There were no detections greater than the AGQSs within approximately 5 miles upgradient of the site. The source of the PFAS at these locations is not identified in the database. The data presented in the database are under constant revision, as new sites or facilities are added, and the data may not contain all potential PFAS detections.



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PROJECT	Preliminary Assessment for PFAS at AASF Concord, NH			
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SCALE	1:18,000	CHK BY	AM	10/29/2019
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	10/29/2019

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 AOIs were identified at the AASF Concord: AOI 1 Hangar Releases, AOI 2 System Testing Area, and AOI 3 Infiltration Gallery. The AOI locations are shown on **Figure 6-1**. The following sections describe the preliminary CSM components and the specific preliminary CSMs developed for these AOIs. The preliminary 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. Receptors at the AASF Concord include site workers and construction workers. Potential off-post receptors include recreational users of the Merrimack River.

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

6.1 AOI 1 Fire Suppression System Releases

AOI 1 includes the Fire Suppression System Releases. Both the main hangar and the Fuel Truck Storage Building at AASF Concord are equipped with AFFF fire suppression systems. Two releases have occurred since the facility was opened. In 2005, a lightning strike triggered the release of the suppression systems in both the main hangar and Fuel Truck Storage Building. It was estimated that less than 10 gallons of Aer-O-Lite 3% AFFF were released from the AASF hangar and that approximately 3.4 gallons were released from the Fuel Truck Storage Building. The foam from both buildings was washed out of the hangar onto the apron, from where it was either washed into the drain at the center of the apron or onto the grass surrounding the apron. Foam washed into the drain at the center of the apron would drain west into an underground infiltration gallery.

The second release occurred in the main hangar in January 2019, when a fire suppression system pipe froze and burst in the wash rack. The foam extended from the wall to about half the width (to the center drain) and half the length of the 8,745-square foot wash rack. The system was charged with Ansulite 3% AFFF, but the exact quantity released is unknown. The foam was contained inside the wash bay and was rinsed down the center trench drain. The foam and wastewater from the trench drain were contained and treated by the onsite wastewater management system, as described in **Section 3.1**. Residual water was removed and disposed of by a contracted disposal facility.

Given the known releases from the two fire suppression systems, there is the potential for PFAS to have migrated from surface soil to subsurface soil around the apron. Therefore, ground-disturbing activities at AOI 1 could result in site worker and construction worker exposure to via ingestion of surface soil or inhalation of soil particles (dust). Ground-disturbing activities to subsurface soil could also result in construction worker exposure via ingestion. Therefore, the inhalation and ingestion pathways for these receptors are considered potentially complete for AOI 1.

PFAS are water soluble and can migrate readily from soil to groundwater; therefore, PFAS released to soil at AOI 1 may migrate to the groundwater via leaching. However, due to the depth of groundwater at the site (estimated to be 30 to 50 ft bgs), the groundwater ingestion exposure pathway for construction workers is considered incomplete. Because no public drinking water wells were identified within 1 mile downgradient of the facility, the groundwater pathway for nearby residents is also considered incomplete.

No surface water bodies were identified at the facility; however, the Merrimack River is located approximately 0.8 miles to the west/southwest (downgradient), and the Soucook River is located approximately 0.6 miles to the south/southeast (side gradient). It is not known if there is offsite groundwater discharge to surface water bodies (the Soucook River, Merrimack River, or their tributaries). Based on the depth to groundwater (30 to 50 ft bgs) and the depth of the Merrimack River (5 to 40 ft bgs), groundwater interaction with the river may be possible downgradient of the site. Therefore, the ingestion exposure pathway for offsite surface water and sediment is considered potentially complete for recreational users. Human consumption of fish potentially affected by PFAS from the river is also possible. The preliminary CSM for AOI 1 is shown on **Figure 6-2**.

6.2 AOI 2 System Testing Area

AOI 2 is the System Testing Area. According to AASF personnel, the fire suppression system in the hangar was tested once in 2005, after the initial installation, to ensure proper mixing of AFFF and water flow and pressure. Testing was conducted outside the north side of the building by the loading dock, and the mixture was discharged to the grass. The system was charged with Aer-O-Lite 3% AFFF, but the quantity of AFFF released is unknown.

Given the known release at the System Testing Area, there is the potential for PFAS to have migrated from surface soil to subsurface soil. Therefore, ground-disturbing activities at AOI 2 could result in site worker and construction worker exposure to potential PFAS contamination via ingestion of surface soil or inhalation of soil particles (dust). Ground-disturbing activities to subsurface soil could result in construction worker exposure via ingestion. Therefore, the inhalation and ingestion pathways for these receptors are considered potentially complete. Although PFAS may migrate from the soil to the groundwater via leaching, the groundwater ingestion exposure pathway for construction workers is considered incomplete due to the depth to groundwater (30 to 50 ft bgs). Because no public drinking water wells were identified within 1 mile downgradient of the facility, the groundwater ingestion pathway for nearby residents is also considered incomplete.

As described above in **Section 6.1**, no surface water bodies were identified at the facility. However, it is not known whether there is offsite groundwater discharge to downgradient surface water bodies (the Soucook River, Merrimack River, or their tributaries). Based on the depth to groundwater (30 to 50 ft bgs) and the depth of the Merrimack River (5 to 40 ft bgs), groundwater interaction with the river may be possible downgradient of the site. Therefore, the ingestion exposure pathway for offsite surface water and sediment is considered potentially complete for recreational users of the nearby rivers. Human consumption of fish potentially affected by PFAS from the river is also possible. The preliminary CSM for AOI 2 is shown on **Figure 6-2**.

