FINAL
Preliminary Assessment Report
Camp Atterbury
Edinburgh, Indiana

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

September 2020

Prepared for:

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

UNCLASSIFIED

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Acronyms and Abbreviations

%	percent
°F	degrees Fahrenheit
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
AOI	Area of Interest
ANG	Air National Guard
ARNG	Army National Guard
ATG	Air-to-Ground Range
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CSM	conceptual site model
EDR™	Environmental Data Resources, Inc.™
FTA	fire training area
GIS	geographic information system
HA	Health Advisory
IDEM	Indiana Department of Environmental Management
IED	Installations & Environment Division
IN	Indiana
NGWA	National Ground Water Association
PA	Preliminary Assessment
PFAS	per- and poly-fluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
SI	Site Inspection
UAS	unmanned aerial surveillance
UCMR3	Unregulated Contaminant Monitoring Rule 3
US	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VSI	visual site inspection
WWTP	wastewater treatment plant

Executive Summary

The Army National Guard (ARNG) is performing *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide*. A PA for per- and polyfluoroalkyl substances (PFAS)-containing materials was completed for Camp Atterbury in Edinburgh, Indiana, to assess potential PFAS release areas and exposure pathways to receptors. The performance of this PA included the following tasks:

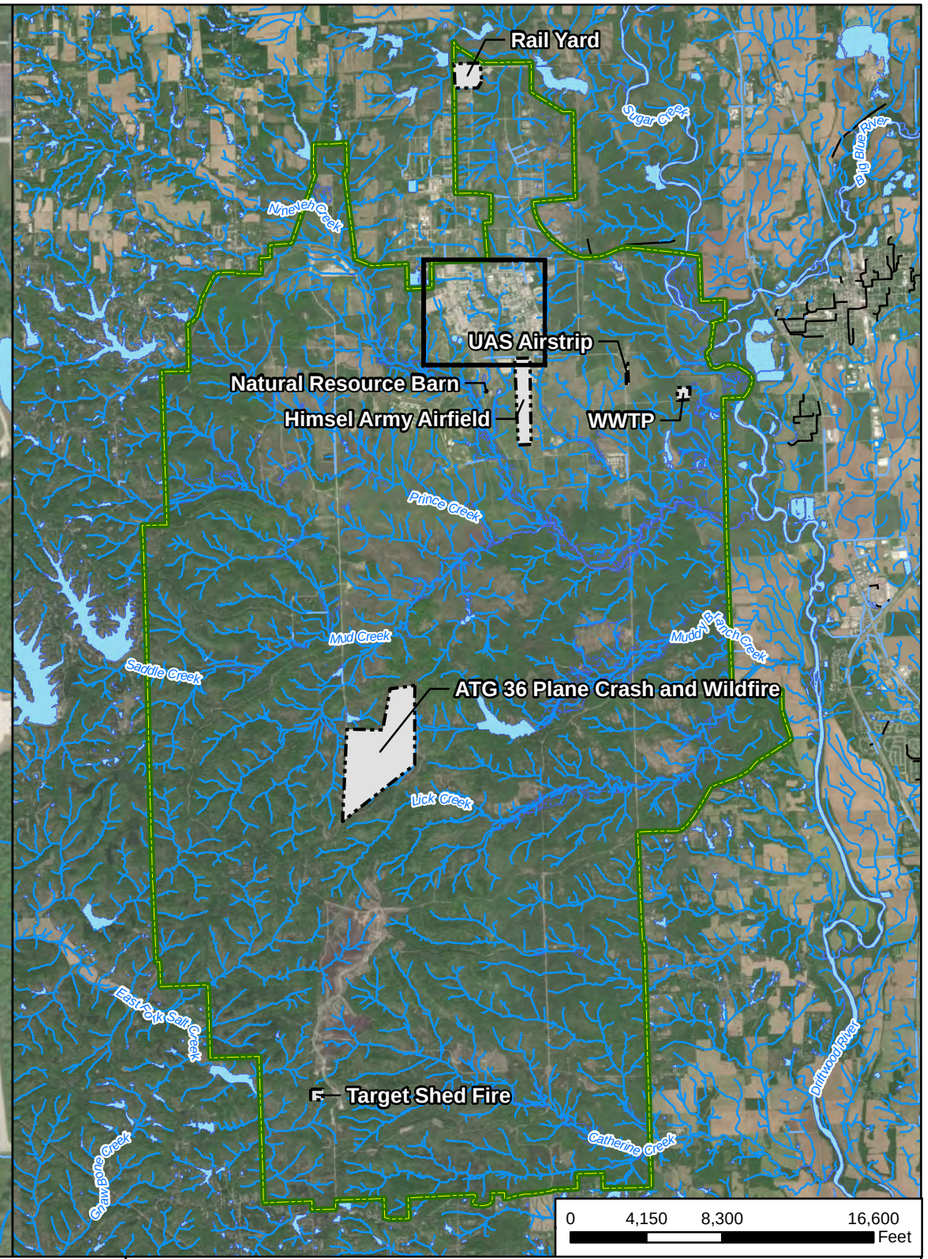
- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)™ report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility;
- Conducted a two-day site visit on 27-28 August 2018 and completed visual site inspections at locations where PFAS-containing materials were suspected of being stored, used, or disposed;
- Interviewed current Indiana ARNG (INARNG) and Indiana Air National Guard (ANG) personnel during the site visit and INARNG environmental managers and operations staff;
- Identified Area(s) of Interest (AOIs) and developed a preliminary conceptual site model (CSM) to summarize potential source-pathway-receptor linkages of potential PFAS in soil, groundwater, surface water, and sediment for each AOI.

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

Table ES- 1. Camp Atterbury AOIs

Area of Interest	Name	Used by	Potential Release Date
AOI 1	Former Fire Station AFFF Discharge	INARNG	Late 1990s
AOI 2	Current Fire Station	INARNG	2007-Present
AOI 3	Tri-Max™ Storage Area	INARNG	2004-Present
AOI 4	Former Fire Station 723	INARNG	Unknown

Based on possible PFAS releases at the AOIs, there is potential for exposure to PFAS contamination in media at or near the facility. The preliminary CSM for Camp Atterbury is shown on **Figure ES-2**. Based on the USEPA Unregulated Contaminant Monitoring Rule 3 (UCMR3) data, it was indicated that no PFAS were detected in a public water system above the USEPA lifetime Health Advisory (HA) within 20 miles of the facility. The HA is 70 parts per trillion for PFOS and PFOA, individually or combined. PFAS analyses performed in 2016 had method detection limits that were higher than currently achievable. Thus, it is possible that low concentrations of PFAS were not detected during the UCMR3 but might be detected if analyzed today.



CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at Camp Atterbury, IN			
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SCALE	1:99,600	CHK BY	JL	9/3/2020
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	9/3/2020

Legend

- Area of Interest
- Potential PFAS Release
- No Suspected Release
- Facility Location
- Water Body
- Wetland
- River/Stream
- Canal/Ditch
- Pipeline

N

Summary of Findings

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12420 Milestone Center Drive
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Figure ES-1

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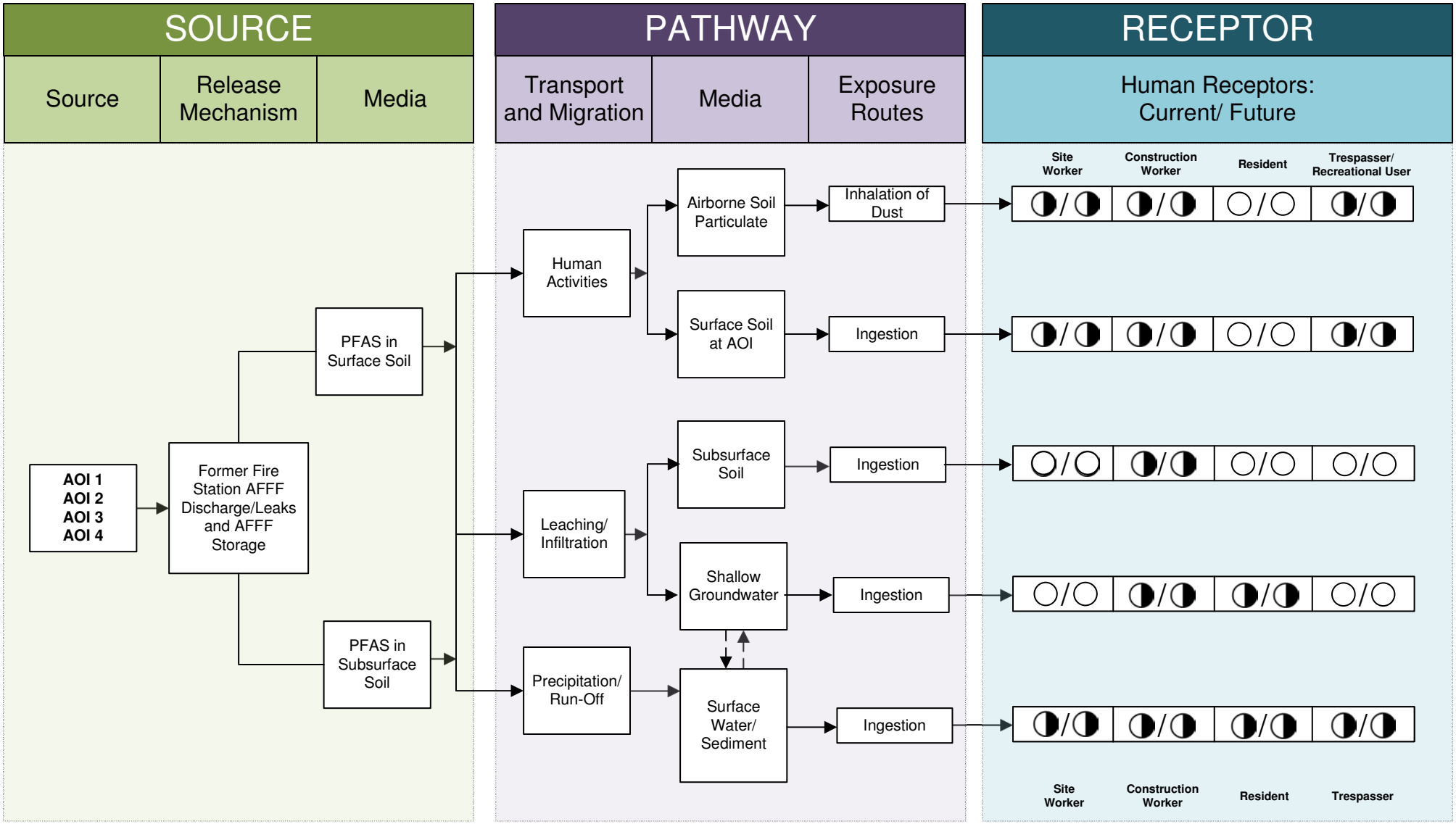


LEGEND

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

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

Figure ES-2
Preliminary Conceptual Site Model
Camp Atterbury, Indiana

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), primarily in the form of aqueous film forming foam (AFFF) released as part of firefighting activities, although other PFAS sources are possible. In addition, the ARNG is assessing businesses or operations adjacent to the ARNG facility (not under the control of ARNG) that could potentially be responsible for a PFAS release.

PFAS are classified as emerging environmental contaminants that are garnering increasing regulatory interest due to their potential risks to human health and the environment. PFAS formulations contain highly diverse mixtures of compounds. Thus, the fate of PFAS compounds in the environment varies. The regulatory framework at both federal and state levels continues to evolve. The US Environmental Protection Agency (USEPA) issued Drinking Water Health Advisories (HAs) for PFOA and PFOS in May 2016, but there are currently no promulgated national standards regulating PFAS in drinking water. In the absence of federal maximum contaminant levels, some states have adopted their own drinking water standards for PFAS. However, the state of Indiana (IN) does not currently have drinking water standards for PFAS.

This report presents the findings of a PA for PFAS-containing materials at Camp Atterbury (also referred to as “the facility”) in Edinburgh, Indiana, 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 Camp Atterbury. The term PFAS will be used throughout this report to encompass all PFAS chemicals being evaluated, including PFOS and PFOA, which are key components of AFFF.

1.2 Preliminary Assessment Methods

The performance of this PA included the following tasks:

- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)™ report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility;
- Conducted a two-day site visit on 27-28 August 2018 and completed visual site inspections (VSIs) at locations where PFAS-containing materials were suspected of being stored, used, or disposed;
- Interviewed current INARNG and IN Air National Guard (ANG) personnel during the site visit and INARNG environmental managers and operations staff;

- Identified Area(s) of Interest (AOIs) and developed a preliminary conceptual site model (CSM) to summarize potential source-pathway-receptor linkages of potential PFAS in soil, groundwater, surface water, and sediment for each AOI.

1.3 Report Organization

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

- **Section 1** – **Introduction:** identifies the project purpose and authority and describes the facility location, environmental setting, and methods used to complete the PA.
- **Section 2** – **Fire Training Areas:** describes the 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

Camp Atterbury Joint Maneuver Training Center is the principle ARNG installation in the state of Indiana, comprising approximately 34,986 acres total (**Figure 1-1**). This current square footage has been the footprint of Camp Atterbury since 1968, when approximately 7,000 acres of the installation north of Old Hospital Road were transferred to the Indiana Department of Natural Resources Division of Fish and Wildlife. The main gate is located off County Road 900 South (also referred to as Old Hospital Road), approximately 3.5 miles west of the city of Edinburgh.

