

FINAL Preliminary Assessment Report Gary Army Aviation Support Facility, Indiana

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

March 2020

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Acronyms and Abbreviations

| | |
|----------|---|
| °F | degrees Fahrenheit |
| AASF | Army Aviation Support Facility |
| AECOM | AECOM Technical Services, Inc. |
| AFFF | aqueous film forming foam |
| AOI | area of interest |
| ARNG | Army National Guard |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CSM | conceptual site model |
| FTA | fire training area |
| IED | Installations and Environment Division |
| IN | Indiana |
| INARNG | Indiana Army National Guard |
| MIDCO II | Midwest Solvent Recovery Co., Inc |
| NFPA | National Fire Protection Association |
| NPL | National Priority List |
| PA | Preliminary Assessment |
| PFAS | per- and poly-fluoroalkyl substances |
| PFOA | perfluorooctanoic acid |
| PFOS | perfluorooctanesulfonic acid |
| US | United States |
| USACE | United States Army Corps of Engineers |
| USEPA | United States Environmental Protection Agency |
| VSI | visual site inspection |

Executive Summary

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

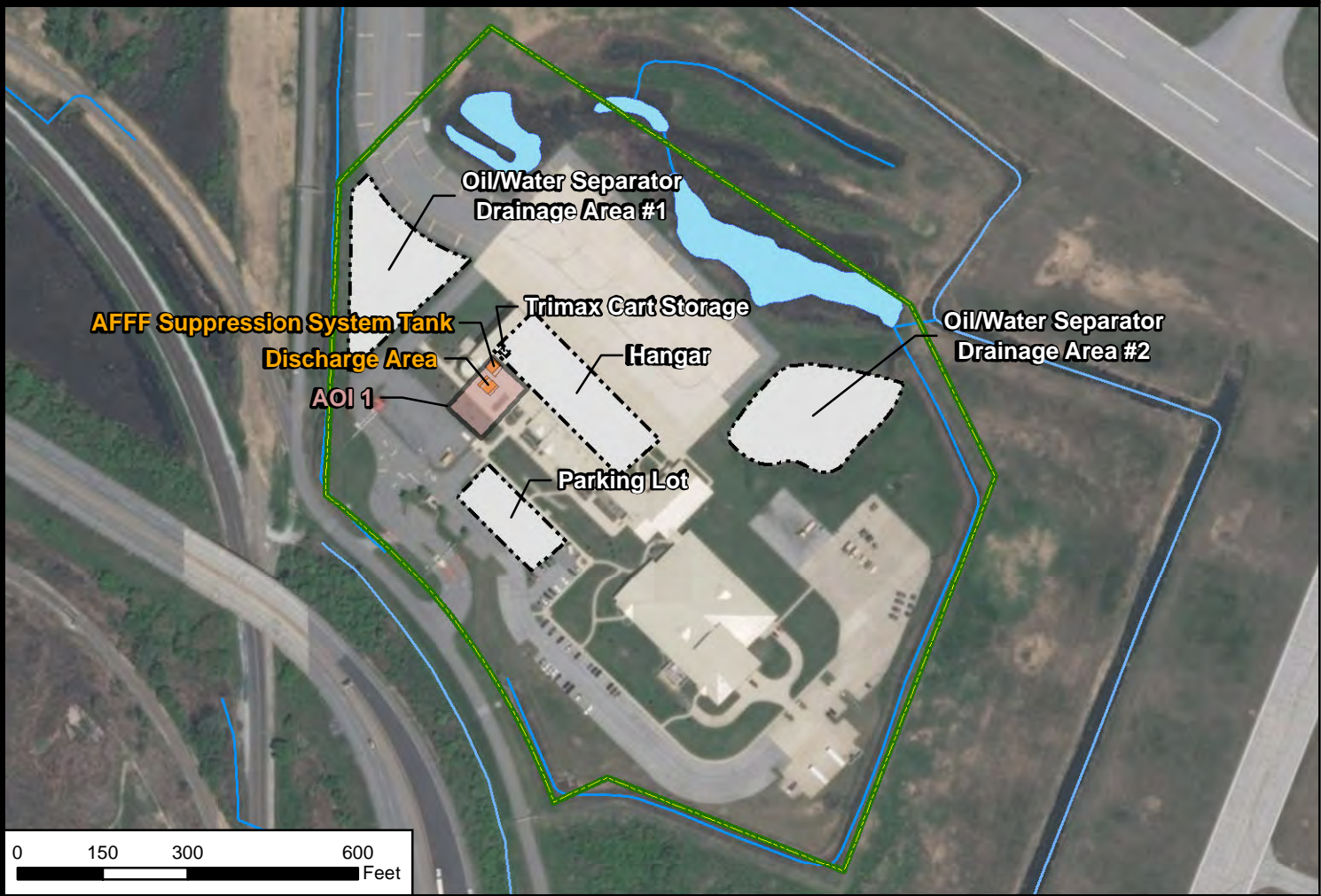
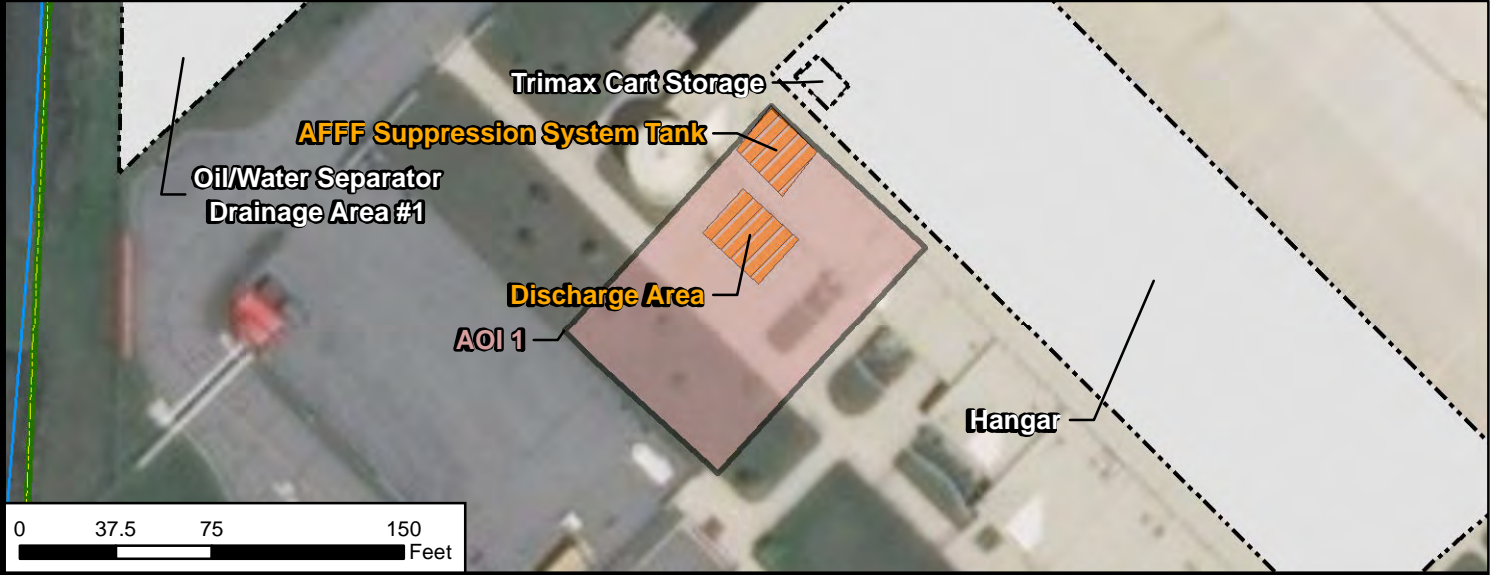
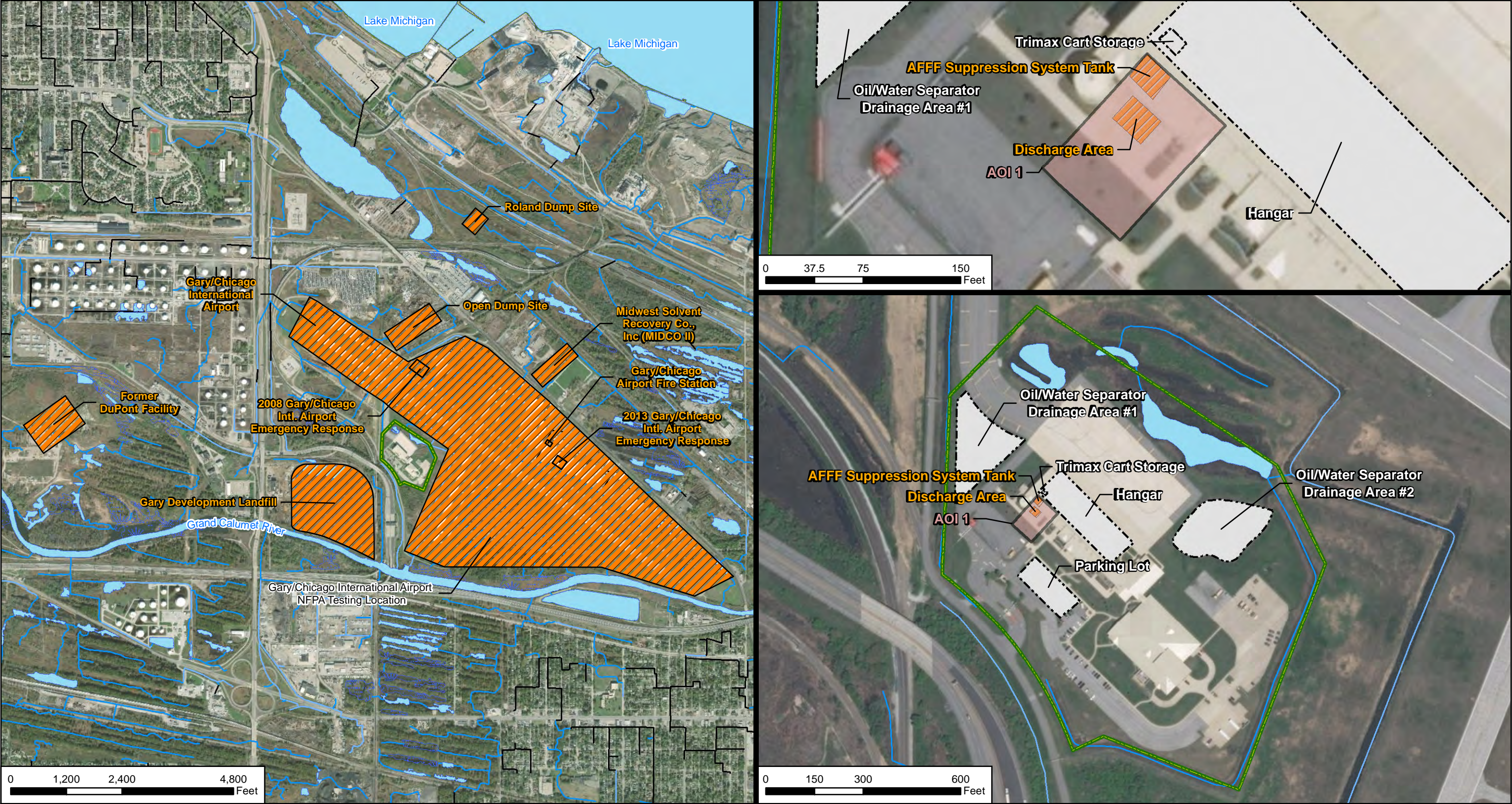
AECOM completed a PA for PFAS at the Army Aviation Support Facility (AASF) in Gary, Indiana (IN) to assess potential PFAS release areas and exposure pathways to receptors. The performance of this PA included the following tasks:

- Reviewed data resources to obtain information relevant to suspected PFAS releases
- Conducted a 1-day site visit on 31 August 2018
- Interviewed Gary AASF personnel during the site visit including Indiana ARNG (INARNG) environmental managers, the Gary/Chicago International Airport Battalion Fire Chief, and Gary AASF operations staff
- Completed visual site inspections at known or suspected PFAS release locations and documented with photographs
- Developed a conceptual site model (CSM) to outline the potential release, pathway, and receptors of PFAS for the Gary AASF

One Area of Interest (AOI) related to PFAS releases was identified at the Gary AASF during the PA. The AOI is shown on **Figure ES-1** and described below:

| Area of Interest | Name | Used by | Release Date |
|------------------|-----------------------------------|--------------------------|-----------------|
| AOI 1 | AFFF Suppression System Leak Area | Gary AASF - Indiana ARNG | 6 February 2018 |

Based on the potential AFFF release at this AOI, there is potential for exposure to PFAS contamination in surface soil and subsurface soil to site and construction workers via ingestion and inhalation, and surface water and sediments to site workers, construction workers, and residents via ingestion. The CSM for the Gary AASF is shown on **Figure ES-2**.