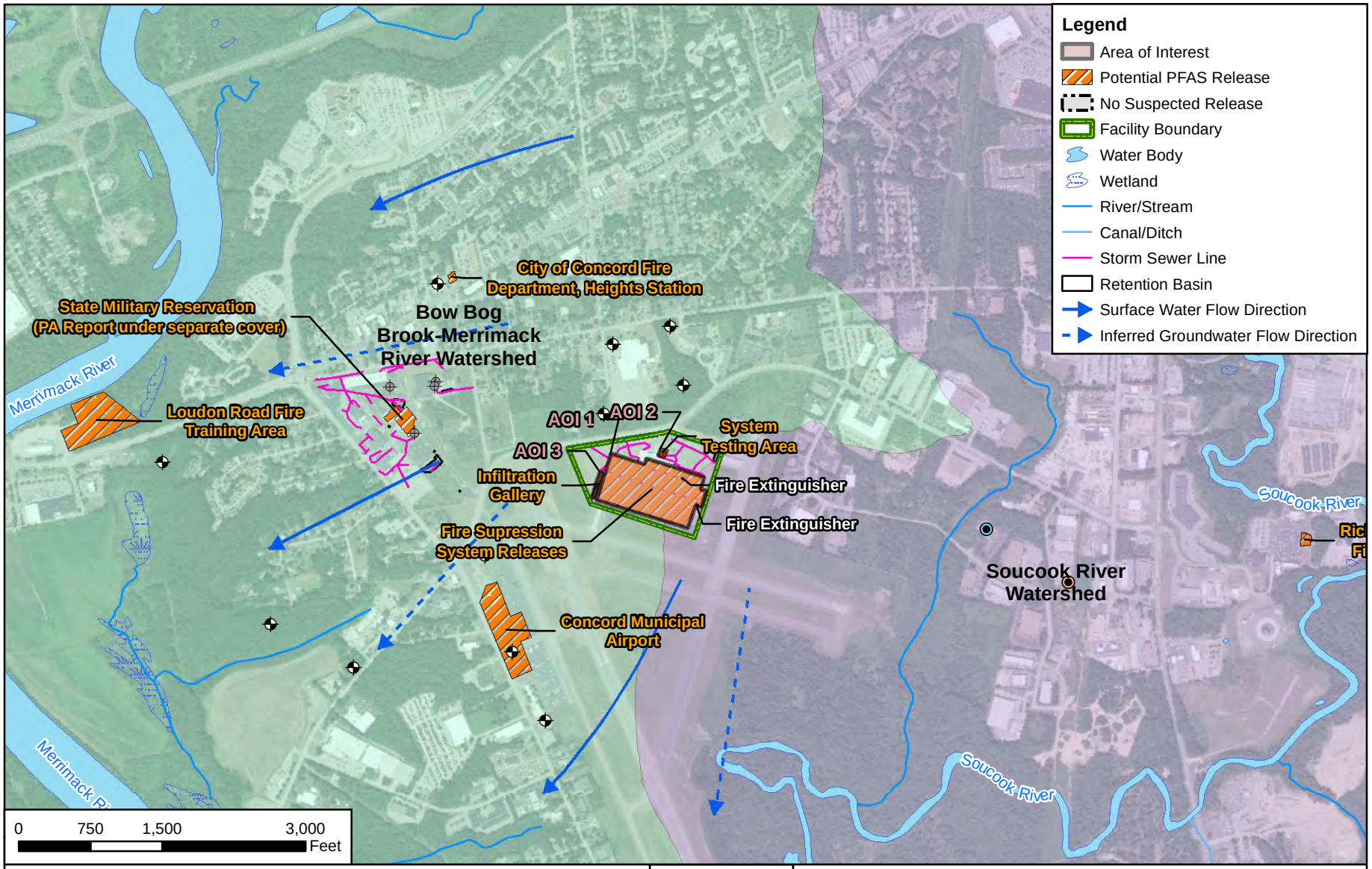
6.3 AOI 3 Infiltration Gallery

AOI 3 is the Infiltration Gallery. The stormwater system and infiltration gallery were installed circa 2004, when the new AASF was constructed. Stormwater runoff from the main apron is collected in a drain at the center of the apron and discharged into a stormwater pre-treatment system, followed by a three-tiered underground infiltration gallery. According to engineering drawings, the infiltration gallery is located 4 feet bgs (NGB, 2002c). According to interviews with NHARNG personnel, foam from the 2005 fire suppression system releases in the main hangar and the fuel truck storage building was washed into the drain.

Given the known releases of AFFF to the stormwater system, there is potential for PFAS to have migrated from the infiltration gallery directly to subsurface soil. Therefore, ground-disturbing activities at AOI 3 could result in site worker and construction worker exposure to potential PFAS

contamination via inhalation of soil particles (dust). Ground-disturbing activities to subsurface soil could result in construction worker exposure via ingestion. Therefore, the inhalation and ingestion pathways for these receptors are considered potentially complete. Although PFAS may migrate from the soil to the groundwater via leaching, the groundwater ingestion exposure pathway for construction workers is considered incomplete due to the depth to groundwater (30 to 50 ft bgs). Because no public drinking water wells were identified within 1 mile downgradient of the facility, the groundwater ingestion pathway for nearby residents is also considered incomplete.

As described above in **Section 6.1**, no surface water bodies were identified at the facility. However, it is not known whether there is offsite groundwater discharge to downgradient surface water bodies (the Soucook River, Merrimack River, or their tributaries). Based on the depth to groundwater (30 to 50 ft bgs) and the depth of the Merrimack River 5 to 40 ft bgs), groundwater interaction with the river may be possible downgradient of the site. Therefore, the ingestion exposure pathway for offsite surface water and sediment is considered potentially complete for recreational users of the nearby rivers. Human consumption of fish potentially affected by PFAS from the river is also possible. The preliminary CSM for AOI 3 is shown on **Figure 6-3**.



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PROJECT	Preliminary Assessment for PFAS at AASF Concord, NH			
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SCALE	1:18,000	CHK BY	AM	10/29/2019
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	10/29/2019

TITLE

Area of Interest

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-1

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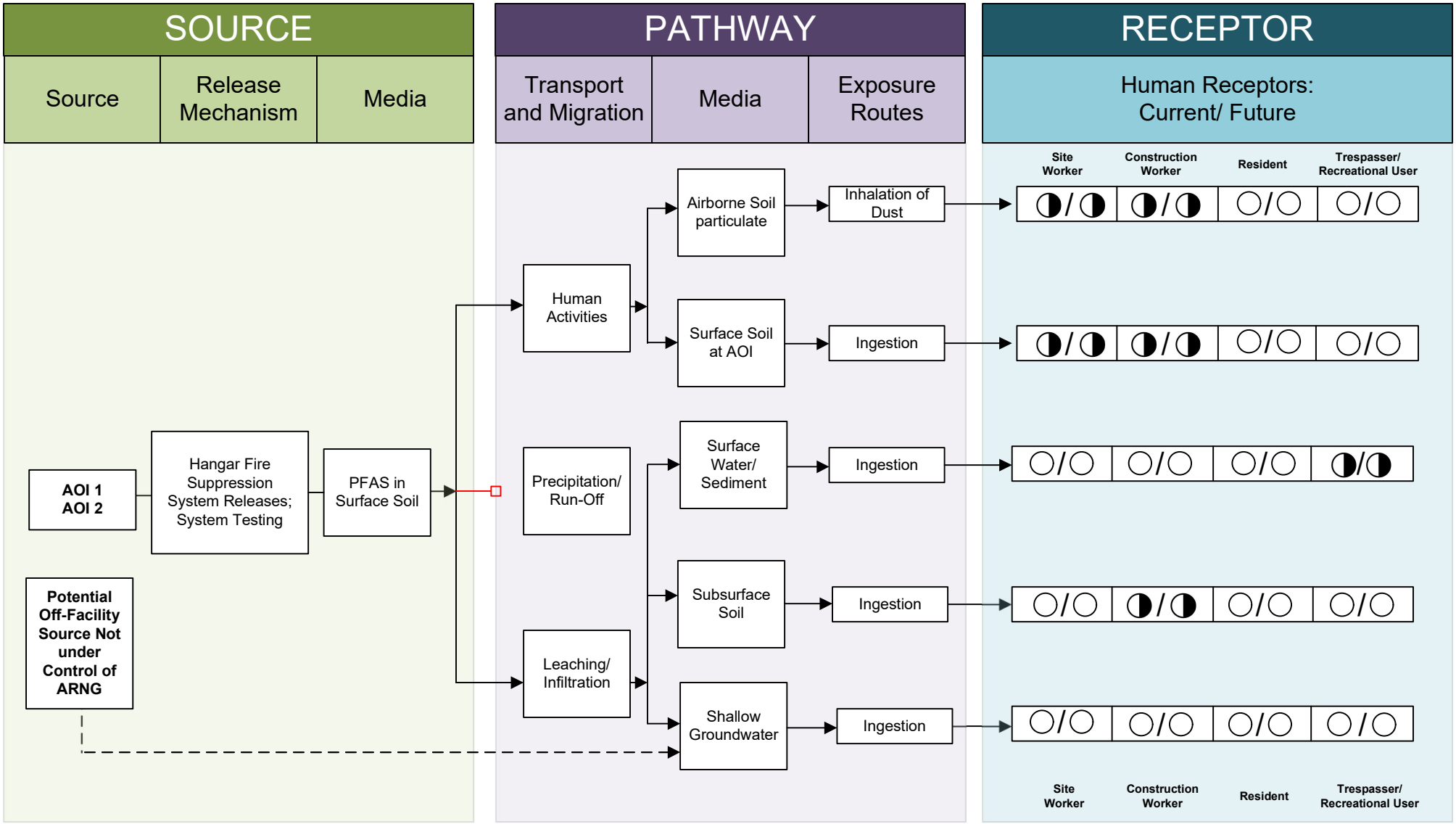


