FINAL
Preliminary Assessment Report
Johnstown Army Aviation Support Facility #2
Johnstown, Pennsylvania

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

July 2020

Prepared for:

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

UNCLASSIFIED

Table of Contents

Tables

Figures

Appendices

Acronyms and Abbreviations

°F	degrees Fahrenheit
AASF	Army Aviation Support Facility
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
AMEC	AMEC Earth & Environmental, Inc.
amsl	above mean sea level
AOI	Area of Interest
ARFF	Aircraft Rescue and Firefighting
ARNG	Army National Guard
ASF	Aviation Support Facility
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CSM	conceptual site model
DEP	Department of Environmental Protection
EDR™	Environmental Data Resources, Inc.™
FAA	Federal Aviation Administration
ft	feet
FTA	fire training area
GIS	Geographic Information System
HA	Health Advisory
JCCA	Johnstown-Cambria County Airport
NTSB	National Transportation Safety Board
OWS	Oil Water Separator
PA	Preliminary Assessment
PAANG	Pennsylvania Air National Guard
PAARNG	Pennsylvania Army National Guard
PaGWIS	Pennsylvania Groundwater Information System
PFAS	per- and poly-fluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
SI	Site Inspection
UCMR3	Unregulated Contaminant Monitoring Rule 3
US	United States
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine
USAR	United States Army Reserve
USEPA	United States Environmental Protection Agency
USMCR	United States Marine Corps Reserve
VSI	visual site inspection

Executive Summary

The Army National Guard (ARNG) is performing *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide*. A PA for per- and polyfluoroalkyl substances (PFAS)-containing materials was completed for the current Johnstown Army Aviation Support Facility (AASF) #2 (also referred to as the "facility") in Johnstown, Pennsylvania, to assess potential PFAS release areas and exposure pathways to receptors. The current AASF #2 is constructed on a parcel of land owned by the Johnstown-Cambria County Airport (JCCA) Authority and leased to the US Government since 1991. This property was further leased to the Pennsylvania ARNG (PAARNG) in an agreement formalized in 2010, although PAARNG occupation began as early as 1997 (Skelly and Loy, Inc., 2010). The current agreement expires in 2051. The performance of this PA included the following tasks:

- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)™ report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility;
- Conducted a 1-day site visit on 27 August 2019 and completed visual site inspections (VSIs) at locations where PFAS-containing materials were suspected of being stored, used, or disposed;
- Interviewed current PAARNG AASF #2 personnel, US Army Reserve (USAR) personnel, and JCCA Aircraft Rescue and Firefighting staff during the site visit; and
- Identified Area(s) of Interest (AOIs) and developed a preliminary conceptual site model (CSM) to summarize potential source-pathway-receptor linkages of potential PFAS in soil, groundwater, surface water, and sediment for each AOI.

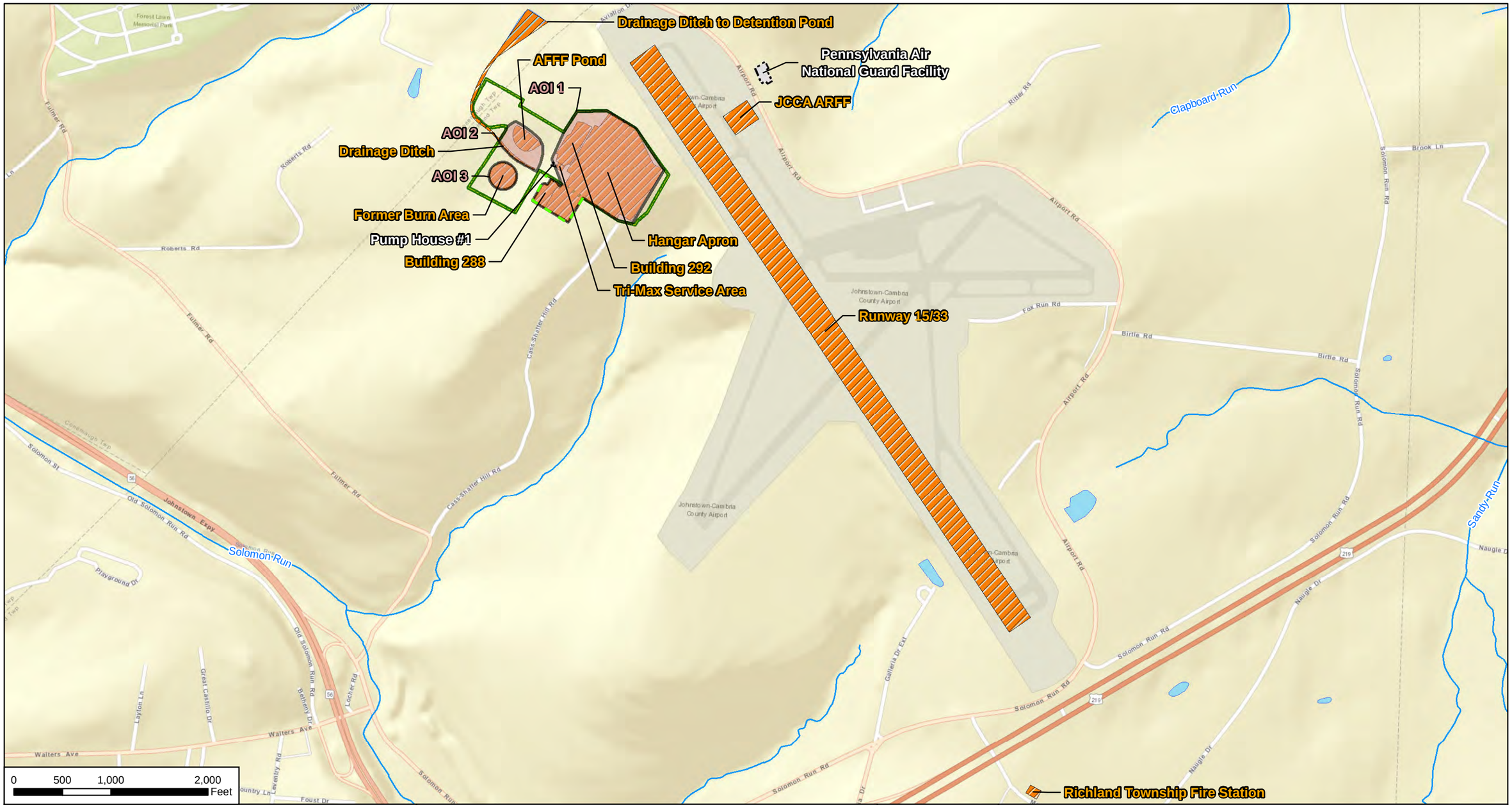
Three AOIs related to a potential PFAS release were identified at the current AASF #2 during the PA. The AOIs are shown on **Figure ES-1** and in **Table ES-1** below:

Table ES-1: AOIs at AASF #2

Area of Interest	Name	Used by	Potential Release Date
AOI 1	Hangar Apron Areas	PAARNG, USAR	1996 to current
AOI 2	Drainage Areas	PAARNG, USAR, US Marine Corps Reserve (USMCR)	Potentially as early as 1996
AOI 3	Former Burn Area	PAARNG, USAR, USMCR	Approximately 2004 to 2010

Based on potential PFAS releases at these AOIs, there is potential for exposure to PFAS contamination in media at or near the facility. The preliminary CSM for AASF #2, which presents the potential receptors and media impacted, is shown on **Figure ES-2**. Based on the United States Environmental Protection Agency (USEPA) Unregulated Contaminant Monitoring Rule 3 (UCMR3) data, it was indicated that no PFAS were detected above the USEPA's lifetime Health Advisory (HA) in two public water systems, Highland Sewer and Water Authority and Greater Johnstown Water Authority, within 20 miles of the facility. The HA is 70 parts per trillion for PFOS and PFOA, individually or combined. The two public water systems were sampled for PFAS between 2014 and 2015. PFAS analyses performed in 2016 had method detection limits that were

higher than currently achievable. Thus, it is possible that low concentrations of PFAS were not detected during the UCMR3 but might be detected if analyzed today.



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PROJECT	Preliminary Assessment for PFAS at Johnstown AASF #2, PA			
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SCALE	1:12,000	CHK BY	ST	7/15/2020
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	RG	7/15/2020

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

N

Summary of Findings

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12420 Milestone Center Drive
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Figure ES-1

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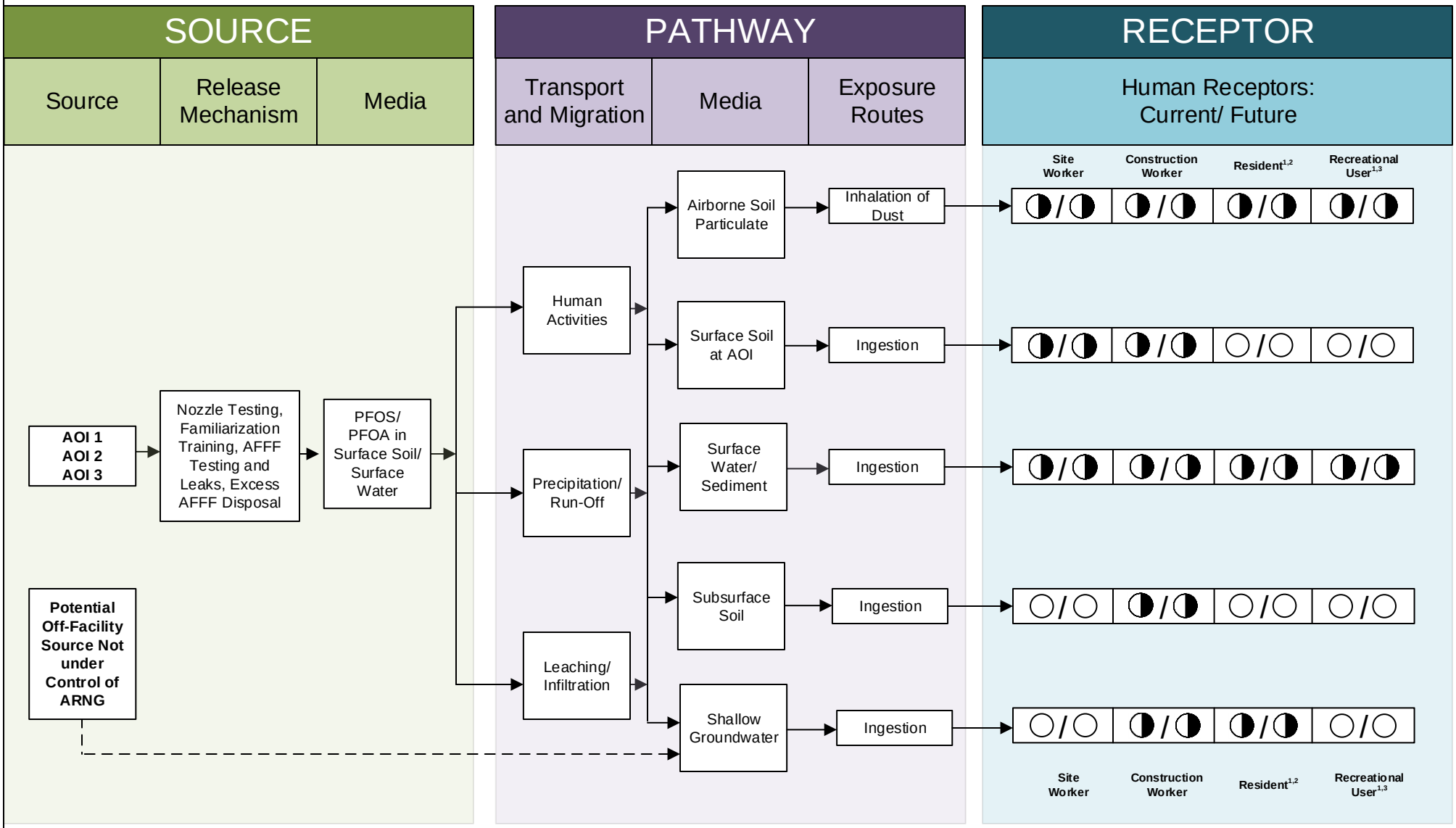


LEGEND

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

NOTES

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

Figure ES-2
Preliminary Conceptual Site Model
AASF #2, Pennsylvania

1. Introduction

1.1 Authority and Purpose

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

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

PFAS are classified as emerging environmental contaminants that are garnering increasing regulatory interest due to their potential risks to human health and the environment. PFAS formulations contain highly diverse mixtures of compounds. Thus, the fate of PFAS compounds in the environment varies. The regulatory framework at both federal and state levels continues to evolve. The US Environmental Protection Agency (USEPA) issued Drinking Water Lifetime Health Advisories (HAs) for PFOA and PFOS in May 2016, but there are currently no promulgated national standards regulating PFAS in drinking water. The HA is 70 parts per trillion for PFOS and PFOA, individually or combined.

This report presents the findings of a PA for PFAS-containing materials at the current Johnstown Army Aviation Support Facility (AASF) #2 (also referred to as the “facility”) in Johnstown, Pennsylvania, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations [CFR] Part 300), and Army requirements and guidance.

This PA documents the known fire training areas (FTAs) as well as other locations where PFAS may have been released into the environment at the current AASF #2. 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 performed at AASF #2:

- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)™ report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility;
- Conducted a 1-day site visit on 27 August 2019 and completed visual site inspections (VSIs) at locations where PFAS-containing materials were suspected of being stored, used, or disposed;

- Interviewed current Pennsylvania Army National Guard (PAARNG) AASF #2 personnel, US Army Reserve (USAR) personnel, and Johnstown-Cambria County Airport (JCCA) Aircraft Rescue and Firefighting (ARFF) staff during the site visit; and
- Identified Area(s) of Interest (AOIs) and developed a preliminary conceptual site model (CSM) to summarize potential source-pathway-receptor linkages of potential PFAS in soil, groundwater, surface water, and sediment for each AOI.

1.3 Report Organization

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

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

1.4 Facility Location and Description

Johnstown AASF #2 is located in the northwestern portion of a parcel of land owned by JCCA Authority, within the Richland and Conemaugh Townships in Cambria County, Pennsylvania. The facility is approximately 5 miles east of the City of Johnstown and 2 miles north of the intersection of Highway 219 and Highway 56. **Figure 1-1** illustrates the location of the AASF #2; however, property boundaries are approximate, based on Geographic Information System (GIS) database information provided by PAARNG, and may not reflect informal property agreements. An "estimated" facility boundary was additionally added in **Figure 1-1** to reflect the current informal property agreements.

JCCA is a joint civil and military airport, with the military comprising approximately 37% of all operations (US Army Center for Health Promotion and Preventive Medicine [USACHPPM], 2006). Military occupants include PAARNG's AASF, Pennsylvania Air National Guard (PAANG), the USAR, the US Marine Corps, and the US Marine Corps Reserve (USMCR) (Army Public Health

Center, 2018). In 1991, the US Government entered a long-term lease agreement with the JCCA Authority for the acquirement of approximately 70 acres at JCCA, which has since been amended by several supplemental lease agreements. The USAR began construction of an Aviation Support Facility (ASF) on the property in 1996. The PAARNG AASF #2 was located in Washington, PA at the time but then relocated to the USAR ASF in 1997 (USACHPPM, 2006). Operational usage of the property was shared between three military divisions: USAR, PAARNG, and USMCR. The PAANG is located on separate property across the airport runway. In 2010, the PAARNG occupation was formalized in a land lease agreement between the Secretary of the Army and the Commonwealth of Pennsylvania, which designated Buildings 218, 236, 292, a 3,247-square yard parking apron, and a 50,000-square yard hangar apron for use by PAARNG. The land occupied by PAARNG is on a portion of the land leased under the aforementioned lease with JCCA Authority. Both agreements are active and expire in 2051, although they may be extended every 10 years until 2081. Real estate documentation is included in **Appendix A**.

1.5 Facility Environmental Setting

JCCA is situated on a plateau in the Allegheny Mountains at a regional topographic high point. Thus, surface water and presumably unconfined groundwater generally move radially from this position. The surrounding topography is characterized by steep slopes and gently rolling hills. Locally, elevations range from 1,880 to 2,278 feet (ft) above mean sea level (amsl). The facility sits at an elevation of 2,253 ft amsl with a general topographic gradient to the northwest.