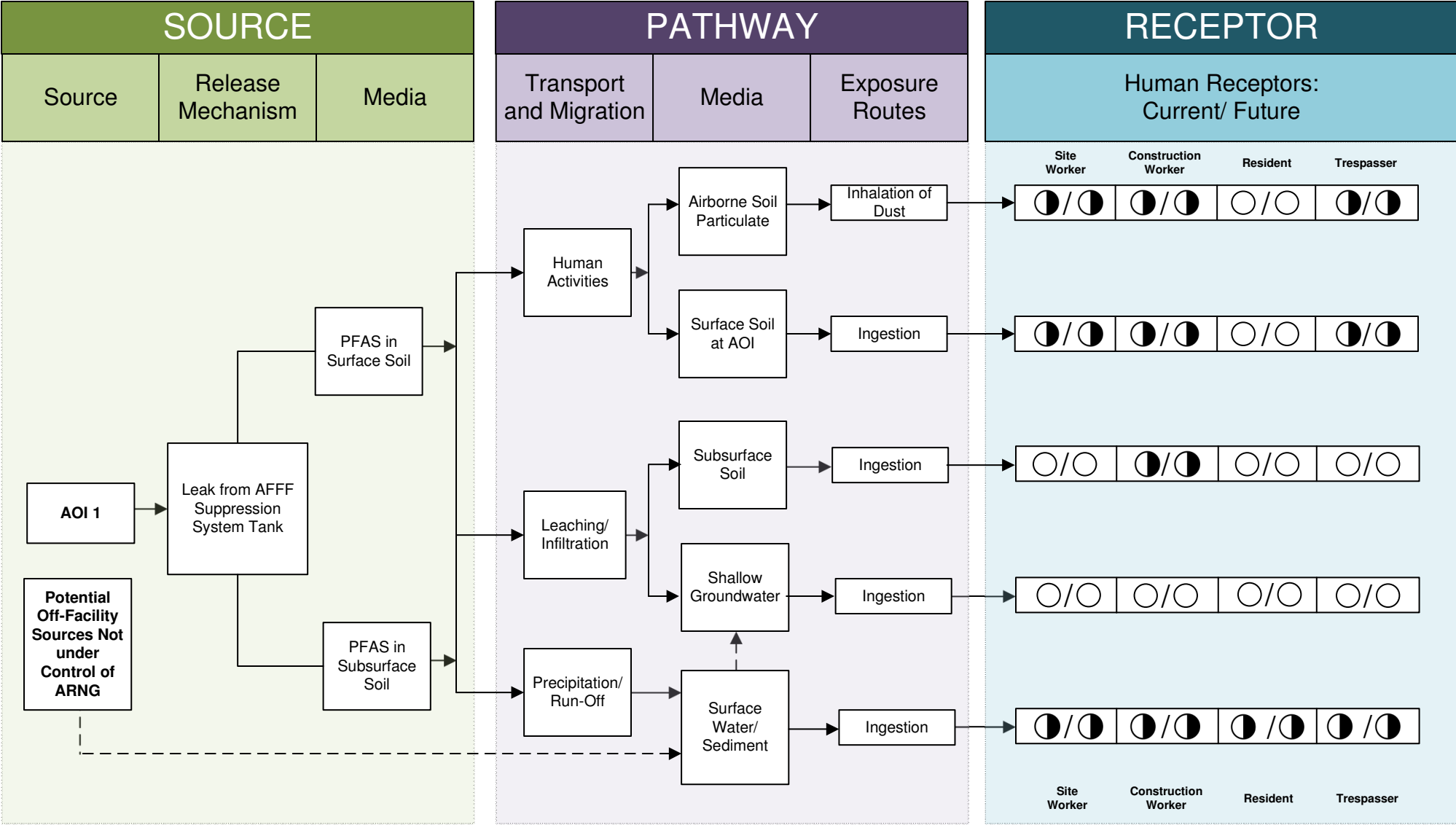


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| CLIENT | | ARNG | | | |
| PROJECT | | Preliminary Assessment for PFAS at Gary AASF, IN | | | |
| REVISED | 6/28/2019 | GIS BY | MS | 6/28/2019 | |
| SCALE | 1:3,600 | CHK BY | ZN | 6/28/2019 | |
| Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community | | PM | RG | 6/28/2019 | |

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

N

| | |
|--|-------------|
| Summary of Findings | |
| 12420 Milestone Center Drive Germantown, MD 20876 | Figure ES-1 |



LEGEND

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

Notes:

1. The resident receptor refers to an off-site resident.
2. Dermal contact exposure pathway is incomplete for PFAS.

Figure ES-2
Preliminary Conceptual Site Model
Gary AASF

1. Introduction

1.1 Authority and Purpose

The United States (US) Army Corps of Engineers (USACE) Baltimore District on behalf of the Army National Guard (ARNG)-Installations & Environment Division (IED), Cleanup Branch contracted AECOM Technical Services, Inc. (AECOM) to perform Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide under Contract Number W912DR-12-D-0014, Task Order W912DR17F0192, issued 11 August 2017. The ARNG is assessing potential effects on human health related to processes at their facilities that used per- and polyfluoroalkyl substances (PFAS) (a suite of related chemicals), primarily releases of aqueous film forming foam (AFFF) although other sources of PFAS 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 these PFAS compounds in the environment will vary. The regulatory framework at both federal and state levels continues to evolve. The US Environmental Protection Agency (USEPA) issued Drinking Water Health Advisories 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, Indiana has not promulgated any of their own standards for PFAS in drinking water or in any other media.

This report presents findings of a PA for PFAS at the Gary Army Aviation Support Facility (AASF) in Gary, 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 Part 300), and USACE requirements and guidance.

This PA documents the known fire training areas (FTAs) as well as additional locations where PFAS may have been released into the environment at the Gary AASF. The term PFAS will be used throughout this report to encompass all PFAS chemicals being evaluated, including PFOS and PFOA, which are key components of AFFF.

1.2 Preliminary Assessment Methods

The performance of this PA included the following tasks:

- Reviewed data resources to obtain information relevant to suspected PFAS releases
- Conducted a 1-day site visit on 31 August 2018
- Interviewed Gary AASF personnel during the site visit including Indiana ARNG (INARNG) environmental managers, the Gary/Chicago International Airport Battalion Fire Chief, and Gary AASF operations staff
- Completed visual site inspections (VSIs) at known or suspected PFAS release locations and documented with photographs
- Developed a conceptual site model (CSM) to outline the potential release, pathway, and receptors of PFAS for the Gary AASF

1.3 Report Organization

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

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

1.4 Facility Location and Description

The Gary AASF is located at the Gary/Chicago Airport in Gary, Indiana. The facility is located in Lake County, Indiana, approximately 25 miles southeast from Chicago, Illinois, and 1.5 miles south of Lake Michigan. It occupies approximately 17 acres of the Gary/Chicago International Airport. The Environmental Data Resource Report showed that the facility was built on a brownfield site that was formerly an Army Nike Missile battery. The AASF opened in 2008 for the purpose of supporting rotary aircraft operations and as an Armory Readiness Center for the INARNG. It is leased from the Gary/Chicago International Airport Authority. A Joint Use Agreement was negotiated between the Gary AASF and the Gary/Chicago International Airport Authority that addresses firefighting and crash rescue services (**Appendix A**).

1.5 Facility Environmental Setting

The Gary AASF is located within the Valparaiso Morainal Complex along the Lake Michigan border (Gray, 2001). Valparaiso Morainal Complex is situated in the Northern Moraine and Lake Region. Lake County is bordered by Lake Michigan to the north, by Illinois to the west, by Porter County to the east, and by Jasper and Newton Counties to the south (Rosenshein, 1961). Northern Indiana is mostly flat terrain with higher and hillier terminal moraines and glacial kettle lakes. Northwest Indiana is characteristically moist and marsh-like. The soils around the Valparaiso Moraine are generally well drained, mostly calcareous, silty, clay loams (Post, 1985). A variety of fauna grow in the mineral-rich soils in normally unforested areas.

The facility is located in a heavily-industrialized area of the Chicago Lake Plain, in the Central Corn Belt Plains Ecoregion (USEPA, 1997). The Chicago Lake Plain ecoregion is a coastal strip with marshes and sand dunes (USEPA, 1997), and it differs from other areas in that it has a climate moderated by the lake and native beach-dune plant communities. The Chicago Lake Plain ecoregion has lower dunes, less woodland, and more urban-industrial activity than surrounding areas.

1.5.1 Geology

The Gary AASF has bedrock of mostly Devonian age and some Silurian age (Indiana Geological & Water Survey, 2018). Devonian age bedrock is carbonaceous shale in the upper portion, and limestone, dolomite, and shale in the lower portion. Silurian age bedrock includes dolomite, limestone, siltstone, and shale. Lake County consists of consolidated rocks from the Middle Silurian age and unconsolidated rocks from the Pleistocene age (Rosenshein, 1961). The oldest rocks underlying Lake County are Cambrian and Ordovician age. The bedrock is covered with unconsolidated Pleistocene age glacial drift that forms the terrain. This glacial drift supplies groundwater in unconsolidated rocks (Rosenshein, 1961). The depth to bedrock in the area ranges from about 100 to 150 feet below the ground surface (Environmental Impact Statement, 2004).

The overlying surficial geology is typical of the physiographic region known as the Calumet Lacustrine Plain, with deposits of unconsolidated sediment and facies of the Atherton Formation (**Figure 1-2**). Sediments in the plain consist of fine lake silt and clay, paludal deposits of muck and peat, expansive sand beaches with dunes, sand and fine gravel from glacial outwash, and clay-rich till inclusions (Fenelon and Watson, 1993). Before urban development, the topography of the area was dominated by a series of linear beach ridges and intersecting swales consistent with dune-swale landscapes. The topography has since become fragmented, but can still be observed in small, isolated areas. Elevations across the facility range from 580 to 600 feet above sea level, with a general slope from the north of the Grand Calumet River to the south (Environmental Impact Statement, 2004).

1.5.2 Hydrogeology

Regional groundwater primarily originates from the dolomite and dolomitic limestone of the Middle Silurian age (Rosenshein, 1961). The Middle Silurian age deposits are overlain by a thin layer of dolomitic limestone from the Middle Devonian age that thickens eastward and is overlain by a layer of Late Devonian age shale. The Gary AASF is located within the eastern portion of the Calumet aquifer. Deposits of dune, beach, and lacustrine silts, sands, and clays make up the surficial aquifer (Fenelon and Watson, 1993). Significant areas of the aquifer near the AASF are urbanized and have been modified with fill deposits. Within the aquifer, thousands of acres of made-land are situated near the shoreline of Lake Michigan. Fill materials in these areas mainly consist of steel mill slag and coal ash, but also include municipal wastes, industrial wastes, construction debris, dredging spoil, ash, and cinders. Biological sludges have been used to cover and fill swampy areas as well (Cohen et al, 2002). The aquifer is unconfined throughout its extent with the exception of small portions where fragmented layers of peat, muck, and organic deposits confine the sands. The units underneath the aquifer are the Quaternary Lake Border and Wheeler Till sequences. The thickness of these units varies from 50 feet to over 150 feet (Cohen et al, 2002). There is an east-west trending divide in the groundwater gradient located between the east branch of the Grand Calumet River and Lake Michigan, just north of the AASF (Watson, 1989). Groundwater at the facility generally flows south toward the Grand Calumet River located about 0.5 miles away. Groundwater south of the Grand Calumet River flows towards the north where it seeps into the river (**Figure 1-2**). The water table is shallow, with depth to groundwater near the facility ranging from 5 to 15 feet below the ground surface (Fenelon and Watson, 1993).

The water balance of the aquifer is heavily influenced by industrial and residential development. Natural recharge occurs through infiltration of precipitation and upward groundwater flow from the bedrock aquifer. Anthropogenic sources of recharge include sanitary sewers, septic systems, and water supply lines. Estimates of recharge rates throughout the aquifer range from 2 to 17 inches per year (Fenelon and Watson, 1993). Discharge occurs through constructed drainage ditches, seepage into sanitary and storm sewers, and downward flow through the clay unit to the underlying bedrock. Groundwater seepage into the Grand Calumet River is very low because more than 90% of the flow in the river comes from municipal and industrial effluent. The groundwater contribution to the river is estimated to be less than 36 cubic feet per second (Fenelon and Watson, 1993).

In the northwestern portion of the aquifer, oil refineries may pump groundwater from the aquifer for industrial use. However, this aquifer system is not generally used for municipal or industrial water supply (Cohen et al, 2002). Environmental Data Resource Reports did not indicate the presence of any public wells in the direction of groundwater flow from the Gary AASF and did not identify any public wells within a 1-mile radius of the facility. Water at the site is supplied by Indiana American Water – Northwest Operations, using the greater Gary area system which draws its water directly from Lake Michigan (Indiana American Water, 2017). Two wells designated for home-use were identified south of the Grand Calumet River, within a 1-mile radius of the facility. It is unknown whether these are used for private drinking water. However, neither well is located downgradient from facility based on the inferred hydraulic gradient.

Based on the USEPA Unregulated Contaminant Monitoring Rule 3 data, it was indicated that PFAS was detected in a public water system above the USEPA Health Advisory level within 20 miles of the facility (**Appendix A**).

