FINAL
Preliminary Assessment Report
Lake Charles Chennault Airport
NGLA,
Louisiana

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

September 2020

Prepared for:

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

UNCLASSIFIED

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Acronyms and Abbreviations

°F	degrees Fahrenheit
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
AOI	Area of Interest
ARNG	Army National Guard
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIAA	Chennault International Airport Authority
CSM	conceptual site model
EDR™	Environmental Data Resources, Inc.™
FTA	fire training area
HA	Health Advisory
LAARNG	Louisiana Army National Guard
msl	mean sea level
NGLA	National Guard Louisiana
OWS	oil/water separator
PA	Preliminary Assessment
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
SI	Site Inspection
SONRIS	Strategic Online National Resources Information System
UCMR 3	Unregulated Contaminant Monitoring Rule 3
US	United States
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VSI	visual site inspection
WWTP	waste water treatment plant

Executive Summary

The Army National Guard (ARNG) is performing *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide*. A PA for per- and polyfluoroalkyl substances (PFAS)-containing materials was completed for the Louisiana ARNG (LAARNG) Lake Charles Chennault Airport facility in Lake Charles, Calcasieu Parish, Louisiana, to assess potential PFAS release areas and exposure pathways to receptors. The LAARNG Lake Charles Chennault Airport National Guard Louisiana (NGLA) ("the facility") consists of a parcel of land owned by the Chennault International Airport Authority (CIAA) that is leased to the LAARNG. The performance of this PA included the following tasks:

- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)™ report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility;
- Conducted a site visit 1 July 2020 and completed visual site inspections at the facility and the CIAA at locations where PFAS-containing materials were suspected of being stored, used, or disposed;
- Interviewed current CIAA personnel, including the Director of Operations, Fire Chief, the Director of Maintenance and Construction, airport consultants, and former employees of CIAA-tenant Northrop Grumman;
- Developed a preliminary conceptual site model (CSM) to outline the potential release, pathway, and receptors of PFAS for the LAARNG Lake Charles Chennault Airport NGLA.

The facility lies within the westernmost portion of the CIAA property, just east of Interstate 210. The LAARNG lease term extends from 2012 until 2052. The leased property currently consists of undeveloped fields, concrete pads on the northern portion, a small storage building and two potable water storage tanks; construction of the future Lake Charles Readiness Center is planned at the facility.

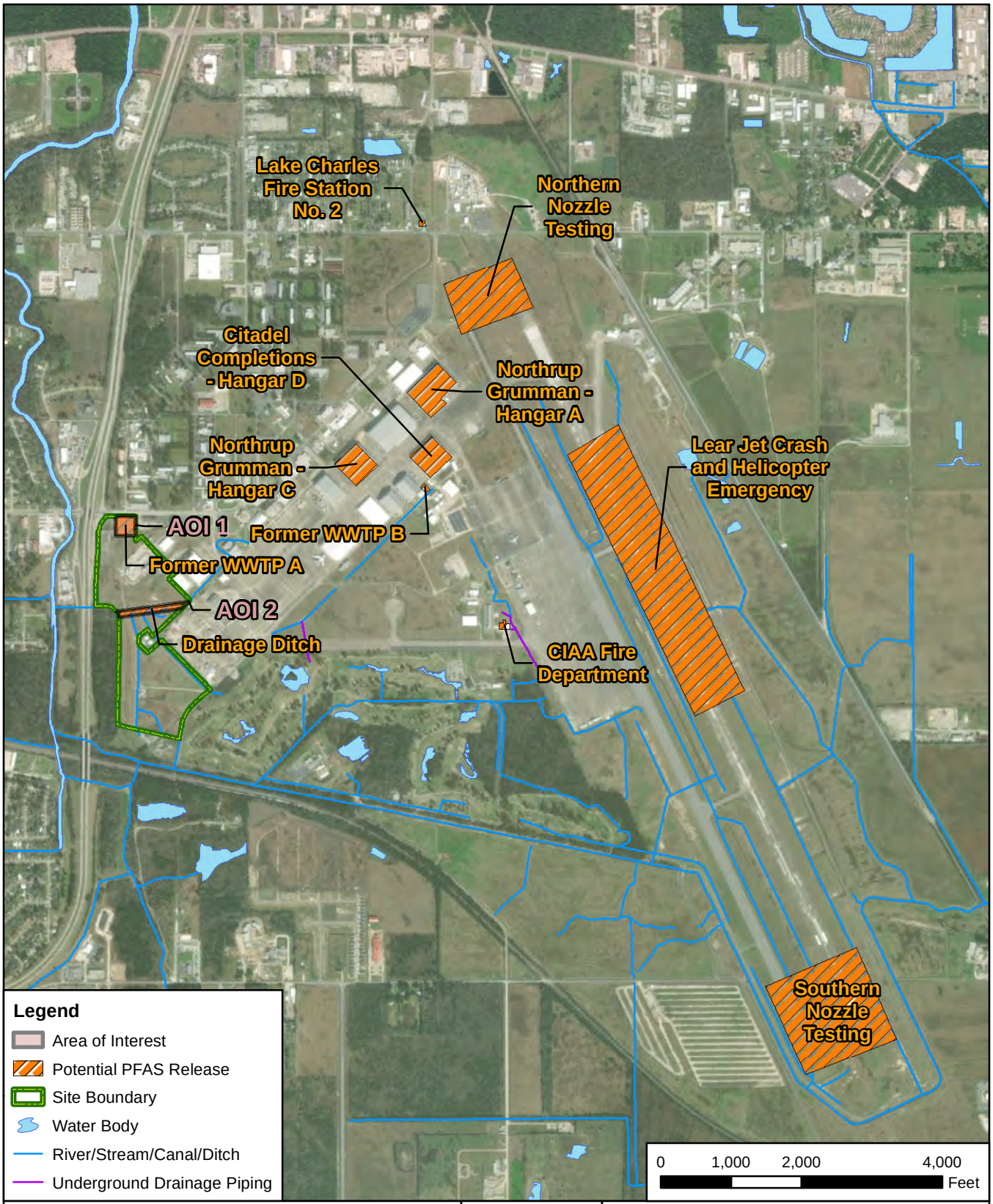
Two potential release areas were identified at the facility during the PA and are considered Areas of Interest (AOIs) (**Table ES-1**). The Former Wastewater Treatment Plant (WWTP) A and Drainage Ditch are designated as AOI 1 and AOI 2, respectively. These AOIs predate LAARNG involvement at the facility. Former WWTP A was operated by CIAA, and the Drainage Ditch receives stormwater from adjacent CIAA tenants with AFFF systems. AOI 1, AOI 2, and multiple off-facility, adjacent sources were identified during the PA and are shown on **Figure ES-1**.

Table ES-1: AOIs at Lake Charles Chennault Airport NGLA

Area of Interest	Name	Used by	Release Dates
AOI 1	Former WWTP A	CIAA	Unknown-1990s
AOI 2	Drainage Ditch	CIAA	Unknown - current

No PFAS releases associated with ARNG activities were identified at the facility. Based on potential PFAS releases at AOI 1 and adjacent offsite sources, there is potential for exposure to PFAS contamination in media at or near the facility. The preliminary CSM for the facility, which presents the potential receptors and media impacted, is shown on **Figure ES-2**. ARNG will evaluate the need for an SI based on the potential receptors, the potential migration of PFAS contamination off the facility, and the availability of resources.

Based on the United States Environmental Protection Agency (USEPA) Unregulated Contaminant Monitoring Rule 3 (UCMR 3) data, it was indicated that no PFAS were detected in a public water system above the USEPA Health Advisory (HA) level within 20 miles of the facility. The HA is 70 parts per trillion for PFOS and PFOA, individually or combined. PFAS analyses performed in 2016 had method detection limits that were higher than currently achievable. Thus, it is possible that low concentrations of PFAS were not detected during the UCMR 3 but might be detected if analyzed today.