The area surrounding JCCA is predominantly undeveloped, wooded land, but it has been zoned for office commercial, light industrial, manufacturing, and single-family residential use (USACHPPM, 2006). Scattered residential homes are located to the west and northwest. The facility is northwest of JCCA Runway 15/33, and beyond JCCA property, agricultural lands are located to the east.

1.5.1 Soil

The surface soils at the AASF are primarily disturbed and composed of fill material due to airport construction activities. Within the area, the majority of the original soils are from the Cookport-Hazelton-Laidig Association. These soils are formed in residual and colluvial materials and have moderately well to well drained, deep to moderately deep, and channery loam characteristics (AMEC Earth & Environmental, Inc. [AMEC], 2003).

1.5.2 Geology

Johnstown AASF #2 is located within the Allegheny Mountain Section physiographic province, which is characterized by wide ridges separated by broad valleys and increasing ridge elevations to the south (Commonwealth of Pennsylvania, 2018). The Ebensburg anticline runs north to south and approximately bisects the property (National Park Service, 2018).

According to a 1994 geotechnical survey of the Johnstown AASF #2 property, the overburden consists of a mixture of organic soil with sands, clay, and silty clay and has a thickness ranging from 0.5 to 14 ft below ground surface (bgs). However, much of the overburden has since been disturbed by construction activities (AMEC, 2003). The underlying surface rocks belong to the Conemaugh Group of the Pennsylvanian age, which is subdivided into the sedimentary bedrock units of the Casselman and Glenshaw Formations. The Conemaugh Group is nearly 1,000 ft thick and consists mainly of shales and sandstones and some beds of limestone. The Allegheny Formation underlies the Conemaugh Group and includes the top of the Upper Freeport coal bed to the base of the Brooksville coal bed. The thickness of the Allegheny Formation is between 220 and 290 ft (Phalen and Martin, 1911). The youngest-age rocks are the Quaternary alluvium

deposits along the Conemaugh River and its tributaries (National Park Service, 2018) (**Figure 1-2**).

1.5.3 Hydrogeology

The regional source for groundwater is the Pennsylvanian aquifer, which is part of the Appalachian Plateau aquifer system. Groundwater yields from the Pennsylvanian aquifer average about 50 gallons per minute, and the Conemaugh Group is a good water bearing unit due to the presence of sandstone (Skelly and Loy, Inc., 2010; AMEC, 2003).

An EDR™ report conducted a well search for a 1-mile radius surrounding the facility (**Appendix A**). Using additional online resources, such as state and local GIS databases, wells were researched to a 4-mile radius of the facility. There are no water supply wells within the facility, and potable water is supplied by the Southwestern Cambria County Water Authority and the Greater Johnstown Water Authority. The Southwestern Cambria County Water Authority is a distribution system that purchases water from Highland Sewer and Water Authority (Southwestern Cambria County Water Authority, 2018). The Highland Sewer and Water Authority and the Greater Johnstown Water Authority have surface water intakes at the North Fork, Dalton Run, Beaverdam Run, Quemahoning, and Lloydell Reservoirs (AMEC, 2003; Highland Sewer and Water Authority, 2019). The closest reservoir to the facility (Dalton Run) is located approximately 8 miles to the southwest. Based on the USEPA Unregulated Contaminant Monitoring Rule 3 (UCMR3) data, it was indicated that no PFAS were detected above the USEPA's HA in two public water systems, Highland Sewer and Water Authority and Greater Johnstown Water Authority, within 20 miles of the facility. The HA is 70 parts per trillion for PFOS and PFOA, individually or combined. The two public water systems were sampled for PFAS between 2014 and 2015. PFAS analyses performed in 2016 had method detection limits that were higher than currently achievable. Thus, it is possible that low concentrations of PFAS were not detected during the UCMR3 but might be detected if analyzed today.

Several domestic wells were identified from the Pennsylvania Groundwater Information System (PaGWIS) northeast and southeast of the facility, within 4 miles. The domestic wells are typically screened within the Conemaugh Group and have static water levels ranging from 28 to 70 ft bgs. Four monitoring wells at JCCA are located approximately 0.5 miles to the east and have static water levels measurements ranging from 12 to 14 ft bgs, and bedrock was encountered at 3 to 5 ft bgs (Pennsylvania Department of Conservation & Natural Resources, n.d.). Thus, the monitoring wells are likely screened in bedrock. The groundwater flow direction in the alluvium likely follows the topographic gradient (generally trending west), but groundwater flow direction in the bedrock is unknown (AMEC, 2003). Groundwater features are presented on **Figure 1-2**.

1.5.4 Hydrology

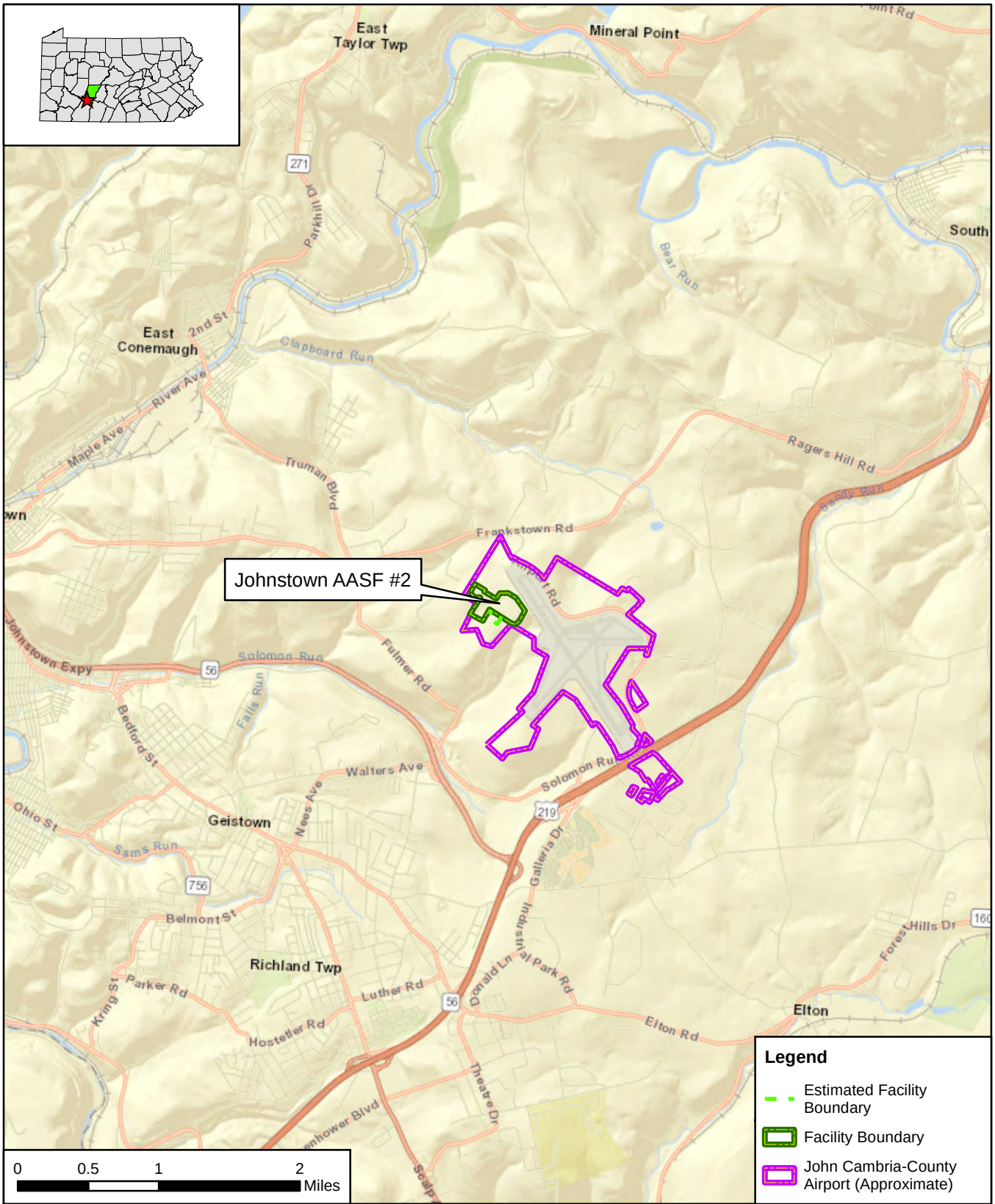
Drainage from the hangar buildings (Buildings 292 and 288) and the apron areas are captured by two stormwater detention ponds that lead into an intermittent, unnamed stream of Solomon Run, which is a tributary of the Conemaugh River. The stormwater detention pond that is located directly west of Building 292 is designated as the "AFFF Pond". According to the GIS database information provided by PAARNG, the AFFF Pond and a portion of a drainage ditch leading into the second stormwater detention pond are located on facility property. The second stormwater detention pond is located off facility property. Another intermittent stream of Solomon Run is located southeast of the facility. Both streams flow southwest into Solomon Run and then connect with the Conemaugh River, located approximately 3.5 miles west of the facility. The general surface water flow direction from the facility is to the west and northwest (Skelly and Loy, Inc., 2010). Surface water features are presented on **Figure 1-3**.

1.5.5 Climate

Johnstown, Pennsylvania is in a humid subtropical climate zone that is generally characterized by cold and temperate weather. The average high temperature for the summer is 78 degrees Fahrenheit (°F), and the average winter low temperature is 20°F. The mean annual temperature is 47°F. The area receives an average of 41 inches of precipitation throughout the year. Generally, the heaviest rains occur from May to July, although the region experiences year-round rainfall (National Weather Service, 2019).

1.5.6 Current and Future Land Use

Johnstown AASF #2 serves as a PAARNG aviation maintenance and storage facility for rotary wing aircraft. The facility is situated on property shared between USAR, PAARNG, and USMCR and is used for administrative, training, mechanical/maintenance, and storage purposes. Related infrastructure includes 12 buildings, tarmacs, hangar aprons, parking lots, storage lockers, two large retention ponds, and one smaller detention pond designed to capture AFFF (Skelly and Loy, Inc., 2010). Future property agreements between USAR and PAARNG over the occupation of shared buildings and resources are currently planned. Otherwise, reasonably anticipated future land use is not expected to change from the current land use described above.



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Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	7/14/2020

Facility Location

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 1-1

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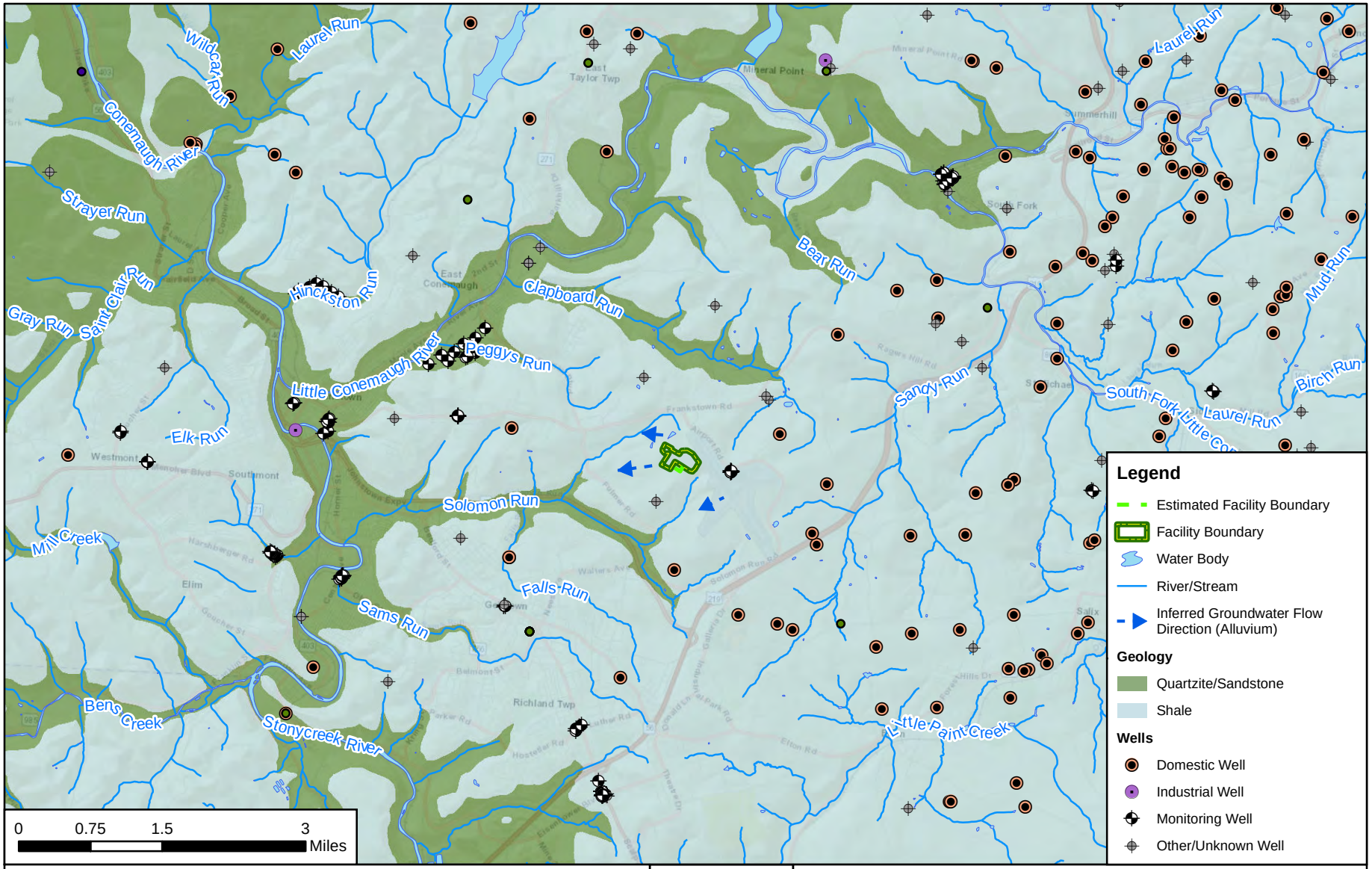

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TITLE

Groundwater Features

AECOM

12420 Milestone Center Drive
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Figure 1-2

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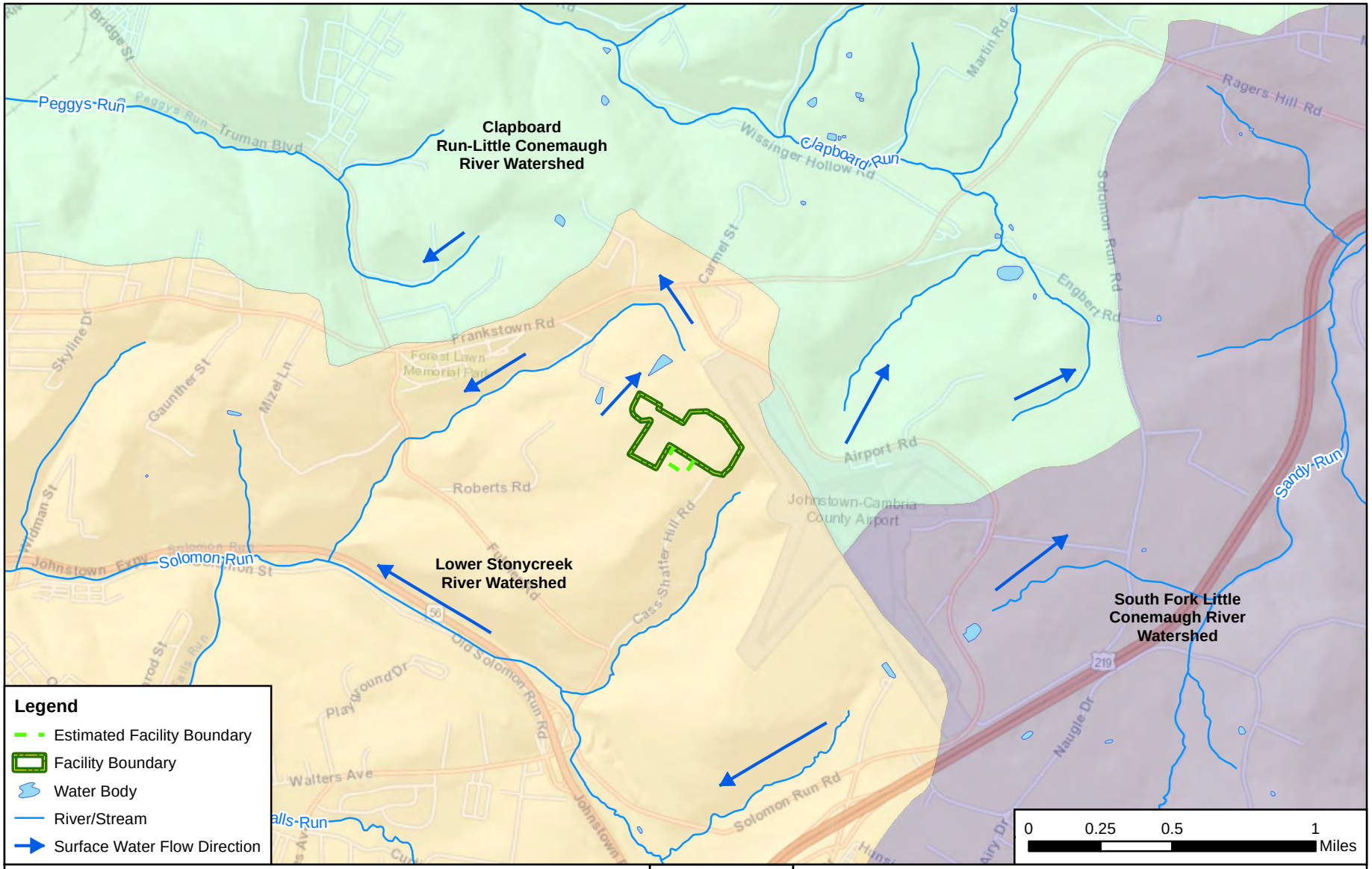