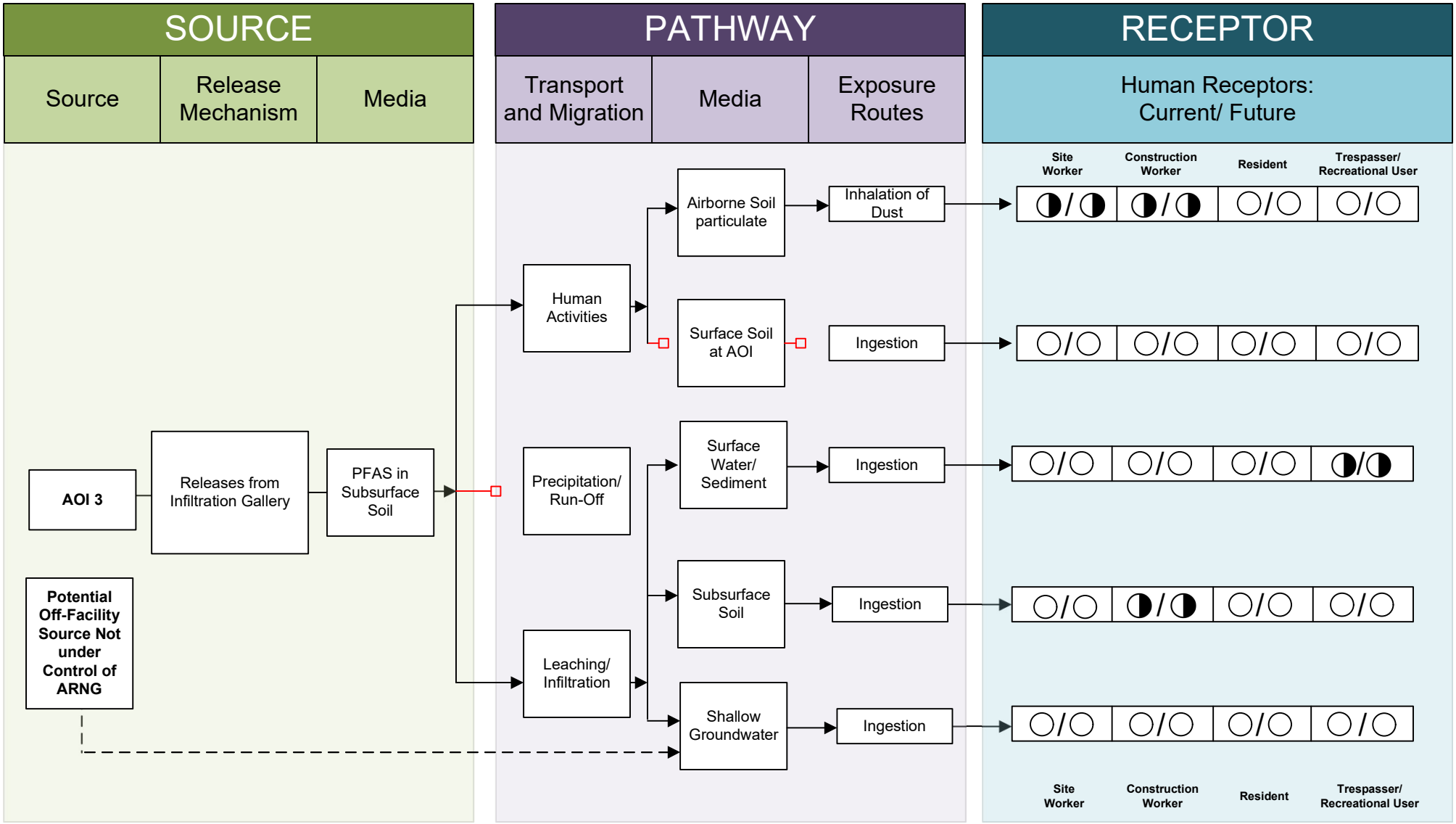
LEGEND

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

NOTES

1. The resident receptor refers to an off-site resident.
2. No surface water bodies were identified at the facility, but the surface water/sediment pathway is considered potentially complete for offsite recreational users due to the potential for groundwater interaction with the downgradient river.
3. Human consumption of fish potentially affected by PFAS from the downgradient river is possible.

Figure 6-2
Preliminary Conceptual Site Model
AOI 1 Fire Suppression System Releases and
AOI 2 System Testing Area



LEGEND

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

NOTES

1. The resident receptor refers to an off-site resident.
2. No surface water bodies were identified at the facility, but the surface water/sediment pathway is considered potentially complete for offsite recreational users due to the potential for groundwater interaction with the downgradient river.
3. Human consumption of fish potentially affected by PFAS from the downgradient river is possible.

Figure 6-3
Preliminary Conceptual Site Model
AOI 3 Infiltration Gallery

7. Conclusions

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

7.1 Findings

Three AOIs related to PFAS releases were identified (**Table 7-1**) at the AASF Concord during the PA (**Figure 7-1**).