1.5.3 Hydrology

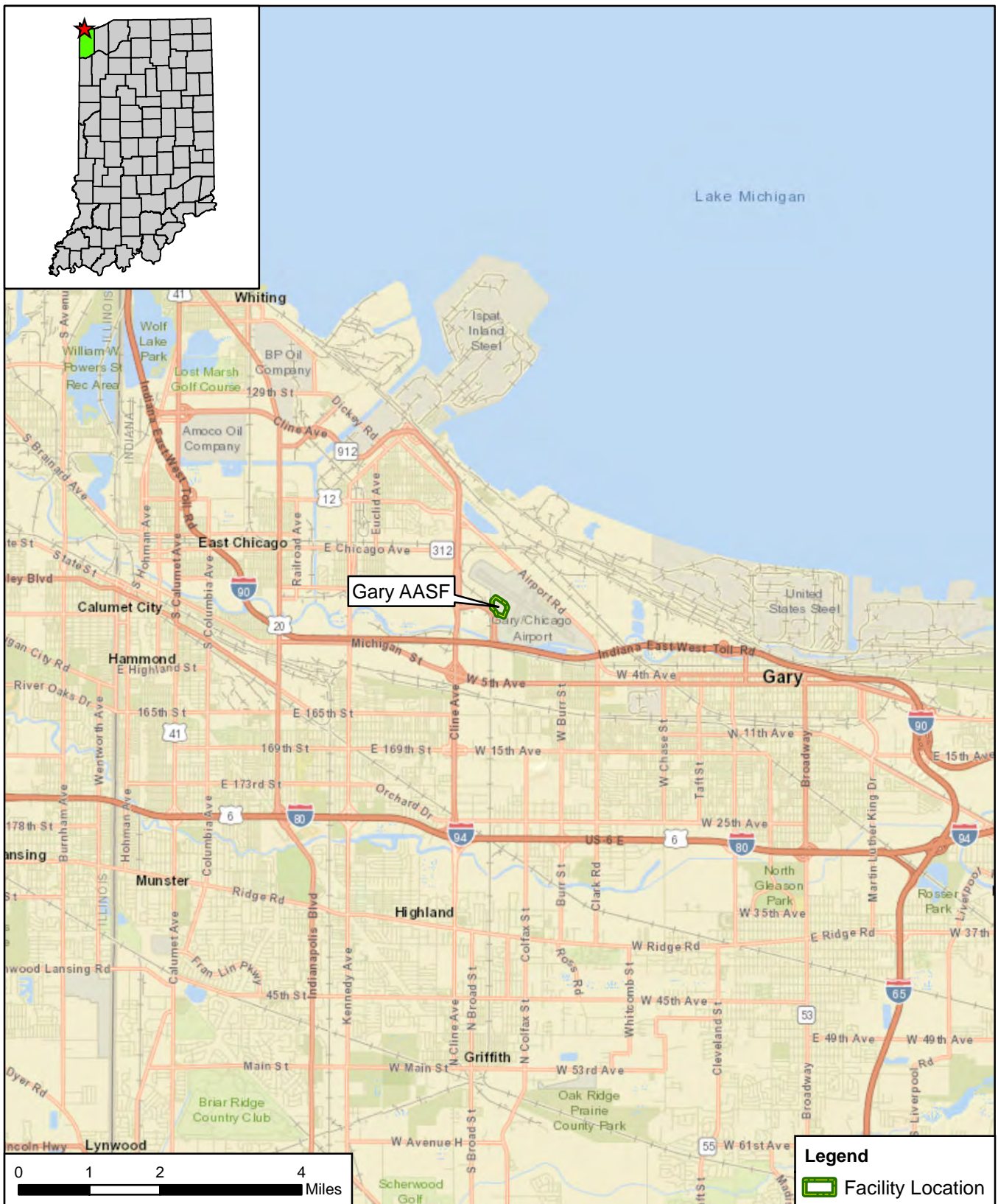
The Grand Calumet and Little Calumet Rivers run through Porter and Lake Counties. North of Lake County is Lake Michigan, a large body of water formed from the Wisconsin age ice sheet (Post, 1985). The Gary AASF is located in the Headwaters Grand Calumet River Watershed. The Grand Calumet River originates in Miller Beach, Indiana and runs from west to east within one mile of the Gary AASF (**Figure 1-3**). The river empties into Lake Michigan through the Indiana Harbor Ship Canal. Baseflow makes up a very small portion of total streamflow in the Grand Calumet River, with the remainder of the flow coming from industrial cooling and processing water as well as waste treatment effluents. Stormwater at the facility is diverted into a series of channels and ditches around the perimeter of the facility that ultimately discharge into the Grand Calumet River (Environmental Impact Statement, 2004). Additionally, several wet swales and ponds are located to the north of the AASF. Floor drains in the hangar of the AASF are connected to oil/water separators that discharge to two drainage swales adjacent to the facility. All remaining interior drains at the facility are connected to the public sanitary sewer system, which is shown in detail in the engineering as-built drawings for the facility (**Appendix A**).

1.5.4 Climate

The climate of Gary, Indiana is variable and influenced by its proximity to Lake Michigan, with an average temperature of 49 degrees Fahrenheit (°F). Summers tend to be humid, with average monthly temperatures between 59 °F and 74 °F. Average monthly winter temperatures range from 22 °F to 37 °F. The city experiences an average of 38 inches of rain and 37 inches of snow per year (National Oceanic and Atmospheric Administration [NOAA], 2018). The wettest month of the year is August with an average of 4.6 inches of precipitation, while the driest month is March with an average of 2.24 inches of precipitation (NOAA, 2018).

1.5.5 Current and Future Land Use

The Gary AASF is currently a controlled access facility and is adjacent to the Gary/Chicago International Airport. The AASF supports rotary aircraft operations and is an Armory Readiness Center for the INARNG. The facility is leased by the INARNG from the Gary/Chicago International Airport Authority. The airport is owned and operated by the City of Gary and provides commercial and general air service to the Chicago area. Reasonably anticipated future land use is not expected to change from the current land use described here.



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| CLIENT | | ARNG | | | |
| NOTES | | Preliminary Assessment for PFAS at Gary AASF, IN | | | |
| REVISED | 6/28/2019 | GIS BY | MS | 6/28/2019 | |
| SCALE | 1:126,720 | CHK BY | ZN | 6/28/2019 | |
| Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, | | PM | RG | 6/28/2019 | |

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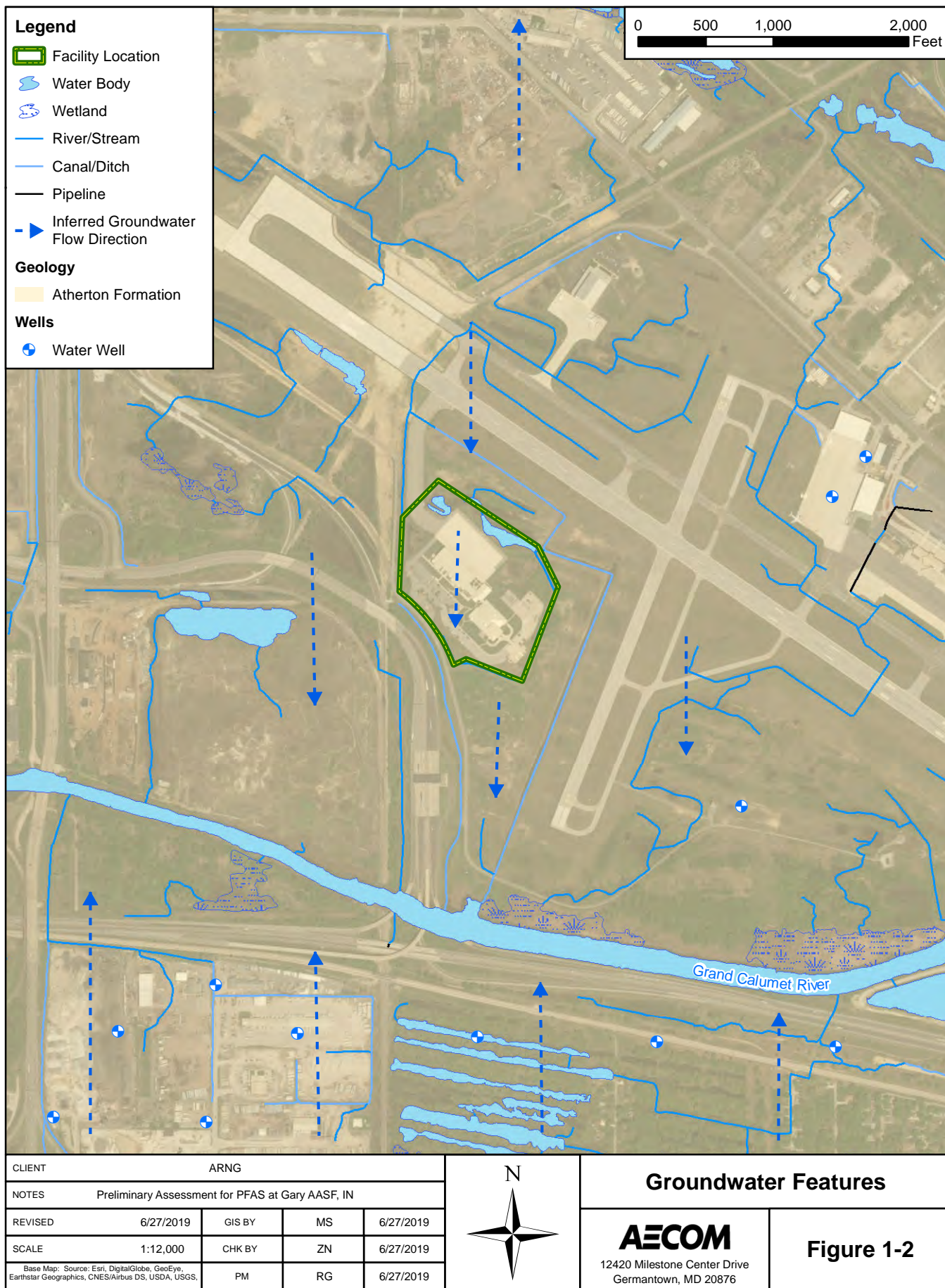
Facility Location

AECOM

12420 Milestone Center Drive
Germantown, MD 20876



Figure 1-1

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|--|-----------|--|----|-----------|---|---|------------|
| CLIENT | | ARNG | | |  | Surface Water Features | |
| NOTES | | Preliminary Assessment for PFAS at Gary AASF, IN | | | | | |
| REVISED | 6/28/2019 | GIS BY | MS | 6/28/2019 | |  12420 Milestone Center Drive Germantown, MD 20876 | Figure 1-3 |
| SCALE | 1:12,000 | CHK BY | ZN | 6/28/2019 | | | |
| Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, | | PM | RG | 6/28/2019 | | | |

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2. Fire Training Areas

One FTA was identified at the Gary AASF during the PA. A description of the FTA is presented below, and its location is shown on **Figure 2-1**. Photographs of the FTA appear in **Appendix C**.

2.1 Parking Lot

Based on PA interviews, the parking lot that serves the Gary AASF has been used annually by INARNG as a live-fire FTA since 2008 (**Appendix B**). The lot is located immediately south of the AASF building. The geographic coordinates are 41°37'1.26"N and 87°25'17.52"W. The location of the FTA at the Gary AASF is shown on **Figure 2-1**.

During PA interviews, the AASF Operations Officer confirmed that training activities are conducted only with ABC (dry chemical) extinguishers and clean fuel such as pallets and straw (**Appendix B**). AFFF has never been used during training exercises. No external agencies have used the AASF or the parking lot for fire training. No AFFF releases are anticipated to have occurred at this FTA.



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| CLIENT | | ARNG | | |
| NOTES | | Preliminary Assessment for PFAS at Gary AASF, IN | | |
| REVISED | 6/28/2019 | GIS BY | MS | 6/28/2019 |
| SCALE | 1:4,800 | CHK BY | ZN | 6/28/2019 |
| Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, | | PM | RG | 6/28/2019 |

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Fire Training Area

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Figure 2-1

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3. Non-Fire Training Areas

Two 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 Hangar

The rotary aircraft hangar is located on the northern portion of the AASF; approximate geographic coordinates are 41°37'3.29"N and 87°25'15.87"W. The hangar is equipped with an AFFF fire suppression system that is currently charged with 3% AFFF. Additionally, there is a Trimax-60 cart stored in the hangar that currently contains 3% AFFF.

The AFFF fire suppression system was installed during the construction of the hangar in 2008. The environmental manager could not confirm whether the system was tested prior to commissioning by discharge into the hangar. According to the facility's as-built engineering drawings, the AFFF suppression system is equipped with a test header. This equipment creates a closed loop to enable testing compliant with the National Fire Protection Association (NFPA) without discharging foam. The presence of this equipment and the lack of any emergency responses in the hangar make it unlikely that the system was ever discharged. Additionally, the environmental manager indicated that INARNG facilities typically do not undergo testing that requires discharges of AFFF as evidenced by a suppression system that was recently installed and commissioned at a different INARNG facility without any discharges. This was confirmed with the INARNG facility manager at that location.