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TITLE

Surface Water Features

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Figure 1-3

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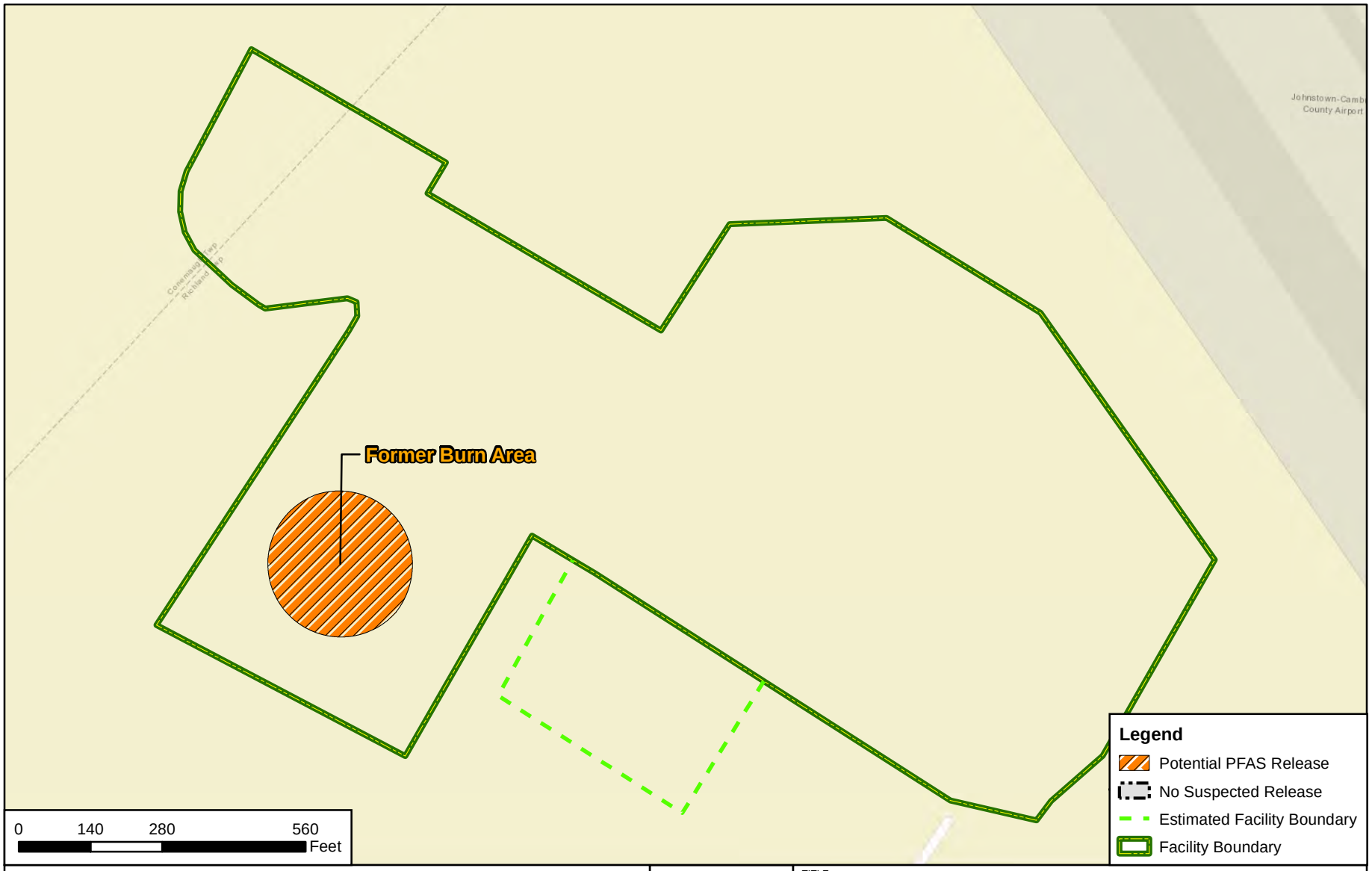
2. Fire Training Areas

One FTA was identified through record reviews and interviews during the PA as described below. The location of the FTA is shown on **Figure 2-1**. PA interview and VSI documents are included in **Appendix B**, and photographs are included in **Appendix C**.

2.1 Former Burn Area

According to PAARNG personnel, the Former Burn Area was previously an unpaved area used for burning miscellaneous materials such as paper documents and was the site of fire training activities from approximately 2004 to 2010. Historically, the same area also contained a concrete batch plant to facilitate the construction of the airport runways. PAARNG personnel reported that only Tri-Max™ fire extinguishers containing water were used to extinguish the fires. The burn area was also used by USMCR and USAR, but their activities at the site are unknown. In approximately 2010, the burn area was regraded and paved over, and a fenced motor pool was constructed over the area. The site is currently only used by PAARNG, but the property will be reacquired by the USAR in the near future.



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TITLE

Fire Training Area

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Figure 2-1

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3. Non-Fire Training Areas

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

3.1 Building 292

Building 292 is an aircraft hangar equipped with an AFFF fire suppression system. The fire suppression system is connected to two 1,000-gallon tanks containing 3% AFFF of the brand and type National Foam Aer-O-Water 3EM. Building 292 was a joint USAR and PAARNG space from 1997 to 2007, although PAARNG was the primary occupant. After 2007, PAARNG was the only occupant, and Building 292 was officially designated for PAARNG usage in the 2010 land lease. Multiple releases of AFFF from Building 292 have been confirmed through fire suppression system testing and leakage. According to the ongoing support agreement between the USAR and PAARNG, the USAR is responsible for the monitoring, maintenance, and repair of any fire prevention and protection systems for all PAARNG-occupied facilities. The support agreement is included in **Appendix A**.

Building 292 was built in 1996 and testing of the AFFF fire suppression system was conducted shortly after installation of the system. During testing, an unspecified amount of AFFF was released from the system. In approximately 1998/1999, another release of AFFF occurred from the fire suppression system. It is unclear how much AFFF was released and whether this release was due to testing or accidental events. PAARNG personnel reported observing foaming from the AFFF release in the nearby stormwater detention pond; thus, the pond was named “AFFF Pond”.

From 2003 to 2010, three additional AFFF fire suppression system testing events occurred. During testing, AFFF was discharged from the fire suppression system and collected in a lined dumpster. A contractor then carted the dumpster away and disposed of the AFFF off-facility. No other information was provided about the AFFF disposal method or location. The system was recharged with approximately ten 55-gallon drums of AFFF after each testing event.

In 2007, a broken valve led to the release of AFFF from the system. A PAARNG Mechanic Supervisor was present at the scene and reported that approximately ¾ of the hangar were filled with AFFF reaching an estimated height of 4 ft inside the hangar. PAARNG personnel attempted to contain the AFFF within the hangar, and the AFFF was hosed down the floor drains with water. After clean-up activities were completed, a contractor fixed the broken valve and recharged the AFFF tanks.

PAARNG fire crash trucks were historically stationed within Building 292. The newer fire crash trucks contained 3% AFFF, and the older trucks contained 6% AFFF. All fire crash trucks were turned over for disposal, with the most recent disposal occurring in 2017 or 2018. The fire crash trucks did not have any known history of leakage or discharge within Building 292 and were mostly unused after 2013. However, prior to disposal, PAARNG personnel reported emptying out the AFFF contents of the fire crash trucks into the drains of the hangar apron, described in **Section 3.4**. It is unknown where the disposed fire crash trucks are currently located.

During the VSI, the fire suppression system tank room was found to have an active drip leak of AFFF from a pipe. The concrete pavement underneath the pipe was corroded and stained with white residue, presumably from AFFF. The USAR was advised by the VSI to eliminate the leak. Trench drains within the tank room and hangar space of Building 292 typically lead into an oil

water separator (OWS) with an automated knife valve that connects to sanitary sewer. Under the circumstance where the Building 292 fire alarm system is tripped, a diverter valve may divert the drainage from the OWS to the AFFF Pond (HDR, 2016). The manual diverter valve was installed as a back-up method to allow AFFF to be collected in the AFFF Pond. However, according to USAR personnel, the diverter valve was reportedly left in the sanitary sewer discharge position over the years. See **Section 3.5** for more details regarding the AFFF Pond drainage.

3.2 Pump House #1

Pump House #1 is an approximately 2,000 square ft room situated between Buildings 292 and 288. The pump house contains engines, pumps, and four 55-gallon drums of AFFF of the brand National Foam Aer-O-Water 3EM 3% for the support of the fire suppression systems in Buildings 292 and 288. According to USAR personnel, the AFFF drums contained within the room have never leaked, and there was no evidence of AFFF spillage observed during the VSI. No release is suspected from the pump house.

3.3 Tri-Max Service Area

The Tri-Max Service Area is the pavement and grassy area near Pump House #1, where PAARNG personnel would service Tri-Max™ fire extinguishers filled with 3% AFFF. During servicing, AFFF was occasionally spilled and then left in place to evaporate or disperse with the wind. The amount of spillage from the Tri-Max™ fire extinguishers and frequency of the servicing are unknown. The PAARNG was in possession of approximately 20 Tri-Max™ fire extinguishers during the early 2000s to 2017/2018, and servicing of the fire extinguishers presumably occurred during this timeframe.

3.4 Hangar Apron

The approximately 73,000-square yard hangar apron is located outside Building 292. The usage of the hangar apron is shared between USAR and PAARNG. The 2010 land lease officially designated 50,000-square yards of hangar apron for PAARNG usage, although it is not immediately clear where property boundaries are drawn.

The hangar apron was the site of nozzle testing activities and familiarization training, which occurred at a frequency of every three to four years during the estimated years of 1999/2000 to 2017/2018. Familiarization training refers to training sessions where personnel would familiarize themselves with discharging the Tri-Max™ fire extinguishers. PAARNG personnel reported that Tri-Max™ fire extinguishers containing AFFF were discharged in the surrounding grassy area of the southeastern corner of the hangar apron. Nozzle testing with AFFF from the PAARNG fire crash trucks also took place in the same approximate area in the pavement, although the fire crash trucks involved in the activity were mostly unused after 2013.

In 2017/2018, the fire crash trucks and Tri-Max™ fire extinguishers were turned over for disposal. Some of the Tri-Max™ fire extinguishers were given to USAR, and the remaining were stored at Fort Indiantown Gap in Annville, Pennsylvania. It is unknown where the disposed fire crash trucks are currently located. Prior to disposal, PAARNG personnel reported emptying out the AFFF contents of the Tri-Max™ fire extinguishers and fire crash trucks into the drains of the hangar apron. The drains of the hangar apron lead into an OWS that then discharges via a diverter valve to either the sanitary sewer or to the drainage ditch leading into an off-facility stormwater detention pond. The capacity of the OWS at the hangar apron is reportedly 30,000-gallons (HDR, 2016). See **Section 3.6** for more details regarding drainage from the drainage ditch. Currently, the hangar apron is equipped with Purple K (non-AFFF) fire extinguishers.

3.5 AFFF Pond

The AFFF Pond is a stormwater detention pond located directly west of Building 292. AFFF has reportedly been observed in the AFFF Pond throughout the years of facility operation, most notably after the 1998/1999 AFFF release incident from Building 292. Thus, the stormwater detention pond has been called the “AFFF Pond” by facility personnel and has been identified in as-built drawings as a fire protection discharge holding area. The AFFF Pond also has a valving system by which the water can be drained to the second off-facility stormwater detention pond (HDR, 2016). The AFFF Pond eventually drains to Solomon Run, a tributary of the Conemaugh River.

The Building 292 and Building 288 OWSs have diverter valves that maintain a drainage connection to the AFFF Pond. The diverter valves switch in connection to the fire alarm system, so when the fire alarm system is triggered, the diverter valve directs drainage from the OWSs into the AFFF Pond as opposed to the sanitary sewer. However, according to USAR personnel, the diverter valve for Building 292 OWS was reportedly left in the sanitary sewer discharge position over the years, so the drainage from Building 292 was likely directed towards the sanitary sewer regardless of a fire alarm system trip.

3.6 Drainage Ditch

AFFF has reportedly been observed in the drainage ditch throughout the years of facility operation. The drainage ditch is located on facility, but a portion of the drainage ditch is located off facility and leads into an off-facility stormwater detention pond (described in **Section 5.1**).

The hangar apron OWS has a diverter valve allowing connection to either the sanitary sewer or drainage ditch, but it is unknown how the OWS is currently connected or in what circumstances the switch between sanitary sewer and drainage ditch would have been made.