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Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	9/25/2020

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Summary of Findings

AECOM
12420 Milestone Center Drive
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Figure ES-1

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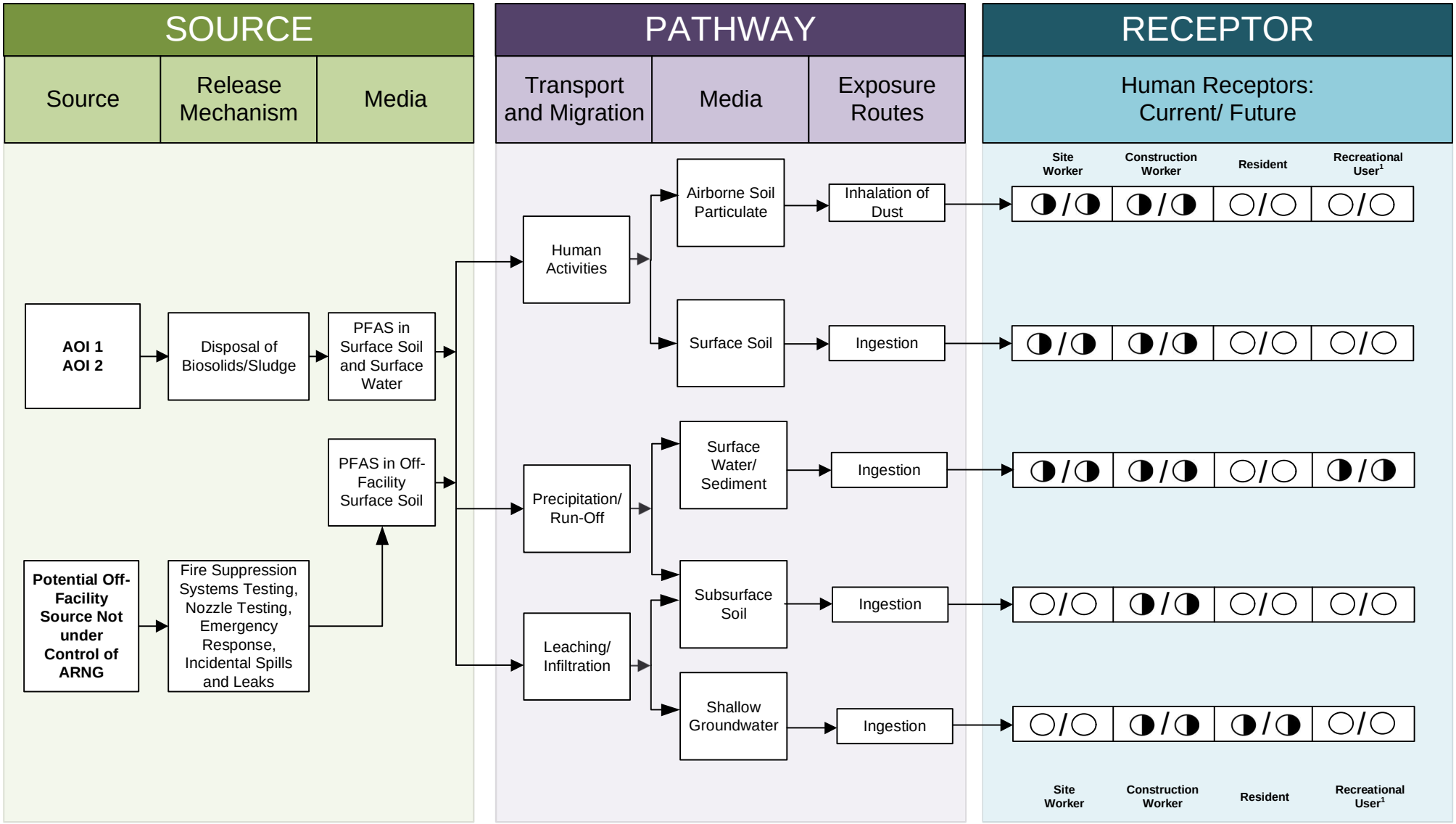


LEGEND

- Flow-Chart Stops
- Flow-Chart Continues
- Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Potentially Complete Pathway with Exceedance of SL

Notes:

1. The resident and recreational user receptors refer to an off-site resident and recreational user.

2. Dermal contact exposure pathway is incomplete for PFAS.

Figure ES-2
Preliminary Conceptual Site Model
Lake Charles Chennault Airport NGLA

1. Introduction

1.1 Authority and Purpose

The Army National Guard (ARNG) G9 is the lead agency in performing *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) at Impacted Sites at ARNG Facilities Nationwide*. This work is supported by the United States (US) Army Corps of Engineers Baltimore District and their contractor AECOM Technical Services, Inc. (AECOM) under Contract Number W912DR-12-D-0014, Task Order W912DR17F0192, issued 11 August 2017.

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

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

This report presents the findings of a PA for PFAS-containing materials at the Louisiana ARNG (LAARNG) Lake Charles Chennault Airport National Guard Louisiana (NGLA) (referred to as "the facility"), Lake Charles, Louisiana, 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 Army requirements and guidance.

This PA documents locations where PFAS may have been released into the environment at the facility. The term PFAS will be used throughout this report to encompass all PFAS chemicals being evaluated, including PFOS and PFOA, which are key components of AFFF.

1.2 Preliminary Assessment Methods

The performance of this PA included the following tasks:

- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)™ report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility;
- Conducted a site visit on 1 July 2020 and completed visual site inspections (VSIs) at locations where PFAS-containing materials were suspected of being stored, used, or disposed;
- Interviewed current Chennault International Airport personnel, including the Director of Operations, Fire Chief, the Director of Maintenance and Construction, airport consultants, and former Northrop Grumman employees;
- Developed a preliminary conceptual site model (CSM) to outline the potential release, pathway and receptors of PFAS for the facility.

1.3 Report Organization

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

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

1.4 Facility Location and Description

The facility is in Lake Charles, Calcasieu Parish, Louisiana and is within the property of Chennault International Airport, at the westernmost portion of the property, just east of Interstate 210. The site location is depicted on **Figure 1-1**.

The original airfield was developed in 1941 by the US Army Air Corp, but was abandoned in 1963, at which point the City of Lake Charles obtained the land to use as a regional airport. The Chennault International Airport Authority (CIAA) manages the property. The LAARNG-leased property consists of a 61.352-acre parcel of land situated on the western perimeter of the larger CIAA footprint and is adjacent to Interstate 210. The lease agreement term began in 2012 and extends to 2052 (LAARNG, 2020; **Appendix A**). The current facility property consists of undeveloped fields, concrete pads on the northern portion land, a small storage building, and two potable water storage tanks.

1.5 Facility Environmental Setting

Calcasieu Parish is in the West Gulf Coastal Plain, which is characterized by low relief with altitudes ranging from 2 to 90 feet. The West Gulf Coastal Plain province is underlain by Quaternary-aged deposits that were deposited due to sea levels dropping during glaciations (Harder, 1960). Topography at the facility is flat, with relief ranging from 0 to 10 feet.

1.5.1 Geology

The facility is underlain by the Beaumont Alloformation, which is part of the Prairie Allogroup (or Prairie Terraces). The Beaumont Alloformation consists of coastal plain sediments deposited by Pleistocene-aged streams. The sediments are composed of clay, silty clay loam, or sand clay loam and grade to sand and gravel (Heinrich et al., 2002). The clays found in the surficial geology are confining to the aquifer residing within the Prairie terraces but may contain sand lenses and layers (US Geological Survey [USGS], 2017). The Prairie terraces are underlain by the Montgomery, Bentley, and Williana Formations, which were all deposited during the Pleistocene (Harder, 1960). The geology underlying the facility is depicted on **Figure 1-2**.