Camp Atterbury opened in August 1942 as a combat training camp for soldiers during World War II before being deactivated by the US War Department, now called the Department of the Army, in 1946. Camp Atterbury was reopened as a training camp during the Korean War before being deactivated, and it remained dormant until 1 April 1969, when the Secretary of the Army issued a license for 33,141.76 acres from the total 33,194 acres to be used for National Guard Purposes by the Indiana ARNG (INARNG). A five-year license was issued every five years until 1982, when a 25-year license was issued. In July of 1988, the license was amended and made valid for an indefinite period. On 25 August of that same year, 650 acres of the installation were licensed for

an indefinite period to the ANG for exclusive use as a firing range, which is still in operation to this day.

Since serving as a training center for INARNG troops during Vietnam and Operation Desert Storm, Camp Atterbury has continued to provide training to military and civilians into the present day, supporting the stability efforts in the Middle East as well as domestic emergency responses.

1.5 Facility Environmental Setting

The facility is located on the border between Central and Southern Indiana. The geography of Central Indiana includes hills and sandstone ravines carved by retreating glaciers (USEPA, 1998). Southern Indiana is known for limestone and is one of the largest limestone quarry regions in the country.

Camp Atterbury lies in Johnson, Brown, and Bartholomew Counties. This area covers New Castle Till Plains and Drainageways in the Central Till Plain Region, and Norman Upland and Scottsburg Lowland Sections in the Southern Hills and Lowlands Region (Gray, 2001). The Scottsburg Lowland Section has alluvial and lacustrine plains that border major streams (Post, 1985). The major soils are acid to neutral silt loams.

The facility is located in the Loamy High Lime Till Plain, in the Eastern Corn Belt Plains Ecoregion (USEPA, 1998). The terrain is nearly level and originally hosted beech forests, oak-sugar maple forests, and elm-ash swamp forests. Much of the forested area has been replaced by agriculture. The stream chemistry and turbidity are unaffected by corn, soybean, and livestock production in the area; water sampling has demonstrated water effluent from Camp Atterbury has lower levels of contaminants than the surrounding waterways. The loss of the forest has also meant the decline of species like the tree sparrow. The land has an elevation that ranges from 610 to 930 feet above sea level. Information for the geologic and hydrogeologic sections was adapated from the Camp Atterbury Operational Range Assessment Phase II Report (AECOM, 2014).

1.5.1 Geology

The Jessup, Trafalgar, and Atherton formations are the result of past glacial advances through this region, with the most recent glacial period, the Wisconsin glaciation, occurring 10,000 years ago. The deposits resulting from the Wisconsin glaciation occupy the northeastern third of Camp Atterbury. The western and southwestern portions of Camp Atterbury are mapped as the bedrock region, consisting of unglaciated surficial deposits of the Martinsville Formation and late Devonian and Mississippian siltstones and shales. The hydrogeologic regions are found in the following geologic strata, listed youngest to oldest (**Figure 1-2**):

- The Martinsville Formation, comprised of fine-grained, poorly sorted materials derived from modern alluvial deposits (Roy F. Weston, 1993). The formation ranges in thickness from 0 to 15 feet thick across Camp Atterbury (US Geological Survey [USGS], 2006).

- Quaternary glacial materials, which are the predominant surficial deposits at Camp Atterbury, typically overlie bedrock in the region. Deposition occurred predominately during the late Pleistocene epoch, and the unit ranges in thickness from 0 feet on the southwestern Norman Upland to greater than 150 feet in the northeastern Scottsburg Lowland (Roy F. Weston, 1993). The Atherton, Trafalgar, and Jessup Formations are all found within the quaternary glacial deposits. The geologic composition of each formation is described below:

    - The Atherton Formation consists of extraglacial deposits of lacustrine facies and outwash formations. The lacustrine facies are generally well-sorted silts and clays

originating as lake deposits. The outwash formations are coarse grained, moderately to well-sorted sands and gravels.

  - The Jessup Formation is defined as fine-grained poorly sorted pre-Wisconsin age glacial till.
  - The Trafalgar Formation is also a fine-grained poorly sorted glacial till from the Wisconsin glaciation.

- The Borden Group, consisting of Lower Mississippian siltstone, shale, and sandstone with intermittent patches of limestone. The unit is prevalent in the western portions of Camp Atterbury, with joint orientation trending east-west (Roy F. Weston, 1993). No information is available regarding the thickness of the Borden Group.
- The New Albany Shale, consisting of late Devonian black and greenish-gray shale with significant amounts of organic matter. The unit is exposed in the eastern portions of Camp Atterbury, with joint orientation trending northwest-southeast. At Camp Atterbury, the New Albany Shale is approximately 100 to 110 feet thick (Roy F. Weston, 1993).

1.5.2 Hydrogeology

The four hydrogeologic regions identified at Camp Atterbury (Jessup Till, Trafalgar Till, Atherton Outwash, and Bedrock Regions) are presented below:

- The Jessup Till Region is located on the upland areas bounding either side of Lick Creek and Muddy Branch Creek, south of Nineveh Creek and west of Mauxferry Road. This region is composed primarily of the Jessup Till, with some lacustrine and outwash deposits from the Atherton Formation. The deposits in this region range from 30 to 90 feet in thickness. The Jessup Till is a fine-grained glacial till; it has low groundwater storage capabilities. The Atherton Formation deposits provide the best potential for water-bearing capacities in this region. However, given their limited thicknesses in this area, groundwater yields will be moderate (USGS, 2006).
- The Trafalgar Till Region is located in the northern portions of Camp Atterbury, roughly north of County Line and Wilder Roads. Isolated regions are also located south of Prince Creek near Lincoln Road. The southern limits of this region represent the southernmost limits of the Wisconsin glaciation. This region is composed of the Jessup and Trafalgar Till formations, as well as the interbedded outwash facies of the Atherton Formation. The Trafalgar Till, which ranges from 10 to 30 feet thick, typically overlies the Jessup Till. The Jessup Till ranges between 25 and 50 feet thick. The outwash facies of the Atherton Formation are generally thin, except north of County Line Road where the Atherton Formation was recorded as 40 and 42 feet thick.
- The Atherton Outwash Region has the highest potential for groundwater yields in this region (USGS, 2006). It is located in the lowland and stream valleys of Lick, Nineveh, Prince, Mud, Muddy Branch, and Saddle Creek. Thicknesses of the Atherton Formation vary greatly throughout this region, from 4 feet to greater than 30 feet (USGS, 2006). Coarse-grained deposits of the Atherton Formation dominate this region, and interbedded Atherton Formation lacustrine silt and clay deposits as thick as 20 feet have also been identified in the region.
- The Bedrock Region is located in the upland area west of Mount Moriah Road, west and south of Saddle Creek and Duck Pond, and southwest of Puff Lake. This region consists of unconsolidated Martinsville Formation deposits overlying the Borden Group. The unconsolidated deposits range from 0 to 15 feet thick. Groundwater from this region occurs primarily in the Martinsville Formation deposits; however, the potential yields are

limited because the deposits are fine-grained and thin (USGS, 2006). The Borden Group bedrock aquifer system is often regarded as an aquitard (hydraulic conductivities range from 10^{-11} to 10^{-7} centimeters per second) and is generally not a very productive aquifer (Roy F. Weston, 1993). However, many wells are able to produce sufficient water for domestic uses as a result of secondary permeability arising from joints and fractures in the rock.

As shown in the water level measurements collected as part of the USGS Hydrogeologic Framework study, depths to groundwater vary greatly across Camp Atterbury from 1 foot to 25 feet below ground surface (bgs; USGS, 2006). Hydrogeologic regions are not confined from one another. Water moves vertically from the land surface, through the unsaturated zone and, where present, through low-permeable, semiconfining layers (which are not laterally extensive) to recharge water in glacial or bedrock aquifers. In some areas, shallow groundwater is discharged as surface water in tile drains and spring seeps. In dry weather, stream flow and lake levels are maintained by groundwater discharge (USGS, 2004).

Groundwater is primarily controlled by local topography and flows from the elevated regions, down slope to the valley bottoms. Regionally, groundwater flow is to the east toward Driftwood River, with the exception of the southwestern portion of the installation where a groundwater divide exists (groundwater southwest of the divide flows in a southwest direction toward the East Fork Salt Creek). Based on topography and soil types, the Atherton Outwash and Trafalgar Till regions are identified as recharge areas (USGS, 2006). These recharge areas encompass the northern, western, and southeastern portions of the central portion of the installation, along Muddy Branch Creek. Groundwater flow in bedrock systems can be very complex, flowing along bedding planes or fractures, which may differ from the direction of the groundwater flow in the unconsolidated deposits or topography. For this reason, in the southwestern portions of Camp Atterbury, where precipitation may recharge the bedrock aquifer, the general groundwater flow direction is thought to be west-southwest. The general orientation of fractures within the Borden Group siltstone and shales is unknown. Therefore, groundwater flow direction is estimated by topography and bedding planes that dip regionally to the southwest. The groundwater that flows in an easterly direction from Camp Atterbury is intercepted by the Driftwood River.

It is estimated that anywhere between 600 and 900 private (domestic) drinking water wells exist within a 4-mile radius of Camp Atterbury. The State of Indiana Department of Natural Resources has approximately 200 to 300 registered drinking water wells within a 4-mile radius (Roy F. Weston, 1993). These wells range in total depth from approximately 24 to 240 feet; static water depths range from approximately 10 to 70 feet.

No groundwater supply wells are located on Camp Atterbury. Based on a review of Wellhead Protection Plans from Princes Lake Utilities, the Town of Edinburgh, and Eastern Bartholomew Water Corporation, the groundwater flow within the area of their supply wells is flowing in a south-southwest direction, originating from areas greater than 4 miles northeast of Camp Atterbury. The Camp Atterbury Water System purchases groundwater from the Prince's Lake Water Department (Atterbury-Muscatatuck Installation, 2018). Prince's Lakes Water Department pumps its water from a group of groundwater wells within the Scottsburg Lowland Aquifer north of the town of Edinburgh, Indiana, which is located to the northeast of Camp Atterbury. The Town of Edinburgh's water supply is located within 0.25 mile of the Princes Lake supply wells. These wells are screened in the Atherton Outwash deposits along the Big Blue River and Sugar Creek and are screened from approximately 70 to 100 feet bgs. Based on the USEPA Unregulated Contaminant Monitoring Rule 3 data, it was indicated that no PFAS were detected in a public water system above the HA within 20 miles of the facility. The HA is 70 parts per trillion for PFOS and PFOA, individually or combined. PFAS analyses performed in 2016 had method detection limits that were higher than currently achievable. Thus, it is possible that low concentrations of PFAS were not detected during the UCMR3 but might be detected if analyzed today.

1.5.3 Hydrology

The majority of the Scottsburg Lowland Section is composed of natural communities of floodplain forests and swamps (Post 1985). There are wetland features like acid seep springs and silty-bottomed, low-gradient streams, rivers, and ponds. Glacial lakes that have drained left behind sediment that formed lake plains, marshes, and peat bogs (Indiana Geological & Water Survey, 2018). The facility spans sections of six different watersheds, which are as follows: Nineveh Creek Watershed, Herriotts Creek-Sugar Creek Watershed, Prince Creek-Mud Creek Watershed, Lick Creek-Driftwood River Watershed, East Fork Salk Creek-North Fork Salt Creek Watershed, and Catharine Creek-Driftwood River Watershed (**Figure 1-3**).