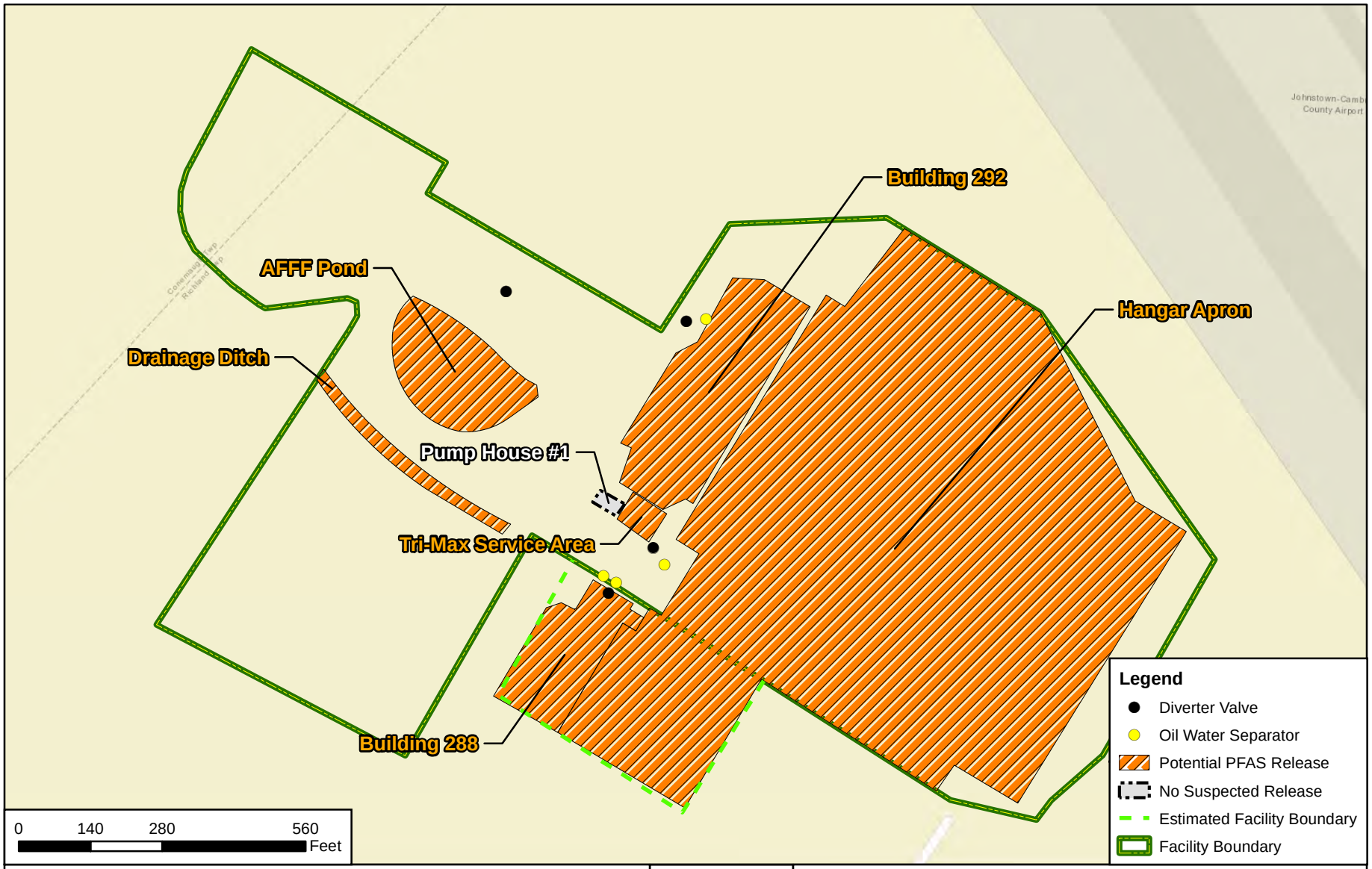
3.7 Building 288

Building 288 is an aircraft hangar equipped with an AFFF fire suppression system. The fire suppression system is connected to two 1,000-gallon tanks containing 3% AFFF of the brand and type National Foam Aer-O-Water 3EM. The building was built in 1999 or 2000, and the USMCR began occupation of the building shortly after construction. According to the 2010 Proposed Site Plan map, the aircraft ramp/apron outside Building 288 was also designated for USMCR usage (see **Appendix A**). In 2009, UCMR released the property to USAR, and the USAR began occupation of the building for their fixed wing operations until June 2017. In July 2017, PAARNG took over occupation of the building. However, according to USAR and PAARNG personnel, Building 288 may become a joint-use hangar for both military entities in the near future.

Multiple releases of AFFF from Building 288 have been confirmed through fire suppression system testing and leakage from the system. From 2003 to 2010, three AFFF fire suppression system testing events occurred within Building 288. During testing, AFFF was discharged from the fire suppression system and collected in a lined dumpster. A contractor then carted the dumpster away and disposed of the AFFF off-facility. No other information was provided about the AFFF disposal method or location. The system was recharged with approximately ten 55-gallon drums of AFFF after each testing event. In 2004 or 2005, there was a minor break of a pipeline carrying AFFF, which released approximately ten gallons of AFFF concentrate into the trench drains of the building. The trench drains of Building 288 lead to an industrial OWS, which then connects to sanitary sewer unless otherwise diverted via a diverter valve to the stormwater OWS. The diverter valve is only used when the fire alarm system is activated within Building 288,

and the manual diverter valve was installed as a back-up method to allow AFFF to be collected in the AFFF Pond. See **Section 3.5** for more details regarding the AFFF Pond drainage.

The USAR Regional Facility Operations Supervisor, whose knowledge extends to 2000, believed that the USMCR only used Halon (non-AFFF) fire extinguishers during their operations at Building 288.



CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at Johnstown AASF #2, PA			
REVISED	7/15/2020	GIS BY	MS	7/15/2020
SCALE	1:3,360	CHK BY	ST	7/15/2020
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	RG	7/15/2020

N

TITLE

Non-Fire Training Areas

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Figure 3-1

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4. Emergency Response Areas

Emergency responses to crashes sometimes require flame suppression, which may result in the release of PFAS to the environment in the form of AFFF. No emergency response areas were identified within the current AASF #2 facility during the PA through interviews with PAARNG, USAR, and JCCA ARFF personnel, whose knowledge covers the period of 1997 to current day. Aircraft emergency services are provided by the JCCA ARFF, and all other emergency services are provided by the Richland Township Fire Department. Until 2011, the AASF #2 had a mutual aid agreement to provide emergency services and support for the Cambria County Department of Emergency Services. After 2011, it was determined that the AASF #2 no longer had the appropriate resources to respond to emergencies in accordance with the agreement. The mutual aid agreements are included in **Appendix A**.

5. Adjacent Sources

Five potential off-facility sources of PFAS adjacent to the current AASF #2, not under the control of the PAARNG, were identified during the PA. A description of each adjacent source is presented below, and the adjacent sources are shown on **Figure 5-1**.

5.1 Drainage Ditch to Detention Pond

According to the GIS database information provided by PAARNG, the drainage ditch to detention pond source is the off-facility portion of the drainage ditch described in **Section 3.6**. The drainage ditch is a half-mile riprap channel that leads into a second stormwater detention pond and then connects with an intermittent, unnamed stream of Solomon Run. In case of major rainfall events, an emergency spillway is also located on the east wall of the detention pond (HDR, 2016). According to the stormwater system and site layout plans in **Appendix A**, the second stormwater detention pond also receives drainage from paved lots and buildings designated for USMCR or USAR usage.

5.2 Pennsylvania Air National Guard (PAANG)

The PAANG facility is located on the northeast portion of JCCA along Airport Road. The PAANG facility was established in September 1997, with the mission of assisting in controlling civilian and military air traffic for JCCA operations (PAANG, 2008). No off-facility VSI was conducted for the PAANG facility; however, PAARNG and JCCA ARFF interviewees did not suspect the PAANG facility to contain AFFF or an aviation hangar. Therefore, the PAANG facility is not suspected to be an adjacent source of PFAS.

5.3 Runway 15/33

Runway 15/33 trends northwest to southeast and is one of the two primary runways at JCCA. Multiple aircraft accidents at Runway 15/33 were identified through interviews with PAARNG and JCCA ARFF personnel and a records search.

On 6 January 1974, Commonwealth Commuter Flight 317 crashed while on approach to JCCA. The aircraft was a Beechcraft 99A model that was on a regularly scheduled commuter flight operated by Air East, Inc. According to the official aircraft accident report, no fire erupted from the wreckage (National Transportation Safety Board [NTSB], 1975). Therefore, it is unlikely that AFFF was used in the crash response.

On 26 December 2006, a Cessna 414 aircraft crashed into JCCA in the midfield area near Runway 15/33 and between Runway 23 and Taxiway G. The geographic coordinates of the crash site are 40°18’57 N; 78°50’3 W. The aircraft was on a medical transport flight operated by Flight Source, LLC (NTSB, n.d.). The ensuing wreckage erupted in flames, and according to PAARNG and JCCA ARFF personnel, the incident was responded to jointly by PAARNG, JCCA ARFF, and Richland Township Fire Department. An unspecified amount of AFFF was used in response to the accident, and the cleanup methods from the site are unknown.

JCCA ARFF personnel reported that there was a Cessna aircraft crash accident near the approach end of Runway 33 that occurred in approximately 2008 or 2009. The accident resulted in a fuel spill, and an unknown amount of AFFF was used in response to the accident. The cleanup methods from the site are unknown, and no records could be found regarding this crash accident. The JCCA ARFF and Richland Township Fire Department were apparently involved in the response, but it could not be confirmed if PAARNG responded as well.

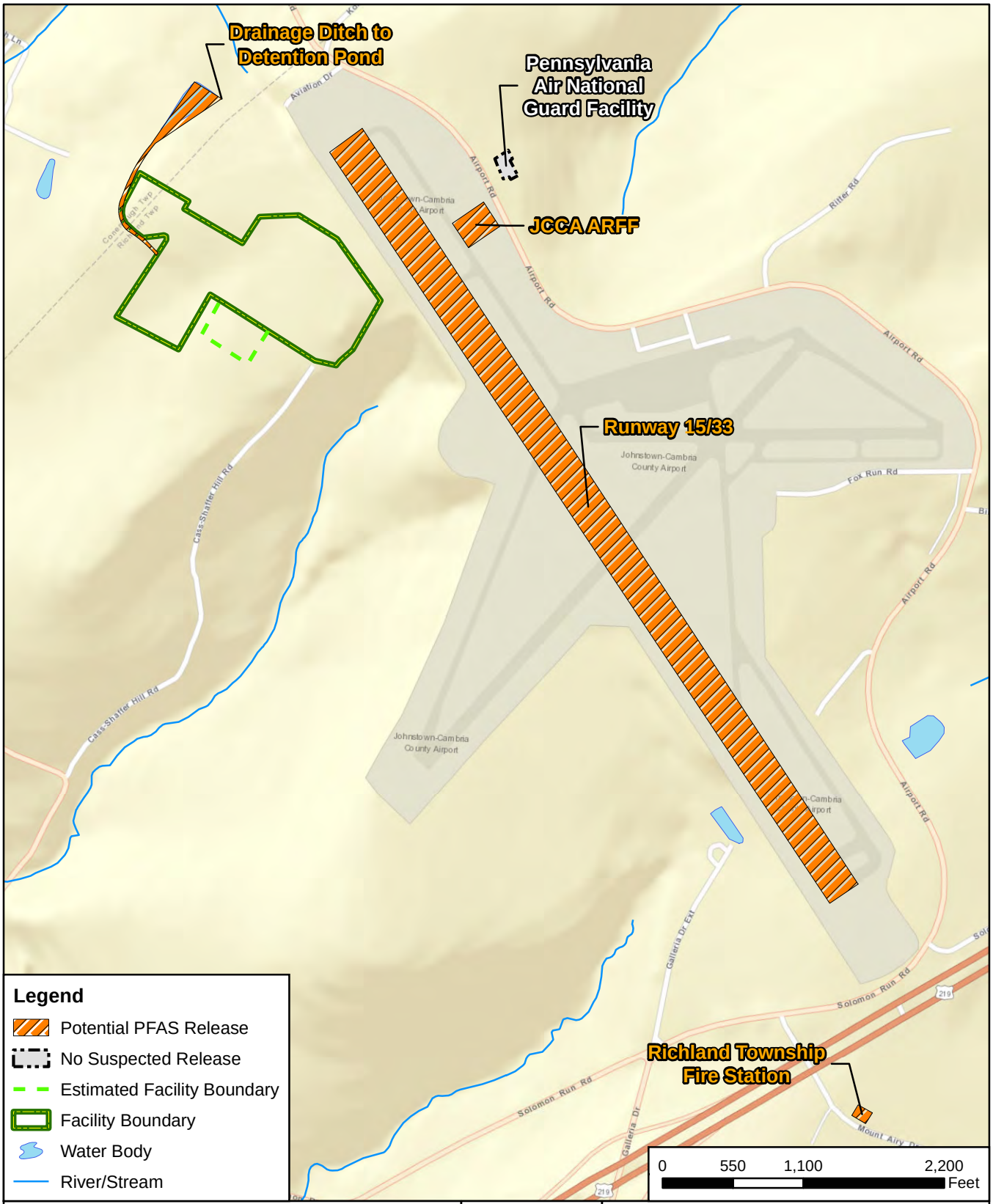
On 6 March 2012, a private Cessna 310 aircraft had a landing gear malfunction and required a hard landing at JCCA (Kathryn's Report, 2012). PAARNG, JCCA ARFF, and Richland Township Fire Department responded to the incident by preemptively spraying the runway with AFFF to soften the landing impact. The foaming of the runway occurred approximately midfield. An unspecified amount of AFFF was used in response to the incident, and the cleanup methods from the site are unknown.

5.4 JCCA ARFF

The JCCA ARFF maintains a maintenance facility on the northeast portion of JCCA along Airport Road. There are two 60-gallon foam tank capacity ARFF firetrucks, 200-gallon barrels, and 5-gallon buckets of 6% AFFF stored within the maintenance facility. Additionally, in accordance with Federal Aviation Administration (FAA) regulations, the JCCA ARFF performs biannual AFFF testing outside the maintenance facility. The interviewed JCCA ARFF personnel estimated that less than 5 gallons of 6% AFFF concentrate were released during each testing event. After the AFFF was discharged, the area was hosed down with water, and the runoff was captured in an adjacent retention pond. The JCCA ARFF had FAA testing records available dating back to 2005.

5.5 Richland Township Fire Station

The Richland Township Fire Department has a fire station due south of the JCCA border, at the address 176 Mount Airy Drive, Johnstown, Pennsylvania 15904. No off-facility VSI was conducted for the fire station; however, Richland Township Fire Department is known to contain AFFF resources due to its involvement in emergency responses at JCCA. Additionally, the Richland Township Fire Department is in a mutual aid agreement with JCCA and ARNG to provide emergency support services (see **Appendix A**). Therefore, the Richland Township Fire Station was identified as a potential adjacent source.



CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at Johnstown AASF #2, PA			
REVISED	7/15/2020	GIS BY	MS	7/15/2020
SCALE	1:13,200	CHK BY	ST	7/15/2020
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	7/15/2020

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, there was one area where AFFF fire training may have occurred, and two areas where AFFF was incidentally spilled or captured. As such, these areas are determined to be AOIs and may be potential PFAS source areas. The AOI locations are shown on **Figure 6-1** and summarized below:

- AOI 1 – Hangar Apron Areas
- AOI 2 – Drainage Areas
- AOI 3 – Former Burn Area

The following section describes the CSM components and the specific preliminary CSMs developed for each AOI. The CSM identifies the three components necessary for a potentially complete exposure pathway: (1) source, (2) pathway, (3) receptor. If any of these elements are missing, the pathway is considered incomplete.

6.1 Pathways

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

AFFF releases identified at Johnstown AASF #2 occurred on both surface soil and paved surfaces. Releases to the paved surfaces could have migrated a short distance onto the surrounding surface soil. Ground-disturbing activities in these grassy and wooded areas as well as beneath the pavement may result in potential exposure to surface soils via ingestion and inhalation of dust particles. AFFF releases to the paved surfaces could have infiltrated the subsurface via cracks in the pavement or joints between areas that are paved with different materials. Ground-disturbing activities may result in potential exposure to subsurface soils and groundwater via ingestion.

PFAS are water soluble and can migrate readily from soil to groundwater via leaching. No drinking water wells exist at Johnstown AASF #2. The facility receives drinking water from municipal water services, which have surface water intakes at several reservoirs. The closest reservoir (Dalton Run) is located approximately 8 miles to the southwest and is unlikely impacted due to the distance from the facility. Several domestic wells are located within 2 miles to the east and may be potentially impacted by contaminated groundwater, because groundwater flow direction in the bedrock is unknown. It is also possible that unregistered, private, domestic wells exist downgradient of the identified AOIs, which may result in potential exposure via ingestion of groundwater. Accidental ingestion of groundwater may also occur during construction activities due to the potential for shallow groundwater across the facility.

Surface water runoff at Johnstown AASF #2 is directed to the drainage areas that compose AOI 2 or flow downslope towards tributaries that eventually lead to the Conemaugh River. As a result, it is possible PFAS migrated to these tributaries and may result in potential exposure via ingestion of surface water.

6.2 Receptors

Receptors at Johnstown AASF #2 include site workers, construction workers, off-facility recreational users, and off-facility residents. Trespassers are an unlikely receptor because the facility is secured. These receptors as they pertain to the facility are described below:

- Site workers typically work at or use the site and may come into contact with the surface soils. Site workers may also use surrounding areas for recreation (i.e. swimming and/or fishing) and come into contact with surface water.
- Construction workers are considered workers who represent a utility worker or other worker who would be exposed to surface and/or subsurface conditions through ground-disturbing activities.
- Off-facility recreational users could be exposed to surface soils and surface water during recreational use.
- Off-facility residents identify receptors who occupy properties outside of Johnstown AASF #2. Off-facility residents may come into contact with groundwater using unregistered, private, domestic wells. Additionally, off-facility residents may use the surrounding area for recreation and may come into contact with surface water.

The preliminary CSMs for Johnstown AASF #2 indicate which specific receptors could potentially be exposed to PFAS. The preliminary CSMs for the AOIs at Johnstown AASF #2 are shown on **Figures 6-2** to **6-4**.