1.5.2 Hydrogeology

The primary aquifer underlying the facility is the Chicot aquifer system, which extends across the majority of southwestern Louisiana. The aquifer resides within the Prairie Terraces and the Montgomery, Bentley, and Williana Formations (Harder, 1960). The Chicot aquifer system is divided into three divisions: the 200-foot, 500-foot, and 700-foot sands, which are confined from one another by thick layers of clay. However, near the Lake Charles area, the 500-foot sand terminates; the 200-foot sands, and 700-foot sands are often referred to as the upper and lower sands (Harder, 1960; USGS, 2017). To the north and northeast of Calcasieu Parish, the divisions of the Chicot aquifer system are undifferentiated and crop out, resulting in recharge (Harder, 1960; USGS, 2017).

Surficial clay layers act as the upper confining unit for the Chicot aquifer system and range from 40 to 280 feet in thickness. The top of the 200-foot sand is present at approximately 0 to 50 feet above mean sea level (msl) in the northeastern portion of Calcasieu Parish and greater than 300 feet above msl in the southwestern portion. The top of the 500-foot sand is present at 400 to 600 feet below msl, whereas the top of the 700-foot sand is present at less than 400 feet below msl in the northern portion of the Parish to greater than 1,000 feet below msl (USGS, 2017).

General groundwater flow in the water table aquifer beneath the facility is inferred to flow to the west/southwest, toward Calcasieu River (**Figure 1-2**). An EDR™ report conducted a well search for a 1-mile radius surrounding the facility (**Appendix A**). Using additional online resources, such as state and local geographic information system databases, wells were researched to a 4-mile radius of the facility. Within approximately 4 miles of the facility, 87 active wells are screened in the water table aquifer (i.e., groundwater resting atop of the upper confining unit of the Chicot aquifer system), although none of these wells are domestic or supply wells and instead are mostly monitoring wells. Groundwater in the water table aquifer range in depth from less than 2 feet below ground surface (bgs) to 39 feet bgs; however, 39 feet bgs is an outlier, and the majority of wells have recorded water depths of less than 10 feet bgs (Louisiana Department of Natural Resources, 2020).

Drinking water at the facility is supplied by the City of Lake Charles, who obtains their water from 17 wells screened within the 500-foot and 700-foot sands of the Chicot aquifer system (City of Lake Charles, no date). Based on the USEPA Unregulated Contaminant Monitoring Rule 3 (UCMR 3) data, it was indicated that no PFAS were detected in a public water system above the HA within 20 miles of the facility. The HA is 70 parts per trillion for PFOS and PFOA, individually or combined. PFAS analyses performed in 2016 had method detection limits that were higher than currently achievable. Thus, it is possible that low concentrations of PFAS were not detected during the UCMR 3, but might be detected if analyzed today.

1.5.3 Hydrology

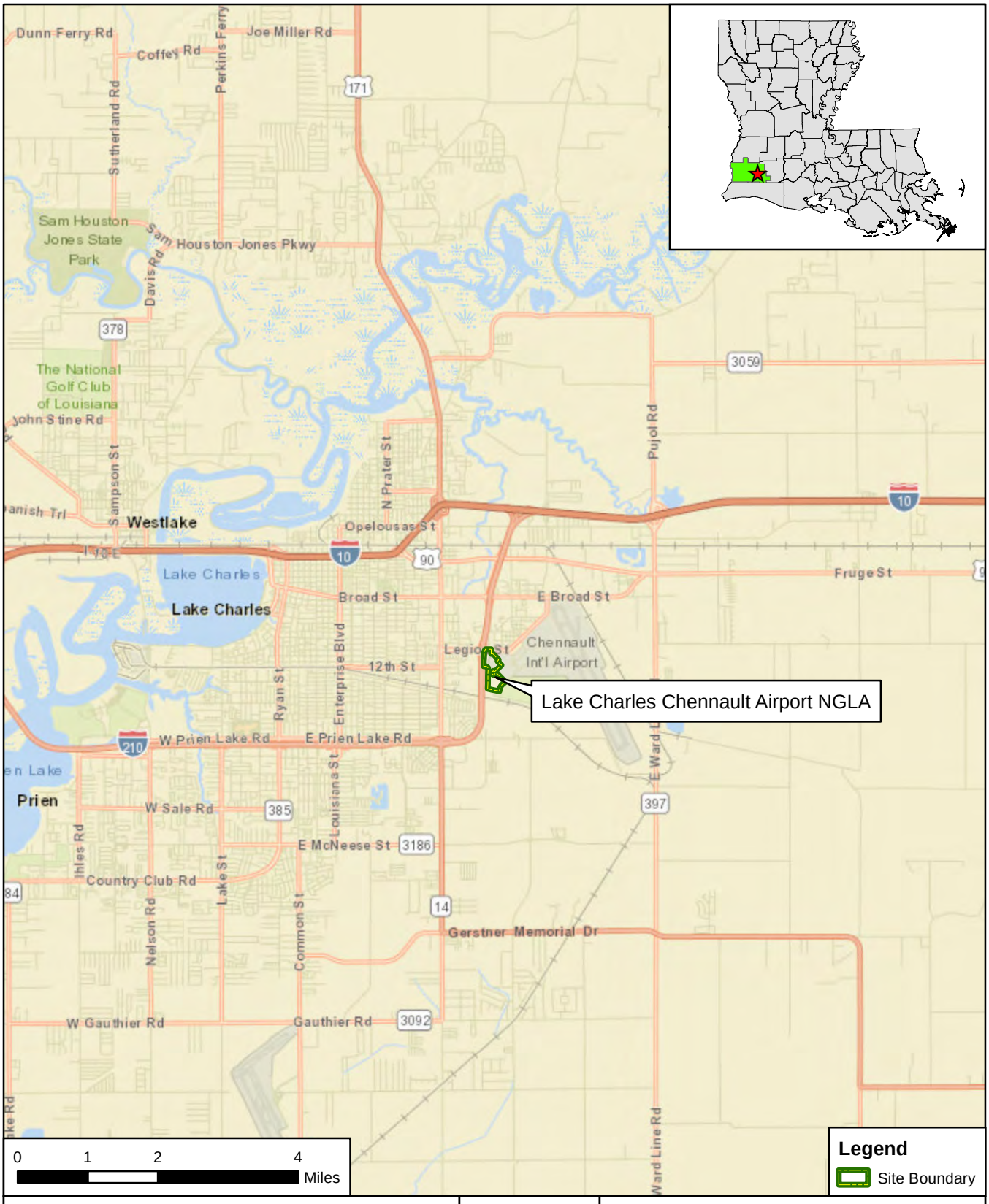
The facility lies within the Kayouche Coulee Watershed. A system of concrete- and grass-covered ditches and underground culverts/piping convey surface and stormwater on the facility and from the larger CIAA footprint. A portion of this drainage system crosses the facility and continues west offsite towards Kayouche Coulee. Other portions of the CIAA stormwater system convey flow to the golf course along the southern CIAA boundary, which drains to Kayouche Coulee. Kayouche Coulee drains into the English Bayou, approximately 3.5 miles north, which then discharges into the Calcasieu River located 1.5 miles to the west. English Bayou and Calcasieu River are used for recreational uses, including fishing. Additionally, over 95% of surface water withdrawn from the Calcasieu River is used for industrial purposes (USGS, 2017). Surface water features surrounding the facility are shown in **Figure 1-3**.