Table 7-1: AOIs at AASF Concord

Area of Interest	Name	Used by	Potential Release Dates
AOI 1	Fire Suppression System Releases	NHARNG	2005 - 2019
AOI 2	System Testing Area	NHARNG	2005
AOI 3	Infiltration Gallery	NHARNG	2005

Based on actual and potential AFFF releases at these AOIs, there is a potential for exposure to PFAS contamination in media at or near the facility. The preliminary CSMs for AOI 1 and AOI 2 are shown on **Figure 6-2**, and the preliminary CSM for AOI 3 is shown on **Figure 6-3**. The preliminary CSMs present the potential receptors and media impacted.

The following areas discussed in **Section 2** through **Section 5** were determined to have no suspected PFAS release to the environment (**Table 7-2**).

Table 7-2: No Suspected Release Areas

No Suspected Release Area	Used by	Rationale for No Suspected Release Determination
Fire Extinguishers	NHARNG	Fire extinguishers inside the AASF Concord and on the apron are ABC extinguishers (potassium bicarbonate).

7.2 Uncertainty

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 AASF Concord. Historically, documentation of PFAS use was not required because PFAS were considered benign. Records were not typically kept by the facility or available during the PA on the use at the AASF.

The conclusions of this PA are predominantly based on the information provided during interviews with personnel who had direct knowledge of PFAS use at the facility. Sometimes the provided information was vague. 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, and reliance on personal recollection. Inaccuracies may arise in potential PFAS release locations. 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, multiple persons were interviewed for the same potential source area, and potential source areas were visually inspected. **Table 7-3** summarizes the uncertainties associated with the PA.

Table 7-3: Uncertainties

Area of Interest	Source of Uncertainty
AOI 1 Fire Suppression System Releases	According to interviewees, the foam from the 2005 event was washed out of the hangar onto the apron, from where it was either washed into the drain at the center of the apron or onto the grass to the south of the apron. The quantity of AFFF which was washed onto the grass is unknown. Additionally, interviewees indicated that foam from the 2019 hangar release was contained inside the wash rack; however, it is possible that some foam was released to the environment. The exact quantity of AFFF released in 2019 is unknown.
AOI 2 System Testing Area	The system testing was undocumented; therefore, the exact quantity of AFFF used is unknown. Additionally, the exact location of the system testing is estimated based on interviewee knowledge.
AOI 3 Infiltration Gallery	According to interviewees, the foam from the 2005 event was washed out of the hangar onto the apron, from where it was either washed into the drain at the center of the apron or onto the grass to the south of the apron. The quantity of AFFF which traveled to the infiltration gallery is unknown.

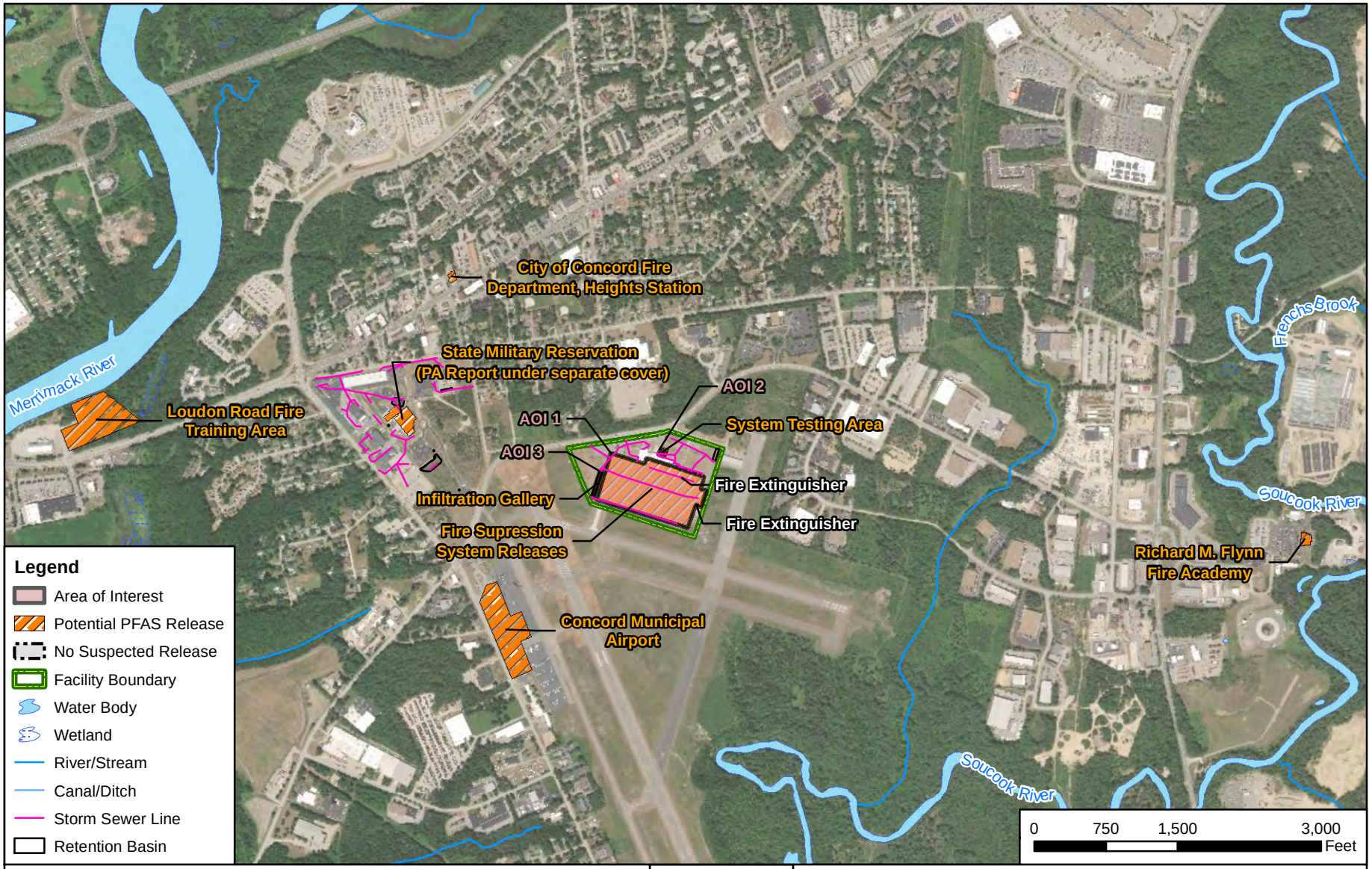
7.3 Potential Future Action

Interviews and records (covering 2005 to present) indicate that current or former ARNG activities may have resulted in potential PFAS releases 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 surface and subsurface soil at these AOIs. In addition, there is potential for offsite receptors to be exposed to PFAS contamination in surface water and sediment or via fish consumption. **Table 7-4** summarizes the rationale used to determine if the AOIs should be considered for further investigation under the CERCLA process and undergo a SI.

The ARNG evaluates the need for an SI based on the presence of a PFAS release, possible receptors, and the migration potential of PFAS contamination to receptors.