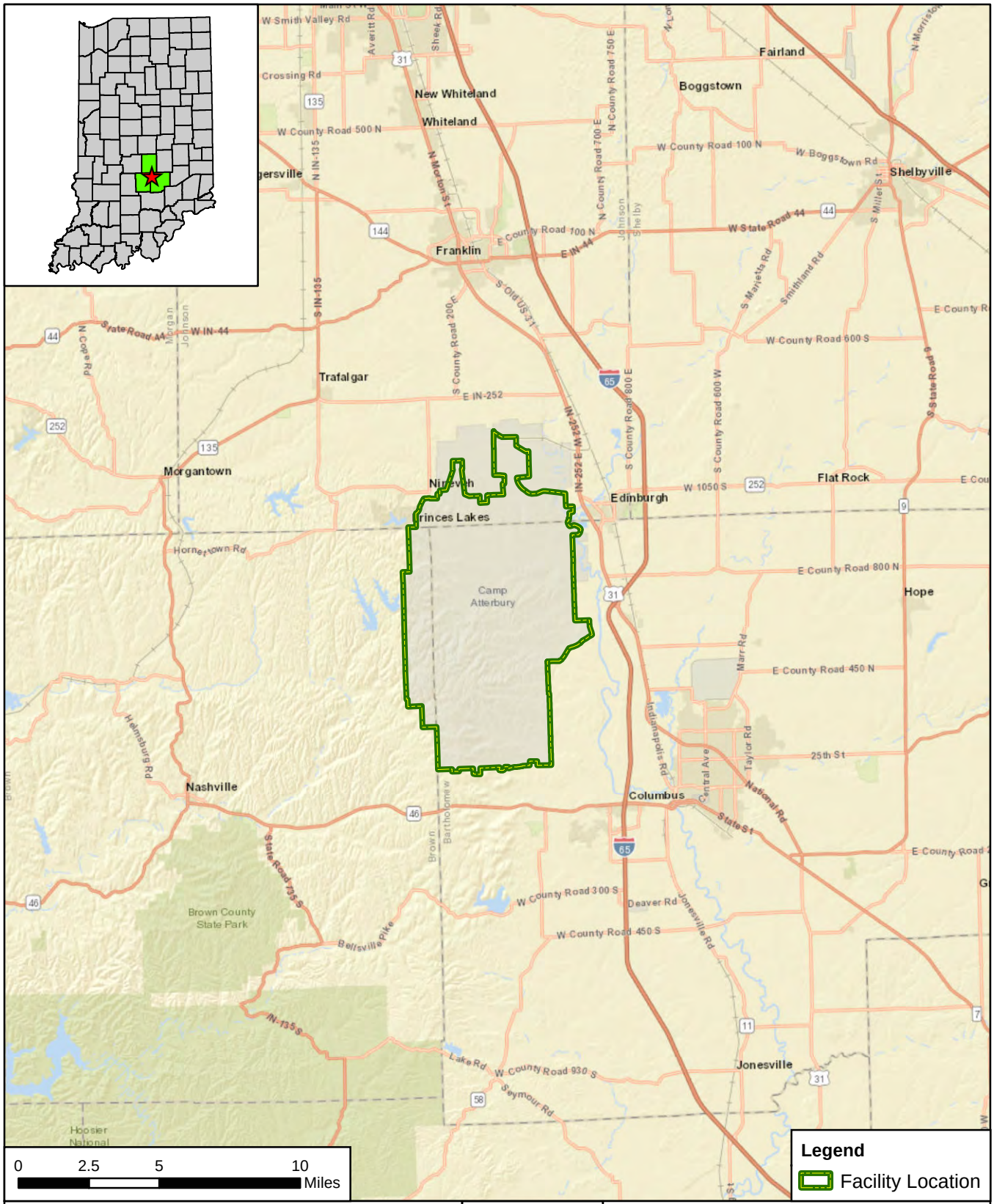
The majority of surface water at the facility ultimately flows to the Driftwood River, which runs from north to south along the eastern boundary of Camp Atterbury. Sugar Creek, the Big Blue River, and the Driftwood River join together in the northeastern corner of Camp Atterbury at one of the region's lowest points of elevation (The Youngs Creek Advisory Group, 2003). From the northwestern corner of the facility, Nineveh Creek drains the northwestern and central portions of Camp Atterbury, running southeast and joining with the Driftwood River in the east.

1.5.4 Climate

Summer temperatures in Central Indiana range from 84.5 degrees Fahrenheit (°F) to 65.1 °F, while winter temperatures in Central Indiana range from 37.9 °F to 22.2 °F (National Weather Service, 2018). The area experiences significant precipitation year-round, with an average of 42 inches of rain and 26 inches of snow annually. In 2008, the area was impacted by a tornado that destroyed several buildings at Camp Atterbury.

1.5.5 Current and Future Land Use

Camp Atterbury is currently home to the majority of INARNG activity within the state of Indiana, providing training to both civilian and military personnel for support in missions both foreign and domestic. Reasonably anticipated future land use is not expected to change from the current land use.



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Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	6/5/2020

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Facility Location

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 1-1

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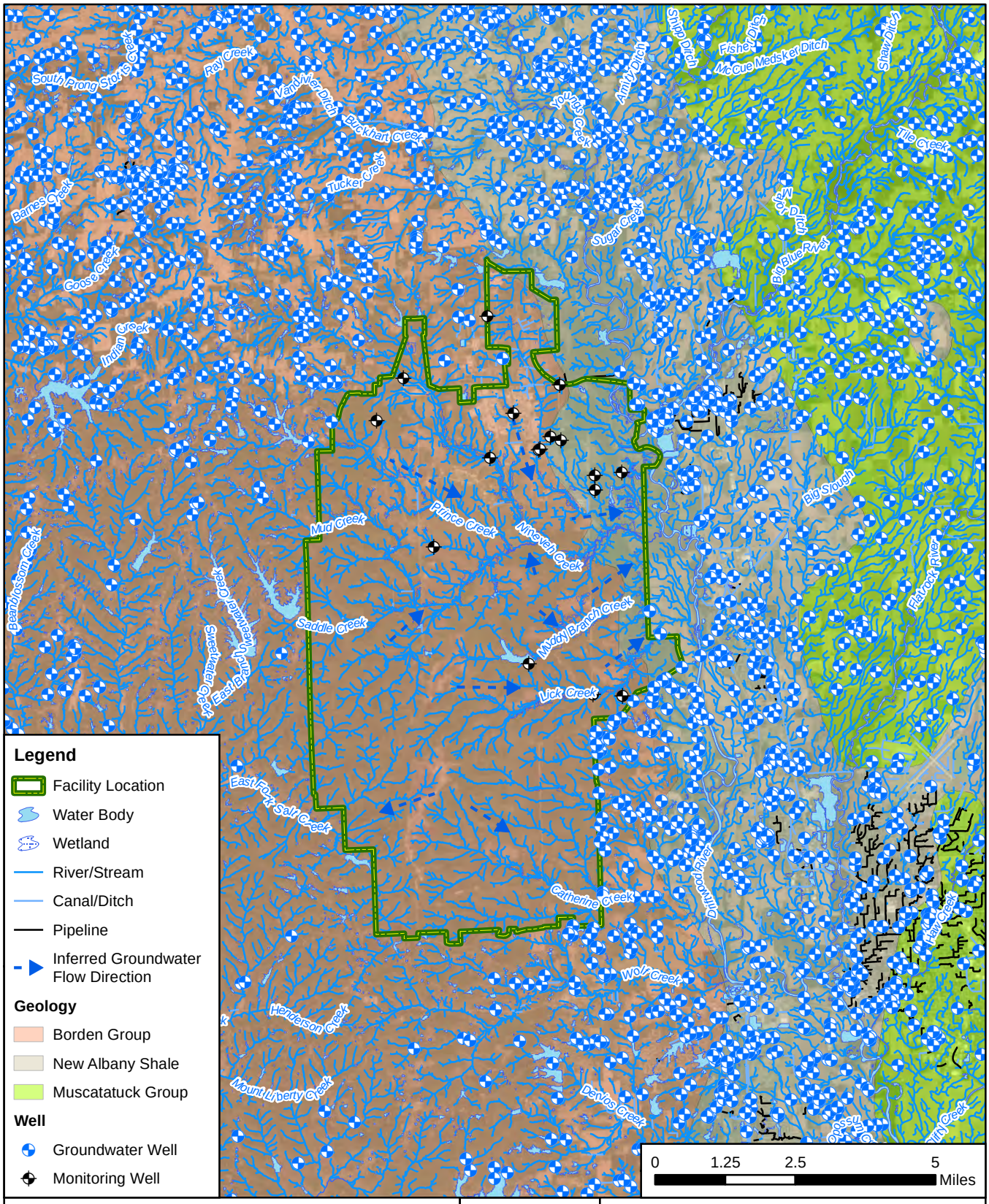

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Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	9/24/2020

Groundwater Features

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12420 Milestone Center Drive
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Figure 1-2

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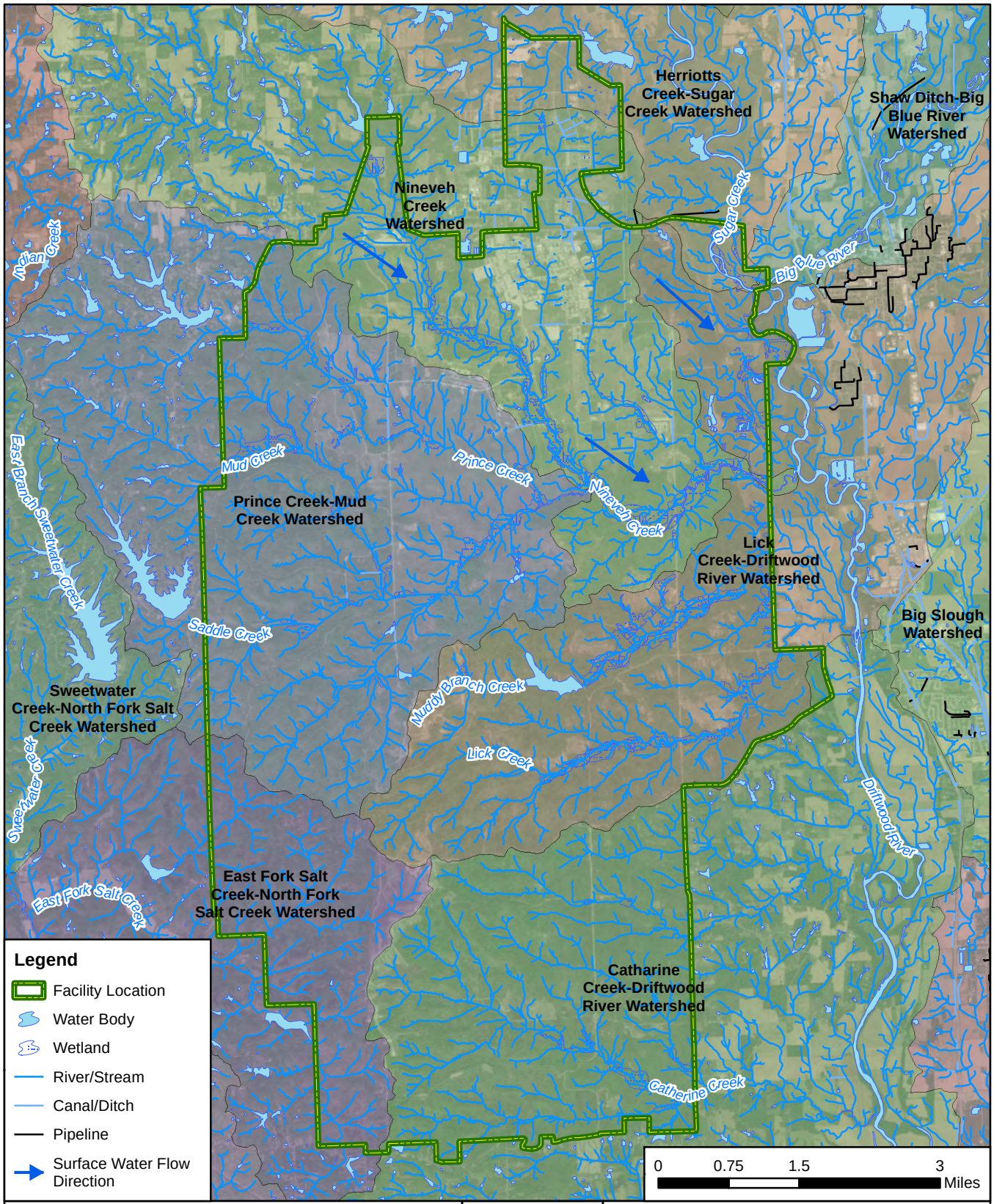

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Surface Water Features

AECOM
12420 Milestone Center Drive
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Figure 1-3

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2. Fire Training Areas

No FTAs were identified at Camp Atterbury during the PA through interviews (**Appendix B)**, the site visit, or EDR™ reports (**Appendix A)**. Tenure of interviewees dates as far back as the 1990s. FTAs are considered a primary potential release area for PFAS because of the common use of AFFF in training events.

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**. Ten non-FTAs where AFFF may have been 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.** Photographs of the non-FTAs appear in **Appendix C**.

3.1 Current Fire Station

The Camp Atterbury Fire Station was built in early 2007, according to historical aerial imagery, and is located adjacent to the Himsel Army Airfield. The geographic coordinates of the fire station are 39°20'42.21"N; 86° 1'40.70"W. The fire station currently houses a 2011 Oshkosh firetruck holding 420 gallons of AFFF and eight 55-gallon drums of 3% Chemguard AFFF. The fire chief, who has direct knowledge of fire station operations, confirmed that no testing, training, or other AFFF discharges of any kind have been conducted with the firetruck since it was acquired in 2011. Additionally, there is no indication of leaks from the firetruck. The AFFF stored onboard the 2011 OshKosh firetruck was not loaded at the current fire station; no known spills related to the firetruck's AFFF contents have occurred at the facility. However, based on the storage of AFFF within the current fire station, the area is conservatively considered a potential PFAS release area. Releases may occur as a result of the corrosive nature of AFFF or incidental leaks or spills during transport of storage containers and vehicles containing AFFF.

3.2 Former Fire Stations – Buildings 244, 325, and 723

Two former fire stations (Buildings 244 and 325) existed about 800 feet apart at Camp Atterbury. The approximate geographic coordinates of Building 244 are 39°21'9.30"N; 86° 1'43.10"W. The approximate geographic coordinates of Building 325 are 39°21'16.35"N; 86° 1'46.00"W. A third former fire station, Building 723, existed in the northwest corner of the cantonment (approximate geographic coordinates are 39°21'34.51"N; 86° 2'42.12"W).