1.5.4 Climate

The climate of Lake Charles is mild and similar to areas along the Gulf Coast (Harder, 1960). average temperature at Lake Charles is 68.6 degrees Fahrenheit (°F), with an average high of 78.1 °F and an average low of 59.1 °F. Lake Charles receives an average of 57.53 inches of precipitation per year (World Climate, 2020).

1.5.5 Current and Future Land Use

Access to the facility is restricted by gated fencing. Other properties surrounding the facility and CIAA property are primarily residential. The facility currently has two potable water tanks and a storage building, but most of the leased property consists of undeveloped fields and concrete pads. LAARNG has plans to construct the Lake Charles Readiness Center on the facility within the next few years (LAARNG, 2020). Future land use in the vicinity is not anticipated to change.



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Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	9/25/2020

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Facility Location

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Figure 1-1

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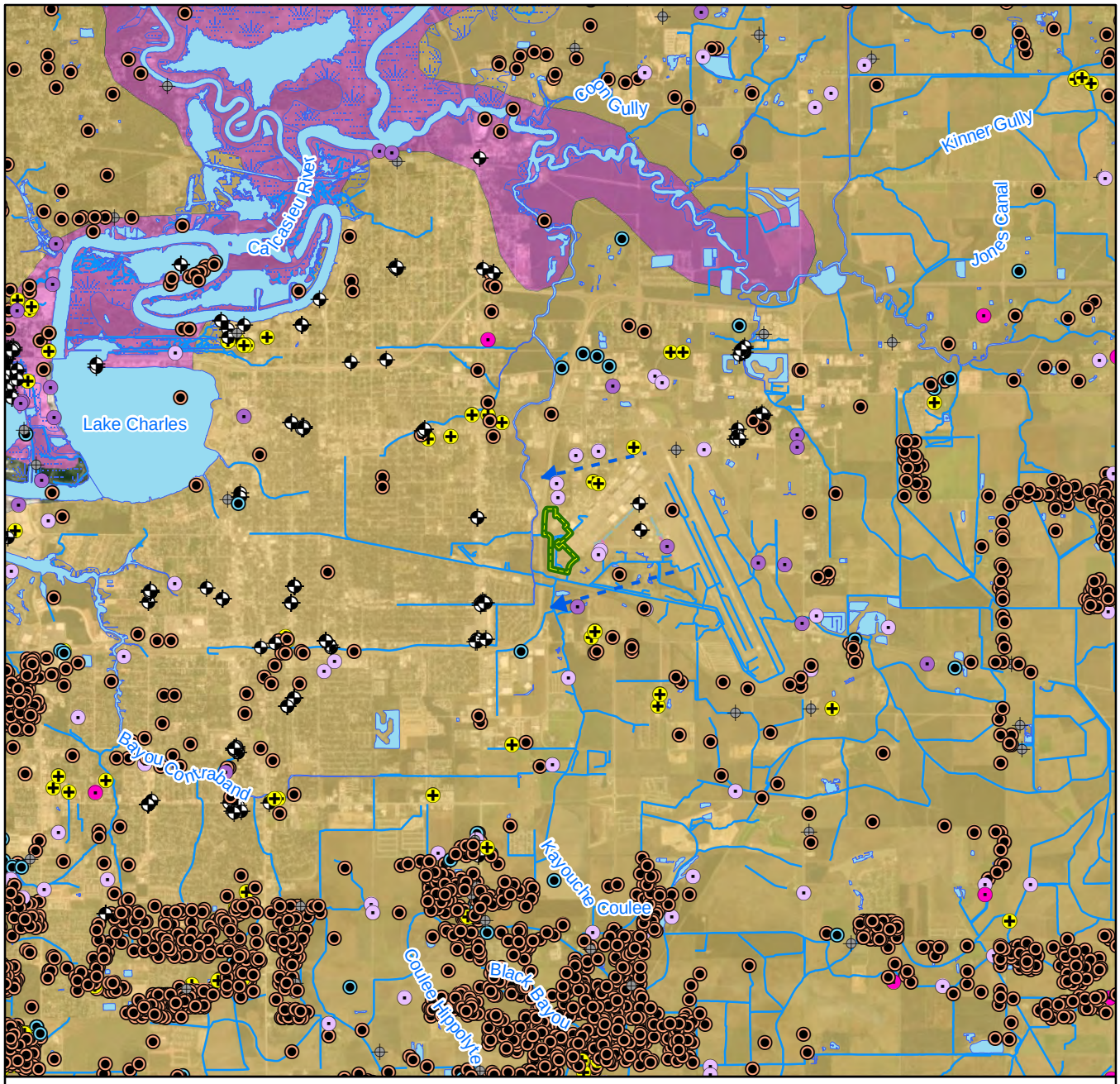

Legend

- Site Boundary
- Water Body
- Wetland
- River/Stream/Canal/Ditch
- Underground Drainage Piping
- Inferred Groundwater Flow Direction

Geology

- Alluvium
- Prairie Terraces

Wells

- Domestic
- Commercial
- Industrial
- Irrigation
- Agricultural
- Public Supply
- Monitoring/Piezometer
- Other/Unknown

0 0.75 1.5 3 Miles

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Groundwater Features

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Figure 1-2

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Surface Water Features

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Figure 1-3

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2. Fire Training Areas

Based on interviews with personnel whose tenure spans from 1995 to the present and review of historic records and the EDR™ report, no FTAs were identified at the facility. Interview records can be found in **Appendix B.1**.

3. Non-Fire Training Areas

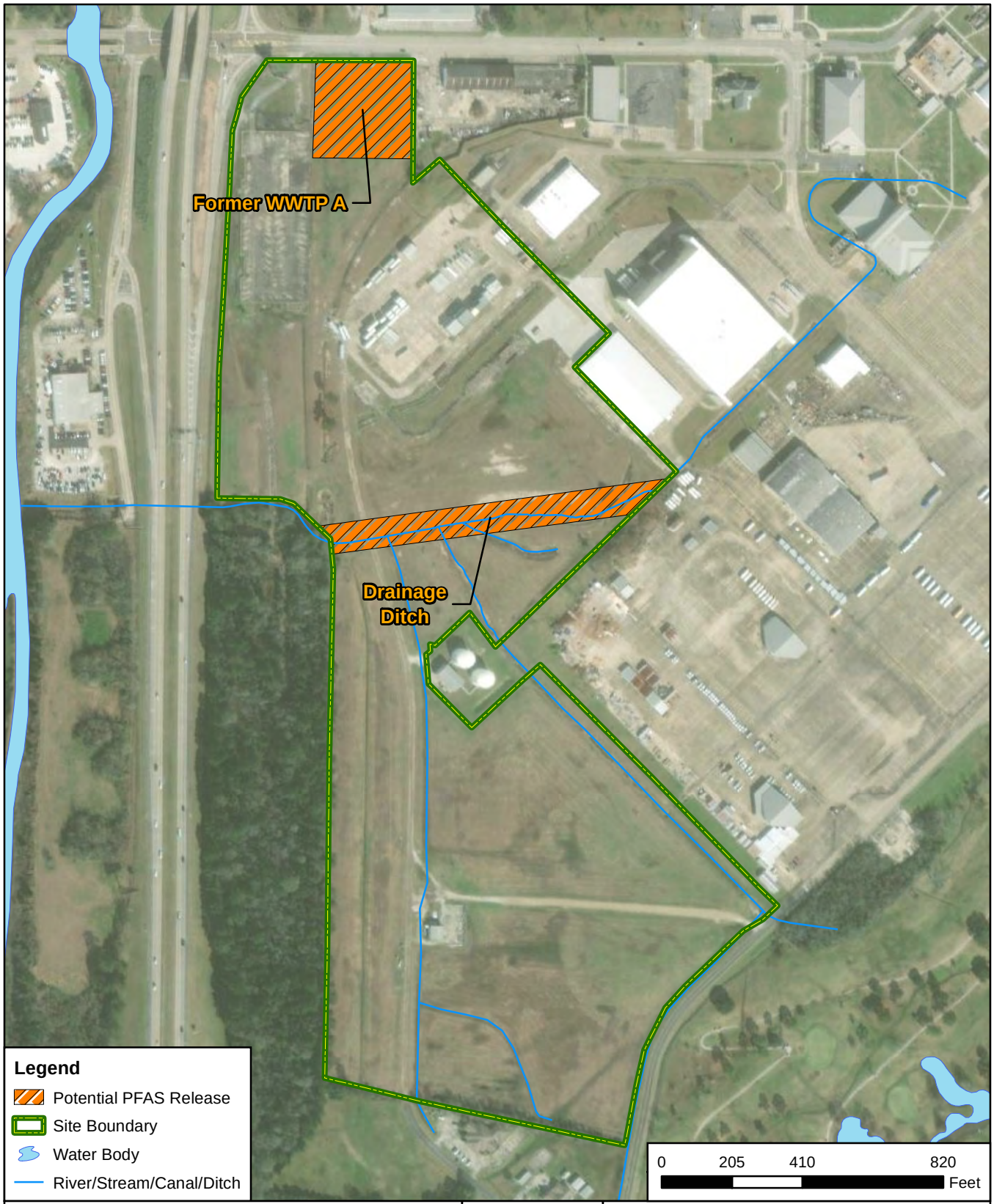
In addition to FTAs, the PA evaluated areas on the facility where PFAS-containing materials may have been broadly used, stored, or disposed. This may include buildings with fire suppression systems, paint booths, AFFF storage areas, and areas of compliance demonstrations. Two non-FTAs where AFFF was stored and/or potentially released on the facility were identified during the PA as shown on **Figure 3-1**. Information on features at the facility obtained during the PA are included in **Appendices A** and **B**. Interview records and photographs appear in **Appendix B** and in **Appendix C**, respectively.