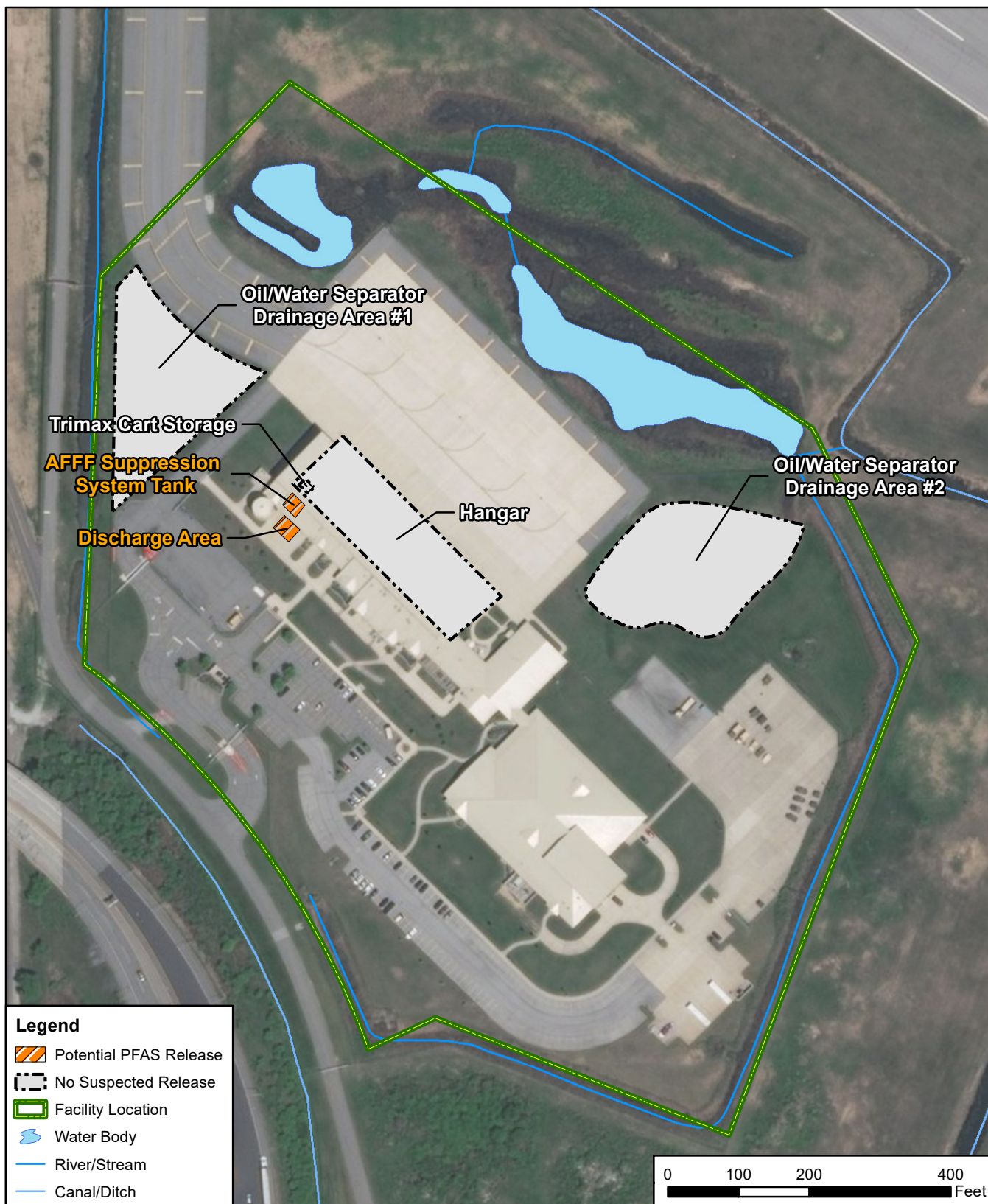
A Trimax-60 cart is stored in the southwestern corner of the Rotary Aircraft Hangar. The geographical coordinates of its storage location are 41°37'4.04"N and 87°25'17.65"W (**Figure 3-1**). The interviewees were unsure of where the Trimax cart came from, but it was first noticed in the hangar shortly after the facility was opened in 2008. The Trimax cart was empty at that time, but was later filled by AASF staff in 2013. The cart was filled with about 10 5-gallon buckets of 3% AFFF that were also stored in the hangar alongside the cart since about 2008. The interviewee confirmed that no spills or drips occurred during the transfer. The Trimax cart was filled in the same location as it is found currently. To the best of the interviewees' knowledge, the Trimax cart has never been used or moved from its present-day location and still contains approximately 50 gallons of 3% AFFF. The interviewees indicated that they would have no means to move it if they had to use it. No testing or other discharges have been performed with the Trimax cart to their knowledge. As shown in the facility's engineering drawings, floor drains in the hangar are connected to oil/water separators, which discharge into two drainage areas located opposite of each other in the western and eastern portions of the facility. These drainage areas are connected to a series of ditches and swales that empty into the Grand Calumet River about 0.5 miles south of the facility.

3.2 AFFF Suppression System Tank


The Rotary Aircraft Hangar AFFF suppression system tank is located in a boiler room in the southwestern corner of the facility. The geographic coordinates are 41°37'3.59"N and 87°25'17.85"W. The room contains the AFFF storage tank for the suppression system along with other water utilities. The storage tank is currently filled to its 770-gallon maximum capacity with 3% AFFF.

In early February 2018, a valve malfunction caused 3% AFFF concentrate to leak from the tank into "cold storage lines" and mix with the water in them. Shortly after the initial malfunction in the boiler room, some of this diluted foam mixture flowed from the "cold storage lines" through an interconnected discharge pipe that leads to a cement sidewalk outside the boiler room. This

discharge was first observed as a puddle on the sidewalk on 6 February 2018. On 7 February 2018, INARNG contracted Covanta Environmental Solutions to clean up and dispose of the AFFF mixture in the “cold storage lines” and the puddle outside the building. It is unclear exactly how much of this solution leaked onto the sidewalk prior to cleanup, but interviewees estimated the volume of the puddle to be approximately 30 gallons and indicated that this puddle was completely confined to the cement area. According to clean up documents, 900 gallons of the AFFF solution were removed and treated off-site with solidification at a treatment facility in Portage, Indiana. It is not known if or how much of the dilute AFFF mixture was released to the environment. There is no indication that the leak continued since the initial malfunction.



| | | | | | |
|--|-----------|---|----|-----------|--|
| CLIENT | | ARNG | | | |
| NOTES | | Preliminary Assessment for PFAS at Camp Atterbury, IN | | | |
| REVISED | 7/15/2019 | GIS BY | MS | 7/15/2019 | |
| SCALE | 1:2,400 | CHK BY | ?? | 7/15/2019 | |
| Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, | | PM | RG | 7/15/2019 | |



Non-Fire Training Areas

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 3-1

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4. Emergency Response Areas

No emergency response areas were identified within the current AASF facility during the PA through interviews. Gary AASF operations officers, with tenure from 2008 to present, and the Gary/Chicago International Airport Battalion Fire Chief, with tenure from 2007 to present, confirmed that no emergencies were historically responded to with AFFF. Furthermore, Environmental Data Resource Report did not indicate any major emergency responses. Emergency services for the Gary AASF are provided by the City of Gary and the Gary/Chicago International Airport fire station.

5. Adjacent Sources

Six potential off-facility PFAS sources were identified adjacent to the Gary AASF during the PA. These sources also present the potential for co-contaminant plumes to intersect the Gary AASF. The locations of potential off-facility source areas are shown on **Figure 5-1**.

5.1 Gary/Chicago International Airport

The Gary/Chicago International Airport is located directly adjacent to the northern and eastern boundaries of the Gary AASF. The geographical coordinates of the runway terminal are 41°37'3.43"N and 87°24'29.33"W. The airport has had several known AFFF releases from NFPA-compliance testing and two AFFF releases from emergency responses.

5.1.1 Airport Fire Station

The airport fire station is located directly northeast of the airport terminal. The geographical coordinates of the fire station are 41°37'5.21"N and 87°24'34.00"W. The fire station battalion chief reported during interviews that all AFFF at the airport is stored within the fire station. This includes about 800 to 900 gallons of 3% AFFF stored in 55-gallon barrels. Additionally, there are two Oshkosh firetrucks parked in the fire station with 210 gallons of 3% AFFF stored in each truck at all times.

The Oshkosh trucks undergo annual testing in compliance with NFPA 412 standard, which requires a discharge of AFFF to demonstrate functionality. The interviewee confirmed that the testing has been done since at least 2011 and assumed that it has likely been done since 1996. The location of the annual testing may have varied throughout the years. To the best of the interviewee's knowledge, NFPA testing has always been conducted in a designated area near the airport's control tower, located about 0.5 miles southeast of the Gary AASF (**Figure 5-1**).

All fire training at the airport is conducted with water only and does not involve ignited fires. The airport has a Boeing 737 modified specifically for simulation and training purposes. Airport fire department personnel travel to Chicago O'Hare International Airport and South Bend, Indiana for ignited-fire training. The interviewee stated that no outside agencies have trained with AFFF at Gary/Chicago International Airport or at the Gary AASF.

5.1.2 Airport Emergency Response Areas

The Battalion Fire Chief identified two emergency response areas at the airport where AFFF was used. The first emergency response occurred around 2008, when the grass near the railroad tracks in the northeastern portion of the airport caught fire. An estimated 50 to 100 gallons of 3% AFFF were used to extinguish the fire. The approximate geographical coordinates are 41°37'21.36"N and 87°25'10.82"W. The second emergency response occurred around 2013, when a deicing truck caught fire on the flight line. An estimated 20 to 30 gallons of 3% AFFF were used to extinguish the fire. The approximate geographical coordinates are 41°37'1.38"N and 87°24'31.11"W. The location of both areas is shown on **Figure 5-1**.

5.2 Midwest Solvent Recovery Co., Inc. (MIDCO II)

The Midwest Solvent Recovery Co., Inc. is a 7-acre USEPA National Priority List (NPL) site (known as MIDCO II) that is located about 1/2 mile northeast of the Gary AASF. The geographic coordinates are 41°37'22.01"N and 87°24'31.00"W. According to the Environmental Data Resource Report, the company historically recycled solvents and disposed of industrial waste onsite using temporary storage in above ground storage tanks and drums. These wastes were

disposed of in open dumping trenches, sludge pits, and filter pits. The company operated until 17 August 1977, when a fire burned most of the above ground storage tanks and drums containing wastes. Several thousand drums containing burned residues were left onsite, along with several above ground storage tanks. On-site remediation began in 1992, and cleanup is currently ongoing (Environmental Impact Statement, 2004). Known contamination of soil, groundwater, and possibly surface water at the site includes halogenated and non-halogenated solvents, cyanide plating bath solutions, electroplating residues, polychlorinated biphenyls, and metals. It is not known if AFFF was used to extinguish the 1977 chemical fire or if PFAS contamination from metals manufacturing processes wastes is present. As such, the MIDCO II NPL site may be an adjacent potential source of PFAS (**Figure 5-1**).

5.3 Former DuPont Facility

A former DuPont facility occupies 440 acres along the Grand Calumet River and is located about 1.5 miles west of the Gary AASF. The geographic coordinates are 41°37'11.38"N and 87°26'55.00"W. The facility was established in 1892 as Graselli Chemical Co. and was later purchased by DuPont. It was an active chemical manufacturing plant for Freon until the 1980s. It is unknown if PFAS were associated with the manufacturing processes at this facility. However, chemicals used in the production of fluorocarbon refrigerants such as Freon were also used by DuPont in the production of Teflon, a known PFAS containing-material, and could reasonably have had overlapping applications at this facility. The facility has been listed as a hazardous waste site under the Resource Conservation and Recovery Act since 1997. The primary contaminants of concern at the site are arsenic, lead, zinc, and cadmium (USEPA, 2018). It is not specified whether PFAS was analyzed in any of the samples collected at this site.

5.4 Gary Development Landfill

The Gary Development Landfill is located about 1/4 mile west-southwest of the Gary AASF. The geographic coordinates are 41°36'50.62"N and 87°25'35.21"W. The 62-acre landfill operated from 1975 to 1989 and is currently on the USEPA NPL. The landfill accepted unauthorized hazardous wastes while it was operational. The landfill is not properly lined, has no engineered cover, and does not have functioning stormwater management systems in place. Site investigations and cleanup are ongoing. Because it is not known what types of waste were disposed of at the landfill, it is a potential adjacent source of PFAS.

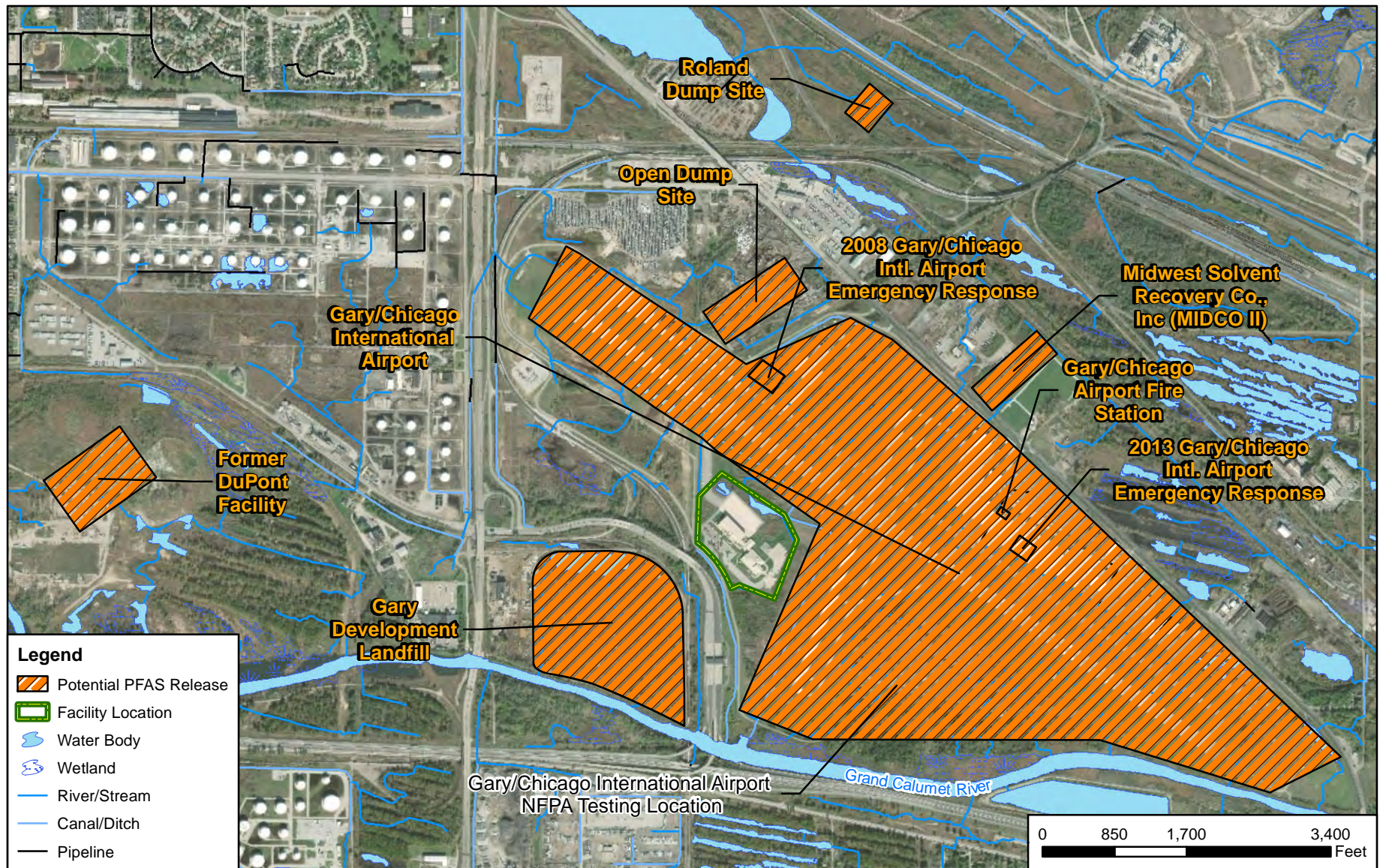
5.5 Open Dump Site

An open dump site is located about 1/4 mile north of the Gary AASF. The geographic coordinates are 41°37'26.71"N and 87°25'16.58"W. The dump site was primarily used by Western Scrap Corporation beginning in the 1960s. The exact nature of the materials disposed of at this location is not known nor the duration of its operation. However, piles of tires, auto parts, car bodies, tank trailers, scrap metal, and above ground storage tanks have been observed on the grounds of the dump (Environmental Impact Statement, 2004). Because of this uncertainty and the industrial land use of the surrounding area, it is possible that the Open Dump Site is a potential source of PFAS contamination.