Building 325 was used historically as a fire station until the 1990s, prior to the fire station at Building 244. Building 723 is present on a historical map of Camp Atterbury dated 1943. Little is known about the extent of firefighting activities that occurred at Camp Atterbury during this time period; Building 325 was recently renovated and repurposed as a storage area and garage for facility vehicles, and no other data on Building 723 was available. Interviewees confirmed the existence of this former fire station, but could not recall details on the type of equipment stored here or whether AFFF had been present in the building.

Building 244 was used as a fire station from the 1990s until the early 2000s. A tornado destroyed Building 244 in 2008, and the Building was subsequently rebuilt and repurposed. According to a phone interview with a Camp Atterbury geographic information system (GIS) analyst who has worked at the facility since the 1990s, a nondescript piece of firefighting equipment stored in the former fire station at Building 244 malfunctioned, releasing firefighting foam within the building during the late 1990s. The type, volume, and concentration of the foam is unknown. The interviewee could not confirm that the discharged foam was AFFF and stated that it is possible that it was Class A foam. Additionally, it is unknown how the foam release was cleaned up, but it is possible that the building was connected to the sewer line that runs to the oil-water separator before going to the facility's wastewater treatment plant (WWTP). The presence of floor drains at the original Building 244 could not be confirmed.

Historical aerial imagery from 2010 shows a red pickup truck in the parking lot of what remains of Building 244 after the tornado (approximately a third of the building is still standing). It is not known what this pickup truck was being used for. Imagery from 2012 shows an entirely new building with no firetrucks in the parking lot. According to interviews, Building 244 was not used as a fire station after its destruction in 2008 due to the construction of the current fire station in 2007.

Historical photographs taken at the former fire stations show firetrucks equipped with foam onsite at Camp Atterbury, possibly as early as the 1980s (**Appendix C**). While the presence of past foam-equipped trucks was confirmed, specific information regarding these trucks or any associated use of AFFF could not be provided by INARNG personnel interviewed during the PA.

3.3 Tri-Max™ Storage Area

Four Tri-Max™-30 emergency response crash carts are currently stored onsite in a long-term, temporarily-erected structure in the northern portion of the facility. The approximate geographic coordinates of the storage area are 39°21'28.94"N; 86° 1'40.65"W. The Tri-Max™ carts were received in 2004 from the Shelbyville AASF, located in Shelby County, Indiana. The carts contained expired 3% AFFF at the time they were received and are presumed to be currently filled to their AFFF capacity. To the knowledge of the interviewees, the carts have never been used and never moved from their present location. VSI found no indication of leaking AFFF from the carts. However, based on the storage of AFFF within the Tri-Max™ Storage Area, the area is conservatively considered a potential PFAS release area. Releases may occur as a result of the corrosive nature of AFFF and incidental leaks or spills during transport.

3.4 Natural Resource Barn

The natural resource barn was constructed around the year 2000 and is used by a detachment of the environmental division at Camp Atterbury that is responsible for responding to wildland fires and performing prescribed burns. This detachment is not associated with the ARNG firefighters located in the current fire station. The approximate geographic coordinates of the barn are 39°20'25.26"N; 86° 2'12.87"W. The barn houses wildland firefighting equipment, including a small foam-equipped brush truck and a foam-equipped all-terrain vehicle. The brush truck and all-terrain vehicle are currently filled with Phos-Chek Class A foam and, according to the Natural Resources Barn Manager, have never been loaded with AFFF. Besides the foam in the vehicles, three 5-gallon buckets of Class A foam are stored in the barn. Even though the barn has existed since 2000, the foam-capable equipment was not acquired until 2008. The natural resource barn manager confirmed that AFFF has not been used by environmental division staff for training purposes, prescribed burns, wildland firefighting, or any other forms of discharge during his tenure from 2008 to the present. Therefore, the natural resource barn does not present a possible release of AFFF.

3.5 Fuel Point

A fuel point is located in the northern portion of the facility. The fuel point is currently equipped with dry chemical extinguishers and a dry chemical suppression system. Interviewees at the fuel point confirmed that AFFF has never been used or stored at the fuel point. Therefore, the fuel point does not present a possibility of AFFF release.

3.6 Himsel Army Airfield

Himsel Army Airfield was built during the original construction of the facility in 1942 but was restored in the early 2000s with some additional construction including the current fire station. The geographic coordinates are 39°20'19.38"N; 86° 1'46.87"W. The airfield supports use of fixed

wing and rotary aircraft for both the INARNG and the ANG. Firefighters confirmed that AFFF was not used at the airfield for training, emergency responses, or any other circumstances from the 1990s to the present.

3.7 UAS Airfield

The Unmanned Aerial Surveillance (UAS) Airfield is located in the northeastern portion of the facility. The geographic coordinates are 39°20'39.10"N; 86°0'34.51"W. The airfield is used primarily by ANG staff, although specific details of the nature of their work was unavailable. Visual inspection of the airfield confirmed that the only possible fire suppression measure in the area is water. No emergency responses or fire training exercises were identified at this location.

3.8 Air-to-Ground Range (ATG) 36

Air-to-Ground Range (ATG) 36 has been leased from the ARNG to the ANG since 1988 as 650 acres of joint use and 11 acres of exclusive use. The range is used primarily by ANG for air-to-ground targeting and training maneuvers. The geographic coordinates are 39°17'5.82"N; 86° 3'28.49"W. The ANG maintains their own firefighting equipment, including a P26 truck and a Polaris E1 “fire buggy” in ATG 36. Interviews with ANG personnel confirmed that all firefighting equipment onsite is Class A foam only (associated safety data sheet was provided; **Appendix A**). Firefighting foam has not been used to the best of their knowledge during their tenure from 1999 to present. A historical crash at this range is discussed in **Section 4**.

3.9 Railyard

A railyard that is used for offloading of supplies and training purposes exists near the northernmost boundary of Camp Atterbury. The geographic coordinates are 39°23'17.16"N; 86°2'20.10"W. Based on interviews, AFFF has never been used or stored at the railyard. During VSI, no fire suppression equipment was found at the railyard, and there was no indication that fire training had ever occurred there. Therefore, the railyard does not present a possibility of AFFF release.

3.10 WWTP

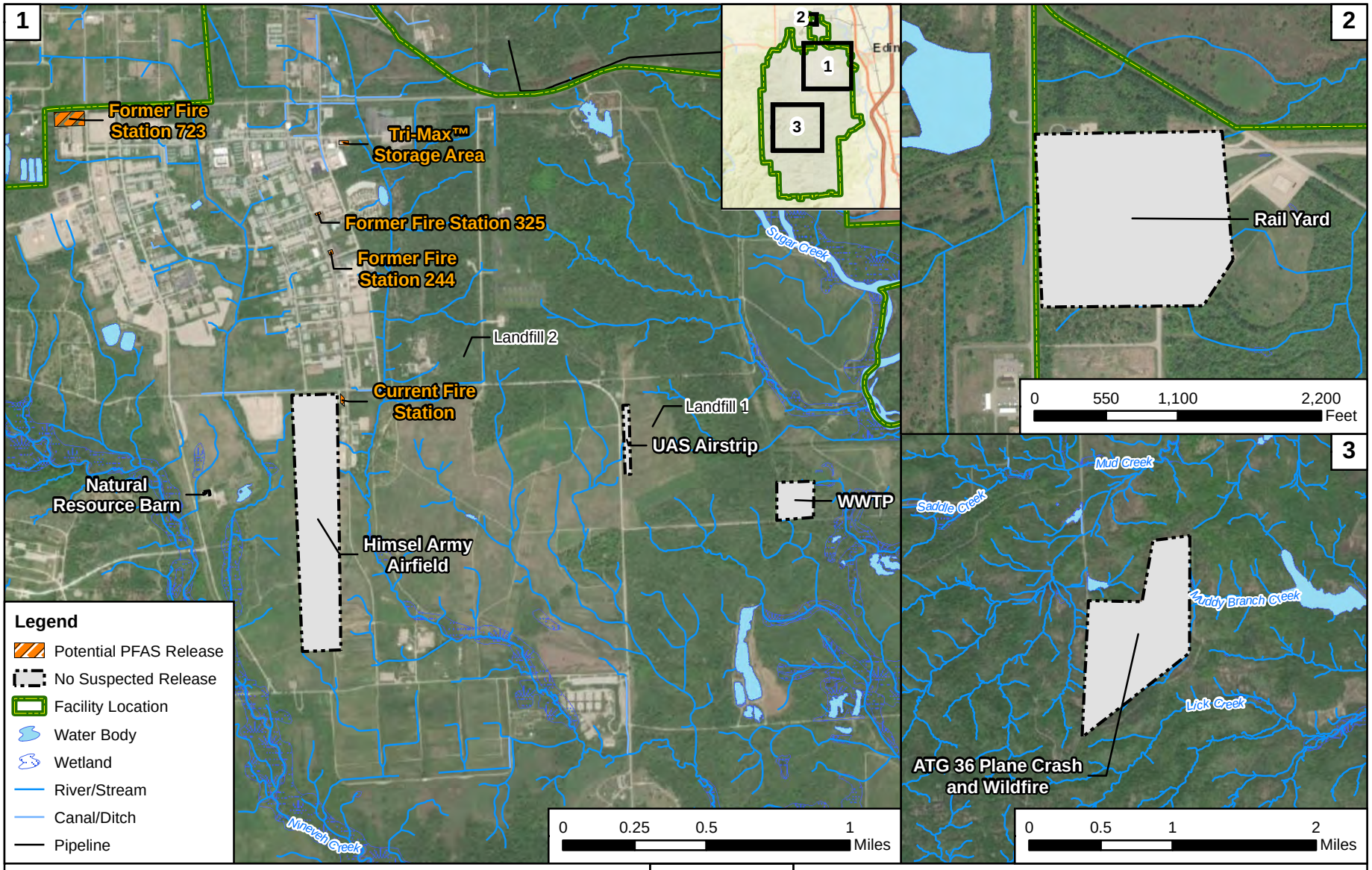
A WWTP was identified during the course of the PA and is located in the eastern portion of the facility, near the UAS airstrip. The geographic coordinates are 39°20'23.13"N; 85°59'55.29"W. An oil-water separator processes facility water prior to the WWTP. Although no direct release of AFFF at the WWTP has been identified, WWTPs can be secondary sources of PFAS based on the facilities that they serve. A connection between the suspected release in Building 244 and the WWTP could not be confirmed.

3.11 Camp Atterbury Landfills

Two former landfills were identified at Camp Atterbury from the Indiana Department of Environmental Management’s (IDEM’s) Landfill Boundaries Database. Information provided by INARNG indicated that Landfill 1 is located adjacent to the current UAS airfield, and accepted municipal solid waste from 1971 to 1993. The total volume of waste at Landfill 1 is measured to be 161,980 square meters, with a maximum depth of 6.1 meters. A copy of the 1998 Notice in Deed for Landfill 1 is included in **Appendix A**.

Landfill 2 comprises approximately 15 to 20 acres and is located approximately 0.5 miles northeast of the northern end of the UAS airfield at the intersection of Mauxferry Road and County Road 900 South. Information provided by the INARNG indicated that Landfill 2 was used from approximately 1953 to 1970 primarily for the disposal of construction waste. Waste was reportedly often burned before disposal at the landfill.

Landfills are not usually a primary source of PFAS; however, materials disposed of in landfills that contain PFAS may leach the compounds into the environment over time. Such materials may include residual sludge wastes from WWTP operations, used AFFF storage containers, or products associated with waterproofing such as uniforms or boots. Based on the use of these landfills for the disposal of municipal waste, it is unlikely such materials are present in Landfill 1 and 2.



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SCALE	1:31,680	CHK BY	JL	9/3/2020
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	9/3/2020

N

Non-Fire Training Areas

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Figure 3-1

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4. Emergency Response Areas

Three emergency responses were identified within the current facility during the PA through interviews or Environmental Data Resource Reports. Emergency services for Camp Atterbury are provided from the Camp Atterbury Fire Department and Natural Resources Barn Staff, ANG, and outside agencies, if needed, that include the Indiana Department of Natural Resources, the German Township Fire Department, and the Nineveh Township Fire Department.