3.1 Former Wastewater Treatment Plant A

Former Wastewater Treatment Plant (WWTP) A was historically located in what is now the northern portion of the LAARNG facility. Based on *the Preconstruction Assessment for the Lake Charles Readiness Center and Future Facility Maintenance Shop* (LAARNG, 2020) and available historical aerial photographs (EDR^{TM}, 2020) the Former WWTP A was constructed by the Air Force adjacent to Johnston Avenue in or before 1952 and demolished in the 1990s (**Appendix A**). No information was provided regarding what buildings drained to WWTP A and disposal of biosolids/sludge. If drains at Hangars A, C, or D historically drained to Former WWTP A, a potential exists for PFAS contamination at this location. The geographic coordinates of the Former WWTP A are 30°12'58.0"N; 93°10'07.3"W.

3.2 Drainage Ditch

A system of concrete- and grass-covered ditches and underground culverts/piping convey surface and stormwater on the facility and surrounding larger CIAA footprint. This drainage system includes a ditch that crosses the facility and is visible as early as 1952 on historical aerial photography (EDR^{TM}, 2020). This ditch continues west offsite towards Kayouche Coulee. Historical or current discharges at adjacent CIAA sources (described further in **Section 5**) may be directed into this system or onto paved or grass surfaces at those facilities, which then may flow/migrate to the ditch. The geographic coordinates of the drainage ditch are 30°12'46.0"N; 93°10'03.7"W.



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Non-Fire Training Area

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Figure 3-1

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4. Emergency Response Areas

No emergency response areas were identified at the facility during the PA through interviews or document review. Adjacent emergency responses are discussed in **Section 5**. There is a mutual aid agreement between the City of Lake Charles and a five-Parish Emergency Network (Southwest Louisiana - Region 5 includes Allen, Beauregard, Calcasieu, Cameron, and Jefferson Davis Parishes, [Louisiana Department of Health, 2020]).

5. Adjacent Sources

During the PA, seven potential off-facility sources of PFAS not under the control of the LAARNG but adjacent to the facility were identified. All of these source areas are within the CIAA property, except Lake Charles Fire Station No. 2. Adjacent potential sources are shown on **Figure 5-1** and described below.

5.1 Northrop Grumman Hangars A and C

Northrop Grumman leases three hangars (Hangars A, B, and C) from CIAA. These hangars lie adjacent to each other on the apron, which is located in the northern portion of the CIAA property. Fire suppression systems equipped with AFFF are housed in Hangar A and Hangar C. No AFFF system in Hangar B was reported. The fire suppression system at Hangar A is equipped with 1% Ansulite, whereas Hangar C uses 3% Ansulite. The fire suppression systems are tested every five years in what the interviewees described as a closed-loop system. After AFFF discharge, the foam is treated with an anti-foam agent then discharged to containment areas. Trenches at Hangar A comprise the containment area, whereas a containment pond is used at Hangar C. The containment areas discharge to the sanitary sewer. No information was provided regarding the amount of AFFF discharged during each system test.

It is unknown when Northrop Grumman started leasing the hangars or when the fire suppression systems were installed. Inspection of the hangar interiors was not conducted during the VSI; therefore, the sizes and layouts of the fire suppression systems are unknown.

5.2 Citadel Completions Hangar D

Citadel Completions LLC leases Hangar D from CIAA. Hangar D is located on the apron, in the northern portion of the CIAA property, and houses a fire suppression system. The fire suppression system is equipped with a 3% Ansulite. System tests are performed every five years in a closed-loop system. After the AFFF is discharged, it is treated with an anti-foam agent then discharged to a containment pond where it drains to the sanitary sewer. No information was provided regarding the amount of AFFF discharged during each system test.

It is unknown when Citadel Completions LLC started leasing the hangar or when the fire suppression systems were installed. Inspection of the hangar interior was not conducted during the VSI. Therefore, the sizes and layouts of the fire suppression systems are unknown.

5.3 CIAA Fire Department

The CIAA Fire Department is located west of the flight line and houses four firefighting trucks. These trucks are equipped with 3% Chemguard, which is pumped into the reservoirs on the trucks from 55-gallon plastic drums. Interviewees recalled minor leaks that occurred which were contained and flowed to the oil/water separator (OWS). The OWS is located off the southeastern corner of the fire station, and it has two chambers with a diverter valve. Water flows into the CIAA sewer system, with overflow diverted to the CIAA stormwater system, which in this area is conveyed to the golf course along the southern CIAA boundary. OWS sludge/sediment is removed via vacuum truck. No information was provided regarding the disposal of the sludge. Interviewees indicated that the City of Lake Charles Fire Department trained with the CIAA Fire Department on the CIAA property; however, no AFFF was used.

5.4 Northern and Southern Nozzle Testing

The CIAA conducted firetruck nozzle spray tests, during which AFFF was discharged quarterly from 1998 to 2018 and semi-annually from 2018 to present. These tests occurred off the south end of the runway (Southern Nozzle Testing) and occurred only once off the north end of the runway (Northern Nozzle Testing). No information was provided regarding the amount of AFFF discharged during each testing event. After testing was complete, water was sprayed to dilute the AFFF and rinse it off paved areas.