6.3 AOI 1: Hangar Apron Areas

AOI 1 includes Building 292, Building 288, Tri-Max Service Area, and hangar apron. AFFF releases have occurred due to fire suppression system trips and testing from Building 292 and nozzle testing, familiarization training, Tri-Max™ servicing, and excess AFFF disposal in the apron areas.

AFFF releases occurred on both paved areas and directly on grassy surfaces. Some AFFF releases may have occurred directly on surface soil or may have infiltrated the subsurface soil via cracks in the pavement or in joints between areas that are paved with different materials.

AFFF releases from the fire suppression systems in Building 288 and Building 292 would have been captured by trench drains within the buildings. AFFF releases on the hangar apron would have been captured by drains on the hangar apron. All drainage is controlled by diverter valves, which either release the drainage as stormwater or as wastewater through connection to the sanitary sewer. In the event that the drainage is released as stormwater, the drainage ditch and AFFF Pond are the receiving water bodies. The ditch and pond constitute AOI 2, discussed in the next section.

The pathways for PFAS exposure in AOI 1 are considered potentially complete for site workers, construction workers, off-facility residents, and recreational users. The preliminary CSM for AOI 1 is shown on **Figure 6-2**. Potential PFAS exposure pathways resulting from releases at AOI 1 are described in **Table 6-1.**

Table 6-1: Exposure Pathways at AOI 1

Pathway	Receptor
Surface Soil	Considered a potentially complete pathway to all receptors via inhalation of dust; considered a potentially complete pathway to site workers and construction workers via ingestion
Subsurface Soil	Considered a potentially complete pathway to construction workers via ingestion or inhalation of dust
Surface Water and Sediment	Considered a potentially complete pathway to all receptors via ingestion
Groundwater	Considered a potentially complete pathway to construction workers and off-facility residents via ingestion

6.4 AOI 2: Drainage Areas

AOI 2 includes the AFFF Pond and a portion of the drainage ditch that leads into a second off-facility stormwater detention pond. Both drainage areas lead to Solomon Run, which is a tributary of the Conemaugh River. AFFF releases from AOI 1 are captured in surface water and sediment in AOI 2. Throughout the years of facility operation, the water runoff in both drainage areas occasionally has been observed to be foamy as a result of AFFF releases in AOI 1.

It is unknown if the stormwater detention ponds and drainage ditch are unlined, so surface water infiltration to groundwater is possible.

The pathways for PFAS exposure in AOI 2 are considered potentially complete for site workers, construction workers, off-facility residents, and recreational users. The preliminary CSM for AOI 2 is shown on **Figure 6-3**. Potential PFAS exposure pathways resulting from releases at AOI 2 are described in **Table 6-2.**

Table 6-2: Exposure Pathways at AOI 2

Pathway	Receptor
Surface Soil	Considered an incomplete pathway to all receptors
Subsurface Soil	Considered an incomplete pathway to all receptors
Surface Water and Sediment	Considered a potentially complete pathway to all receptors via ingestion
Groundwater	Considered a potentially complete pathway to construction workers and off-facility residents via ingestion

6.5 AOI 3: Former Burn Area

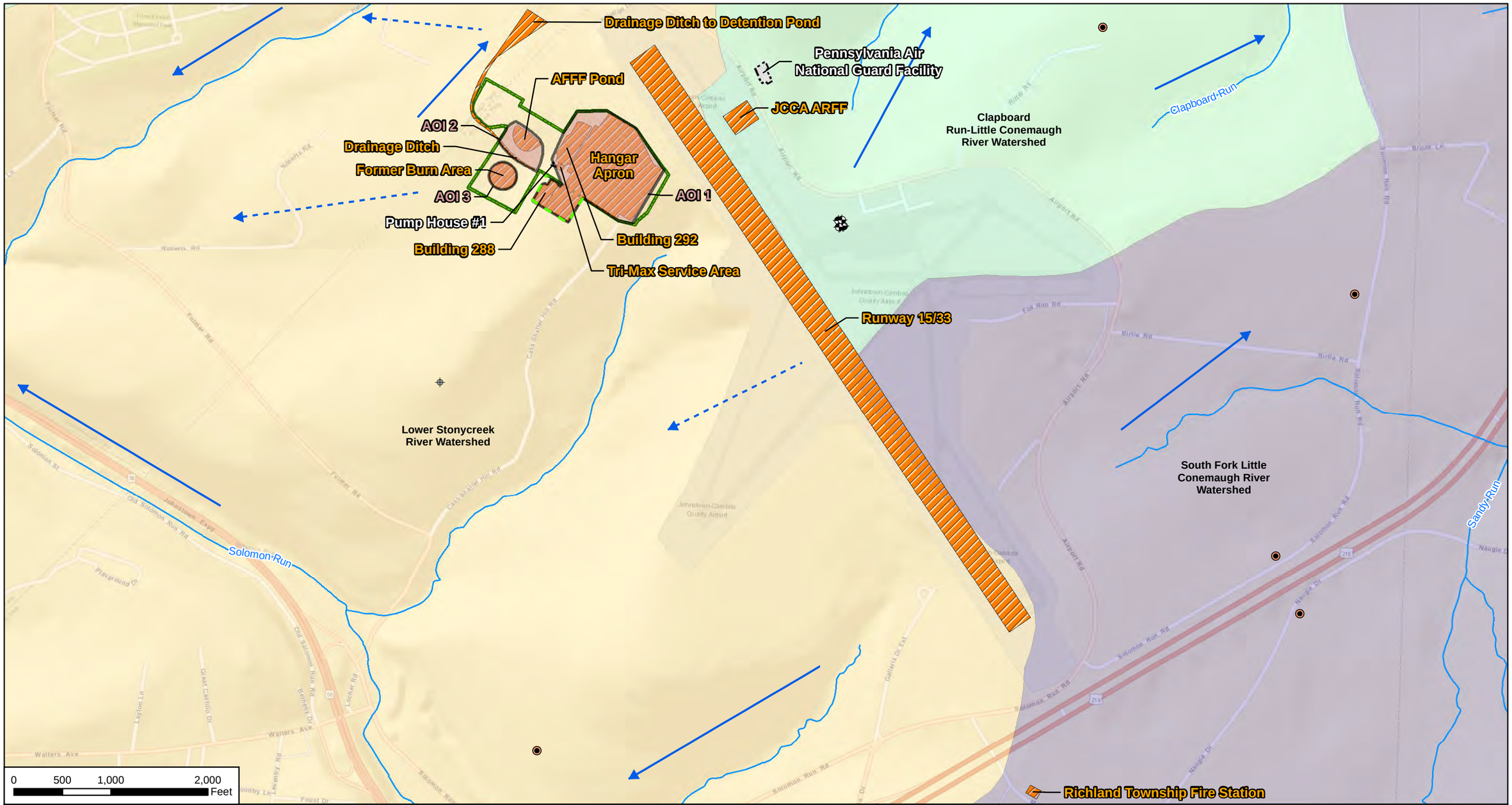
AOI 3 includes the Former Burn Area where AFFF releases may have occurred from fire training activities. The Former Burn Area was regraded and paved over in approximately 2010, and the current area is a fenced motor pool.

At the time of the fire training activities (approximately 2004 to 2010), AOI 3 was located on unpaved surfaces. Thus, expended AFFF may have been released directly onto surface soil and then infiltrated the subsurface soil. Surface water runoff at AOI 3 generally flows west towards Solomon Run, which is a tributary of the Conemaugh River.

The pathways for PFAS exposure in AOI 3 are considered potentially complete for site workers, construction workers, off-facility residents, and recreational users. The preliminary CSM for AOI 3 is shown on **Figure 6-4**. Potential PFAS exposure pathways resulting from releases at AOI 3 are described in **Table 6-3.**

Table 6-3: Exposure Pathways at AOI 3

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



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Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	RG	7/15/2020

- Area of Interest
- Potential PFAS Release
- No Suspected Release
- Estimated Facility Boundary
- Facility Boundary
- River/Stream
- Surface Water Flow Direction
- Inferred Groundwater Flow Direction (Alluvium)
- Domestic Well
- Monitoring Well
- Other/Unknown Well

N

Areas of Interest

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-1

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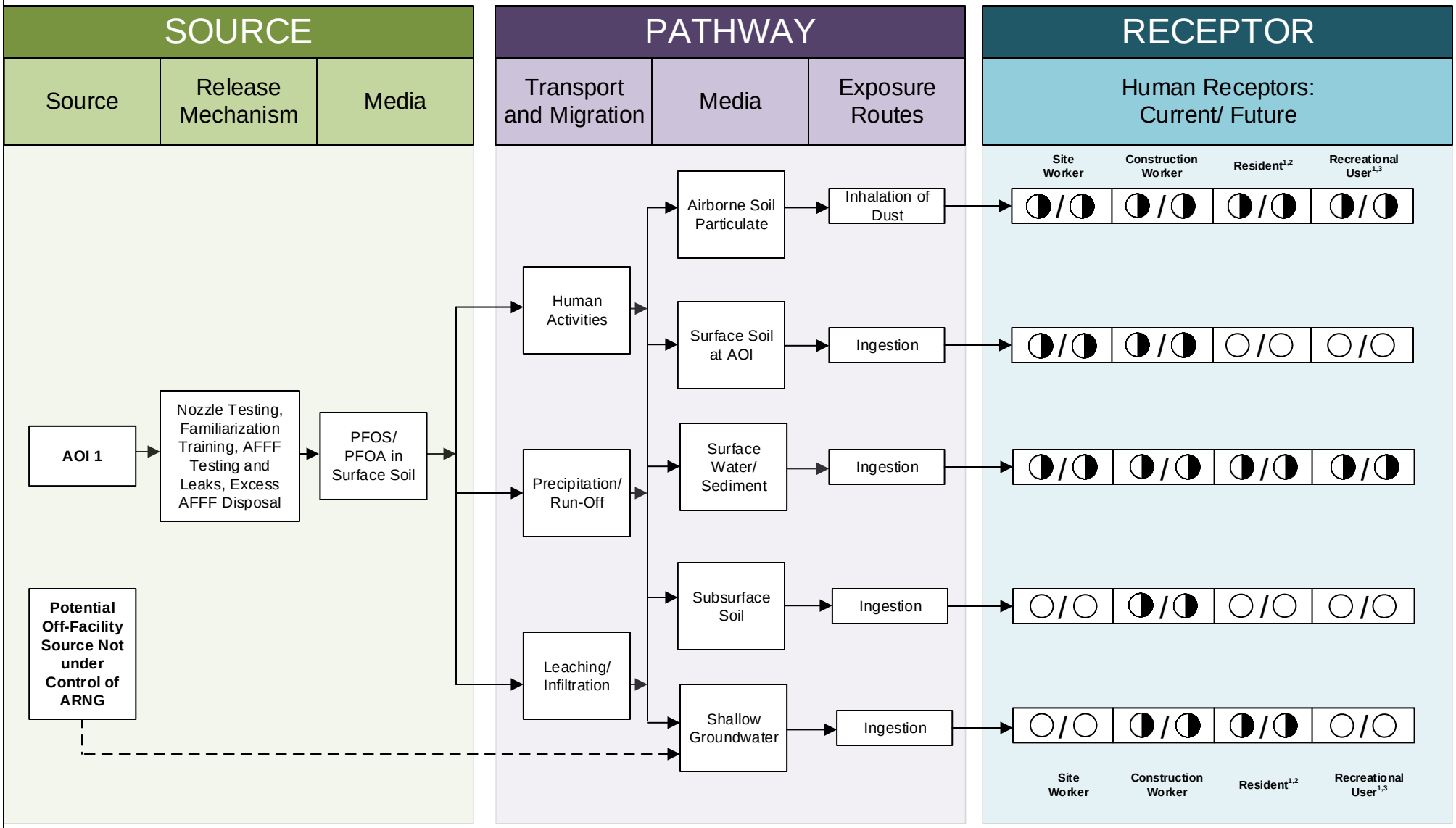