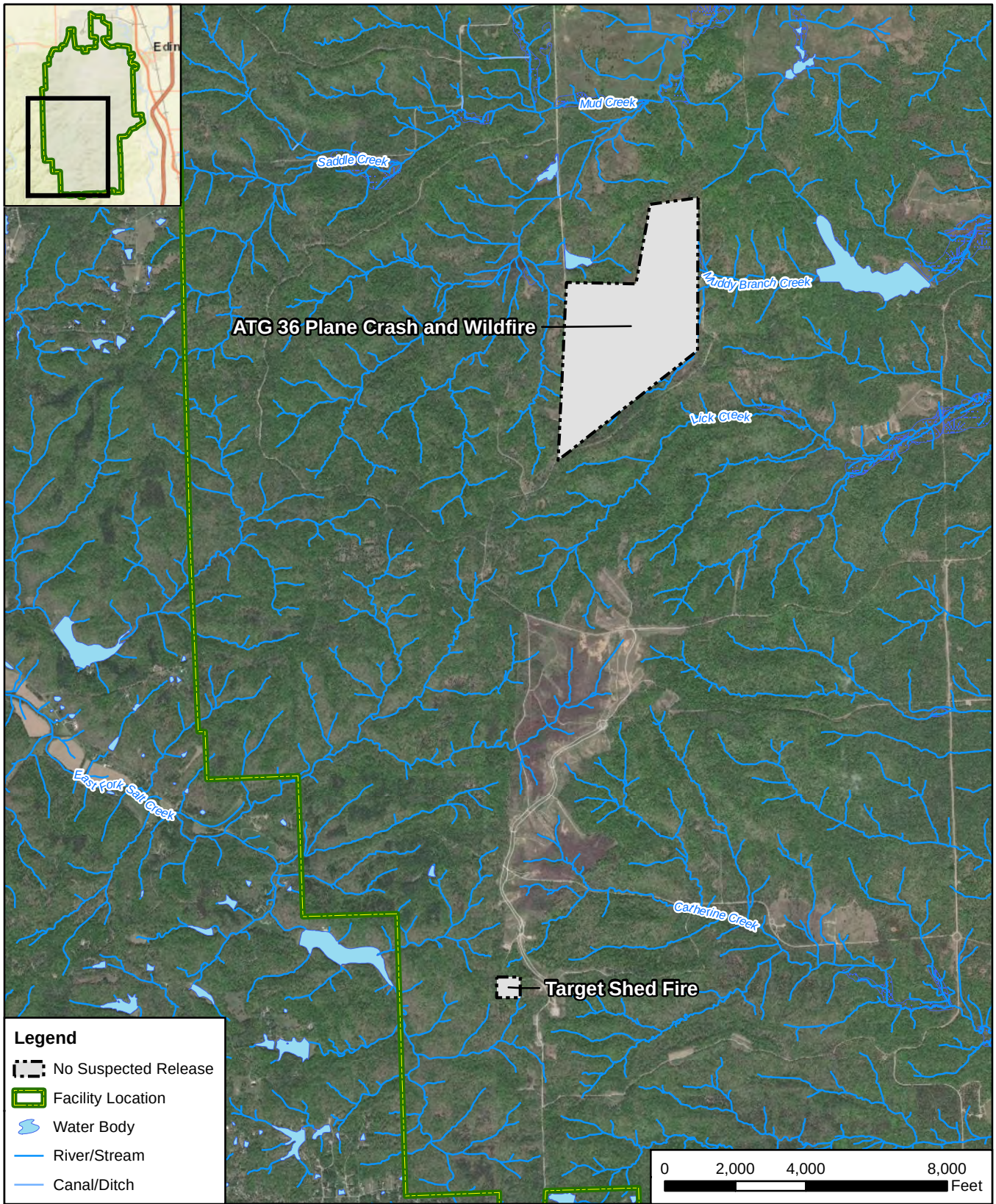
4.1 ATG 36 Plane Crash and Wildfire

In 1978, an A-10 Warthog crashed in the ATG 36 area and resulted in a contained fire **(Figure 4-1)**. The crash occurred in a heavily wooded, remote area that was impassable by emergency response vehicles. Therefore, firefighters were not able to reach the aircraft with their fire suppression equipment, and it is anticipated that no AFFF was used in relation to this incident.

Additionally, an incident occurred in 2010, when a prescribed burn in ATG 36 turned into a minor wildlands fire. The two local municipal fire departments, German Township and Nineveh Township, responded to the fire but were turned away at the gate to Camp Atterbury because the natural resources staff on post had already suppressed the fire.

4.2 Range 37 Target Shed Fire

A fire occurred in 2016, when a target shed located in Range 37 burned down due to a malfunctioning heater. German Township fire department responded to the fire and came onto Camp Atterbury to assist with firefighting, along with the natural resources staff and the ANG firefighters. Natural resources staff confirmed that no foam was used in the fire, and the local municipal fire departments only used water for firefighting.



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SCALE	1:48,000	CHK BY	ZN	6/5/2020
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	6/5/2020

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Emergency Response Areas

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Figure 4-1

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5. Adjacent Sources

Information acquired during PA interviews (**Appendix B**), internet research, and phone calls, as well as data presented in the EDR™ report (**Appendix A**) indicated that no adjacent off-facility sources of PFAS exist near Camp Atterbury. The surrounding area is primarily rural agricultural land.

6. Preliminary Conceptual Site Model

Based on the PA findings, four AOIs were identified at Camp Atterbury: AOI 1 the Former Fire Station AFFF Discharge, AOI 2 the Current Fire Station, AOI 3 the Tri-Max™ Storage Area, and AOI 4 Former Fire Station 723. The AOI locations are shown on **Figure 6-1**. The following sections describe the CSM components and the specific preliminary CSM developed for AOI 1 though AOI 3. 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.

In general, the potential PFAS exposure pathways are ingestion and inhalation. Dermal contact is not considered to be a potential exposure pathway, as studies have shown very limited absorption of PFAS through the skin (National Ground Water Association [NGWA] 2018). Receptors at Camp Atterbury include site workers and construction workers. The preliminary CSM for Camp Atterbury indicates which specific receptors could potentially be exposed to PFAS.

6.1 AOI 1 Former Fire Station AFFF Discharge

AOI 1 is the former fire station AFFF discharge area. PFAS were potentially released once inside Building 244 by the INARNG in the late 1990s. A malfunction with the fire equipment stored in the building resulted in a discharge of an unknown type and quantity of firefighting foam. Additionally, there is photographic evidence of foam-equipped firetrucks at the adjacent former fire station, Building 325, that dates back to the 1980s. Because information about this time period at Camp Atterbury is very limited, and evidence indicates that AFFF was present in both former fire stations, Building 325 is also included in the area of AOI 1.

After the foam discharge in Building 244, the fate of the released foam is uncertain. If the building had floor drains connected to the facility's sewer lines, then the released foam would have gone to an oil-water separator before reaching the WWTP onsite. Building 244 was completely rebuilt after being destroyed by a tornado in 2008, and as-built drawings were unavailable, so the presence of floor drains could not be confirmed. Building 325 was renovated and repurposed since its time as a fire station and does not currently have floor drains. The interviewees indicated it was most likely that Building 244 did not have floor drains connected to the WWTP, and that the discharged foam was physically pushed and rinsed out of the building into the surrounding soil. Surface transport due to stormwater runoff outside the building is driven by topography, as there are no stormwater conveyances in the area. Surface runoff around Building 244 and Building 325 flows east along the elevation gradient to a tributary of Nineveh Creek. This tributary is located approximately 0.25 miles east of the AOI and flows from north to south. Additionally, shallow groundwater is discharged as surface water to streams throughout the facility and would follow the same flow direction as the over-land flow at AOI 1. Camp Atterbury's drinking water is supplied by Prince's Lakes Water, which pumps its water from a group of groundwater wells north of the town of Edinburgh, Indiana, drawing from the Scottsburg Lowland Aquifer; no drinking water wells are currently used within the boundaries of Camp Atterbury.

Ground-disturbing activities to surface soil at AOI 1 could result in site worker, construction worker, and trespasser exposure to potential PFAS contamination, while ground-disturbing activities to subsurface soil at AOI 1 could result in construction worker exposure to potential PFAS contamination. Therefore, the exposure pathways for inhalation of soil particles and ingestion of soil are potentially complete for these receptors. PFAS are water soluble and can migrate readily from soil to groundwater or surface water via leaching and run-off. Because potential PFAS released to surrounding surface and subsurface soil may have occurred, it is possible that PFAS migrated from the surface soil at AOI 1 into the surrounding tributary via stormwater runoff and groundwater discharge. The eventual discharge of this water to Nineveh Creek and the Driftwood River has the potential to impact surface water and sediment. These bodies of water are not used

as public drinking water sources in the region, but the Driftwood River is used recreationally by residents. Therefore, the surface water and sediment exposure pathways via ingestion for site and construction workers, residents, trespassers, and recreational users are potentially complete.

Groundwater flow at Camp Atterbury is predominantly to the southeast toward the Driftwood River. Several unclassified wells are located east of the river and are screened in the unconsolidated and bedrock aquifers. Therefore, the groundwater exposure pathways for off-facility residents via ingestion is potentially complete. Due to the presence of shallow groundwater (1 to 20 feet bgs), trenching activities could result in potentially complete pathways for construction workers (USGS, 2006). The preliminary CSM for Camp Atterbury is shown on **Figure 6-2**.

6.2 AOI 2 Current Fire Station

AOI 2 is the current Camp Atterbury Fire Station. Although the fire station was constructed in 2007 and interviewees first-hand knowledge of the facility includes the entire existence of the fire station, it is conservatively considered a potential PFAS release area based on the storage of AFFF in drums and on a firefighting vehicle.

If AFFF releases have occurred at the current fire station, they may have occurred within the building or on the paved and grassy surface outside of it. AFFF releases inside would likely migrate via floor drains to an oil-water separator before reaching the WWTP onsite. Released AFFF may also have been tracked on the shoes of site workers outside the building, or physically pushed and rinsed out of the building into the surrounding soil.

Surface transport due to stormwater runoff outside the building is driven by relatively flat topography that generally slopes downward to the east. PFAS released to the surfaces outside of AOI 2 may migrate via surface water runoff along the elevation gradient towards a tributary of Nineveh Creek located approximately 0.1 miles to the east. The pathways and receptors for AOI 2 are the same as described in **Section 6.1**. The preliminary CSM for AOI 2 is shown on **Figure 6-2**.

6.3 AOI 3 Tri-Max™ Storage Area

AOI 3 is the Tri-Max™ Storage Area. Although there have been no known incidences of AFFF release, the Tri-Max™ Storage Area is conservatively considered a potential PFAS release area based on the long-term storage of four Tri-Max™-30 emergency response crash carts containing expired 3% AFFF.

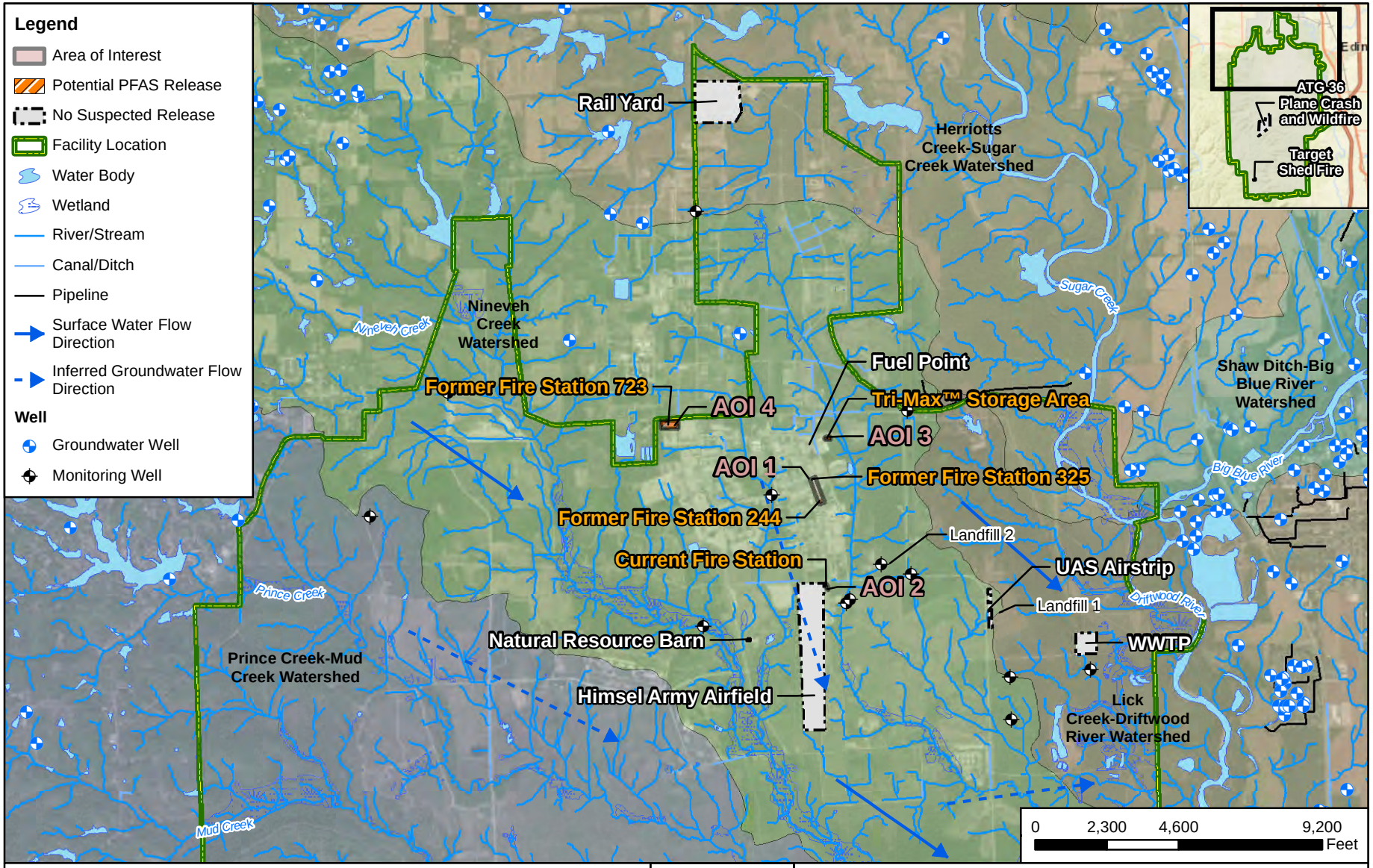
If AFFF releases occurred, they would have occurred either within the temporarily-erected structure or on the paved and grassy surface outside of it. The temporarily-erected structure is situated on concrete pavement, which has no floor drains, and any joints or cracks in the pavement may facilitate the movement of PFAS into the subsurface.