5.5 Lear Jet Crash and Helicopter Emergency

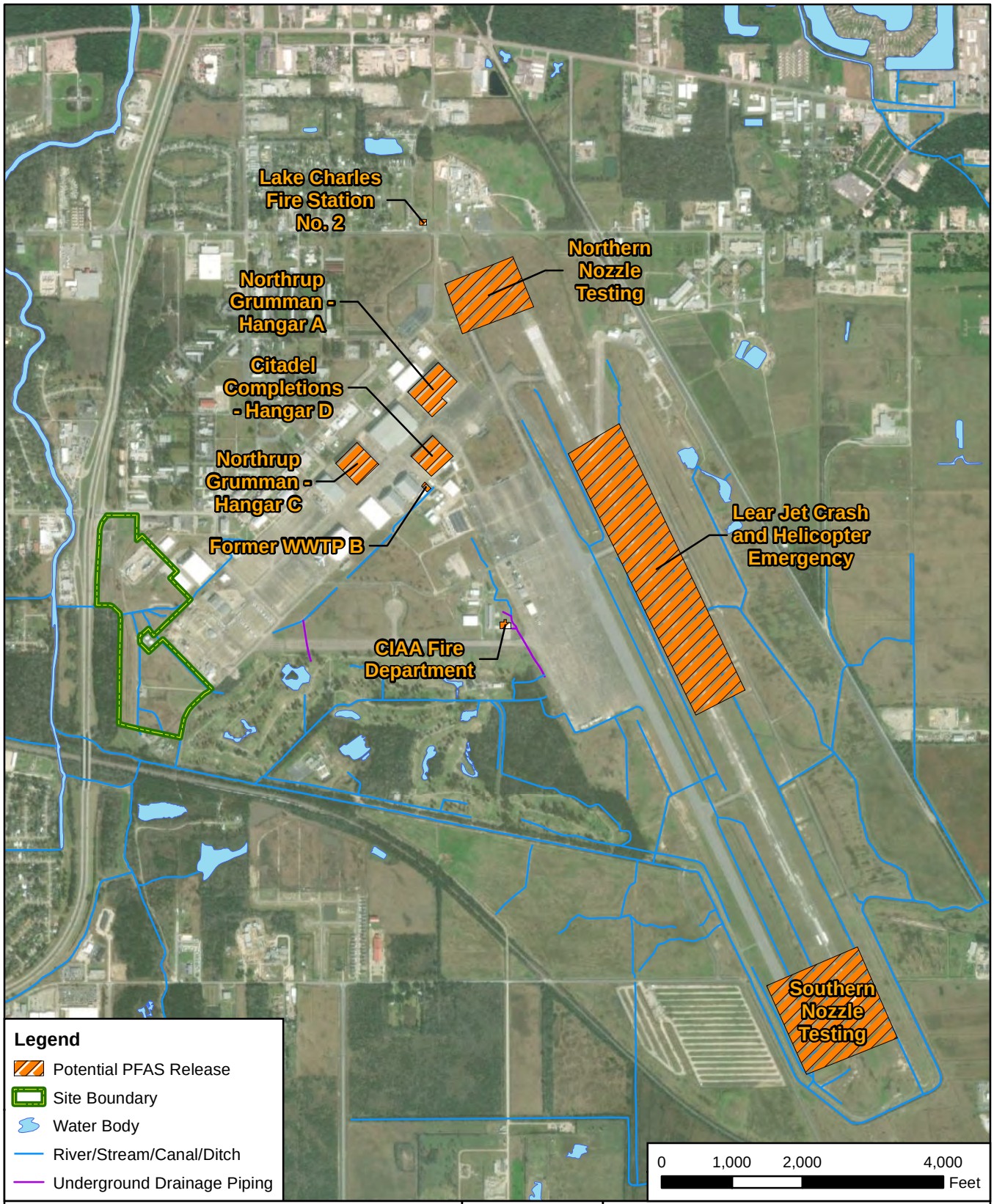
Interviewees recalled an emergency helicopter landing in the late 1980s to early 1990s. Prior to landing, the runway was sprayed with foam. No documentation could be found on the incident, and it is unclear what type of foam was used and whether the foam was removed or allowed to dissipate naturally. In 2009, a small private Lear jet made a crash landing at Chennault International Airport, which resulted in a fuel leak. The fire department contained and cleaned up the fuel leak. It is unclear if any AFFF were used as a preventative measure. At the time of the VSI, several Purple K units were staged along the flight line; however, no interviewees recalled ever staging units equipped with AFFF.

5.6 Former WWTP B

Former WWTP B was historically located adjacent to the LAARNG facility and is southwest of Hangar D. Interviewees did not mention the presence of this WWTP; however, a map from G&E Engineering, Inc. shows the presence of a small WWTP (**Appendix A**). No information was provided regarding what buildings drained to the WWTP and disposal of biosolids/sludge. If drains at Hangars A, C, or D historically drained to Former WWTP B, there may be potential PFAS contamination at this location.

5.7 Lake Charles Fire Station No. 2

The Lake Charles Fire Station No. 2 is located 0.25 miles northwest of the runway. No information was gathered during the PA regarding this adjacent source; however, it is possible AFFF is stored at this location.



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Adjacent Sources

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Germantown, MD 20876

Figure 5-1

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6. Preliminary Conceptual Site Model

Based on the PA findings, two potential release areas were identified at the LAARNG Lake Charles Chennault Airport NGLA: AOI 1 Former WWTP A and AOI 2 Drainage Ditches. The AOIs are shown on **Figure 6-1**. These AOIs are associated with historical and current adjacent sources that are unrelated to LAARNG activities at the facility. The following sections describe the CSM components and the preliminary CSMs developed for AOIs 1 and 2. The CSM identifies the three components necessary for a potentially complete exposure pathway: (1) source, (2) pathway, (3) receptor. If any of these elements are missing, the pathway is considered incomplete.

6.1 Pathways

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

Potential releases identified at Lake Charles Chennault Airport NGLA and at adjacent offsite locations occurred on both grassy and paved surfaces. Releases to paved surfaces could have migrated a short distance onto the surrounding soil. Ground-disturbing activities in surface soil as well as beneath the pavement could produce dust and could result in potential exposure to surface soils via inhalation of dust particles. AFFF releases to the paved surfaces could have infiltrated the subsurface via cracks in the pavement or joints between areas that are paved with different materials. Additionally, leaching and infiltration can result in the vertical migration of PFAS from surface soil to subsurface soil. PFAS are also water soluble and can migrate readily from soil to groundwater via leaching. Therefore, ground-disturbing activities at the facility may result in potential exposure to subsurface soils via ingestion and inhalation of dust and groundwater via ingestion.

Drinking water at the facility is provided by the City of Lake Charles, who sources their water from 17 wells drilled into the 500-foot and 700-foot sands of the Chicot aquifer system (City of Lake Charles, no date). No drinking water wells exist at facility, although there are domestic and public wells within 4-mile radius. No drinking water wells screened above the confining layer were observed in the Strategic Online National Resources Information System (SONRIS) database (Louisiana Department of Natural Resources, 2020); however, it is possible that unregistered, private, domestic wells exist downgradient of facility, which may result in potential exposure via ingestion of groundwater.

6.2 Receptors

Receptors at the facility include site workers, construction workers, off-facility recreational users, and off-facility residents. These receptors, as they pertain to the facility, are described below:

- Site workers typically work at or use the site and may come into contact with the surface soils.
- Construction workers represent utility or other workers who would be exposed to surface and/or subsurface conditions through ground-disturbing activities.
- Off-facility recreational users typically include persons who may recreationally use an off-facility area that may be affected by a PFAS release from the facility. Off-facility recreational users could be exposed to sediment and surface water during recreational use.
- Off-facility residents occupy properties outside of Lake Charles Chennault Airport NGLA. Off-facility residents may come into contact with groundwater using unregistered private or domestic wells.

The preliminary CSM for the facility indicates which specific receptors could potentially be exposed to PFAS. The preliminary CSMs for the facility are shown on **Figures 6-2** and **6-3**.