Table 7-4: PA Findings Summary

Area of Interest	AOI Location	Rationale	Potential Future Action
AOI 1 Fire Suppression System Releases	43°12'31.0"N; 71°30'07.8"W	Known release in 2005 from the main hangar and the Fuel Truck Storage Building Hangar. Foam was washed into the drain at the center of the apron and onto the grass to the south of the apron. Known release in 2019 within Wash Rack. Foam was contained inside the building.	Proceed to an SI, focus on surface soil, subsurface soil, and groundwater
AOI 2 System Testing Area	43°12'35.2"N; 71°30'09.9"W	Fire Suppression System from the main hangar was tested and discharged to this location in 2005.	Proceed to an SI, focus on surface soil, subsurface soil, and groundwater
AOI 3 Infiltration Gallery	43°12'33.1"N; 71°30'19.2"W	Foam washed into the drain at the center of the apron after 2005 fire suppression system releases would travel to the underground infiltration gallery. Potential for AFFF to be released to the subsurface from the infiltration gallery.	Proceed to an SI, focus on subsurface soil and groundwater



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PROJECT	Preliminary Assessment for PFAS at AASF Concord, NH			
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SCALE	1:18,000	CHK BY	AM	10/29/2019
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	10/29/2019

N

TITLE

Summary of Findings

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Figure 7-1

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US Climate Data, 2019. *Climate Concord - New Hampshire.* Accessed April 9 2019 at https://www.usclimatedata.com/climate/concord/new-hampshire/united-states/usnh0045.

USAEHA, 1993. *Preliminary Assessment, Ground Water Quality Survey No. 38-26-K28T-94, Selected NHARNG Sites*. 12 November.

USEPA, 1980. *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*.

USEPA, 1991. *Guidance for Performing Preliminary Assessments under CERCLA*. September.

USEPA, 1994. National Oil and Hazardous Substances Pollution Contingency Plan (Final Rule). 40 CFR Part 300; 59 Federal Register 47384. September.

USEPA, 2016a. *Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA).* Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. EPA Document Number: 822-R-16-005. May.

USEPA, 2016b. *Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS).* Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. EPA Document Number: 822-R-16-004. May.

USEPA, 2017. *UCMR 3 (2013-2015) Occurrence Data by State. Occurrence Data for the Unregulated Contaminant Monitoring Rule*. Accessed 9 July 2019 at https://www.epa.gov/dwucmr/occurrence-data-unregulated-contaminant-monitoring-rule. January.

Appendix A
Data Resources

Data resources will be provided separately on CD. Data resources for the AASF Concord include:

Environmental Data Resources Report

- 2019 The EDR Radius Map™ Report with GeoCheck®; Aerial Photo Decade Package; and Certified Sanborn® Map Report; Army Aviation Support Facility Concord, 26 Regional Drive, Concord, NH 03301.

Previous Investigations

- GZA GeoEnvironmental, Inc., 2010. *Remedial Action Plan, Former Vishay Sprague Facility, 70 Pembroke Road, Concord, New Hampshire.* February.
- Hengen, Elizabeth Durfee, 2011. *Historic Area Form, Concord Municipal Airport, Concord, New Hampshire*. February.
- Stone & Webster Environmental Technology & Services, 1998. *Final Site Investigation, New Hampshire Army National Guard, State Military Reservation, Concord, New Hampshire*. March.
- Tighe & Bond, 2018. *Building Addition Preconstruction Assessment, New Hampshire Army National Guard, Army Aviation Support Facility, 26 Regional Drive Concord, New Hampshire.* September.

Real Estate Documentation

- City of Concord, New Hampshire, 2002. *Lease Agreement by and between the City of Concord and the State of New Hampshire, by and through the Adjutant General, for a certain 26 acre tract or parcel of land located in the City of Concord, County of Merrimack and State of New Hampshire at Concord Municipal Airport*. 29 May.

Regulations, Advisories, and Orders

- NHDES, 2019. *New Hampshire Code of Administrative rules, Chapter Env-Dw 700, Water Quality: Standards, Monitoring, Treatment, Compliance, and Reporting; NH Env-Dw 701.03, NH Env-Dw 705.06, NH Env-Dw 707.06, NH Env-Dw 712.23 through NH Env-Dw 712.30*. 30 September.

Engineering Drawings

- NHARNG, 2013. *AASF – First Floor Plan. Sheet 1 of 2*. November.
- NHARNG, 2013. *AASF – First Floor Plan. Sheet 2 of 2*. November.
- NGB, 2002a. *Site Plan - Airside. Sheet No: C-11. Army Aviation Support Facility, Project No. 97828-R/330028, Army – New Hampshire National Guard, Concord Airport, Concord, New Hampshire*. 25 October.
- NGB, 2002b. *Grading and Drainage Plan - Airside. Sheet No: C-14. Army Aviation Support Facility, Project No. 97828-R/330028, Army – New Hampshire National Guard, Concord Airport, Concord, New Hampshire*. 25 October.
- NGB, 2002c. *Drainage System Details #1. Sheet No: C-16. Army Aviation Support Facility, Project No. 97828-R/330028, Army – New Hampshire National Guard, Concord Airport, Concord, New Hampshire*. 25 October.

Appendix B
Preliminary Assessment Documentation

Appendix B.1
Interview Records

PA Interview Questionnaire - Environmental Manager

Facility: Concord ~~SMR~~ AASF
Interviewer: [redacted]
Date/Time: 4-22-19 1000

Interviewee: Group interview Title: See below Phone Number: See below Email: See below	Can your name/role be used in the PA Report? (Y) or N Can you recommend anyone we can interview? (Y) or N See page 2 of form

1. Roles or activities with the Facility/years working at the Facility.
   - [redacted] - state Env Supervisor - 24 yrs, physically at Concord SMR but responsible for entire state
   - [redacted] - state Env supervisor - always w/ Concord SMR - 27 yrs
   - [redacted] - Env Branch manager, 9 yrs ARNG (Berlin / Plymouth), 14 yrs at ~~Concord SMR~~
2. Where can I find previous facility/ownership information?
   leased from city of Concord
   [redacted] to provide records

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 – no known
   Fire Training Areas – ~~no~~ to information (ask [redacted])
   Firefighting (Active Fire) – no known
   Crash – no known
   (Fire Suppression Systems (Hangers/Dining Facilities)) – in main hangar + fuel storage Bld
   Fire Protection at Fueling Stations – no known
   Non-Technical/Recreational/ Pest Management – no known
   Metals Plating Facility – no known
   Waterproofing Uniforms (Laundry Facilities) – no known
   Other – no known

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?
   - yes - discuss w [redacted] for testing
   - two bldgs - AASF and Fuel Truck storage Bldg
   - [redacted] to provide as-builts

Additional info/interviewees:
(refer to sign-in sheet)
- [redacted] water resource manager, 12 yrs