5.6 Roland Dump Site

The Roland Dump Site is located about 1/4 mile east-northeast of the Gary AASF. The geographic coordinates are 41°37'52.73"N and 87°24'55.56"W. This site is classified as an active non-NPL removal only site. The nature of the materials disposed of here is unclear based on independent research and the Environmental Data Resource Reports (**Appendix A**). Because of the

uncertainty about the site and the industrial land use of the surrounding area, it is possible that the Roland Dump Site is a potential source of PFAS contamination.



| | | | | | |
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| CLIENT | | ARNG | | | |
| PROJECT | | Preliminary Assessment for PFAS at Gary AASF, IN | | | |
| REVISED | 6/28/2019 | GIS BY | MS | 6/28/2019 | |
| SCALE | 1:20,400 | CHK BY | ZN | 6/28/2019 | |
| Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community | | PM | RG | 6/28/2019 | |

| Adjacent Source | | |
|-----------------|--|-------------------|
| | 12420 Milestone Center Drive Germantown, MD 20876 | Figure 5-1 |

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6. Preliminary Conceptual Site Model

Based on the PA findings, one AOI was identified at the Gary AASF: AOI 1 – AFFF Suppression System Leak Area. The AOI location is shown on **Figure 6-1**. The following section describes the CSM components and the specific CSMs developed for each AOI. The CSM identifies the three components necessary for a potentially complete exposure pathway: (1) source, (2) pathway, (3) receptor. If any of these elements are missing, the pathway is considered incomplete.

In general, the potential PFAS exposure pathways are ingestion and inhalation. Human exposure via the dermal contact pathway may occur, and current risk practice suggests it is an insignificant pathway compared to ingestion; however, exposure data for dermal pathways is sparse and continues to be the subject of PFAS toxicological study. Receptors at the AASF include site workers and construction workers. The CSM for the AOI indicates which specific receptors could potentially be exposed to PFAS.

6.1 AOI 1 – AFFF Suppression System Tank

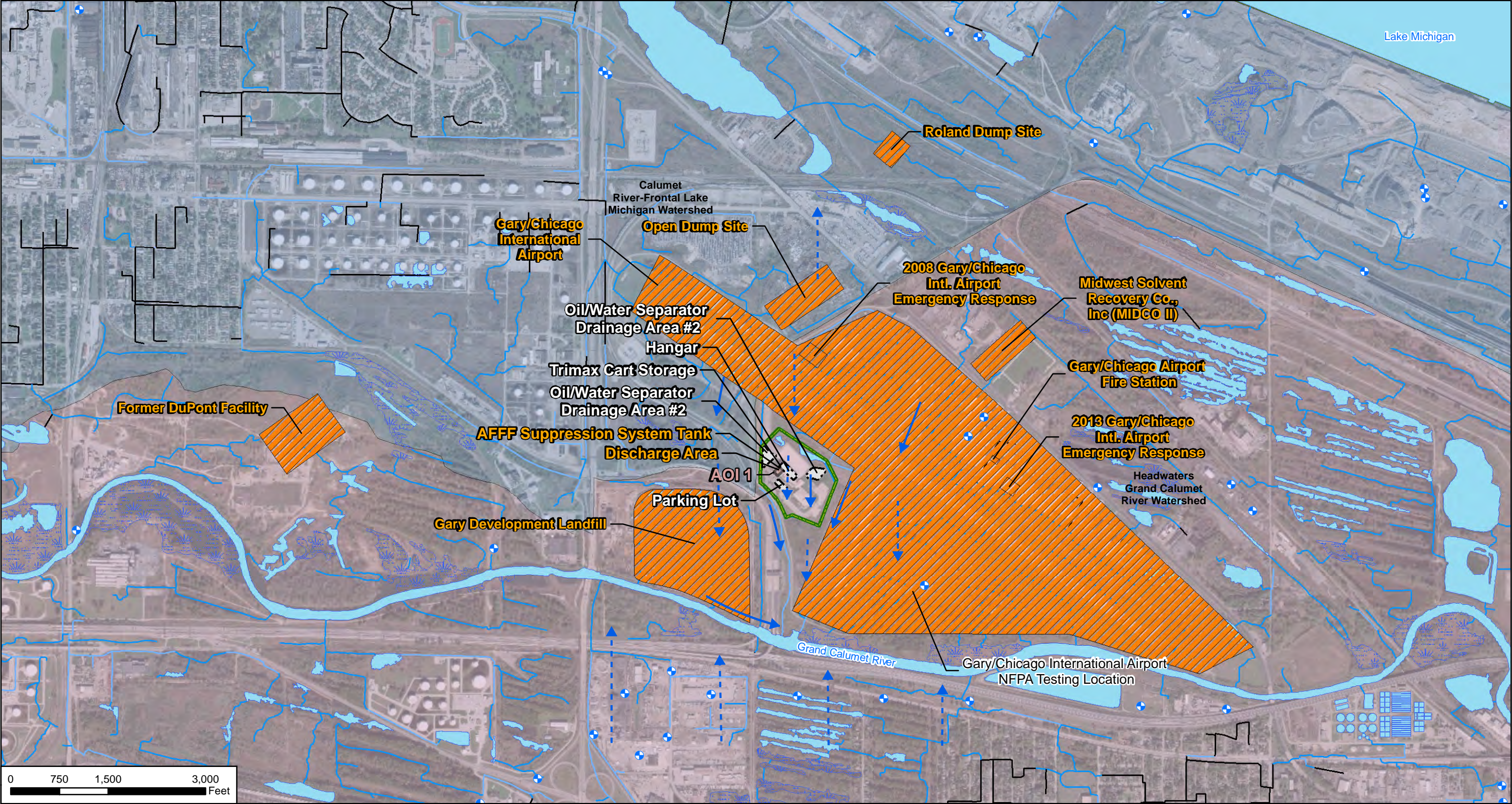
AOI 1 is the location where a small quantity (precise amount is unknown) of dilute AFFF mixture leaked onto a concrete sidewalk outside of the boiler room in early February 2018. Due to a malfunction in the suppression system that supports the Rotary Aircraft Hangar, 3% AFFF concentrate leaked into the “cold storage lines” located in the Boiler Room. These lines contained water at the time, and the dilute AFFF mixture flowed from a discharge pipe, spilling onto the outside concrete. Interviewees estimated that the puddle volume was about 30 gallons that spread out across but remained confined to the concrete area. Remaining AFFF mixture within the “cold storage lines” and the puddle on the concrete was contained and cleaned up by a contractor. The waste was removed by the contractor and treated off-site with solidification at a treatment facility in Portage, Indiana.

The release of AFFF was reported by interviewees as a stationary puddle. Although this puddle was cleaned up and removed by a contractor, it is possible that AFFF incidentally migrated across the concrete and into the surrounding grassy areas prior to clean up or infiltrated to the soil beneath the concrete through pores, cracks, and seams. According to the engineering as-built drawings of the AASF, there are no storm drains servicing that portion of the facility. Drainages have been diverted around the current AASF that ultimately drain to the Grand Calumet River. Drinking water at the AASF is supplied by Indiana-American Water. No domestic wells are located downgradient of AOI 1. Groundwater under the facility, which flows toward the Grand Calumet River, is not anticipated to impact the groundwater south of the Grand Calumet River, since the hydraulic gradient south of the Grand Calumet River opposes the hydraulic gradient encompassing the facility.

Ground-disturbing activities to surface soil and subsurface soil at AOI 1 could result in site worker, construction worker, and trespasser exposure to potential PFAS contamination via inhalation and incidental ingestion. 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 drainage ditches via stormwater runoff. The eventual discharge of this water to the nearby Grand Calumet River has the potential to impact surface water and sediment. No surface water intakes are located in the Grand Calumet River downgradient of the drainage area.

Drinking water for the city of Gary is provided by Indiana-American Water, which sources its water from Lake Michigan. However, the surface water and sediment exposure pathways via ingestion for site and construction workers, residents, trespassers, and recreational users are potentially

complete. Groundwater at the AASF flows predominantly to the south, towards the Grand Calumet River. Because drinking water at the Gary AASF is supplied by Indiana-American Water, and no domestic water supply wells are present downgradient of the AASF, the groundwater pathway is considered incomplete. The CSM for the Gary AASF is shown on **Figure 6-2**.



CLIENT

ARNG

PROJECT

Preliminary Assessment for PFAS at Gary AASF, IN

REVISED

6/28/2019

GIS BY

MS

6/28/2019

SCALE

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Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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6/28/2019

Area of Interest

Potential PFAS Release

No Suspected Release

Facility Location

Water Body

Wetland

River/Stream

Canal/Ditch

Pipeline

Surface Water Flow Direction

Inferred Groundwater Flow Direction

Water Well

N

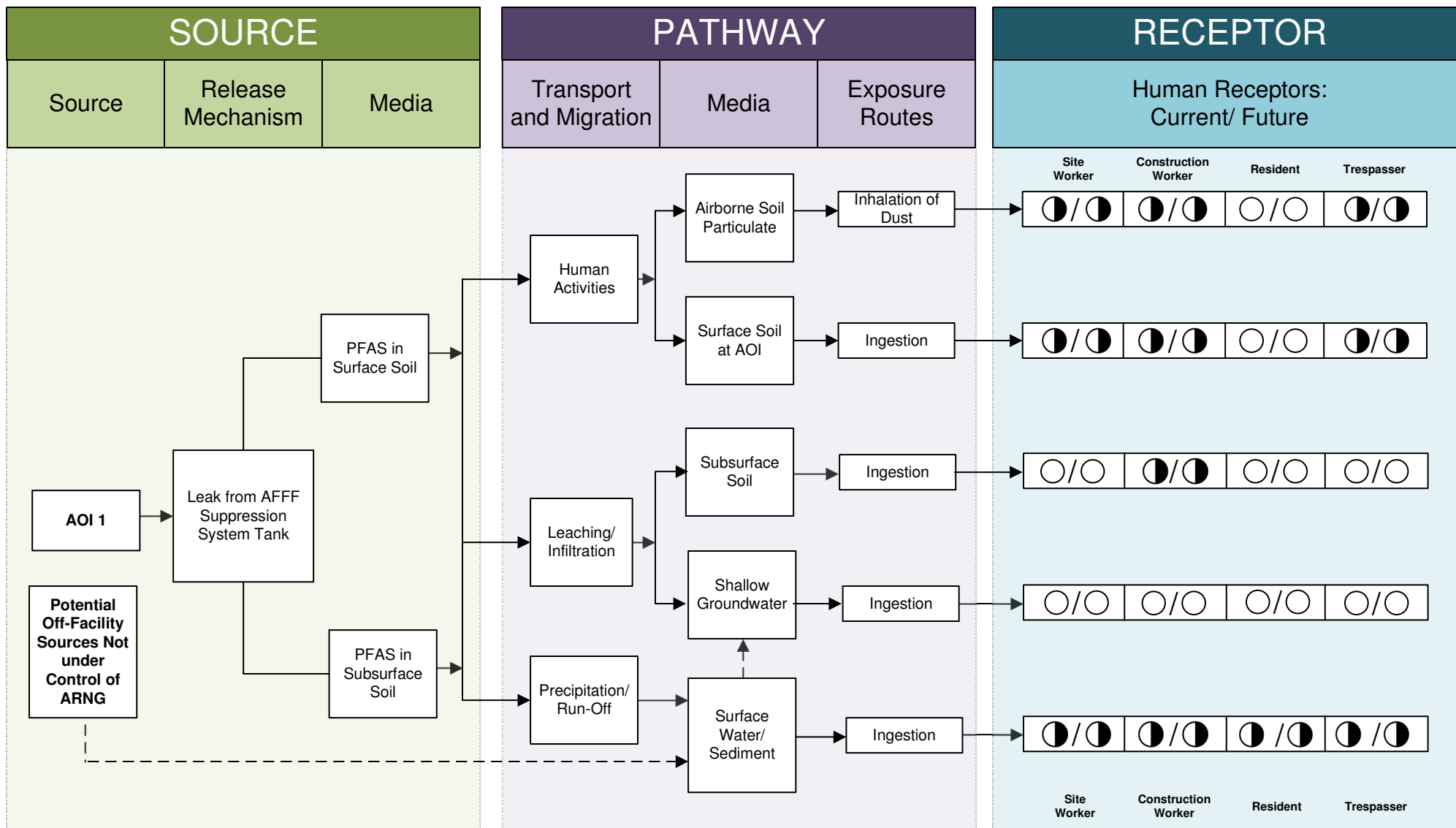
Area of Interest

AECOM

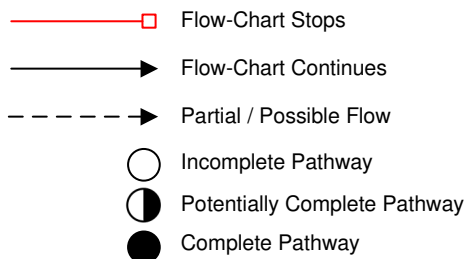
12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-1

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LEGEND



Notes:

1. The resident receptor refers to an off-site resident.
2. Dermal contact exposure pathway is incomplete for PFAS.

Figure 6-2
Preliminary Conceptual Site Model
Gary AASF

7. Conclusions

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

7.1 Findings

One AOI related to a potential PFAS release was identified at the Gary AASF during the PA (**Figure 7-1**):

Table 7-1. Gary AASF Summary of Findings

| Area of Interest | Name | Used by | Release Date |
|------------------|-----------------------------------|---------|-----------------|
| AOI 1 | AFFF Suppression System Leak Area | INARNG | 6 February 2018 |

While the AFFF spill was contained and recovered, it is possible that some amount reached the surrounding grassy area or infiltrated to the soil beneath the concrete through pores, cracks, and seams. Thus, there is potential for exposure to PFAS contamination in surface and subsurface soil to site workers and construction workers via ingestion and inhalation and in surface water and sediment for all receptors via ingestion. Drinking water is supplied by Indiana-American Water, which obtains its water from Lake Michigan. No private residential drinking water wells or public drinking water wells are located in or around the Gary AASF; therefore, the groundwater exposure pathway is incomplete.