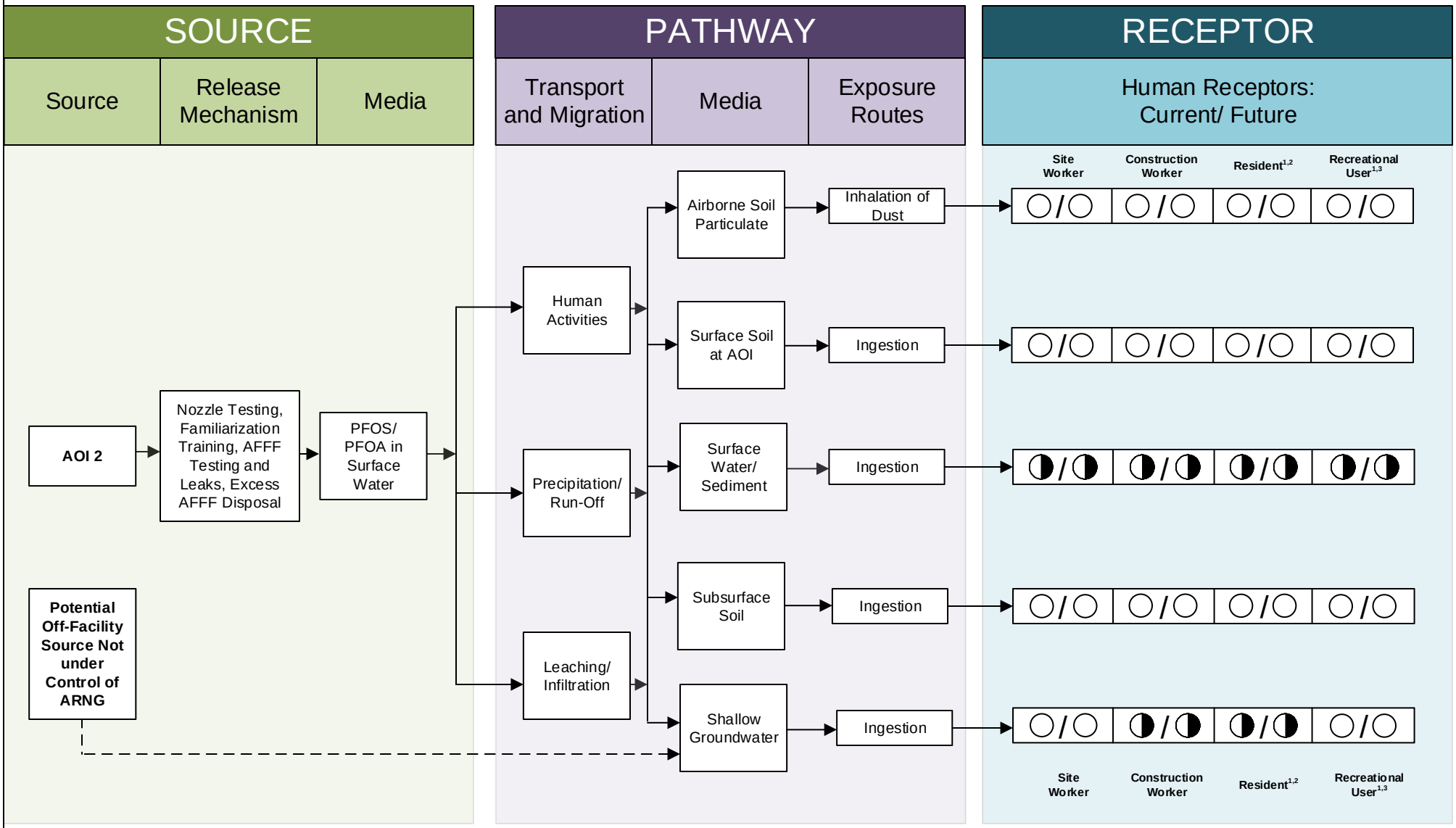
LEGEND

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

NOTES

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

Figure 6-2
Preliminary Conceptual Site Model
AOI 1 Hangar Apron Areas



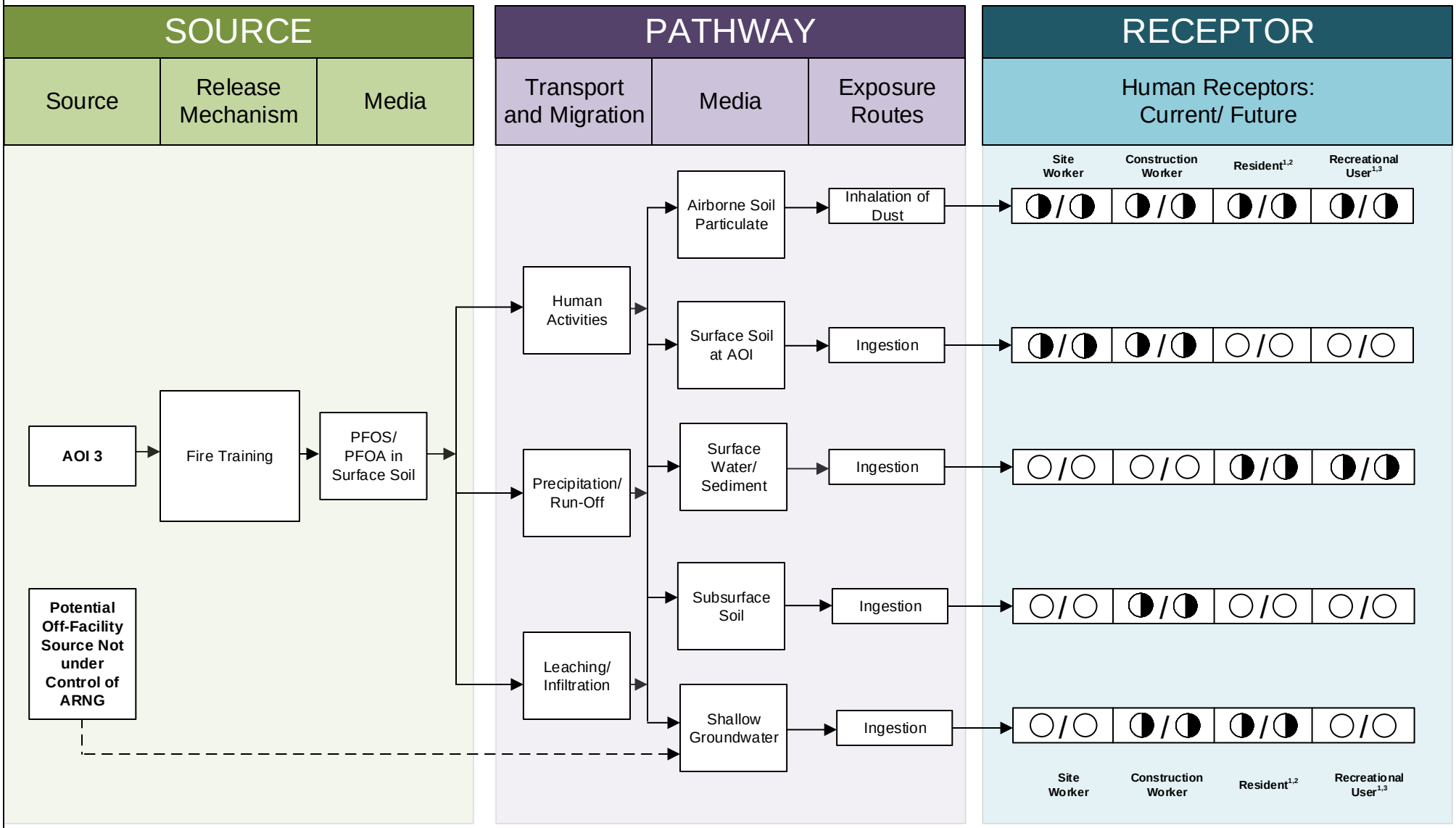
LEGEND

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

NOTES

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

Figure 6-3
Preliminary Conceptual Site Model
AOI 2 Drainage Areas



LEGEND

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

NOTES

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

Figure 6-4
Preliminary Conceptual Site Model
AOI 3 Former Burn Area

7. Conclusions

This report presents a summary of available information gathered during the PA on the use and storage of AFFF and other PFAS-related activities at the current AASF #2. The PA findings are based on the information presented in **Appendix A** and **Appendix B**.

7.1 Findings

Three AOIs related to potential PFAS release were identified (**Table 7-1**) at the current AASF #2 during the PA (**Figure 7-1**):

Table 7-1: AOIs at AASF #2

Area of Interest	Name	Used by	Potential Release Date
AOI 1	Hangar Apron Areas	PAARNG, USAR	1996 to current
AOI 2	Drainage Areas	PAARNG, USAR, USMCR	Potentially as early as 1996
AOI 3	Former Burn Area	PAARNG, USAR, USMCR	Approximately 2004 to 2010

Based on potential PFAS releases at these AOIs, there is potential for exposure to PFAS contamination in media at or near the facility. The preliminary CSMs for AASF #2 are shown on **Figures 6-2** through **6-4**, which present the potential receptors and media impacted.

The following areas discussed in **Section 2** through **Section 5** were determined to have no suspected release:

Table 7-2: No suspected Releases, AASF #2

No Suspected Release Area	Used by	Rationale for No Suspected Release Determination
Pump House #1	PAARNG	The building contained AFFF storage, but there was no evidence of spillage.
PAANG Facility	PAANG	The facility does not appear to contain an aviation hangar and interviewees did not suspect the facility to have stored or used AFFF.

Due to the mutual aid and/or property agreements between ARNG, USAR, USMCR, JCCA, and Richland Township Fire Department, there is a potential for off-facility sources of PFAS in the local area. **Table 7-3** summarizes the entities associated with each site considered under this investigation.

Table 7-3: Site Features and Associated Entities, AASF #2

Site Feature	Site Description	Pennsylvania Army National Guard (ARNG)	US Army Reserve (USAR)	US Marine Corps Reserve (USMCR)	Johnstown-Cambria County Airport (JCCA) Aircraft Rescue and Firefighting (ARFF)	Richland Township Fire Department
Building 292	Hangar with an AFFF fire suppression system. Multiple AFFF releases confirmed either through testing or accidental trips. Approximate Timeline of Events 1996: Building built and first AFFF fire suppression system test (before occupation) 1998/1999: Release or test filled AFFF pond with foam 2003: System tested where AFFF was discharged into lined dumpster and then carted off-site 2003-2010: System tested twice. AFFF discharged into lined dumpster and carted off-site. 2007: Leaky valve filled 3/4 of hangar with AFFF Current: Drip leak from AFFF pipe Status: suspected release Dates: multiple (see above)	•Joint USAR and ARNG space from 1997-2007, but primarily ARNG occupation. •Only ARNG occupation after 2007. ARNG stored fire crash trucks in Building 292 hangar. •Designated for ARNG use in 2010 land lease	•Joint USAR and ARNG space from 1997-2007, but primarily ARNG occupation. •According to the support agreement between USAR and ARNG, the USAR was responsible for the monitoring, maintenance, and repair of the AFFF fire suppression system			
Building 288	Hangar with an AFFF fire suppression system. Multiple AFFF releases confirmed through testing. Approximate Timeline of Events 1999/2000: Building built 2003: System tested where AFFF was discharged into lined dumpster and then carted off-site 2004/05: Minor break of pipe line carrying AFFF, releasing ~10 gallons into drain 2003-2010: System tested twice. AFFF discharged into lined dumpster and carted off-site. Status: suspected release Dates: multiple (see above)	•ARNG moved into hangar in July 2017. •Will become joint USAR and ARNG space. USAR will use the space as a motor pool.	•USAR occupied the building after USMCR (beginning 2009?) until June 2017. •Will become joint USAR and ARNG space. USAR will use the space as a motor pool.	•Occupied first by USMCR from 1999/2000 until 2009. •According to USAR personnel, USMCR only kept and used Halon fire extinguishers.		
Pump House #1	Contains engines, pumps, and four 55-gallon drums of AFFF for fire suppression system support of Buildings 292 and 288. Status: no suspected release.	Stated in 2010 ECOP report that the building was used by ARNG				
Tri-Max Service Area	Trimaxes were serviced with AFFF in the area beside Pump House #1. Spillage reportedly occurred during servicing and was left in place. Status: suspected release Dates: early 2000s to 2017/2018 (coinciding with dates that Trimaxes were at facility)	ARNG personnel reported servicing Trimaxes in the area. ARNG owned ~20 Trimaxes, but when ARNG got rid of Trimaxes, they gave some to USAR and the rest are stored currently at FTIG.				

Table 7-3: Site Features and Associated Entities, AASF #2

Site Feature	Site Description	Pennsylvania Army National Guard (ARNG)	US Army Reserve (USAR)	US Marine Corps Reserve (USMCR)	Johnstown-Cambria County Airport (JCCA) Aircraft Rescue and Firefighting (ARFF)	Richland Township Fire Department
Hangar Apron/Tarmac	Tarmac was used for familiarization training and nozzle testing by ARNG. It is also the area where ARNG purged all excess AFFF from Trimaxes and fire crash trucks when they were getting ready to turn in the Trimaxes and trucks. Currently, airfield is equipped with Purple K extinguishers. Status: suspected release Dates: 1999/2000-2017/2018	•Designated 3,247 square yards of hangar apron for ARNG use in 2010 land lease •ARNG personnel reported conducting familiarization training every 3-4 years with Trimaxes containing AFFF in grassy area just beyond tarmac. They also did nozzle testing with fire crash trucks containing AFFF in the same southeastern corner of tarmac. Fire crash trucks sat unused after 2013 and ARNG recently got rid of them •When ARNG got rid of the Trimaxes and fire crash trucks, they purged all AFFF into drains in airfield.	In the 2010 Proposed Site Plan, ramp in front of Building 292 is shared between ARNG and USAR	In the 2010 Proposed Site Plan, ramp in front of Building 288 is labeled "USMCR Ramp"		
Former Burn Area	Burn area was a former FTA used by USAR, USMCR, and ARNG. ARNG stated that they only used Trimaxes filled with water and burned paper documents. It is unknown what USAR and USMCR activities were in the area. Area was regraded, paved over, and turned into a motor pool in ~2010. Status: suspected release (due to uncertainty) Dates: 2004 to 2010	•ARNG currently uses the area as a fenced motor pool but this will soon be turned over to USAR •Joint usage of area by ARNG, USAR, and USMCR	•USAR has plans to reacquire this property from ARNG •Joint usage of area by ARNG, USAR, and USMCR	•Joint usage of area by ARNG, USAR, and USMCR		
AFFF Pond (secondary containment area)	AFFF Pond is a stormwater detention pond that has previously been observed to contain AFFF; thus, it has been coined the name "AFFF Pond". If the fire alarm system trips in Building 292 and Building 288, the drains in the buildings lead through oil water separators and then into the AFFF Pond. Status: suspected release Dates: multiple (see Building 292)	ARNG activities in Buildings 292 and 288 may have contributed to PFAS contamination.	USAR activities in Buildings 292 and 288 may have contributed to PFAS contamination.			

Table 7-3: Site Features and Associated Entities, AASF #2

Site Feature	Site Description	Pennsylvania Army National Guard (ARNG)	US Army Reserve (USAR)	US Marine Corps Reserve (USMCR)	Johnstown-Cambria County Airport (JCCA) Aircraft Rescue and Firefighting (ARFF)	Richland Township Fire Department
Drainage Ditch and Detention Pond (secondary containment area)	A drainage ditch leads into a second stormwater detention pond. AFFF has previously been observed in the drainage ditch. The drainage ditch/ detention pond captures drainage from the flight line/ tarmac. Status: suspected release Dates: multiple (see Building 292, Building 288, and Flight Line/ Tarmac)	ARNG activities at the flight line/ tarmac may have contributed to PFAS contamination.	The drainage ditch and detention pond also receives drainage from USAR areas.	The drainage ditch and detention pond also receives drainage from USMCR areas.		
Runway 15/33 (adjacent source)	Runway 15/33 is on JCCA property but is shared between civilian and military aircraft. Multiple civilian aircraft crashes and emergency responses involving AFFF have been reported throughout the years on the runway. Approximate Timeline of Events 1974: Commercial airplane crash, AFFF response and exact location unknown 2006: Commercial airplane crash, AFFF response by municipal and ARNG fire departments 2008: Cessna airplane involving fuel spill and AFFF response by municipal fire departments, location unknown and records not found 2012: Private aircraft landing gear accident, runway foamed by municipal and ARNG fire departments Status: suspected release Dates: multiple (see above)	•Until 2011, ARNG was in a mutual aid agreement with the ARFF and Richland Township Fire Department to provide emergency support services for all aircraft emergencies regardless if aircraft is civilian or military. After 2011, ARNG declared they no longer had the appropriate resources to respond to emergencies in accordance with the agreement. •Confirmed involvement in 2006 crash and 2012 landing gear incident			ARFF has been involved in all aircraft emergencies and is the primary first responder.	Richland Township Fire Department has been involved in all aircraft emergencies and is the primary first responder.
ARFF (adjacent source)	ARFF maintenance facility and AFFF testing area indicated in the left picture. ARFF does AFFF testing biannually for FAA regulations. Status: suspected release Dates: 2005 to present				JCCA ARFF conducts AFFF testing biannually for FAA regulations in area outside of maintenance facility. Testing records go back to 2005.	

Table 7-3: Site Features and Associated Entities, AASF #2

Site Feature	Site Description	Pennsylvania Army National Guard (ARNG)	US Army Reserve (USAR)	US Marine Corps Reserve (USMCR)	Johnstown-Cambria County Airport (JCCA) Aircraft Rescue and Firefighting (ARFF)	Richland Township Fire Department
Pennyslvania Air National Guard (PAANG) (adjacent source)	No off-facility visual site inspection conducted, but interviewees did not suspect PAANG to contain AFFF at facility. Facility does not appear to contain an aviation hangar. PAANG facility is home to the 258th Air Traffic Control Squadron, which controls civilian and military air traffic for JCCA. Status: no suspected release					
Richland Township Fire Department (adjacent source)	Richland Township Fire Department borders JCCA to the south and is in agreement with the JCCA and ARNG to provide support for emergencies. Status: suspected release					No off-facility visual site inspection conducted, but Richland Township Fire Department is known to contain AFFF resources due to involvement in JCCA emergency responses.

7.2 Uncertainties

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

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

In order to minimize the level of uncertainty, readily available data regarding the use and storage of PFAS were reviewed, current personnel were interviewed, multiple persons were interviewed for the same potential source area, and potential source areas were visually inspected.

The following **Table 7-4** summarizes the uncertainties associated with the PA:

Table 7-4: Summary of Uncertainties

Area of Interest	Source of Uncertainty
AOI 1: Hangar Apron Areas	The exact dates and details of some of the AFFF releases from the fire suppression system are unknown. Additionally, the interviewees did not specify exact locations within the hangar apron where AFFF was released for disposal.
AOI 2: Drainage Areas	The AFFF Pond has a valving system by which the water can be drained through a ditch into the second off-facility stormwater detention pond (HDR, 2016); however, it is unknown in what instances this migration pathway would have occurred between the two detention ponds. Additionally, general uncertainty about drainage pathways and diverter valve connections exists due to conflicting information received from reviewed documentation and site interviews.
AOI 3: Former Burn Area	It is unknown if the fire training activities involved AFFF or some other type of firefighting foam. USAR and USMCR activities at the Former Burn Area are unknown.