PA Interview Questionnaire - Environmental Manager

Facility: Concord AASF
Interviewer: [redacted]
Date/Time: 9-28-19 1000

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?
   - AASF – yes (currently charged), charged in 2005 discovered not in spec, 2008 removed and replaced w/ in-spec AFF, more details w/ Brad Berry (or ask Zach B – he would have copies) → 12 drums
   - FTSB – yes (currently charged)

7. How is AFFF procured? Do you have an inventory/procurement system that tracks use?
   - Discuss with [redacted] (refer to interview sheet – per [redacted] inventory, procurement is managed by a contractor and is procured through the state system for the ARNG)

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)?
   - mostly 3% – brand unknown
   - ~~ask~~ current documents unclear will get copies everything they have
   - have MSDS for release at new AASF (aerolite 3%)

9. Where is the AFFF stored? How is it stored (tanks, 55-gallon drums, 5-gallon buckets)? What size are the storage tanks? Is the AFFF stored as a mixed solution (3% or 6%) or concentrated material?
   - deluge tanks, ~~size unknown~~ 900 gal and 200 gal, one in main hanger, smaller one in FTSB.
   - no storage drums/buckets

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?
    None at the facility, two areas nearby (indicated on map). Both areas active.
    (1) Smokey Bear Blvd, Concord
    (2) Louden Road by Everett Arena, Concord
    ↳ used to be a wooden tower at this area used for training, removed in late 1990s

PA Interview Questionnaire - Environmental Manager

Facility: Concord AASF
Interviewer: [redacted]
Date/Time: 4-22-19 1000

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?

NA - no training on site

For release from hangar suppression system - drain in center of tarmac/apron flows to west where a underground basin is located, then into vortex OWS then an infiltration gallery

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? [redacted] unknown - no recollection

- [redacted] all training has been offsite.
- FTA on Smokey Bear Blvd, see maps (owned by State DOT. Guard did it from to put out fires)
- 2nd: Loudon Rd by Everett Arena FTA (per [redacted])

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

see above

Ditto

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?

NA

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?

NA

PA Interview Questionnaire - Environmental Manager

Facility: Concord AASF
Interviewer: [redacted]
Date/Time: 4-22-19 1000

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?

NA
did not use for this purpose → ~~no information from~~ have not done this

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

none to recollections of interviewees

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?

- Coordinate mock drills - it is written (ask [redacted])
- [redacted] unaware if it is a formal agreement [redacted] is also unaware of formal agreement
- for emergencies - city of concord fire dept would respond

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)?

- 2005 discharge from hangar due to lightening strike
- water flow/pressure testing/mixture testing in 2005 after initial installation (see figure for loc)
- January 2019 pipe burst in wash bay

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

no known

PA Interview Questionnaire - Environmental Manager

Facility: Concord AASF
Interviewer: [redacted]
Date/Time: 4-22-19 1000

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?

~~ECAP~~

★ EBS for new AASF (circa 2008)
PCA for construction (building a readiness center)

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

[redacted] to provide records listed above

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?

NA

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.?

NA

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?

- 1255-gal ~~buckets~~ drums, called DLA (in 2008) - facilities removed it. Donated to local Fire Departments. DLA would not take it.

PA Interview Questionnaire - Environmental Manager

Facility: Concord AASF
Interviewer: [redacted]
Date/Time: 4-22-14 1000

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

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- NH ANG to contact.
- [redacted] to provide interview for us.

PA Interview Questionnaire - Other

Facility: Concord AASF + SMR
Interviewer: [redacted]
Date/Time: 4-22-19 1500 am

Interviewee: [redacted] Title: Maitenence Tech/ Super 507 Phone Number: 603-731-2019 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:

NHARNG - 25 years
15 years at Concord SMR/AASF
maintenance technician and supervisor

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?

testing to make sure the AFFF system was mixed properly ~~truck~~ (initial test to make sure it is working)	Known Uses
Company truck would come to make sure the deluge system was operating properly - water flow, pressure, and mixture testing (to ensure it is 3% AFFF)	Use
Only checked pressure/mixture after initial testing. Not tested again after change in 2008	Procurement
Not part of primary testing system test requirements - believes contractor is supposed to take care of this	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

PA Interview Questionnaire - Other

Facility: Concord AASF / SM4
Interviewer: [redacted]
Date/Time: 4-22-19 1800

inventory/procurement (hired by the State of NH) is managed by a contractor [procured through the state system for the ARNG]
↳ State of NH administrative ([redacted] to send ~~the~~ the link)

★ ★Pipe frozen and broke - winter 2019 (January)
- foam produced and was contained in the ~~drain~~ wash bay (indoor only)
- foam went down the bench drain ~~which went~~ which went to city's WWTP
- foam stretched from wall to center drain, chest height, = half of the width of hangar in wash bay

Appendix B.2
Visual Site Inspection Checklists

04-22-2019

Visual Site Inspection Checklist

[redacted]

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

Recorded by: [redacted], AECOM

ARNG Contact: [redacted]

Date and Time: 4-22-19 1400

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

Source/Release Information

Site Name / Area Name / Unique ID: AASF Concord

Site / Area Acreage: approx 34 acres

Historic Site Use (Brief Description): Built in 2004
Previously undeveloped portion of airport

Current Site Use (Brief Description): AASF - 900 gal AFFF tank
Fuel Tank Storage Bldg - 200 gal tank

Physical barriers or access restrictions: Yes-Chain link fence, checkin and security approval required

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

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):
• 2005 hardening storm, caused system to discharge
• 2019 pipe burst in washrack
• 2005 mixture testing on N side of bldg

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
Dump Road - industrial area - concord Litho, Construction company, automotive, breaks, tires, office buildings, gymnastics, USPS, early enrichment center

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

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

now Old Turnpike Road

04-22-19 - [redacted] Concord AASF

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:
Aer-O-Lite 3% AFFF liquid concentrate (see SDS) in 2005, Currently ANSUL 3% AFFF (see SDS)

1b. If yes, describe maintenance schedule/leaks:
- only tested mixture once after initial installation in 2005 (see map for location)
- leaks - January 2014 pipe burst in wash rack

1c. If yes, how often is the AFFF replaced:
has only been replaced once in 2008 when initial AFFF was not mil-spec

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?
[redacted] to provide as-builts floor drains (trench drains) go to city's WWTP

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation? (Y)/N
roof drains go to infiltration gallery on N side of the bldg

1a. If so, note observation and location: middle of tarmac drains to ~~infiltration~~ underground basin, then into vortex oil-water separator, then to infiltration gallery

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
Pembroke well field 1.2mi S ~~E~~ Domestic wells commercial well 0.5 mi E

3a. If so, please note the location:
monitoring wells at former Vishay Sprague site, Concord SMR, some at airport

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. wind sock data on airport website (Concord municipal airport)

6. Does an adjacent non-ARNG PFAS source exist? (Y)/N

6a. If so, please note the source and location. local fire stations and fire training areas

6b. Will off-site reconnaissance be conducted? Y/(N)

[redacted]