6.3 AOI 1 Former WWTP A

The Former WWTP A was in use from its construction at an unknown date until it was demolished in the 1990s. During that time, potential PFAS releases on both grassy and paved surfaces at adjacent sources, such as Northrop Grumman Hangars A and C and Citadel Completions Hangar D, may have been discharged to AOI 1. However, no information was provided regarding what buildings drained to the WWTP and disposal of biosolids/sludge. Because use of the WWTP A predates LAARNG use of the facility, any exposure pathways are not due to LAARNG activities.

Potentially complete exposure pathways exist due to CIAA activities at AOI 1 and the presence of adjacent off-facility sources, which include fire suppression systems testing, nozzle testing, emergency response, and incidental leaks and spills related to the storage of AFFF. The preliminary CSM for AOI 1 is presented on **Figure 6-2.** Potential PFAS exposure pathways associated with AOI 1 and adjacent off-facility releases that could migrate to the LAARNG facility are described in **Table 6-1**.

Table 6-1: Exposure Pathways at AOI 1

Pathway	Receptor
Surface Soil	Considered a potentially complete pathway to site workers, construction workers, and trespassers via inhalation of dust from off-facility sources
Subsurface Soil	Considered a potentially complete pathway to construction workers via ingestion or inhalation of dust
Surface Water and Sediment	Considered a potentially complete pathway to offsite recreational users via ingestion
Groundwater	Considered a potentially complete pathway to construction workers and offsite residents via ingestion

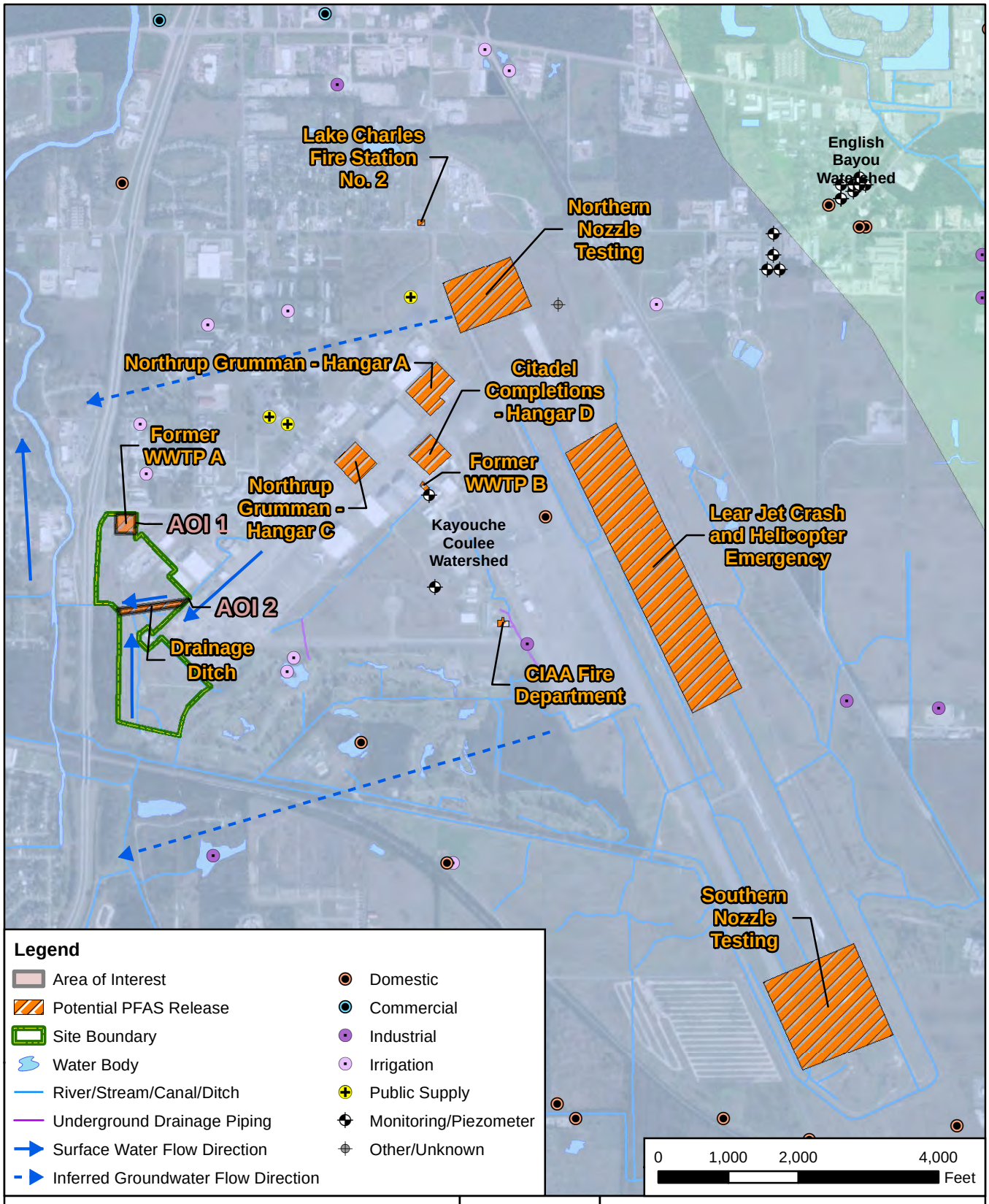
6.4 AOI 2 Drainage Ditch

Surface and stormwater runoff from adjacent properties drain to the facility via the ditch that conveys flow west across the site then discharges off-facility into Kayouche Coulee. Potentially complete exposure pathways exist at AOI 2 due to sources at adjacent CIAA tenants, which include fire suppression systems testing, nozzle testing, emergency response, and incidental leaks and spills related to the storage of AFFF. Further, it is possible PFAS could migrate to nearby tributaries, which may result in potential exposure via ingestion of surface water and sediment.

The preliminary CSM for AOI 2 is presented on **Figure 6-3.** Potential PFAS exposure pathways associated with adjacent off-facility releases that could migrate to the LAARNG facility via AOI 2 are described in **Table 6-2**.

Table 6-2: Exposure Pathways at AOI 2

Pathway	Receptor
Surface Soil	Considered a potentially complete pathway to site workers, construction workers, and trespassers via ingestion or inhalation of dust from off-facility sources
Subsurface Soil	Considered a potentially complete pathway to construction workers via ingestion or inhalation of dust
Surface Water and Sediment	Considered a potentially complete pathway to site workers, construction workers, and recreational users via ingestion
Groundwater	Considered a potentially complete pathway to construction workers and offsite residents via ingestion



CLIENT	ARNG			
Preliminary Assessment for PFAS at Lake Charles Chennault Airport NGLA, LA				
REVISED	9/25/2020	GIS BY	MS	9/25/2020
SCALE	1:24,000	CHK BY	JH	9/25/2020
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	9/25/2020