The following areas at the Gary AASF discussed in **Section 2** through **Section 4** 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 |
|---------------------------|---------|--|
| Hangar | INARNG | The AFFF suppression system in the hangar was reportedly never discharged and has a test-header to bypass the system during testing. The Trimax-60 stored within the hangar has never leaked or encountered any spills to the best of the interviewees' knowledge. |
| Parking Lot FTA | INARNG | All fire training was conducted with ABC extinguishers and clean fuel such as wooden pallets. No outside agencies performed fire training at the facility. |

During the PA, several potential adjacent sources were identified, including known AFFF releases at the Gary/Chicago International Airport within 1/2 mile of the Gary AASF. The area around the facility is heavily industrialized with numerous ongoing remediation activities. These sources also present the potential for migration via groundwater under the facility and stormwater flow into the drainage ditches surrounding the facility.

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 predominantly based on the information provided during interviews with personnel who had direct knowledge of PFAS use at the facility. Sometimes, the provided information was vague 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, 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, multiple persons were interviewed for the same potential source area, and potential source areas were visually inspected. Additionally, all facility personnel who were interviewed had been at the facility since it was first used in 2008.

The following table summarizes the uncertainties associated with the PA:

Table 7-3. Uncertainties within the PA

| Area of Interest | Source of Uncertainty |
|---|--|
| AOI 1 - AFFF Suppression System Leak Area | The exact amount of AFFF mixture that was discharged outside the building is unknown. Only total volume removed by the contractor is known, which includes the water taken out of the internal plumbing. It is also uncertain whether any of the spill reached the surrounding grassy areas. |
| Hangar | The origin of the Trimax cart and 5-gallon buckets of AFFF is unknown. |

Potential off-facility PFAS release areas exist adjacent to the Gary AASF. Because these areas include property upgradient of the facility, it is unknown whether or not potential PFAS contamination from adjacent off-facility sources has migrated towards Gary AASF via groundwater or surface water flow.

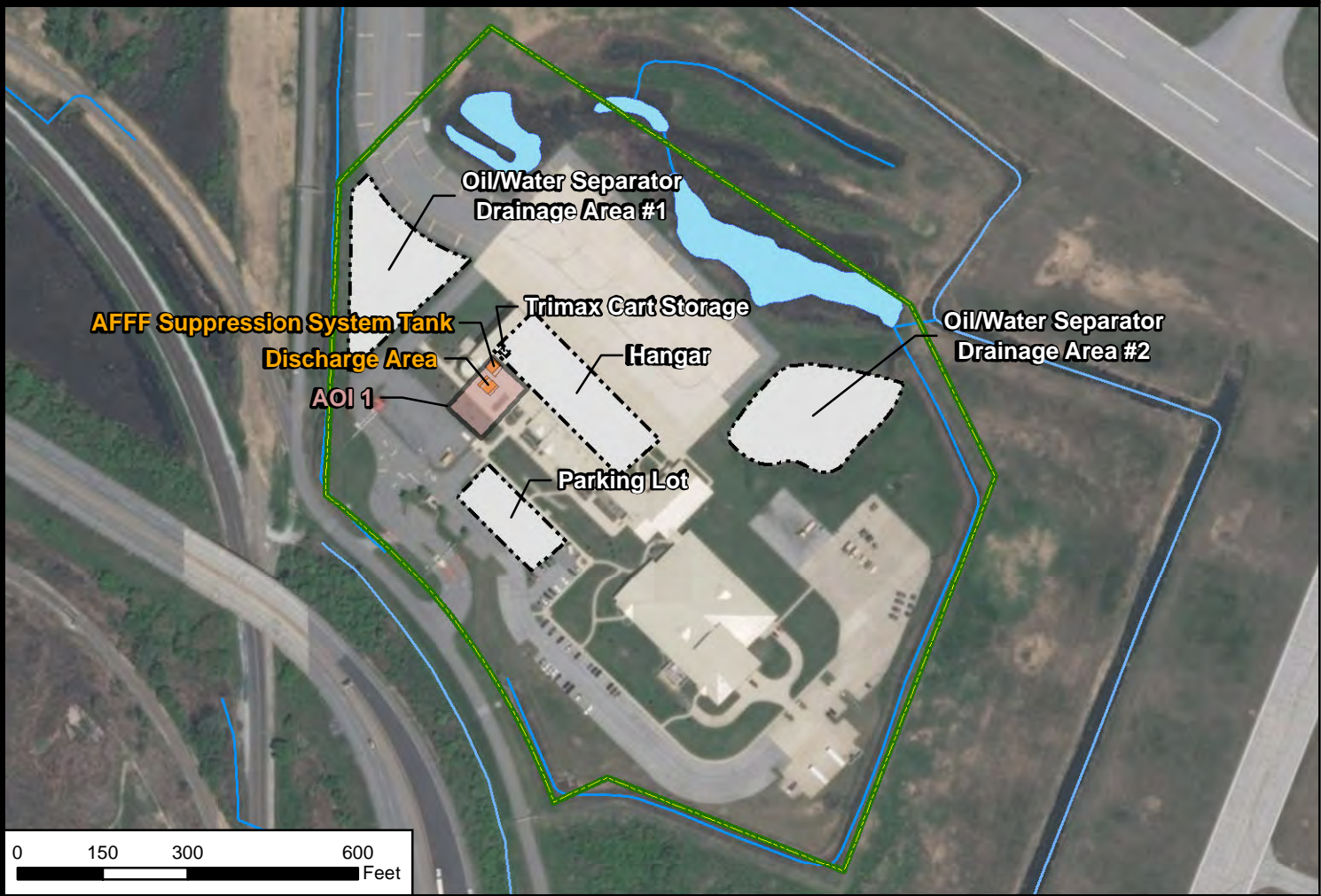
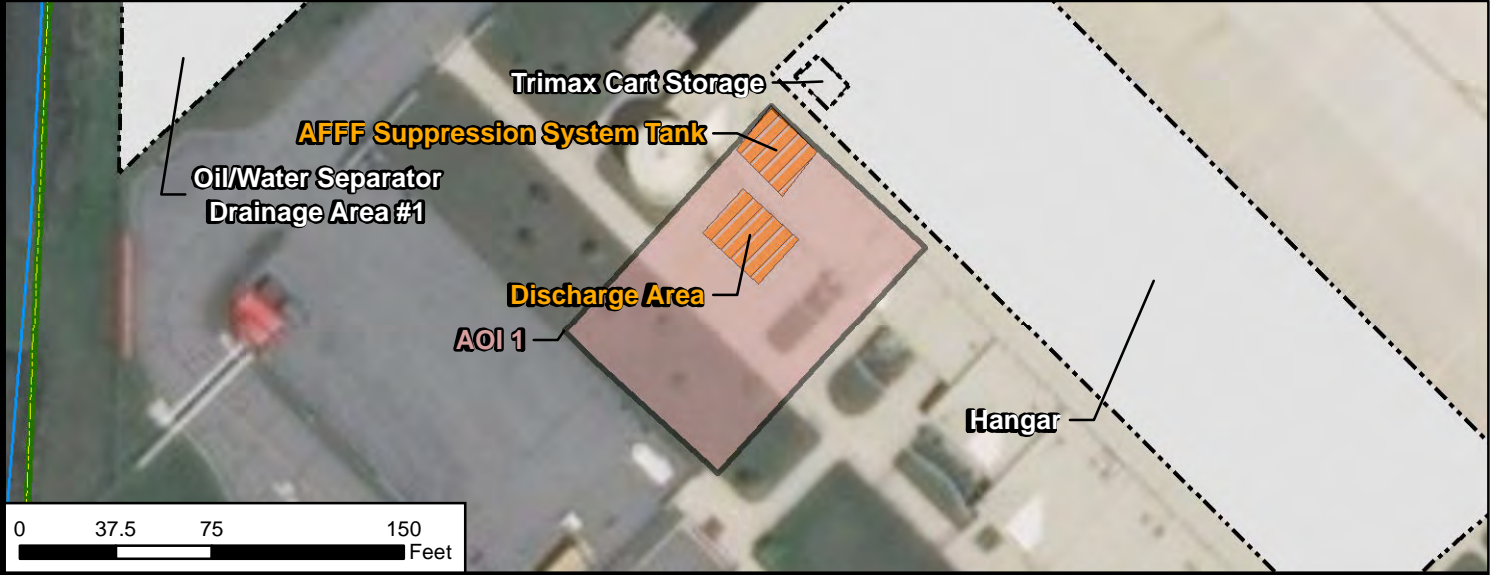
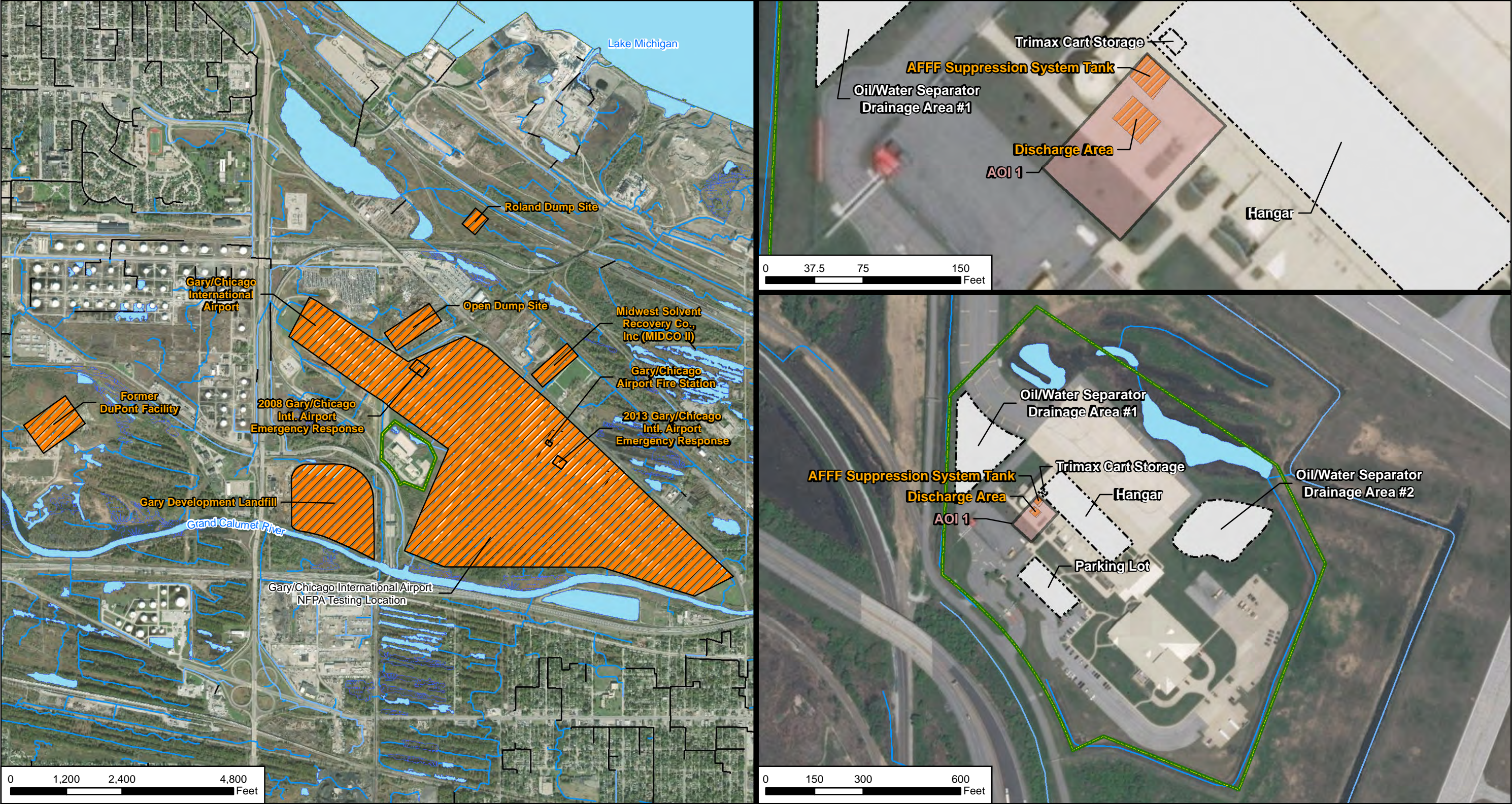
7.3 Potential Future Actions

Interviews and records (covering 2008 to present) indicate that current or former ARNG activities may have resulted in a potential PFAS release at the AOI identified during the PA. Based on the CSM developed for the AOI, there is potential for receptors to be exposed to PFAS contamination in soil, surface water, and sediment at this AOI. **Table 7-4** summarizes the rationale used to determine if the AOI should be considered for further investigation under the CERCLA process and undergo an SI.