7.3 Potential Future Actions

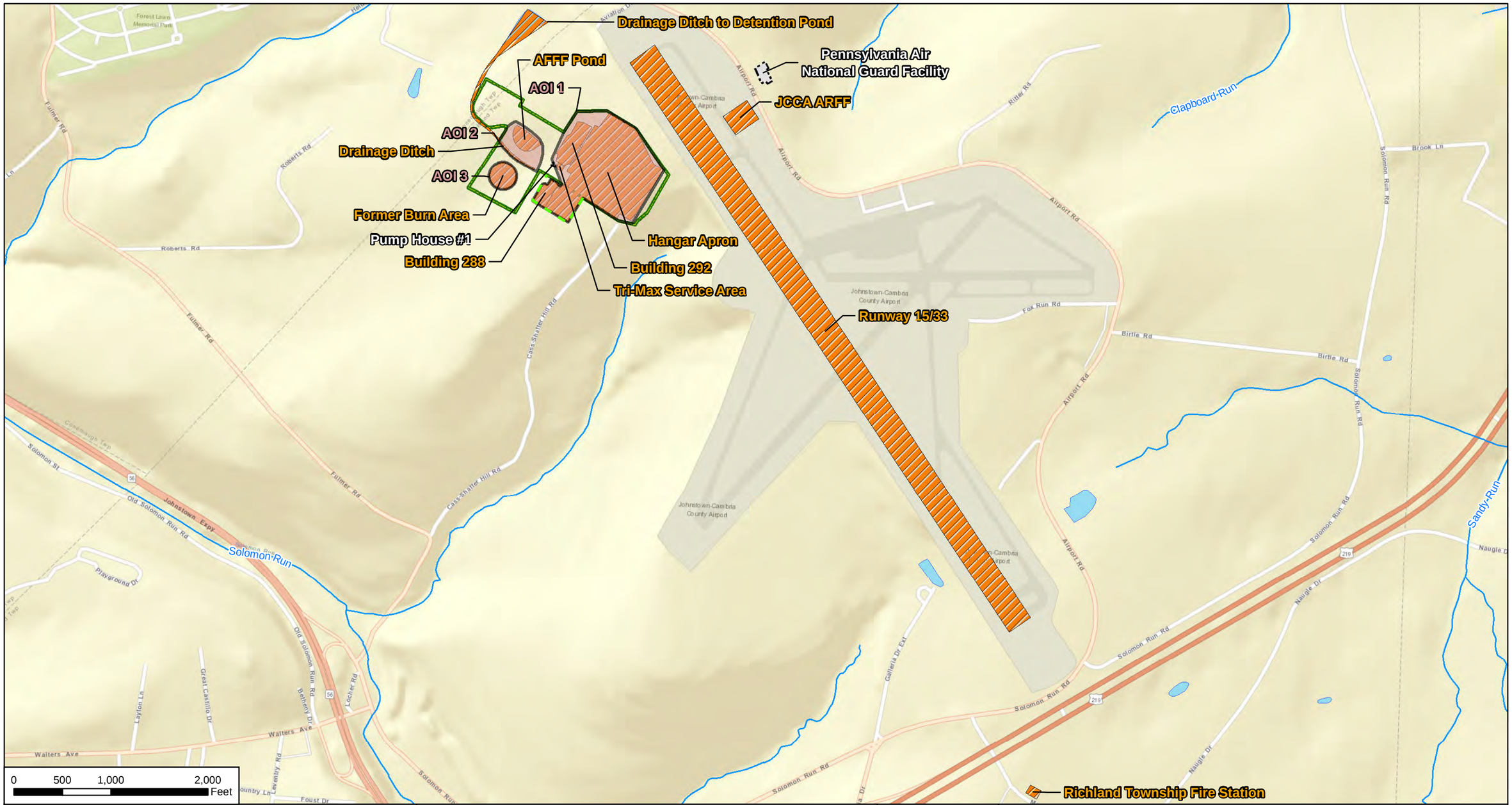
Based on the documented absence (1997 to present) of the use or release of AFFF from Pump House #1, evidence does not indicate that current or former ARNG activities having contributed PFAS contamination to soil, groundwater, surface water, or sediment at this location. This location will not move forward in the CERCLA process.

Interviews and records (covering 1997 to present) indicate that current or former ARNG activities may have resulted in potential PFAS releases at three AOIs identified during the PA. Based on the preliminary CSM developed for the AOI, there is potential for receptors to be exposed to PFAS contamination in soil, groundwater, surface water, and sediment at these AOIs. **Table 7-5** summarizes the rationale used to determine if the AOIs should be considered for further investigation under the CERCLA process and undergo an SI.

Table 7-5: PA Findings Summary

Area of Interest	AOI Location	Rationale	Potential Future Action
AOI 1: Hangar Apron Areas	40°19'15.7"N; 78°50'40.7"W	Confirmed location of AFFF releases from fire suppression system, nozzle testing, familiarization training, Tri-Max™ servicing, and excess AFFF disposal.	Proceed to an SI, focus on soil, groundwater, surface water, sediment
AOI 2: Drainage Areas	40°19'15.7"N; 78°50'46.7"W	USAR and PAARNG personnel have reported seeing AFFF in the AFFF Pond and the drainage ditch during the years of facility operation. The AFFF Pond captures drainage from Building 292 when the fire alarm system is triggered. The drainage ditch captures drainage from Building 292 when the fire alarm system is not triggered, the hangar apron, and Building 288.	Proceed to an SI, focus on groundwater, surface water, sediment
AOI 3: Former Burn Area	40°19'12.4"N; 78°50'49.9"W	Confirmed location of fire training activities by PAARNG, USAR, and USMCR.	Proceed to an SI, focus on soil, groundwater, surface water, sediment

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



CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at Johnstown AASF #2, PA			
REVISED	7/15/2020	GIS BY	MS	7/15/2020
SCALE	1:12,000	CHK BY	ST	7/15/2020
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	RG	7/15/2020

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

N

Summary of Findings

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 7-1

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Appendix A
Data Resources

Data resources will be provided separately on CD. Data resources for AASF #2 include:

Environmental Data Resources, Inc.™ Geocheck Report

- 2019 Environmental Data Resources, Inc.™ Geocheck Report for AASF #2, Pennsylvania

Leasing Information

- 1991 Land Lease Between Johnstown Cambria Airport Authority and the United States of America, Lease No. DACA-31-5-91-274
- 1994 Land Lease Between Wilmore Coal Company and the United States of America, Lease No. DACA-31-5-94-589
- 1997 Supplemental Lease Agreement No. 1, Lease No.: DACA-31-5-91-274
- 1999 Supplemental Lease Agreement No. 2, Lease No.: DACA-31-5-91-274
- 2001 Supplemental Lease Agreement No. 3, Lease No.: DACA-31-5-91-274
- 2003 Supplemental Lease Agreement No. 4, Lease No.: DACA-31-5-91-274
- 2005 U.S. Government Lease for Real Property, Lease No. DACA-31-5-05-0471
- 2010 Department of the Army License for National Guard Purposes at Johnstown-Cambria, Johnstown, Pennsylvania, License No. DACA-31-3-10-240.
- 2010 Proposed Site Plan Map
- Johnstown Airport Legal Agreements
- Proposed Site/Utility Plan, Johnstown AASF Construction of Longbow Crew Trainer Facility
- Real Estate Planning Map, Pennsylvania Air National Guard
- Ultimate Airport Layout Plan, John Murtha Johnstown-Cambria County Airport

Miscellaneous

- Site Layout and Source Areas/Drainage Patterns Figures
- Stormwater and Industrial Conveyance System Figure

PAARNG Environmental Management Plans

- 2006 Pennsylvania Army National Guard, Statewide Operational Noise Management Plan
- 2016 Spill Prevention, Control, and Countermeasures Plan, Johnstown Complex (PA051) Johnstown, Pennsylvania

PAARNG Mutual Aid Agreements

- 1997 Support Agreement, Agreement No. W25ASN-98029-001
- 2007 Airport Joint Use Agreement
- 2010 Support Agreement, Agreement No. W25ASN-98029-002
- 2011 Letter of Agreement Between Cambria County Department of Emergency Services and Johnstown-Cambria County Airport Authority (JCCAA), 258th Air Traffic Control Squadron (PAANG), Army Aviation Support Facility #2 (PAARNG), Marine Corp Reserve Training Center, Richland Fire Department, Richland Police Department

Previous Investigations Completed at AASF #2

- 2010 Final Environmental Condition of Property, Environmental Site Assessment, Johnstown Army Aviation Support Facility, Richland and Conemaugh Townships, Cambria County, Pennsylvania
- 2018 Pennsylvania Army National Guard, Installation Compatible Use Zone Study

Stormwater Permit Determinations

- 2017 Memorandum from Christopher Kriley (Pennsylvania Department of Environmental Protection) to Mr. Don Paul (Department of Military & Veterans Affairs), RE: Permit Determination, Pennsylvania Army National Guard Facilities

Appendix B
Preliminary Assessment Documentation

Appendix B.1
Interview Records

PA Interview Questionnaire - Other

Facility:__Johnstown AASF #2
Interviewer:__[redacted]_____
Date/Time:__8/27/19_____

Interviewee:__[redacted] (JCCA)____ **Title:__Maintenance Supervisor _____** **Phone Number:_____** **Email:_____**	Can your name/role be used in the PA Report? **Y** or N Can you recommend anyone we can interview? Y or N _____

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

Has been in maintenance and operations at the Cambria County Airport Rescue Firefighting (ARFF) for 11 years

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?

FAA regulations require the ARFF to discharge/test the AFFF twice a year. They discharge 6% AFFF twice a year outside the maintenance facility.	**Known Uses**
They also do a response test for FAA annually but only with water.	Use
They train with water only.	Procurement
During FAA testing of AFFF, typically <5 gallons of concentrated AFFF are released. The firetrucks then hose down the area with water, and the testing area drains to a retention pond.	Disposition
Testing records go back to 2005.	Storage (Mixed)
The facility contains 2 firetrucks with 60-gallon foam tank capacities each.	Storage (Solution)
They have AFFF in 200-gallon barrels and buckets. Brands include National Foam and Chemguard Milspec.	Inventory, Off-Spec
They do an annual timed emergency response training with ARNG. They have a mutual aid response agreement with Richland Fire Department and ARNG.	Containment
In 2008/2009, there was an accident with an aircraft. This involved a fuel spill and there was an unknown amount of foam released. The cleanup method is unknown. There is no incident report available.	SOP on Filling
Confirmed the location of the 2012 landing gear incident.	Leaking Vehicles
Both responses involved Richland Fire Department and possibly ARNG response too.	Nozzle and Suppression System Testing

PA Interview Questionnaire - Other

Facility:__Johnstown AASF #2
Interviewer:__[redacted]_____
Date/Time:__8/27/19_____

December 26, 2006, there was an aircraft crash which also had a foam response.	Dining Facilities
	Vehicle Washing
	Ramp Washing
	Fuel Spill Washing and Fueling Stations
	Chrome Plating or Waterproofing

PA Interview Questionnaire - Other

Facility:_Johnstown AASF #2__
Interviewer:___[redacted]_____
Date/Time:___8/27/19_____

Interviewee:_[redacted] (PAARNG)____ **Title:__Electronics Mechanic Supervisor___** **Phone Number:_____** **Email:_____**	Can your name/role be used in the PA Report? **Y** or N Can you recommend anyone we can interview? Y or N _____

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

Been at facility since 2000

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

At Bldg 292, there was AFFF coming out of a valve. The Richland Fire Department (municipal) came and hosed down the foam and helped to contain it.	**Known Uses**
The foam filled ¾ of the hangar and was about 4 ft high, but most of it went down the drains in the hangar. It is unlikely that AFFF went out of the hangar. This occurred in ~2007.	Use
A contractor came in and fixed the broken valve and recharged the tank.	Procurement
The clean up process was that they tried to push the foam towards the center of the hangar with squeegees. There was still residual foam for months after the incident because the floor would be sticky and you could see footprints of white residue outside the hangar.	Disposition
The Richland Fire Department responds to structure fires. The Cambria County Airport fire department responds to aircraft emergencies.	Storage (Mixed)
	Storage (Solution)
	Inventory, Off-Spec
	Containment
	SOP on Filling
	Leaking Vehicles
	Nozzle and Suppression System Testing
	Dining Facilities

PA Interview Questionnaire - Other

Facility:_Johnstown AASF #2__
Interviewer:__[redacted]_____
Date/Time:___8/27/19_____

	Vehicle Washing
	Ramp Washing
	Fuel Spill Washing and Fueling Stations
	Chrome Plating or Waterproofing

PA Interview Questionnaire - Other

Facility:_Johnstown AASF #2_
Interviewer:_[redacted]_____
Date/Time:__8/27/19_____

Interviewee:__see below (PAARNG)_____ **Title:_____** **Phone Number:_____** **Email:_____**	Can your name/role be used in the PA Report? **Y** or N Can you recommend anyone we can interview? Y or N _____

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

[redacted] (Mechanic/Mechanic Supervisor) since 1997

[redacted] (Aircraft Mechanic/Fire Crew) since 1999

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?

[redacted] (814-977-5007) (retired officer) was present during two testing events of the AFFF fire suppression system in Bldg 292 that resulted in releases. The 1st testing event occurred in ~1996/1997. It was unknown when 2nd testing event occurred.	**Known Uses**
A 3rd release event occurred at Bldg 292 when the system broke and foam went out the hangar doors. This occurred in the past 10 years. This was a partial release from a leaky valve. The foam was hosed down to the drain. [redacted] (PAARNG) was present during the incident and would be able to tell more information.	Use
Johnstown AASF #2 had Trimaxes that were filled with AFFF. They were required to test the Trimaxes annually, but actually they were tested about every 3-4 years. Trimaxes were tested on the southwestern corner of the airfield.	Procurement
The Trimaxes were received in the early 2000s. In ~2017/2018, they got rid of these Trimaxes and purged all the remaining AFFF in the testing area.	Disposition
They indicated there was a burn area where they would conduct training with the Trimaxes, but the Trimaxes were only filled with water.	Storage (Mixed)
All Trimaxes are currently at a warehouse in FTIG. There were ~20 Trimaxes but the USAR took some of them.	Storage (Solution)
Trimaxes were serviced with AFFF in the area between Bldg 288 and Bldg 292. Some spillage occurred but was just left on the pavement.	Inventory, Off-Spec
There was an incident where a landing gear wouldn't retract so AASF response crew foamed the runway. That occurred in ~2012.	Containment
Bldg 292 Hangar was built in 1996 and was occupied in 1997.	SOP on Filling

PA Interview Questionnaire - Other

Facility:_Johnstown AASF #2_
Interviewer:__[redacted]_____
Date/Time:__8/27/19_____

The AASF had firetrucks containing 3% and 6% AFFF. They never fired off the foam after 2013 except emptying it out when they got rid of it recently. They got rid of the AFFF by parking over the drains in the airfield and opening the bottom hatch to release the foam.	Leaking Vehicles
The fire detachment team was just volunteer employees. They do not have to follow FAA regulations to do fire training and have not had joint fire training exercises.	Nozzle and Suppression System Testing
There was a red truck with a 50 gallon foam capacity and a crash truck with 75 gallon foam capacity. Both contained 3% AFFF. Prior to acquiring these trucks, they had two other trucks that were yellow and contained 6% AFFF. They got rid of the yellow trucks in 2006/2007.	Dining Facilities
There was an airplane accident in the civilian side, which was jointly responded to by the municipal fire department and ARNG. AFFF was used. Crash occurred in 2006/2007.	Vehicle Washing
The runways were redone in ~2010. They excavated and refilled the soil and then extended the runways.	Ramp Washing
The AFFF fire suppression systems in Bldgs 292 and 288 were tested and foam was discharged into a lined dumpster in 2003. This dumpster was diluted with water, covered with a tarp, and then a contractor carted it away and disposed of the material off-site at a landfill. They recharged the system with ~ten 50-gallon drums of AFFF. The system was tested twice after that (between 2003-2010) in both hangar buildings.	Fuel Spill Washing and Fueling Stations
[redacted] has Reserve Real Property information. Contact information [redacted]	Chrome Plating or Waterproofing

PA Interview Questionnaire - Other

Facility:_Johnstown AASF #2_
Interviewer:_[redacted]_____
Date/Time:__8/27/19_____

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

Roles or activities with the Facility/Years working at the Facility:	
Regional Facility Operations Supervisor with the 99th USAR since 2000	
He handles everything maintenance related	
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?	
USAR C-12 unit (fixed wing) operations from 1997-2007.	**Known Uses**
Bldg 288 was built in 1999/2000 with an AFFF fire suppression system in hangar. The Marine occupied the building until 2009, and then it became USAR property.	Use
He believes the Marines used Halon fire extinguishers.	Procurement
The burn area (indicated on map) was used between 2004 and 2010. Three entities shared the burn area: Marines, USAR, and ARNG. The burn area is a potential FTA.	Disposition
The Marines helicopter crashed into Bldg 288. There weren't more details on this but it appears this didn't lead to any type of AFFF release or response.	Storage (Mixed)
There was a minor break in a pipeline containing concentrate foam in the Bldg 288 tank room in 2004/2005. The foam was pushed down the floor drains and about 10 gallons was released.	Storage (Solution)
	Inventory, Off-Spec
	Containment
	SOP on Filling
	Leaking Vehicles
	Nozzle and Suppression System Testing
	Dining Facilities
	Vehicle Washing