The topography of the AOI 3 slopes slightly downward to the east. AFFF releases to surfaces outside of the temporarily-erected structure likely migrate via surface water runoff into a tributary of Nineveh Creek located approximately 0.2 miles to the east. The pathways and receptors for AOI 3 are the same as described in **Section 6.1**. The preliminary CSM for AOI 3 is shown on **Figure 6-2**.

6.4 AOI 4 Former Fire Station 723

AOI 4 is the Former Fire Station 723 and dates back to as early as the 1940s. Little information is known of Former Fire Station 723 and whether AFFF was used or stored at this location.

Potential AFFF releases at the Former Fire Station 723 would have occurred either within the the building or outside on the surface soil. PFAS may have migrated vertically from surface soil to the subsurface soil and groundwater via leaching. Surface water runoff at AOI 4 would drain into Nineveh Creek. The pathways and receptors for AOI 4 are the same as described in **Section 6.1**. The preliminary CSM for AOI 4 is shown on **Figure 6-2**.



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PROJECT	Preliminary Assessment for PFAS at Camp Atterbury, IN			
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SCALE	1:55,200	CHK BY	JL	9/3/2020
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	9/3/2020

TITLE

Areas of Interest

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Figure 6-1

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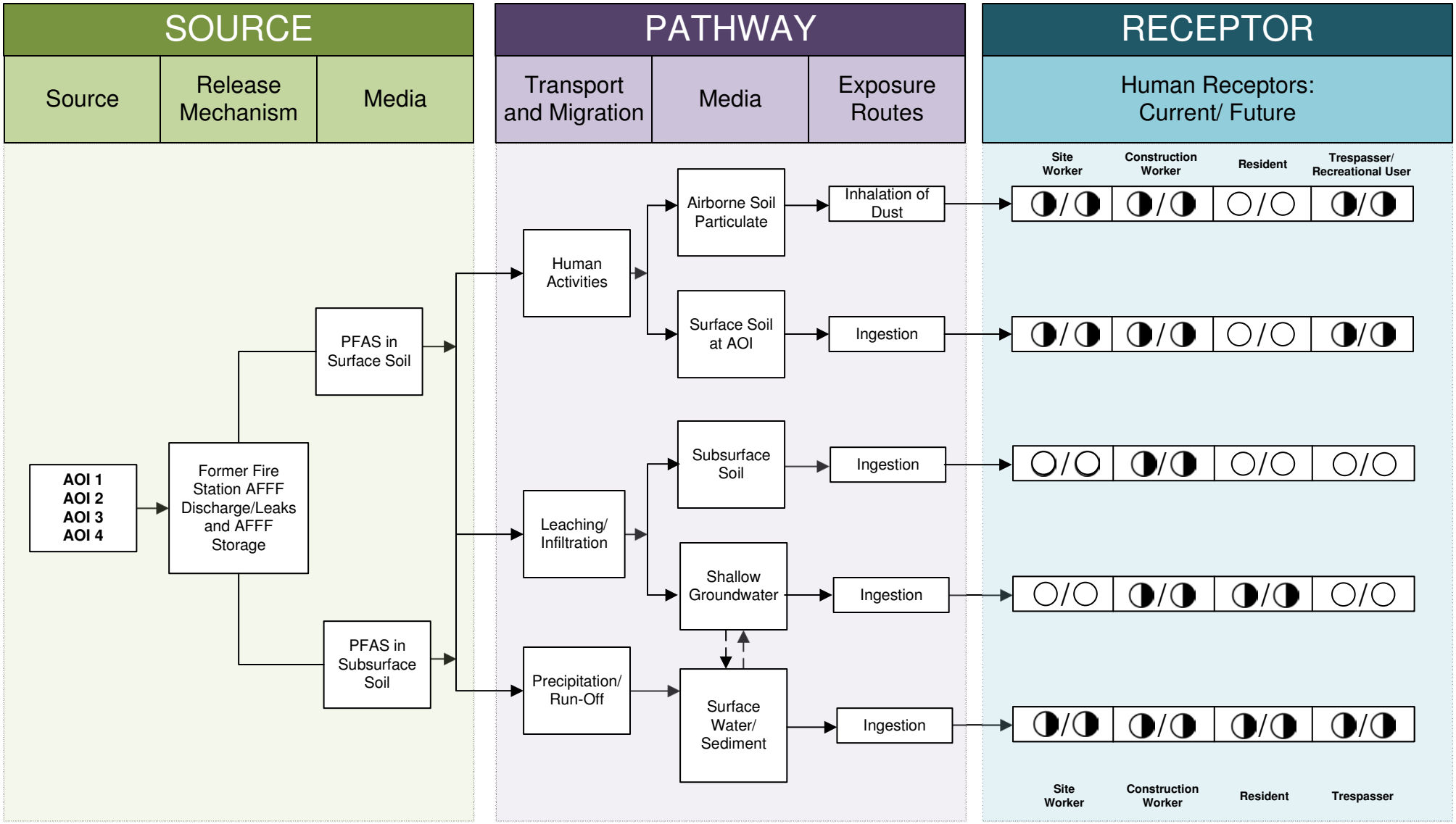


LEGEND

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

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

Figure 6-2
Preliminary Conceptual Site Model
Camp Atterbury, Indiana

7. Conclusions

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

7.1 Findings

Four AOIs (**Table 7-1**) related to potential PFAS releases were identified at Camp Atterbury during the PA (**Figure 7-1**):

Table 7-1. Camp Atterbury Summary of Findings

Area of Interest	Name	Used by	Potential Release Dates
AOI 1	Former Fire Station AFFF Discharge	INARNG	Late 1990s
AOI 2	Current Fire Station	INARNG	2007-Present
AOI 3	Tri-Max™ Storage Area	INARNG	2004-Present
AOI 4	Former Fire Station 723	INARNG	Unknown

Based on potential PFAS releases at the AOIs, there is potential for exposure to PFAS contamination in media at or near the facility.

The areas presented in **Table 7-2**, discussed in further detail in **Section 2** through **Section 5**, were determined to have no suspected release.

Table 7-2. Determinations of No Suspected Release

No Suspected Release Area	Used by	Rationale for No Suspected Release Determination
Natural Resource Barn	INARNG	Based on interviews and visual inspection, AFFF has never been stored here or used in any of the equipment. Only Class A foam has been used and stored here over the duration of the building's existence.
Himsel Army Airfield	INARNG/ANG	Based on interviews, there were no emergency responses at the airfield involving the use of AFFF, no FTAs, and only dry chemical extinguishers on the flight line.
UAS Airstrip	INARNG/ANG	Based on interviews and visual inspection, there were no emergency responses at the airstrip involving the use of AFFF, no FTAs, and only water is stored at the location for fire suppression.
ATG 36	ANG	Based on interviews and supplemental documentation, only Class A foam is used by ANG. No emergency responses have included the use of AFFF in ATG 36.

No Suspected Release Area	Used by	Rationale for No Suspected Release Determination
Railyard	INARNG	Based on interviews and visual inspection, there were no emergency responses at the railyard involving the use of AFFF, no fire training, and no fire suppression equipment here whatsoever.
Fuel Point	INARNG	Based on interviews and visal inspection, only dry chemical fire suppression has ever been used here.
WWTP	INARNG	Based on interviews, the possible release at Building 244 was contained to the building itself and the surrounding soil. Interviewees stated that it was unlikely that the building had floor drains connected to the WWTP.

7.2 Uncertainties

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

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

In order to minimize the level of uncertainty, readily available data regarding the use and storage of PFAS were reviewed, retired and current personnel were interviewed, multiple persons were interviewed for the same potential source area, and potential source areas were visually inspected. **Table 7-3** summarizes the uncertainties associated with the PA.

Table 7-3. Uncertainties within the PA

Area of Interest	Source of Uncertainty
AOI 1 – Former Fire Station AFFF Discharge	Given interviewee tenure, limited information was available regarding the release at Building 244. The interviewee with knowledge of the release could not verify that the foam was AFFF and stated that it could have been Class A foam, consistent with Class A foam used by the environmental detachment and currently stored in the Natural Resources Barn. Also, the inclusion of Building 325 in the AOI is based on assuming similar fire station operations, not direct information on a potential release.

	Additionally, historical photographs show foam-equipped firetrucks with model years from the 1980s, indicating that historical use of AFFF at Camp Atterbury may have been more signifant than its current use. While considered unlikely, it is not firmly established whether the Buildings were connected to the WWTP.
AOI 2 – Current Fire Station	The drainage route for floor drains within the current fire station is unknown. Additionally, it is unclear whether storm drains are located outside the building that may divert surface water runoff.
AOI 3 – Tri-Max™ Storage Area	The four Tri-Max™-30 emergency response crash carts were filled with expired 3% AFFF at the time that they were received in 2004. They are presumed to be currently filled to their AFFF capacity with the same material, but this could not be confirmed by any documented sources.
AOI 4 – Form Fire Station 723	Interviewees and historical maps indicate that Building 723 was historically used as a fire station. The building is known to have existed 1943; however, little is known about the extent of firefighting activities that occurred at Camp Atterbury during that time. It is not known when the building was last used as a fire station or if AFFF was ever stored or used at this location.

7.3 Potential Future Actions

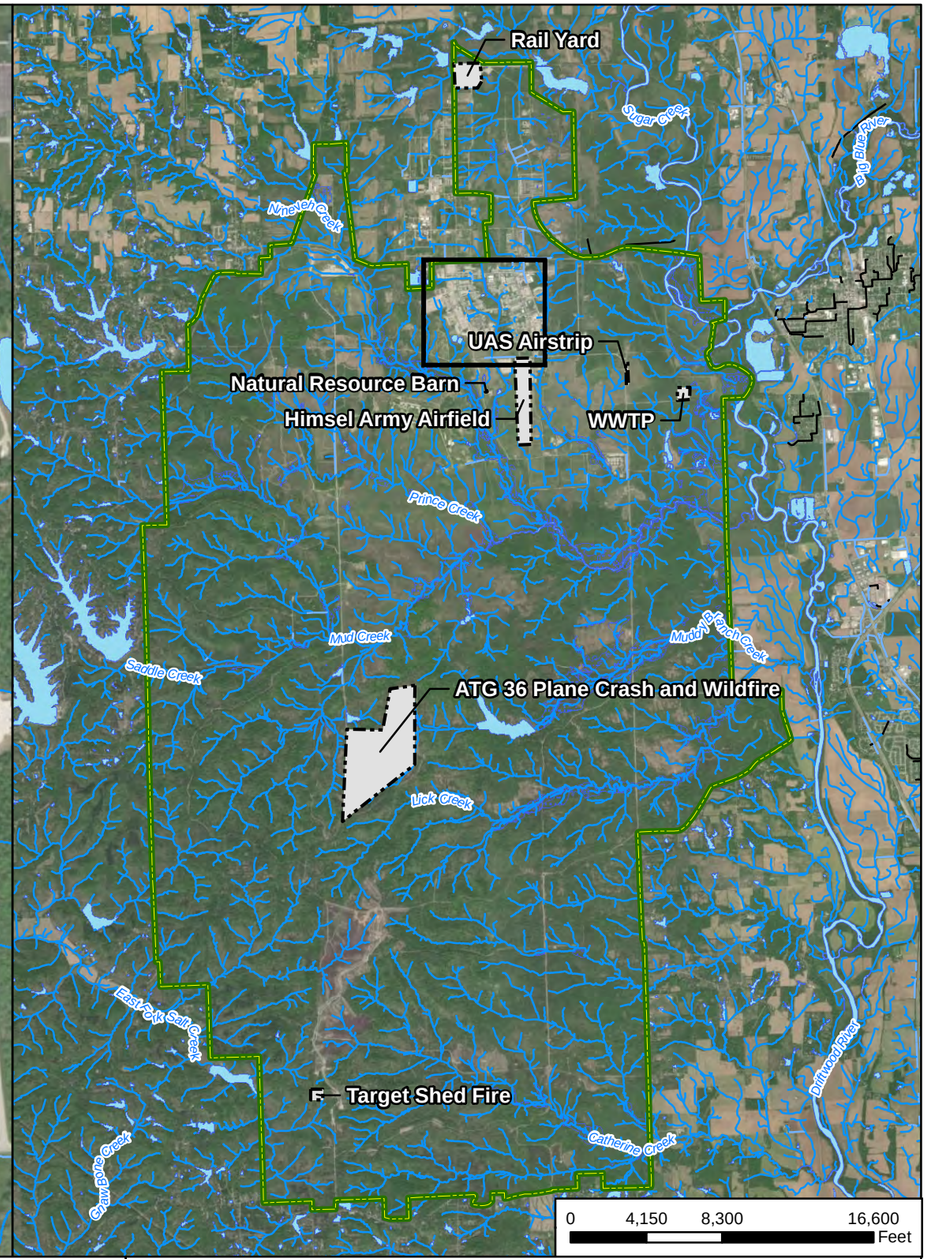
Interviews and records (discontinuously covering the 1990s to present) indicate that current or former ARNG activities may have resulted in a potential PFAS release at the AOIs identified during the PA. Based on the preliminary CSM developed for the AOIs, there is potential for receptors to be exposed to PFAS contamination in soil, surface water, sediment, and groundwater at the AOIs. **Table 7-4** summarizes the rationale used to determine if the AOIs should be considered for further investigation under the CERCLA process and undergo an SI.