ARNG evaluates the need for an SI at the Gary AASF based on the presence of PFAS releases, possible receptors, and the migration potential of PFAS contamination to receptors.

Table 7-4. Summary of Potential Future Actions

| Area of Interest | AOI Location | Rationale | Potential Future Action |
|---|--------------------------------------|---|--|
| AOI 1 AFFF Suppression System Leak Area | 41°37'3.59"N and 87°25'17.90"W | Approximately 30 gallons of leaked AFFF mixture discharged, contained, and cleaned up in early February 2018. | Proceed to an SI, focus on soil, sediment, and surface water |



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| CLIENT | | ARNG | | | |
| PROJECT | | Preliminary Assessment for PFAS at Gary AASF, IN | | | |
| REVISED | 6/28/2019 | GIS BY | MS | 6/28/2019 | |
| SCALE | 1:3,600 | CHK BY | ZN | 6/28/2019 | |
| Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community | | PM | RG | 6/28/2019 | |

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

N

| | |
|--|------------|
| Summary of Findings | |
| 12420 Milestone Center Drive Germantown, MD 20876 | Figure 7-1 |

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Appendix A

Data Resources

Data Resources will be provided separately on CD. Data Resources for the Gary AASF include:

Gary AASF Leases, Licenses, and Permits

- 2005 Lease between INARNG and Gary/Chicago International Airport Authority

Gary AASF Engineering As-Built Drawings

- Relevant as-built drawings for fire suppression system, sewer connections, and site drainage.

Gary AASF AFFF Release Documentation

- 2018 AFFF Cleanup Documents – Covanta Environmental Solutions

Gary AASF EDR Report

- 2018 Gary AASF EDR Report

EPA Unregulated Contaminant Monitoring Rule 3 (UCMR3) Data

- UCMR3 data for PFOS and PFOA for local area

Appendix B

Preliminary Assessment Documentation

Appendix B.1

Interview Records

PA Interview Questionnaire – Fire Station

Facility: Gary AASF
Interviewer:
Date/Time: 08/31/18

| | |
|---|---|
| Interviewee: <u>SFC</u> <u> </u> Title: <u>Computer Clerk and Fire Safety Officer</u> Phone Number: <u> </u> Email: <u> </u> | Can your name/role be used in the PA Report? <u>Y</u> or N Can you recommend anyone we can interview? <u>Y</u> or N <u> </u> |
| <p>1. Roles or activities with the Facility/years working at the Facility.</p> <p>Information technology and fire safety officer from 2008 to present.</p> | |
| <p>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.</p> <p>Maintenance (e.g., ramp washing)-None Fire Training Areas –One FTA, no AFFF used at FTA. Live fire training for ABC extinguishers Firefighting (Active Fire)-No firefighting at AFFF, only live-fire at FTA. Trimax in hangar contains AFFF, never used Crash-No crashes Fire Suppression Systems (Hangars/Dining Facilities)-AFFF suppression system in hangar Fire Protection at Fueling Stations-None; Refueling done at Gary Jet Center Non-Technical/Recreational/ Pest Management-None</p> | |
| <p>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?</p> <p>The rotary aircraft hangar is equipped with an AFFF suppression system. It is unknown if it was tested during commissioning. It has not been tested since 2008 to their knowledge. He assumes that Viking Corp, the manufacturer would handle that.</p> | |
| <p>4. Are fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam?</p> <p>Currently charged with 3% Aer-O-Water AFFF. Assuming the tank is full, it has a 770 gallon capacity.</p> | |

PA Interview Questionnaire – Fire Station

Facility: Gary AASF
Interviewer:
Date/Time: 08/31/18

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

The AFFF for the suppression system came from Viking Corp. The AFFF in the Trimax cart was already on site when SFC got here. It may have come from Camp Atterbury.

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)?

ESF 3% AFFF in Trimax
Aer-O-Water 3% AFFF in hangar suppression tank

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

AFFF is not formulated on base. It was transferred once to the Trimax cart in 2013, which occurred in the hangar.

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?

AFFF is currently stored in the suppression system tank (770 gallons, 3%) which is in the boiler room in the southwest portion of the building. AFFF is also stored in the Trimax-60 in the southwest corner of the hangar (Unknown volume, 3%).

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?

The AFFF that was transferred to the Trimax was done by hand in 2013. About 10 buckets of 3% AFFF were emptied into the Trimax (50 gallons). No other transfers were recalled. No spills or small drips occurred during the transfer.

10. Provide a list of vehicles that carried AFFF, now and in the past, and where are/were they located?
There is a Trimax-60 cart in the hangar. The Trimax has been in the hangar since SFC got to the AASF in 2008. (The AASF was constructed in 2008). Not sure where the Trimax came from. It was empty when he found it in 2008. Several five gallon buckets of 3% “ESF” AFFF were stored with the Trimax. He transferred those buckets into the Trimax-60 in 2013. The Trimax has never been used, or moved from its current position. They do not have the equipment to pull the cart. No leaks or spills have been observed with the Trimax.

PA Interview Questionnaire – Fire Station

Facility: Gary AASF
Interviewer: Zachary Neigh
Date/Time: 08/31/18

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 leaks have been observed from the Trimax cart. No spray tests have been done with it. There was a leak from the suppression system in January 2018.

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?

One FTA in the front parking lot. Used only for annual ABC extinguisher training with live-fire. AFFF was never used at the FTA.

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

Clean, dry fuel such as pallets.

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 AFFF used at the FTA.

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?

Gary Airport provides emergency response for airframes. Offsite agencies come to the airport annually for fire training, ask [REDACTED] about details.

City of Gary responds to structure fires and other emergencies.

PA Interview Questionnaire – Fire Station

Facility: Gary AASF
Interviewer: [REDACTED]
Date/Time: 08/31/18

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?

People from other units come on post, but they did not bring AFFF or other forms of fire protection equipment. These people were not coming to the AASF for fire training. No emergencies encountered.

PA Interview Questionnaire – Fire Station

Facility: Gary AASF
Interviewer: [REDACTED]
Date/Time: 08/31/18

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

No they never trained off post for firefighting.

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 incidents recalled.

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

No spills that they know of. All refueling was done by the Gary Jet Center (part of the Gary Airport).

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

No, it is possible that the Gary Airport fire station off post (at the airport). No one from the AASF has used AFFF for forest fires.

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)?

PA Interview Questionnaire – Fire Station

Facility: Gary AASF
Interviewer: [REDACTED]
Date/Time: 08/31/18

There was a release outside of the boiler room where the suppression tank is stored in late January 2018. A valve in the plumbing to the AFFF suppression malfunctioned and a small amount of AFFF leaked into the “cold storage lines” mixing with facility water in those lines. A contractor was called to clean out the lines and dispose of the now diluted AFFF/water mixture there (see invoice from Covanta Environmental Solutions). The cleanup was performed on February 7th, 2018. The day before the cleanup, some of the diluted AFFF mixture leaked out of a pipe leading outside from the boiler room. This leak reportedly collected in a puddle outside of the boiler room, on the concrete. This was also cleaned up by the contractor. The contractor disposed of the AFFF by solidification off-site at a hazardous waste facility in Portage, Indiana. The invoice reports that 900 gallons of “Fire Suppression Foam and Water” were hauled to the waste facility.

He estimates that about a “bathtub” volume of liquid leaked onto the concrete (approx. 30 gallons). The puddle/leak was completely confined to the concrete until the contractor arrived, who then further contained the leak.

PA Interview Questionnaire – Fire Station

Facility: Gary AASF
Interviewer: [REDACTED]
Date/Time: 08/31/18

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

No creative uses recalled.

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?

Disposal practices are unknown; they have never had to do it. The contractor that cleaned up the AFFF suppression leak disposed of it at their facility.

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

Gary Airport fire chief, [REDACTED]

PA Interview Questionnaire - Environmental Manager

Facility: Gary AASF
Interviewer:
Date/Time: 08/31/2018

| | |
|---|---|
| Interviewee: <u> </u> Title: <u>Operations Officer</u> Phone Number: <u> </u> Email: <u> </u> | Can your name/role be used in the PA Report? <u>Y</u> or N Can you recommend anyone we can interview? <u>Y</u> or N <u> </u> |
| <p>1. Roles or activities with the Facility/years working at the Facility.</p> <p>Operations officer from 2011 to present.</p> | |
| <p>2. Where can I find previous facility ownership information?</p> <p>National Guard Bureau. The Gary AASF has been ARNG controlled since 2008 and is leased from the Gary/Chicago International Airport adjacent to the facility.</p> | |
| <p>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.</p> <p>Maintenance- No AFFF use recalled Fire Training Areas- One FTA, used for ABC extinguisher training Firefighting (Active Fire)-None; Airport responds to airframe fires, City responds to structures Crash - None Fire Suppression Systems (Hangers/Dining Facilities) –AFFF fire suppression in hangar Fire Protection at Fueling Stations – Refueling done at airport (mobile refuelers) Non-Technical/Recreational/ Pest Management -None Metals Plating Facility-None, but possible adjacent sources Waterproofing Uniforms (Laundry Facilities) - None Other –Trimax cart containing AFFF is stored in Hangar, reportedly never used</p> | |
| <p>4. Fill out CSM Information worksheet with the Environmental Manager.</p> | |
| <p>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?</p> <p>The rotary aircraft hangar is equipped with an AFFF fire suppression system. Testing requirements are unknown. The capacity of the AFFF system’s storage tank is 770 gallons, with 3% AFFF.</p> <p>As built drawings were provided on a CD.</p> | |

PA Interview Questionnaire - Environmental Manager

Facility: Gary AASF

Interviewer: [REDACTED]

Date/Time: 08/31/2018

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?

The suppression system currently has a full tank of 770 gallons of 3% AFFF. It was installed when the hangar was built in 2008.

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

Unsure how it was procured, and is unaware of a system. The suppression system's AFFF was presumably procured by the company that installed it, Viking Corp. Unsure of the origin of the AFFF in the Trimax and the Trimax itself.

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)?

3% "ESF" AFFF in Trimax

3% Aer-o-water in suppression tank

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?

The 770 gallon suppression system tank is located in the boiler room, southwest corner of facility. The Trimax is stored in the southwest corner of the hangar. See [REDACTED] interview for more detail on Trimax.

All AFFF is stored as 3%

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?

One FTA exists in the AASF parking lot, just south of the building (Identified on facility map). The interviewee confirmed that AFFF was not used here, at least since 2011. ([REDACTED] provided additional details on use of FTA)

PA Interview Questionnaire - Environmental Manager

Facility: Gary AASF
Interviewer:
Date/Time: 08/31/2018

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?

Not applicable; no AFFF used at FTA.

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?

Offsite agencies come to the AASF annually or less for training. During recent tri-annual fire training they did not see any foam being used by other agencies. Can confirm that the AASF did not use it during that training.

It is possible that outside agencies went to the Gary/Chicago International Airport for fire training. Contact airport fire chief to confirm.

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

No fire training off-post.

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?

Unaware of any AFFF brought to Gary AASF by outside personnel for training or otherwise.

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

No emergency response incidents. If there was an airframe fire, the airport fire station would respond. For all other emergencies such as structure fires, the City of Gary would respond.

PA Interview Questionnaire - Environmental Manager

Facility: Gary AASF
Interviewer: [REDACTED]
Date/Time: 08/31/2018

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 spills at AASF. Refueling point is at the Gary/Chicago Airport's Jet Center.

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

No it was not used for any fires on or off post.

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?

There is no formal agreement that he is aware of. The Gary/Chicago Airport responds to airframe fires and the City of Gary responds to structure fires and other emergencies.

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 hangar system leaked outside the maintenance/boiler room due to a malfunction. Otherwise, the system was never used or discharged to their knowledge. (See [REDACTED] interview for details on release).

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

Not aware of any creative uses of AFFF.

PA Interview Questionnaire - Environmental Manager

Facility: Gary AASF
Interviewer:
Date/Time: 08/31/2018

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?

Doubtful that there are any similar studies since the facility is only 10 years old. Contact or for that information.

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

Major provided us with:

- SPCC Document
- AFFF spill cleanup invoice from contractor
- As-Built drawings of the facility

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 on base.

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. No chrome plating.

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?

Presumably Viking Corp would dispose of AFFF in the suppression system if needed. Covanta Environmental Solutions cleaned up and disposed of the AFFF leak outside the boiler room (invoice provided).