Visual Survey Inspection Log

[redacted] to check date of valve update

Significant Topographical Features:

1. Has the infrastructure changed at the site/area? (Y/N) yes

1a. If so, please describe change (ex. Structures no longer exist): built in 2004. gate on drain system would back up and now updated valve for sample collection after release

2. Is the site/area vegetated? Y (N)

2a. If not vegetated, briefly describe the site/area composition: no vegetation in immediate vicity - grass around tarmac, evergreen by parking lot, across streets

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

greater than 50 ft bgs depth to GW

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

1a. If so, please note to what extent: chain link fence, check in to buildings

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: protected species - carnival butterfly (mix of development zones and conservation zones)

3. Are residential areas located near the site? (Y) N

3a. If so, please note the location/distance: yes - to the North, West, southwest within a mi, many homes

4. Are any schools/day care centers located near the site? (Y) N

4a. If so, please note the location/distance/type: many daycares, residential within 4-mi state website - licensed residential daycares

5. Are any wetlands located near the site? Y (N)

5a. If so, please note the location/distance/type: a few miles away - NHARNG [redacted] to provide GIS layers

Early Enrichment Center, 850 ft East
Concord Christian academy, 1300 ft North
East Concord Cooperative Preschool, 2100 ft North
The Children's Place and Parent Education Center, 3000 ft N
Merrimack Valley Daycare Center, 4200 ft West

04-22-19 [redacted]
Concord AASF

Visual Survey Inspection Log

Additional Notes

Photo ID/Name	Date & Location	Photo Description
Concord-AASF-019	04-22-19 Wash rack	Wash rack area of 2019 January fire burst and foam release
"_020	04-22-19 wash rack	Close-up of pipes that burst in 2019
"_021	04-22-19 Apron	Fire Extinguisher on apron
"_022	04-22-19 Apron	Second fire extinguisher on apron

Photographic Log

Photo ID/Name	Date & Location	Photograph Description
Concord-AASF-01	04-22-19 Main Hangar	View of tarmac at AASF looking SE from bay door; note floor drain along door
_02	04-22-19 Main Hangar	Floor drain along center of main hangar
-03	04-22-19 Tank/Pump Room	Tank and piping for AFFF fire supression system
04	04-22-19 Tank/Pump Room	AFFF tank details
_05	04-22-19 Tank/Pump Room	AFFF tank/label details
_06	04-22-19 Tank/Pump Room	AFFF tank/label details
-07	04-22-19 Tank/Pump Room	suspected current SDS (could not confirm)
_08	04-22-19 Tank/Pump Room	" " page 2
_09	04-22-19 Fuel Truck Storage Bldg	Tank and piping for fire supression system in FTSB.
_10	04-22-19 Fuel Truck Storage Bldg	AFFF tank and label details in FTSB
_11	04-22-19 Fuel Truck Storage	Bldg " "
_12	04-22-19 Fuel Truck Storage	Bldg " "
_13	04-22-19 Fuel Truck Storage	Bldg " "
_14	04-22-19 ~~Fuel Truck Storage Bldg~~	Kiefer looking East w/ drain in center AASF apron
_15	04-22-19 Infiltration Gallery	Infiltration gallery underground location access port
_16	04-22-19 Infiltration Gallery	View of infiltration gallery field looking west
_17	04-22-19 Infiltration Gallery	Vortechnics OWS manhole covers adjacent to underground basin
_18	04-22-19 Infiltration Gallery	Vortechnics manhole cover details

Appendix B.3
Conceptual Site Model Information

04-22-2019

Visual Site Inspection Checklist

[redacted]

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

Recorded by: [redacted], AECOM

ARNG Contact: [redacted]

Date and Time: 4-22-19 1400

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

Source/Release Information

Site Name / Area Name / Unique ID: AASF Concord

Site / Area Acreage: approx 34 acres

Historic Site Use (Brief Description): Built in 2004
Previously undeveloped portion of airport

Current Site Use (Brief Description): AASF - 900 gal AFFF tank
Fuel Tank Storage Bldg - 200 gal tank

Physical barriers or access restrictions: Yes-Chain link fence, checkin and security approval required

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

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):
• 2005 hardening storm, caused system to discharge
• 2019 pipe burst in washrack
• 2005 mixture testing on N side of bldg

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
Dump Road - industrial area - concord Litho, Construction company, automotive, breaks, tires, office buildings, gymnastics, USPS, early enrichment center

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

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

now Old Turnpike Road

04-22-19 - [redacted] Concord AASF

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:
Aer-O-Lite 3% AFFF liquid concentrate (see SDS) in 2005, Currently ANSUL 3% AFFF (see SDS)

1b. If yes, describe maintenance schedule/leaks:
- only tested mixture once after initial installation in 2005 (see map for location)
- leaks - January 2014 pipe burst in wash rack

1c. If yes, how often is the AFFF replaced:
has only been replaced once in 2008 when initial AFFF was not mil-spec

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?
[redacted] to provide as-builts floor drains (trench drains) go to city's WWTP

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation? (Y)/N
roof drains go to infiltration gallery on N side of the bldg

1a. If so, note observation and location: middle of tarmac drains to ~~infiltration~~ underground basin, then into vortex oil-water separator, then to infiltration gallery

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
Pembroke well field 1.2mi S ~~E~~ Domestic wells commercial well 0.5 mi E

3a. If so, please note the location:
monitoring wells at former Vishay Sprague site, Concord SMR, some at airport

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. wind sock data on airport website (Concord municipal airport)

6. Does an adjacent non-ARNG PFAS source exist? (Y)/N

6a. If so, please note the source and location. local fire stations and fire training areas

6b. Will off-site reconnaissance be conducted? Y/(N)

[redacted]

Visual Survey Inspection Log

[redacted] to check date of valve update

Significant Topographical Features:

1. Has the infrastructure changed at the site/area? (Y/N) yes

1a. If so, please describe change (ex. Structures no longer exist): built in 2004. gate on drain system would back up and now updated valve for sample collection after release

2. Is the site/area vegetated? Y (N)

2a. If not vegetated, briefly describe the site/area composition: no vegetation in immediate vicity - grass around tarmac, evergreen by parking lot, across streets

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

greater than 50 ft bgs depth to GW

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

1a. If so, please note to what extent: chain link fence, check in to buildings

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: protected species - carnival butterfly (mix of development zones and conservation zones)

3. Are residential areas located near the site? (Y) N

3a. If so, please note the location/distance: yes - to the North, West, southwest within a mi, many homes

4. Are any schools/day care centers located near the site? (Y) N

4a. If so, please note the location/distance/type: many daycares, residential within 4-mi state website - licensed residential daycares

5. Are any wetlands located near the site? Y (N)

5a. If so, please note the location/distance/type: a few miles away - NHARNG [redacted] to provide GIS layers

Early Enrichment Center, 850 ft East
Concord Christian academy, 1300 ft North
East Concord Cooperative Preschool, 2100 ft North
The Children's Place and Parent Education Center, 3000 ft N
Merrimack Valley Daycare Center, 4200 ft West