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

Table 7-4. Summary of Potential Future Actions

Area of Interest	AOI Location	Rationale	Potential Future Action
AOI 1 Former Fire Station AFFF Discharge	39°21'9.30"N, 86°1'43.10"W	Unknown quantity and type of foam discharged in former fire station (Building 244) in the late 1990s	Proceed to an SI, focus on soil, groundwater, surface water and sediment
AOI 2 Current Fire Station	39°20'42.21"N, 86°1'40.70"W	Potential PFAS release a result of AFFF storage	Proceed to an SI, focus on soil, groundwater, surface water and sediment
AOI 3 Tri-Max™ Storage Area	39°21'28.94"N, 86°1'40.65"W	Potential PFAS release a result of AFFF storage	Proceed to an SI, focus on soil, groundwater, surface water and sediment

AOI 4 Former Fire Station 723	39°21'34.19"N, 86° 2'44.29"W	Unknown historical fire fighting activities and use of AFFF	Proceed to an SI, focus on soil, groundwater, surface water and sediment



CLIENT	ARNG			
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SCALE	1:99,600	CHK BY	JL	9/3/2020
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	9/3/2020

Legend

- Area of Interest
- Potential PFAS Release
- No Suspected Release
- Facility Location
- Water Body
- Wetland
- River/Stream
- Canal/Ditch
- Pipeline

N

Summary of Findings

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Figure 7-1

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Appendix A
Data Resources

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

Camp Atterbury Leases, Licenses, and Permits

- 1988 Permit and License between INARNG and INANG for use of Camp Atterbury by INANG

Camp Atterbury INANG Firefighting Foam Specifications

- Safety Data Sheet for Ansul Silv-Ex Plus Class A Foam

Camp Atterbury EDR Report

- 2018 Camp Atterbury EDR Report

Camp Atterbury Historical Documents

- 2008 Camp Atterbury Integrated Natural Resources Management Plan (INRMP)

Appendix B
Preliminary Assessment Documentation

Appendix B.1
Interview Records

PA Interview Questionnaire – Fire Station

Facility: Camp Atterbury
Interviewer: [redacted]
Date/Time: 08/27/18 1200

Interviewee: [redacted], SFC [redacted], and SFC [redacted] **Title:** Fire Inspector and Fire Staff **Phone Number:** ([redacted]) **Email:** _____	Can your name/role be used in the PA Report? **Y** or N Can you recommend anyone we can interview? Y or **N** _____

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

[redacted]
Fire Inspector for Camp Atterbury for the past year.
Military fire fighter since 1982 (not at this facility), has only been at this facility for about a year.

SFC [redacted]
In charge of fire staff at Atterbury. Has been at the facility for about a year. Most current fire staff here have short tenure, except SFC Crist.

SFC [redacted]
Senior fire staff. Worked at Atterbury from 1990s to present.

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

   Maintenance (e.g., ramp washing) - None
   Fire Training Areas – No FTAs, there have been simulations/training but with water only
   Firefighting (Active Fire) – One truck currently with 375 gallons of AFFF on it, never used.
   Crash – None that he is aware of
   Fire Suppression Systems (Hangers/Dining Facilities) - None
   Fire Protection at Fueling Stations – Dry chemical only
   Non-Technical/Recreational/ Pest Management - None

SFC [redacted] with longest knowledge of Atterbury (~1990s) stated that foam has never been used to knowledge at Camp Atterbury. No knowledge of accidental foam releases either.

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

No AFFF dispensing or suppression systems constructed in any buildings.

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

No AFFF suppression systems.

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

Unsure of what they would do to get more AFFF if they used all AFFF associated with the truck in the current fire station, currently filled with AFFF. AFFF came with the new Oshkosh truck in 2011.

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

Chemguard 3% AFFF in current fire station

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

No, it is all stored in the fire station. Truck came with AFFF in it in 2011, and was accompanied by the drums of AFFF stored with it currently.

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

Stored in the fire station in ten 55 gallon drums as 3% AFFF (550 gallons total in drums). Additional 420 gallons of AFFF stored in the truck's foam tank.

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

Has not been transferred to his knowledge, but it would have to be done done manually in the fire station. No observed leaks in the new truck since 2011, no wash racks or anything like that for the firetruck.

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

Currently one Oshkosh truck with 420 gallons of AFFF, located in the current fire station. Unsure of the past trucks. There was at least one Macy truck back in the 1980s with 70 gallons of foam.

Current fire station was built in the early 2000s. Past vehicles would have been stored elsewhere, like building 244 and/or 325.

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

No history of leaks in the current fire truck (since it was acquired in 2011). The truck's nozzle was tested, but not using AFFF. Nozzle tests were conducted using dish soap.

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

No FTAs currently exist, unaware of any formal FTAs in the past. No live-fire training is conducted on post.

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

No live fire training here. Simulations were done using water. No formal FTAs.

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

No known AFFF use anywhere at the facility from 1990s to present.

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

Surrounding municipalities and DNR responds to 911 fire emergencies. Not aware of a formal agreement. None of them use AFFF to their knowledge. Responding organizations are:
German Township Fire Co.
Nineveh Township Fire Co.
Indiana Department of Natural Resources (DNR)

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

No units came on post with fire personnel or AFFF to their knowledge. Camp Atterbury and possibly outside municipalities would respond to emergencies.

PA Interview Questionnaire – Fire Station

Facility: Camp Atterbury
Interviewer: [redacted]
Date/Time: 08/27/18 1200

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

Some fire training may have occurred at MUTC but cannot recall units.

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

No incident reports available.

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

AFFF was never used to their knowledge, including in response to fuel spills.

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

AFFF was never used to their knowledge, including in response to forest fires. Natural resources staff respond to forest fires and have prescribed burns. However they do not have AFFF.

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

Former fire stations discussed with [redacted]. They have no knowledge of AFFF being used at any of those locations.

PA Interview Questionnaire – Fire Station

Facility: Camp Atterbury
Interviewer: [redacted]
Date/Time: 08/27/18 1200

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

No creative uses.

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

AFFF disposal is unknown to the interviewees. No disposal has occurred to their knowledge.

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

SFC [redacted] was called by SFC [redacted] during this interview. No additional interviewees were identified.

PA Interview Questionnaire - Other

Facility: Camp Atterbury
Interviewer: [redacted]
Date/Time: 8/28/18 0945

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

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

Currently a GIS analyst. Worked at Camp Atterbury since late 1980s. Roughly 30 years of experience at the facility (Longest tenured interviewee in this preliminary assessment).

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?

Former fire station, building 244, used to house firefighting equipment including at least one firetruck in the late 1990s/early 2000s. The building was destroyed by a tornado in 2008, and was rebuilt and repurposed. At some point in the late 1990s or early 2000s, possibly as late as 2004, a piece of firefighting equipment malfunctioned in building 244, releasing foam inside the building. It may have been the firetruck which malfunctioned.

The quantity and type of foam released is unknown. Interviewee is certain that it was foam, but states that it may not have been AFFF since Class A foam is used elsewhere at the facility. Clean up of the release is unknown. Speculating that it was a solid floor and was simply "squeegeed" or rinsed out of the garage bay into the surrounding soil.

A second former fire station is located near building 244, known as building 325. It was one of the original fire stations at Camp Atterbury, presumably it was repurposed when building 244 became the fire station. It was not destroyed by the 2008 tornado, but appears to be renovated. VSI confirmed that there is no firefighting equipment or AFFF in the building. It is currently used by facilities/operations staff to store assorted equipment and park light trucks. Knowledge of other former fire stations at the facility, but no specifics on locations.

Never saw any nozzle testing or other discharges of foam outside the current or former fire stations.

No knowledge of any FTAs ever being used at Atterbury. She has never witnessed or otherwise been made aware of FTA locations. Annual handheld ABC extinguisher training was held at Muscatatuck Urban Training Center for Camp Atterbury

Known Uses
Use
Procurement
Disposition
Storage (Mixed)
Storage (Solution)
Inventory, Off-Spec
Containment
SOP on Filling
Leaking Vehicles
Nozzle and Suppression System Testing
Dining Facilities
Vehicle Washing
Ramp Washing
Fuel Spill Washing and Fueling Stations
Chrome Plating or Waterproofing

personnel. Other than the possible release at building 244, she has no knowledge of any AFFF use elsewhere at the facility.	

PA Interview Questionnaire - Other

Facility: Camp Atterbury
Interviewer: [redacted]
Date/Time: 08/28/18 1330

Interviewee: MSgt [redacted] **Title:** NCOIC Air Guard Operations **Phone Number:** ([redacted] **Email:**_____	Can your name/role be used in the PA Report? **Y** or N Can you recommend anyone we can interview? Y or **N** _____

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

Role: Air Guard Operations Officer at Camp Atterbury from 1999 to present. Knowledge of Air-to-Ground Range 36 use (leased from ARNG by ANG).

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?

Air Guard (ANG) foam and fire equipment is stored on Air-to-Ground (ATG) range 36. Only Class A foam is possessed by them (MSDS provided). No foam use at all by ANG from 1999 to present (duration of interviewee's tenure).

In 2003, ANG at Camp Atterbury acquired a P26 and Polaris E1 "Fire Buggy." The Polaris had Class A foam on it, but it was never used because the system itself created so much "suds" that it was a hinderance to fire fighting. They used those for wildlands fires, but never used foam on those either.

There was an A-10 crash in the 1970s (possibly 1978) at ATG Range 36. The crash occurred deep in a wooded area and was not accessible by emergency responders. Unknown if outside entities responded, but it is unlikely that any AFFF was used due to the extreme difficulty getting firefighting equipment to the crash site.

MSgt [redacted] has no knowledge of any use of AFFF at Camp Atterbury from 1999-present.

Known Uses
Use
Procurement
Disposition
Storage (Mixed)
Storage (Solution)
Inventory, Off-Spec
Containment
SOP on Filling
Leaking Vehicles
Nozzle and Suppression System Testing
Dining Facilities
Vehicle Washing
Ramp Washing
Fuel Spill Washing and Fueling Stations
Chrome Plating

PA Interview Questionnaire - Environmental Manager

Facility:_Camp Atterbury_
Interviewer:_[redacted]
Date/Time:_08/26/18 0900_

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

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

2. Where can I find previous facility ownership information?

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

   Maintenance - None
   Fire Training Areas – Unaware of any FTAs
   Firefighting (Active Fire) – A brush fire a few years ago
   Crash – None that he is aware of, check with ATG staff
   Fire Suppression Systems (Hangers/Dining Facilities) - None
   Fire Protection at Fueling Stations – VSI here later, no AFFF
   Non-Technical/Recreational/ Pest Management – Not that he is aware of
   Metals Plating Facility - None
   Waterproofing Uniforms (Laundry Facilities) - None
   Other – May have been an accidental AFFF release in former fire station back in 1990s. Will talk to [redacted] for details. That building has since been demolished by a tornado.

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

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

No AFFF dispensing systems, confirmed with [redacted]

PA Interview Questionnaire - Environmental Manager

Facility:_Camp Atterbury_
Interviewer:_[redacted]
Date/Time:_08/26/18 0900_

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

No AFFF fire suppression systems. Fire Station is only known area with AFFF stored. Will need to do a VSI of natural resources barn to confirm that they do not have AFFF there either.

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

Unsure how the AFFF in the fire station was procured. Will interview fire station staff.

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

Unsure, we will check the Fire Station.

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

Stored in 55 gallon drums. Unsure of specifications, will verify during VSI.

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

No FTAs exist that he is aware of. Given the age of the facility, it is possible that FTAs existed at one time, but no knowledge of inactive FTAs either.

PA Interview Questionnaire - Environmental Manager

Facility:_Camp Atterbury_
Interviewer:_[redacted]
Date/Time:_08/26/18 0900_

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

Fire training is not conducted here, so there have been no AFFF releases during training. No retention ponds or other practices are known for possible historical training either.

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

Brush fire a few years ago, when Ninevah Twsp, DNR, and German Twsp responded. We will interview one of the Camp Atterbury natural resources staff who was responsible for wildlands fire at the time.

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

Unaware of any off-post fire training. Some of them may have gone to MUTC (site visit scheduled there later in the week).

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

No training with AFFF that he was aware of, or any fire training at all.

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

Could not find any official incident reports. The first responders were the Camp Atterbury natural resources staff, outside entities included Ninevah Twsp, German Twsp, and DNR. However, fire may have been extinguished by the time they arrived on scene.