PA Interview Questionnaire - Environmental Manager

Facility: Gary AASF
Interviewer: [REDACTED]
Date/Time: 08/31/2018

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

The Gary/Chicago International Airport Battalion Fire Chief:

[REDACTED]

PA Interview Questionnaire – Fire Station

Facility: Gary AASF
Interviewer:
Date/Time: 12/18/18 1500

| | |
|--|---|
| Interviewee: <u> </u> Title: <u>Gary/Chicago Int. Battalion Fire Chief</u> Phone Number: <u> </u> Email: <u> </u> | Can your name/role be used in the PA Report? <u>Y</u> or N Can you recommend anyone we can interview? Y or <u>N</u> |
| <p>1. Roles or activities with the Facility/years working at the Facility.</p> <p>Has been with the Gary Fire Department for 34 years, not all of them at the airport. Stationed at Gary/Chicago International as a Lieutenant since 2007. Was promoted to Battalion Chief in January 2017 and is currently on part-time duty at Gary/Chicago International.</p> | |
| <p>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.</p> <p>Maintenance (e.g., ramp washing)-None, AFFF used for fire fighting only Fire Training Areas-Have a Boeing 737 Training Aircraft, only use water in that training. Firefighting (Active Fire)-Two fires have been fought with AFFF that he can recall at the airport, none at AASF Crash-None Fire Suppression Systems (Hangers/Dining Facilities)-Only AFFF suppression is the one at AASF Fire Protection at Fueling Stations-None at tank farm; Mobile refueling trucks with non-AFFF only Non-Technical/Recreational/ Pest Management-No creative uses, too expensive *1996 was first “certified” use of AFFF at the airport. NFPA testing of trucks annually since then (confirmed since 2011)</p> | |
| <p>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?</p> <p>Only the Gary AASF hangar. Unaware of specifications or testing of that system. No AFFF suppression/dispensing systems at Gary/Chicago International</p> | |
| <p>4. Are fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam?</p> <p>The Gary AASF system is charged with AFFF.</p> | |
| <p>5. How is AFFF procured? Do you have an inventory/procurement system that tracks use?</p> <p>They have an inventory of their AFFF and purchase AFFF to replenish that stock once every year or two.</p> | |

PA Interview Questionnaire – Fire Station

Facility: Gary AASF
Interviewer: [REDACTED]
Date/Time: 12/18/18 1500

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)?

3% AFFF, 3M and/or Chemguard

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

It is not formulated at Gary/Chicago International.

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?

It is stored in 55 gallon plastic barrels inside the fire station as 3% AFFF. There is a total of 800-900 gallons stored in the barrels. Additionally, the two Oshkosh trucks each contain 210 gallons of 3% AFFF.

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?

All handling/transfers are done at the station. AFFF is proportioned on the trucks during use. Stored as 3% in 55 gallon barrels in the fire station and loaded directly into the trucks.

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

There are two Oshkosh 1500's in the fire station with 210 gallons of AFFF (3%) in each. No flight line extinguishers or crash carts with AFFF. The 150lb wheeled units that they have near flight line and runway are dry chemical purple K or sodium-bicarbonate.

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 leaks recalled. Vehicles were tested to NFPA 412 standards annually. He witnessed some of these tests from about 2011 to present. In 2011/2012 they did them twice a year because of a misunderstanding in the chain of command. He assumes that these annual test were carried out since 1996. To the best of his knowledge, the location of the testing has always occurred near the control tower. There is a hydrant along the road to the gate of the adjacent toll road which they use.

PA Interview Questionnaire – Fire Station

Facility: Gary AASF
Interviewer: [REDACTED]
Date/Time: 12/18/18 1500

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?

The only formal FTA is the Boeing 737 Training structure, which is only used for scenario simulations and water spraying. No AFFF has been used in fire training there (since 2007 at least). No live-fire training is done at Gary/Chicago International. The airport fire crew travels to Chicago O'Hare airport or South Bend, Indiana for live-fire training where they use AFFF or simulated foam.

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

None. All live-fire training is done at either O'Hare or South Bend facility.

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?

AFFF discharged during NFPA 412 tests into open field at the airport, not near AASF. No cleanup was required.

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?

Gary/Chicago International Fire Department would respond to a fire at the Gary AASF.

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?

Other fire/emergency crews have come to the airport in the past for training. No one ever trained with AFFF there to the best of his knowledge.

PA Interview Questionnaire – Fire Station

Facility: Gary AASF
Interviewer: [REDACTED]
Date/Time: 12/18/18 1500

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

No military stationed at the airport.

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 emergency responses at the AASF.

2012/2013- Deicing truck caught fire on the flight line. About 20 to 30 gallons of 3% AFFF were used. Gary/Chicago airport FD responded.

2008- Brush/grass fire around railroad lines adjacent to the runway, on hillside. About 50 to 100 gallons of 3% AFFF used to knock down the flames and contain it. Gary/Chicago FD responded.

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 not used in response to fuel spills or as a precaution/preventative measure. Absorbents and standard practices were followed in response to spills. Only minor spills were encountered at the airport.

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

Used in one brush fire in 2008, discussed in #18 above.

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)?

The only AFFF-areas he is aware of include:

- The two emergency response areas discussed above
- Annual NFPA testing areas discussed above
- Fire station (storage and handling)
- Gary AASF hangar suppression system

PA Interview Questionnaire – Fire Station

Facility: Gary AASF
Interviewer: [REDACTED]
Date/Time: 12/18/18 1500

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

Not aware of anything like that.

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?

Never disposed of it. Unsure if old or expired AFFF was shipped off-site.

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

He can be contacted again if more information is needed.

Appendix B.2

Visual Site Inspection Checklists

Visual Site Inspection Checklist

Names(s) of people performing VSI: _____

Recorded by: _____

ARNG Contact: _____

Date and Time: 08/31/18 10:00

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

Source/Release Information

Site Name / Area Name / Unique ID: Gary AASF

Site / Area Acreage: Site: 17 acres
AOI1: Concrete area outside boiler room; Approx 0.04 acres

Historic Site Use (Brief Description): Historically the area was undeveloped, surrounded by industrial sites and the Gary/Chicago International Airport. Previously there was a Nike Missile Battery here

Current Site Use (Brief Description): The current AASF was constructed in 2008 and services/maintains military helicopters

Physical barriers or access restrictions: Access to the area is restricted to AASF 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):
AFFF has been charged in the hangar suppression system storage tank since the AASF was built in 2008. The AFFF storage tank is housed in the boiler room. The system's tank leaked outside onto the sidewalk in Feb 2018

2. Has usage been documented? ☒ Y / ☐ N

2a. If yes, keep a record (place electronic files on a disk):
No documented usage. However, cleanup of leak was documented.

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

3a. Indicate what businesses are located near the site
Gary/Chicago International Airport, NPL/Superfund sites, former Dupont facility, landfills and dumps.

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

4a. If yes, provide a description of the airport/flightline tenants:
Gary/Chicago International Airport

Visual Survey Inspection Log

Other Significant Site Features:

1. Does the facility have a fire suppression system?

Y / N

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

3% AFFF Aer-O-Water

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

No maintenance schedule known; In late January 2018, the system leaked into the "cold storage" lines and mixed with water in them, then partially discharged on to the concrete outside the boiler room. The discharge was noticed on Feb 6th.

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

Unknown

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

As built were obtained. Floor drains lead to Oil/Water Separator

Transport / Pathway Information

Migration Potential:

1. Does site/area drainage flow off installation?

Y / N

1a. If so, note observation and location:

Drainage ditches/channels surround the facility. Eventually lead to Grand Calumet River

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

Y / N

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

Only for stormwater; drainage ditches

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

Y / N

3a. If so, please note the location:

No drinking water wells, only monitoring wells. Several ongoing remediation projects.

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.

Gary/Chicago Airport may be able to provide this information

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

Y / N

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

AFFF Discharges for NFPA testing occurred annually at Gary/Chicago airport near control tower

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):

Area around the AASF is heavily developed with industrial sites and residential areas. The facility has been unchanged to the best of our knowledge since 2008

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:

To the north of the AASF there are swales with standing water

Receptor Information

1. Is access to the site restricted?

Y / N

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

The site is fenced in, separately from the Gary/Chicago airport, and requires a code to enter the gate.

2. Who can access the site?

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

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

3. Are residential areas located near the site?

Y / N

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

Most residential areas are about 1 mile away

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:

Wetlands are located along the banks of the Grand Calumet River half a mile to the south.

Visual Survey Inspection Log

Additional Notes

Photographic Log

| Photo ID/Name | Date & Location | Photograph Description |
|------------------|--------------------|----------------------------|
| Photograph No. 1 | 8/31/18; Gary AASF | Discharge Pipe |
| Photograph No. 2 | 8/31/18; Gary AASF | Area affected by discharge |
| | | |
| | | |
| | | |
| | | |

Appendix B.3

Conceptual Site Model Information

Preliminary Assessment – Conceptual Site Model Information

Site Name: Gary AASF

Why has this location been identified as a site?

The Hangar historically contained an AFFF fire suppression system. The system's tank leaked in January/February 2018.

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

Yes, Gary/Chicago International Airport

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? South

Average rainfall? 38 inches per year

Any flooding during rainy season? Not since AASF has been here. Stormwater discharges to ditches and swales in a series connected to Grand Calumet River

Direct or indirect pathway to ditches? OWS from hangar to ditches, overland flow to ditches during storm events

Direct or indirect pathway to larger bodies of water? Ditches eventually drain to Grand Calumet River. The river empties into Lake Michigan

Does surface water pond any place on site? Wet swale/retention pond immediately north of AASF, long wet swales leading from there to Grand Calumet River.

Any impoundment areas or retention ponds? Yes

Any NPDES location points near the site? Yes, all culverts discharging stormwater are covered under a stormwater permit

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

Drainages have been diverted around the AASF and the Gary/Chicago Airport

Preliminary Assessment – Conceptual Site Model Information

Groundwater:

Groundwater flow direction? South

Depth to groundwater? 5 to 15 feet

Uses (agricultural, drinking water, irrigation)? No known uses of groundwater near the site. Old publications mention industrial use by oil refineries. Unclear if that use continues

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

Any groundwater monitoring well locations near the site? Yes, several on the airport property and many more on surrounding properties.

Is groundwater used for drinking water? No

Are there drinking water supply wells on installation? No

Do they serve off-post populations? No

Are there off-post drinking water wells downgradient? No

Waste Water Treatment Plant:

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

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

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

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

Equipment Rinse Water

1. Is firefighting equipment washed? Where does the rinse water go? N/A – fire fighting services are provided by the Gary/Chicago International Airport

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? NFPA testing at airport conducted annually (from 1996 to present) near the control tower.

3. Other? N/A

Preliminary Assessment – Conceptual Site Model Information

Identify Potential Receptors:

Site Worker: Y

Construction Worker : Y

Recreational User: N

Residential: Y (for surface water only)

Child: N

Ecological: N

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

Gary Chicago International Airport

Documentation

Ask for Engineering drawings (if applicable). **Drawing 002 L102 shows OWS outfalls from hangar.**

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

No known changes since original construction in 2008

Appendix C

Photographic Log

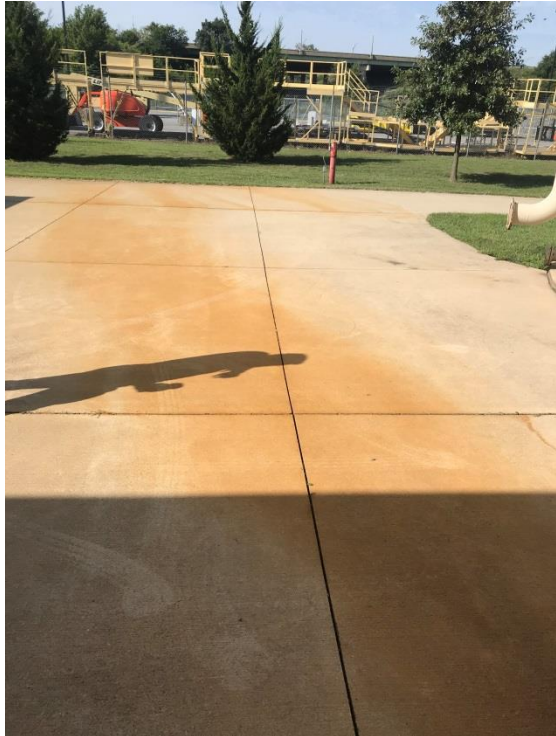
APPENDIX C – Photographic Log

| Army National Guard, Preliminary Assessment for PFAS | | Gary AASF | Gary Indiana |
|---|--|-----------|--------------|
| Photograph No. 1 Description: Looking southwest in the southwest corner of the Rotary Aircraft Hangar. Trimax-60 cart containing about 50 gallons of 3% “ESF” AFFF. The cart has been in the present day location since it was first observed at the site in 2008. Date Taken: 31 August 2018 |  | | |
| Photograph No. 2 Description: Looking southwest in the Rotary Aircraft Hangar. One of the nozzles for the AFFF suppression system installed in the hangar. Date Taken: 31 August 2018 |  | | |

APPENDIX C – Photographic Log

| Army National Guard, Preliminary Assessment for PFAS | Gary AASF | Gary Indiana |
|--|--|--------------|
| <p>Photograph No. 3</p> <p>Description:</p> <p>Looking east. The AFFF suppression system tank installed by Viking Corp. The tank is located in the boiler room near the southwest corner of the facility. The tank has a 770 gallon capacity and uses Aer-O-Water 3% AFFF as indicated on the label.</p> <p>Date Taken: 31 August 2018</p> |  | |
| <p>Photograph No. 4</p> <p>Description:</p> <p>Looking north. The AFFF leak in February 2018 was discharged from the pipe that is seen protruding horizontally from the wall. The door to the boiler room can also be seen to the left of the pipe. Staining can be seen on the concrete near this pipe as well.</p> <p>Date Taken: 31 August 2018</p> |  | |

APPENDIX C – Photographic Log

| Army National Guard, Preliminary Assessment for PFAS | | | Gary AASF | Gary Indiana |
|--|--|--|---|--------------|
| Photograph No. 5 | | | | |
| <p>Description:</p> <p>Looking southwest. The concrete area that confined the AFFF leak. Staining is visible on the concrete in the foreground. Interviewees stated that the leak did not migrate to the grassy area in the background.</p> <p>Date Taken:</p> <p>31 August 2018</p> | | | | |
| | | |  | |