04-22-19 [redacted]
Concord AASF

Visual Survey Inspection Log

Additional Notes

Photo ID/Name	Date & Location	Photo Description
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"_020	04-22-19 wash rack	Close-up of pipes that burst in 2019
"_021	04-22-19 Apron	Fire Extinguisher on apron
"_022	04-22-19 Apron	Second fire extinguisher on apron

Photographic Log

Photo ID/Name	Date & Location	Photograph Description
Concord-AASF-01	04-22-19 Main Hangar	View of tarmac at AASF looking SE from bay door; note floor drain along door
_02	04-22-19 Main Hangar	Floor drain along center of main hangar
-03	04-22-19 Tank/Pump Room	Tank and piping for AFFF fire supression system
04	04-22-19 Tank/Pump Room	AFFF tank details
_05	04-22-19 Tank/Pump Room	AFFF tank/label details
_06	04-22-19 Tank/Pump Room	AFFF tank/label details
-07	04-22-19 Tank/Pump Room	suspected current SDS (could not confirm)
_08	04-22-19 Tank/Pump Room	" " page 2
_09	04-22-19 Fuel Truck Storage Bldg	Tank and piping for fire supression system in FTSB.
_10	04-22-19 Fuel Truck Storage Bldg	AFFF tank and label details in FTSB
_11	04-22-19 Fuel Truck Storage	Bldg " "
_12	04-22-19 Fuel Truck Storage	Bldg " "
_13	04-22-19 Fuel Truck Storage	Bldg " "
_14	04-22-19 ~~Fuel Truck Storage Bldg~~	Kiefer looking East w/ drain in center AASF apron
_15	04-22-19 Infiltration Gallery	Infiltration gallery underground location access port
_16	04-22-19 Infiltration Gallery	View of infiltration gallery field looking west
_17	04-22-19 Infiltration Gallery	Vortechnics OWS manhole covers adjacent to underground basin
_18	04-22-19 Infiltration Gallery	Vortechnics manhole cover details

Appendix C
Photograph Log

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	AASF Concord	Concord, New Hampshire

Photograph No. 01

Date 4/22/2019
Time 14:11

Description:
View of apron from main hanger at AASF from bay doorl note floor/trench drain along doorway.

Orientation:
Southeast

Photograph No. 02

Date 4/22/2019
Time 14:12

Description:
Floor/trench drain along center of main AASF Hanger.

Orientation:
Northeast

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	AASF Concord	Concord, New Hampshire

Photograph No. 03

Date 4/22/2019

Time 14:19

Description:
AFFF tank (900 gallons) and piping for the Hanger fire suppression system in the tank/pump room.

Orientation:
Southeast

Photograph No. 04

Date 4/22/2019

Time 14:19

Description:
Label details for the AFFF tank for the Hanger fire suppression system in the tank/pump room. This label appears to have been removed from a 55-gallon AFFF drum and placed on the 900-gallon AFFF tank.

Orientation:
NA

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	AASF Concord	Concord, New Hampshire

Photograph No. 05

Date 4/22/2019

Time 14:23

Description:
Label details for the 900-gallon AFFF tank for the Hanger fire suppression system in the tank/pump room.

Orientation:
NA

Photograph No. 06

Date 4/22/2019

Time 14:23

Description:
Label details for the 900-gallon AFFF tank for the Hanger fire suppression system in the tank/pump room.

Orientation:
NA

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	AASF Concord	Concord, New Hampshire

Photograph No. 07

Date 4/22/2019

Time 14:37

Description:

AFFF tank (200 gallons) and piping for the Fuel Truck Storage Building fire suppression system in the tank/pump room.

Orientation:

Southeast

Photograph No. 08

Date 4/22/2019

Time 14:37

Description:

Label details for the 200-gallon AFFF tank for the Fuel Truck Storage Building fire suppression system in the tank/pump room.

Orientation:

NA

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	AASF Concord	Concord, New Hampshire

Photograph No. 09

Date 4/22/2019
Time 14:37

Description:
Label details for the 200-gallon AFFF tank for the Fuel Truck Storage Building fire suppression system in the tank/pump room.

Orientation:
NA

Photograph No. 10

Date 4/22/2019
Time 14:37

Description:
Label details for the 200-gallon AFFF tank for the Fuel Truck Storage Building fire suppression system in the tank/pump room.

Orientation:
NA

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	AASF Concord	Concord, New Hampshire

Photograph No. 11

Date 4/22/2019
Time 14:37

Description:
Label details for the 200-gallon AFFF tank for the Fuel Truck Storage Building fire suppression system in the tank/pump room. This label appears to have been removed from a 55-gallon AFFF drum and placed on the 900-gallon AFFF tank.

Orientation:
NA

Photograph No. 12

Date 4/22/2019
Time 14:45

Description:
Drain in center of AASF apron, which flows west to a underground basin, Vortex oil-water seperator, and then an on-site infiltration gallery.

Orientation:
Southeast

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	AASF Concord	Concord, New Hampshire

Photograph No. 13

Date 4/22/2019
Time 14:47

Description:
Access point to the underground basin west of the AASF Apron, into which the drain at the center of the apron flows. Maholes for the Vortechnics oil-water separator and area of infiltration gallery can be seen in the background.

Orientation:
Northwest

Photograph No. 14

Date 4/22/2019
Time 14:47

Description:
View of infiltration gallery area looking West.

Orientation:
West

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	AASF Concord	Concord, New Hampshire

Photograph No. 15

Date 4/22/2019

Time 14:48

Description:
Manhole covers for Vortechnics oil-water separator.

Orientation:
North

Photograph No. 16

Date 4/22/2019

Time 14:48

Description:
Close-up of manhole covers for Vortechnics oil-water separator.

Orientation:
South

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	AASF Concord	Concord, New Hampshire

Photograph No. 17

Date 4/22/2019
Time 15:32

Description:
Pipes in wash rack of main AASF Hanger which froze and burst in January 2019, resulting in a foam release (Ansulite 3% AFFF).

Orientation:
North

Photograph No. 18

Date 4/22/2019
Time 15:33

Description:
Area of Wash Rack in main AASF Hanger which had a foam release (Ansulite 3% AFFF) in January 2019. Pipes (shown on back wall) froze and burst, resulting in a foam release. The foam was approximately chest-high and extended from the back wall to about half the width (to the center drain) and half the length of the wash rack.

Orientation:
North

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	AASF Concord	Concord, New Hampshire

Photograph No. 19

Date 4/22/2019

Time 15:33

Description:
Fire extinguisher (#1) on AASF apron near Fuel Tank Storage Building, chemical.

Orientation:
NA

Photograph No. 20

Date 4/22/2019

Time 15:33

Description:
Fire extinguisher (#2) on AASF apron near Fuel Tank Storage Building, chemical.

Orientation:
NA