PA Interview Questionnaire - Environmental Manager

Facility:_Camp Atterbury_
Interviewer:_[redacted]
Date/Time:_08/26/18 0900_

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

No fuel spill logs, AFFF was never used to wash or as a precaution, to his knowledge.

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

The natural resources staff are responsible for wildlands fires on-post and do not have AFFF to his knowledge. They may have class A foam, but will confirm during VSI.

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

No formal agreement, the local FDs from Ninevah Twsp, German Twsp, and the DNR respond to 911 fire emergencies on post. On post Fire Department does not respond to off post fires.

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

The former fire station where a suspected release was indicated by a senior analyst, with the longest tenure on the interview list. She indicated that it likely occurred in the 1990s, more details will come from the scheduled call with her.

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

No creative uses of AFFF, besides the possible release in the 1990s, he is unaware of any other incidents involved AFFF at Camp Atterbury.

PA Interview Questionnaire - Environmental Manager

Facility:_Camp Atterbury_
Interviewer:_[redacted]__
Date/Time:_08/26/18 0900_

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

    Reports provided:

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

Lease information, especially with ATG range – [redacted] will assist with this.

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

No chrome plating.

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

Not applicable.

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

    How was it turned in in the past?

PA Interview Questionnaire - Environmental Manager

Facility:_Camp Atterbury_
Interviewer:_[redacted]__
Date/Time:_08/26/18 0900_

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

No one else besides those already on the list.

PA Interview Questionnaire - Other

Facility: Camp Atterbury
Interviewer: [redacted]
Date/Time: 08/28/18 1330

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

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

Role: Responsible for Natural Resources Operations including prescribed burns and wildlands fires. Worked at Camp Atterbury for 10 years (2008 to present). Knowledge of wildlands firefighting and emergency responses.

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?

Wildlands firefighting equipment is stored in the natural resources barn along with Phos-Chek Class A Foam (details in Visual Site Inspection). The natural resources barn was built in the early 2000s. He has no knowledge of this detachment ever acquiring, possessing or using AFFF.

Natural Resources staff responsible for putting out brush/wildlands fires and performing prescribed burns. ANG assists/coordinates with prescribed burns as well, they have a brush truck and a Polaris mobile unit. No AFFF has been used (2008 to present) in putting out those fires.

No FTAs that he is aware of. No uses of AFFF that he is aware of. Only knows of AFFF in the current ARNG fire station, which has never been used. ARNG fire staff generally do not respond to wildlands fires or prescribed burns.

Two instances since 2008 where outside agencies responded to fires on base:

January 2016- Target shed burnt down on ATG Range 36. German Township responded to the fire. No foam was used.

2010 – Prescribed burn which turned into minor wildlands fire. Ninevah Township and German township responded, but never came on the facility. They were stopped at the gate and told that they were not needed.

All outside agencies only use water for firefighting to his knowledge.

Known Uses
Use
Procurement
Disposition
Storage (Mixed)
Storage (Solution)
Inventory, Off-Spec
Containment
SOP on Filling
Leaking Vehicles
Nozzle and Suppression System Testing
Dining Facilities
Vehicle Washing
Ramp Washing
Fuel Spill Washing and Fueling Stations
Chrome Plating or Waterproofing

PA Interview Questionnaire - Other

Facility: Camp Atterbury
Interviewer: [redacted]
Date/Time: 08/28/18 1000

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

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

Role: Supervisor at Camp Atterbury for past 3 years (2015-present). Spent 12 years before that at Shelbyville AASF (2003-2015) and was responsible for the fuel point there. Knowledge of multiple Trimax carts with AFFF stored at Camp Atterbury.

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?

AFFF has never been used at Camp Atterbury to her knowledge in the past 3 years. Never heard of it being used at Camp Atterbury during her 12-year tenure at Shelbyville either.

Six (6) Trimax-30 carts were reportedly sent to Camp Atterbury in 2004 from Shelbyville. However, there are currently only four Trimax -30 carts stored in a "tent" – temporary storage building in the northern portion of the facility. It is unknown whether only four were sent to Atterbury in 2004 or if there were two additional carts at Camp Atterbury at some point in time. These carts were sent to Camp Atterbury from the Shelbyville AASF in 2004 because the AFFF in them had expired, and Shelbyville had more Trimax carts than they needed. They are presumed to be full. These carts were never discharged at Camp Atterbury, but did undergo hydrostatic testing at Shelbyville AASF in 2003 (details below). Upon visual inspection of the carts at Atterbury, it does not appear that the Trimax-30 carts have been moved, cleaned around/under, or otherwise handled during their time in storage. No sign of any leaks present under or around the carts.

SFC [redacted] has no other knowledge of AFFF at Camp Atterbury.

The following information is specific to the Shelbyville AASF, and does not pertain directly to the Camp Atterbury Preliminary Assessment:

Hydrostatic testing was conducted with the Trimax-30 carts in early 2000s (possibly 2003) at the Shelbyville AASF. Approximately 50 gallons of 3% AFFF was

Known Uses
Use
Procurement
Disposition
Storage (Mixed)
Storage (Solution)
Inventory, Off-Spec
Containment
SOP on Filling
Leaking Vehicles
Nozzle and Suppression System Testing
Dining Facilities
Vehicle Washing
Ramp Washing
Fuel Spill Washing and Fueling Stations
Chrome Plating or Waterproofing

discharged into the drainage ditch (identified on site map) during hydrostatic testing, which served a secondary purpose as a weed control measure. This was only performed once during the tenure of SFC [redacted]. Additionally, the air line on a Trimax-30 cart malfunctioned in 2010, but no AFFF was released in that incident. The Trimax carts were filled by SFC [redacted], she confirms that there were no leaks or spills during these transfers. During her tenure at Shelbyville there was one emergency response in 2003/2004, no AFFF was used. ABC extinguisher was used on the prop plane which was sparking on the runway. Not aware of any other crashes/emergency responses No suppression system in the hangar at Shelbyville. There was a vehicle mounted system there from 2003 to around 2015. The system was mounted on a skid which attached to a Ford F350 truck. It was a dual system with both AFFF and purple K. The AFFF was never used to her knowledge, never leaked, and no nozzle testing was performed. SFC [redacted] purchased all AFFF at Shelbyville, using an FPC card. Approximately 25 5-gallon buckets were ordered every 5 years. Unused, expired buckets were hauled away by the vendor.	

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: 8/27/2018 12:00

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

Source/Release Information

Site Name / Area Name / Unique ID: Camp Atterbury

Site / Area Acreage:
Current Fire Station
Former Fire Station
Fuel Point
Natural Resources Barn
Railyard
Trimax Storage Area
Himsel Airfield
UAS Airstrip

Historic Site Use (Brief Description): Current fire station was built in early 2000s. Former fire station 325 was used historically until late 1990s, while former fire station 244 was used from 1990s to early 2000s. Building 244 was destroyed by a tornado in 2008 and rebuilt/repurposed. Building 325 has been rennovated and repurposed.

Current Site Use (Brief Description):
Current fire station currently stores AFFF
Former fire stations were repurposed.
Fuel point uses only dry chemical fire extinguishers
Natural resources barn has wildland fire equipment - Class A foam only
Railyard has no fire suppresion or association with AFFF
4 Trimax carts are stored in the long term storage area in northern portion of facility
Dry chemical crash carts only at Himsel Airfield

Physical barriers or access restrictions: Access to Camp Atterbury is restricted to INARNG personnel. Access gates and fences

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):

According to one interviewee, AFFF may have been accidentally discharged in building 244 in the early 2000s. Usage time, type, and quantity is unknown. No use or spills/discharges indicated otherwise.

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

Closest town is Edinburgh, IN with residential and commercial areas. No PFAS related activities or adjacent sources were indicated near the site

Visual Survey Inspection Log

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

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

There is a fixed-wing airfield known as Himsel Airfield, and a UAS airstrip. Neither have been associated with AFFF use.

Visual Survey Inspection Log

Other Significant Site Features:

1. Does the facility have a fire suppression system? Y / **N**

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

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

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

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

Transport / Pathway Information

Migration Potential:

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

1a. If so, note observation and location:

WWTP for the site is located along a tributary of the Driftwood River

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):

Building 244 rebuilt after destruction by tornado in 2008. Himsel Army Airfield was renovated, current FS was newly built in early 2000s

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

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

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

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

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

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

Receptor Information

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

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

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

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

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

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

Nearest town/residential area is 3.5 miles to the east. Edinburgh, IN

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

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

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

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

Visual Survey Inspection Log

Additional Notes

AFFF Inventory in Current FS: 10 55-gallon drums of ChemGuard 3% A AFFF,
1 Oshkosh (2011) firetruck with 420 gallons of 3% AFFF

Suspected release in former fire station, building 244

4 Trimax-30 carts stored in long term storage tent in northern portion of facility. Never used, no sign of leaks.

No indication of AFFF stored, used, or released anywhere else at the facility

Photographic Log

Photo ID/Name	Date & Location	Photograph Description

Appendix B.3
Conceptual Site Model Information

Preliminary Assessment – Conceptual Site Model Information

Site Name: Camp Atterbury

Why has this location been identified as a site?

AFFF is stored onsite and one possible release was identified in the late 1990s.

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

No

Training Events

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

If so, how often? N/A

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

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

Surface Water:

Surface water flow direction? Southeast

Average rainfall? 42 inches per year

Any flooding during rainy season? Rarely. There was a severe storm with some flooding and a tornado in 2008

Direct or indirect pathway to ditches? OWS from some facilities to onsite WWTP no direct pathway to surface water from AOI 1

Direct or indirect pathway to larger bodies of water? Indirect through WWTP to Driftwood River

Does surface water pond any place on site? A small swale/ponded area 0.25 miles east of AOI 1. Not much surface water ponding otherwise.

Any impoundment areas or retention ponds? No

Any NPDES location points near the site? WWTP

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

Topographical drainages, there are no large swales or ditches

Preliminary Assessment – Conceptual Site Model Information

Groundwater:

Groundwater flow direction? Southeast

Depth to groundwater? 80 to 140 ft

Uses (agricultural, drinking water, irrigation)? Nearest use for drinking water >3 miles away, north of Edinburgh used for Camp Atterbury drinking water

Any groundwater treatment systems? Several extraction and treatment wells in area due to ongoing remediation

Any groundwater monitoring well locations near the site? Yes a few onsite

Is groundwater used for drinking water? Yes, pumped in from Prince's Lake Water north of Edinburgh, IN. Groundwater from Camp Atterbury does not interact with the drinking water source

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, drinking water wells exist around Edinburgh on the other side of Driftwood River.

Waste Water Treatment Plant:

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

If so, do we understand the process and which water is/was treated at the plant? Oil-water separator from drainages before going to treatment plant. No as-builts so unsure which drainages go to WWTP

Do we understand the fate of sludge waste? Unsure if biosolids are used

Is surface water from potential contaminated sites treated? No

Equipment Rinse Water

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

Yes, but no dedicated wash rack or area. Firetruck currently washed outside of current firestation

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 have been tested, but only using dish soap (at least from 1990s to present). No AFFF was used during that time, so no inadvertent AFFF is suspected of being rinsed through the hoses or nozzle during testing.

3. Other? N/A

Preliminary Assessment – Conceptual Site Model Information

Identify Potential Receptors:

Site Worker: Y

Construction Worker : Y

Recreational User: N

Residential: N

Child: N

Ecological: N

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

Mostly rural area

Documentation

Ask for Engineering drawings (if applicable).

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

No known changes specific to drainage system, but several buildings have been modified, built, or demolished over the lifetime of the facility.

Appendix C
Photographic Log

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Atterbury	Edinburgh, Indiana

Photograph No. 1

Description:

Looking west at the current Camp Atterbury fire station.

Date Taken:

27 August 2018

Photograph No. 2

Description:

Looking south inside the current fire station. 2011 Oshkosh firetruck equipped with a 420 gallon AFFF tank, currently filled with 3% AFFF.

Date Taken:

27 August 2018

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Atterbury	Edinburgh, Indiana

Photograph No. 3

Description:

Looking east inside the current fire station. Eight 55-gallon drums of ChemGuard 3% AFFF.

Date Taken:

27 August 2018

Photograph No. 4

Description:

Looking east inside the storage tent structure that has housed four Trimax-30 crash carts, from 2004 to present.

Date Taken:

28 August 2018

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Atterbury	Edinburgh, Indiana

Photograph No. 5

Description:

Looking west inside the natural resources barn. Three pieces of firefighting equipment currently stored in the barn.

Date Taken:

28 August 2018

Photograph No. 6

Description:

Looking west inside the natural resources barn. Three 5-gallon buckets of Phos-Chek Class A Firefighting foam used in the vehicles.

Date Taken:

28 August 2018

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Atterbury	Edinburgh, Indiana

Photograph No. 7

Description:

Looking south at former fire station building 325. It has since been repurposed and renovated.

Date Taken:

28 August 2018

Photograph No. 8

Description:

Photographs found through independent research of past firetrucks at Camp Atterbury with foam capability. The model years range from 1986 to 1989, while dates printed on the photographs range from 2006 to 2010.

Date Accessed:

28 August 2018