Appendix B.2
Visual Site Inspection Checklists

Visual Site Inspection Checklist

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

Recorded by: [redacted]

ARNG Contact: [redacted]

Date and Time: 8/27/19

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

Source/Release Information

Site Name / Area Name / Unique ID: Building 292

Site / Area Acreage: 69,000 SF

Historic Site Use (Brief Description): hangar w/ maintenance shops & administrative rooms

Current Site Use (Brief Description): same as above

Physical barriers or access restrictions: AASF outside perimeter fence

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):

multiple releases from AFFF fire suppression system through testing / trip

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

mostly wooded, some residential

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

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

PRS Technologies, PAANG (no aviation support)

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:

3% AFFF National Foam Aer-o-water 3EM

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

yes drip leaking currently, scheduled annually but last inspection 4/19/

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

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

leads to OWS

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation? (Y) N

1a. If so, note observation and location:

Second detention pond leads off installation

2. Is there channelized flow within the site/area? (Y) N

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

drainage ditch leading to detention pond

3. Are monitoring or drinking water wells located near the site? Y (N)

3a. If so, please note the location:

4. Are surface water intakes located near the site? Y (N)

4a. If so, please note the location:

5. Can wind dispersion information be obtained? Y (N)

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

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

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

multiple from USAR, ARFF, and crash incident responses

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

Visual Survey Inspection Log

Significant Topographical Features:

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

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

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

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

3. Does the site or area exhibit evidence of erosion? Y / (N)

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

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

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

two detention ponds

Receptor Information

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

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

outside perimeter fence

2. Who can access the site? Site Workers / (Construction Workers) / (Trespassers) / Residential / Recreational Users / (Ecological)

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

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

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

Sparsely located to north and west

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

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

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

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

Visual Survey Inspection Log

Additional Notes

was joint USAR & ARNG space from 1997-2007
after 2007, ARNG space only

Photographic Log

Photo ID/Name	Date & Location	Photograph Description

Visual Site Inspection Checklist

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

Recorded by: [redacted]

ARNG Contact: [redacted]

Date and Time: 8/27/19

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

Source/Release Information

Site Name / Area Name / Unique ID: Flight line / Tarmac

Site / Area Acreage:

Historic Site Use (Brief Description): aircraft parking, nozzle testing

Current Site Use (Brief Description): aircraft parking

Physical barriers or access restrictions: AASF outside perimeter fence

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):

they discharged AFFF from crash trucks & Trimaxes for nozzle testing

2. Has usage been documented? Y (N)

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

every 3-4 yrs; also got rid of all excess AFFF on tarmac drains

3. What types of businesses are located near the site? **Industrial / Commercial / Plating / Waterproofing / Residential**

3a. Indicate what businesses are located near the site

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

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

DRS Technologies, PAANG

Visual Survey Inspection Log

Other Significant Site Features:

1. Does the facility have a fire suppression system? (Y) / N — See Bldg 292 VSI form

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

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

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

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

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation? (Y) / N

1a. If so, note observation and location:

2nd detention pond leads off installation

2. Is there channelized flow within the site/area? (Y) / N

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

drainage ditch leading to detention pond

3. Are monitoring or drinking water wells located near the site? Y / (N)

3a. If so, please note the location:

4. Are surface water intakes located near the site? Y / (N)

4a. If so, please note the location:

5. Can wind dispersion information be obtained? Y / (N)

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

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

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

multiple fires WAR, ARFF, and crash incident responses

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

Visual Survey Inspection Log

Significant Topographical Features:

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

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

flightline was extended

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

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

vegetation surrounding flightline where they might have discharg AFFF

3. Does the site or area exhibit evidence of erosion? Y (N)

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

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

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

Receptor Information

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

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

outside perimeter fence

2. Who can access the site? **Site Workers / Construction Workers / Trespassers / Residential / Recreational Users / Ecological**

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

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

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

Sparsely located to north and west

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

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

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

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

Visual Site Inspection Checklist

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

Recorded by: [redacted]

ARNG Contact: [redacted]

Date and Time: 8/27/19

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

Source/Release Information

Site Name / Area Name / Unique ID: Burn area

Site / Area Acreage:

Historic Site Use (Brief Description): fire training area, burn pit, former location of concrete batch plant

Current Site Use (Brief Description): motor pool

Physical barriers or access restrictions: AASF perimeter fence

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

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

unknown, PARNG stated they trained w/ water only but also used by USAR and marines

2. Has usage been documented? Y / (N)

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

3. What types of businesses are located near the site? **Industrial / Commercial / Plating / Waterproofing / (Residential)**

3a. Indicate what businesses are located near the site

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

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

DRS Technologies, PARNG

Visual Survey Inspection Log

Other Significant Site Features:

1. Does the facility have a fire suppression system? (Y) N See Bldg 292 VSI form

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

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

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

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

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation? (Y) N

1a. If so, note observation and location:

Second detention pond leads off installation

2. Is there channelized flow within the site/area? (Y) / N

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

drainage ditch leading to detention pond

3. Are monitoring or drinking water wells located near the site? Y (N)

3a. If so, please note the location:

4. Are surface water intakes located near the site? Y (N)

4a. If so, please note the location:

5. Can wind dispersion information be obtained? Y (N)

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

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

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

Multiple from USAR, ~~ARFF~~, and crash incident responses

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

Visual Survey Inspection Log

Significant Topographical Features:

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

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

burn area paved over and turned into motor pool

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

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

surrounding area wooded

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

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

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

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

Receptor Information

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

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

outside perimeter fence

2. Who can access the site? Site Workers / Construction Workers / ~~Trespassers~~ / Residential / Recreational Users / ~~Ecological~~

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

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

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

located to north and west

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

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

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

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

Visual Site Inspection Checklist

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

Recorded by: [redacted]

ARNG Contact: [redacted]

Date and Time: 8/27/19

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

Source/Release Information

Site Name / Area Name / Unique ID: Pump House 1

Site / Area Acreage: 2,000 sf

Historic Site Use (Brief Description): water pump station for Bldgs 292 & 288, AFFF storage

Current Site Use (Brief Description): same as above

Physical barriers or access restrictions: NSF perimeter fence

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):

several AFFF drums stored in area (55-gallons) of

2. Has usage been documented? Y / (N) National Foam Aer-O-Water 3EM 3%

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

3. What types of businesses are located near the site? **Industrial / Commercial / Plating / Waterproofing / (Residential)**

3a. Indicate what businesses are located near the site

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

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

DRS Technologies, PANNG

Visual Survey Inspection Log

Other Significant Site Features:

1. Does the facility have a fire suppression system? (Y) / N See Bldg 292 VSI form

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

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

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

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

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation? (Y) / N

1a. If so, note observation and location:

detention ponds flow off-installation

2. Is there channelized flow within the site/area? (Y) / N

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

drainage ditch leading to detention pond

3. Are monitoring or drinking water wells located near the site? Y / (N)

3a. If so, please note the location:

4. Are surface water intakes located near the site? Y / (N)

4a. If so, please note the location:

5. Can wind dispersion information be obtained? Y / (N)

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

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

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

multiple from USAR, ARFF, and crash incident responses

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

Visual Survey Inspection Log

Significant Topographical Features:

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

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

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

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

3. Does the site or area exhibit evidence of erosion? Y / (N)

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

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

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

Receptor Information

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

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

AASF perimeter fence

2. Who can access the site? Site Workers / (Construction Workers) / (Trespassers) / Residential / Recreational Users / Ecological

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

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

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

located to north and west

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

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

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

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

Visual Site Inspection Checklist

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

Recorded by: [redacted]

ARNG Contact: [redacted]

Date and Time: 8/27/19

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

Source/Release Information

Site Name / Area Name / Unique ID: JCA Maintenance Facility (aka ARFF)

Site / Area Acreage:

Historic Site Use (Brief Description): maintenance shop and fire station for airport

Current Site Use (Brief Description): same as above

Physical barriers or access restrictions: perimeter fence

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):

they discharge AFFF manually for FAA testing

2. Has usage been documented? (Y) / N

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

testing records for FAA requirements go back to 2005

3. What types of businesses are located near the site? **Industrial / ~~Commercial~~ / Plating / Waterproofing / Residential**

3a. Indicate what businesses are located near the site

DRS Technologies, PANG,

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

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

Other Significant Site Features:

1. Does the facility have a fire suppression system? Y (N)

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

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

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

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

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation? (Y) / N

1a. If so, note observation and location:

the area where they discharge flows into a retention pond and then off installation

2. Is there channelized flow within the site/area? Y / (N)

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

3. Are monitoring or drinking water wells located near the site? Y (N)

3a. If so, please note the location:

4. Are surface water intakes located near the site? Y / (N)

4a. If so, please note the location:

5. Can wind dispersion information be obtained? Y / (N)

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

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

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

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

Visual Survey Inspection Log

Significant Topographical Features:

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

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

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

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

3. Does the site or area exhibit evidence of erosion? Y / (N)

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

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

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

Receptor Information

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

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

perimeter fence

2. Who can access the site? Site Workers / Construction Workers / Trespassers / Residential / Recreational Users / Ecological

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

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

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

to the north

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

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

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

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

Appendix B.3
Conceptual Site Model Information

Preliminary Assessment – Conceptual Site Model Information

Site Name: Johnstown AASF #2

Why has this location been identified as a site?

The facility is an Army Aviation Support Facility (AASF).

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

Joint military use of property by US Army Reserves and US Marine Corps Reserve. Facility is also near Johnstown-Cambria County Airport.

Training Events

Have any training events with AFFF occurred at this site? *Yes*

If so, how often? *Every 3-4 years they did familiarization training and nozzle testing*

How much material was used? Is it documented? *Not documented*

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

Surface Water:

Surface water flow direction? *Towards stormwater detention ponds and tributaries of Solomon Run*

Average rainfall? *41 inches*

Any flooding during rainy season? *No*

Direct or indirect pathway to ditches? *Direct pathway to drainage ditch*

Direct or indirect pathway to larger bodies of water? *Indirect pathway to Solomon Run through tributaries and perennial streams*

Does surface water pond any place on site? *There are two stormwater detention ponds*

Any impoundment areas or retention ponds? *Yes*

Any NPDES location points near the site? *No*

How does surface water drain on and around the flight line? *Flight line drains lead through OWS and then to drainage ditch*

Preliminary Assessment – Conceptual Site Model Information

Groundwater:

Groundwater flow direction? *Follows topographic gradient but generally towards northwest*

Depth to groundwater? *~10-15 ft bgs*

Uses (agricultural, drinking water, irrigation)? *Not within facility*

Any groundwater treatment systems? *No*

Any groundwater monitoring well locations near the site? *No*

Is groundwater used for drinking water? *No*

Are there drinking water supply wells on installation? *No*

Do they serve off-post populations? *No*

Are there off-post drinking water wells downgradient? *No*

Waste Water Treatment Plant:

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

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

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

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

Equipment Rinse Water

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

No

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

Nozzles tested on tarmac and drainage from tarmac goes into the drainage ditch leading into a stormwater detention pond.

3. Other?

Preliminary Assessment – Conceptual Site Model Information

Identify Potential Receptors:

Site Worker -> Yes

Construction Worker -> Yes

Recreational User -> Potentially if trespassing

Residential ->

Child -> No

Ecological -> Yes

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

Documentation

Ask for Engineering drawings (if applicable).

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

Appendix C
Photographic Log

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Johnstown AASF #2	Johnstown, PA

Photograph No. 1

Date 8/27/2019

Time 9:14

Description:

The hangar apron was previously used by ARNG for familiarization training and nozzle testing with AFFF. All excess AFFF was also purged into the apron drains.

Orientation:

Southeast

Photograph No. 2

Date 8/27/2019

Time 9:17

Description:

The hangar apron is currently equipped with Purple K (non-AFFF) fire extinguishers. Previously, Tri-Max fire extinguishers containing AFFF were stationed on the apron.

Orientation:

Northwest

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Johnstown AASF #2	Johnstown, PA

Photograph No. 3

Date 8/27/2019

Time 9:35

Description:

The AFFF Pond is a stormwater detention pond that has been identified in as-built drawings as a fire protection discharge holding area. AFFF has previously been observed in the AFFF Pond.

Orientation:

West

Photograph No. 4

Date 8/27/2019

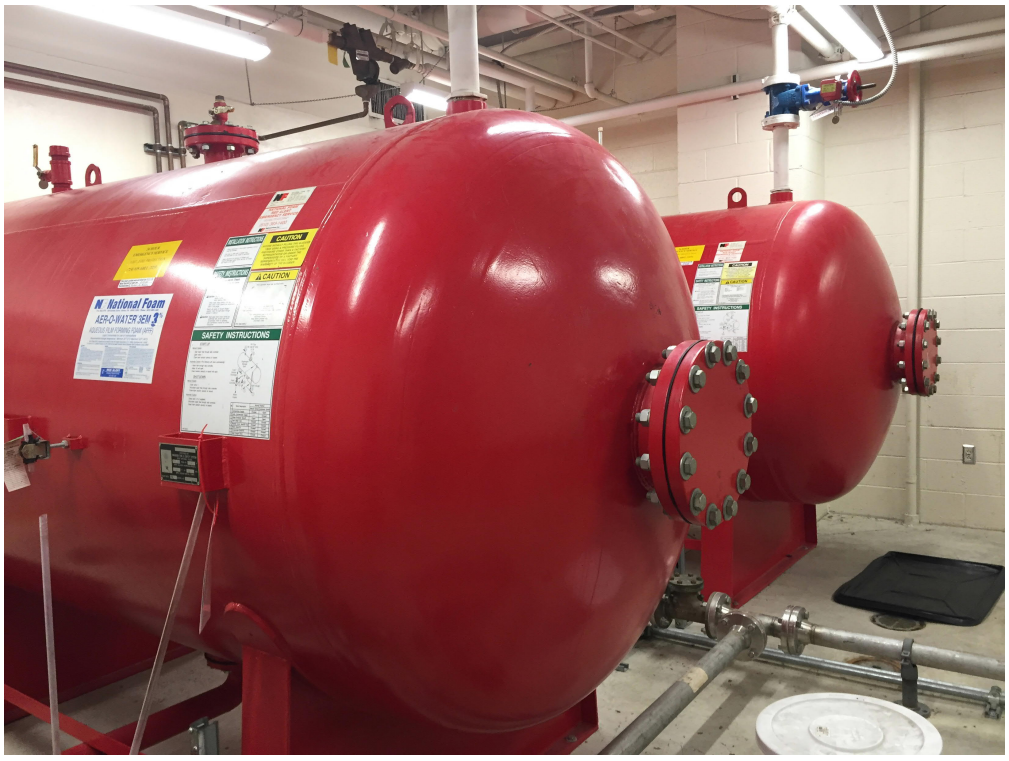
Time 9:47

Description:

The AFFF fire suppression system tanks for Building 292 are shown. The tanks have a 1,200-gallon capacity and are filled with National Foam Aer-O-Water 3EM 3% AFFF.

Orientation:

North



Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Johnstown AASF #2	Johnstown, PA

Photograph No. 5

Date 8/27/2019
Time 9:51

Description:
A pipe in the Building 292 tank room is shown to be leaking AFFF. Corrosion of the concrete pavement below the leakage is observed.

Orientation:
Southeast

Photograph No. 6

Date 8/27/2019
Time 9:49

Description:
Floor drains in Building 292 lead through an oil water separator and then drain into either the AFFF Pond or the sanitary sewer.

Orientation:
Southwest

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Johnstown AASF #2	Johnstown, PA

Photograph No. 7

Date 8/27/2019

Time 12:25

Description:

In accordance with FAA regulations, the ARFF tests AFFF systems from their firetrucks at a biannual frequency. The AFFF is discharged into a grassy field beside a taxiway.

Orientation:

Southwest

Photograph No. 8

Date 8/27/2019

Time 12:52

Description:

Four 55-gallon drums of AFFF are observed stored in Pump House #1. The AFFF is of the brand and type National Foam Aer-O-Water 3EM 3%.

Orientation:

South

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Johnstown AASF #2	Johnstown, PA

Photograph No. 9

Date 8/27/2019

Time 13:07

Description:

The drainage ditch leads into a second off-facility stormwater detention pond. AFFF has previously been observed in the drainage ditch.

Orientation:

Northwest