N

Area of Interest

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-1

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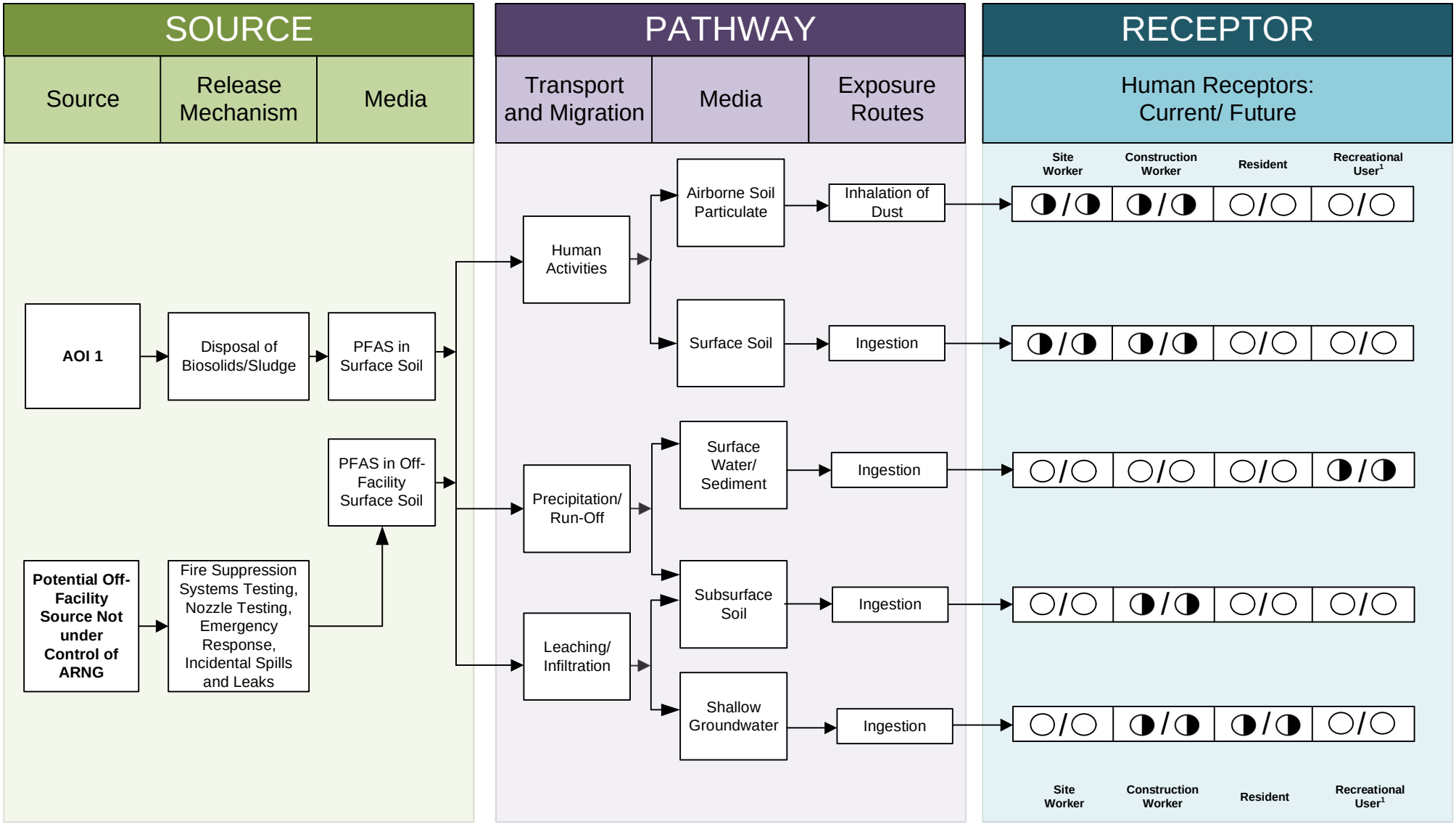


LEGEND

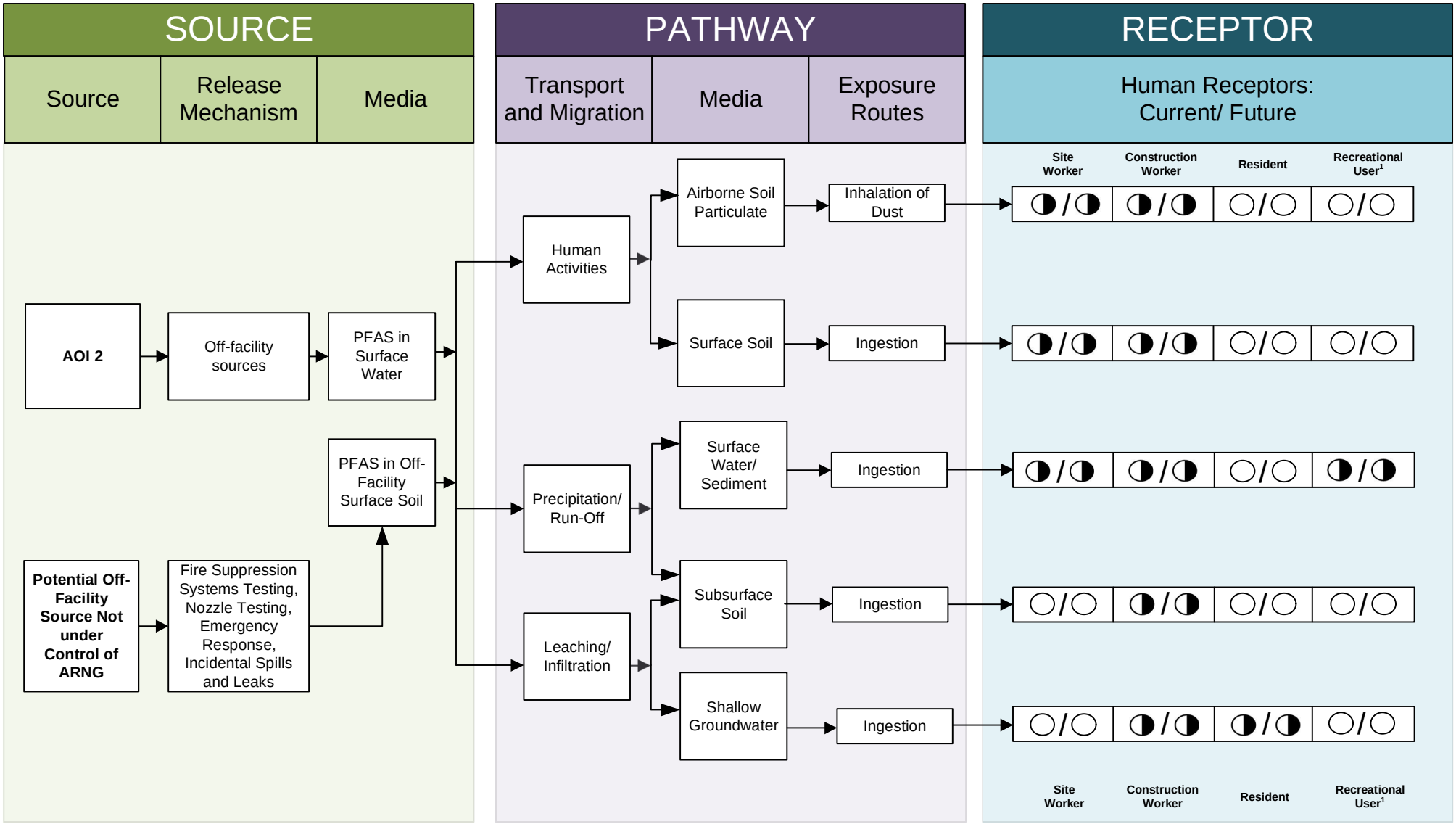
- Flow-Chart Stops
- Flow-Chart Continues
- Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Potentially Complete Pathway with Exceedance of SL

Notes:

1. The resident and recreational user receptors refer to an off-site resident and recreational user.

2. Dermal contact exposure pathway is incomplete for PFAS.

Figure 6-2
Preliminary Conceptual Site Model
AOI 1 Former WWTP A
Lake Charles Chennault Airport NGLA



LEGEND

- Flow-Chart Stops
- Flow-Chart Continues
- Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Potentially Complete Pathway with Exceedance of SL

Notes:

1. The resident and recreational user receptors refer to an off-site resident and recreational user.

2. Dermal contact exposure pathway is incomplete for PFAS.

Figure 6-3
Preliminary Conceptual Site Model
AOI 2 Drainage Ditch
Lake Charles Chennault Airport NGLA

7. Conclusions

This report presents a summary of available information gathered during the PA with respect to the use of AFFF and other PFAS-related activities at the LAARNG Lake Charles Chennault Airport NGLA. The PA findings are based on the information presented in **Appendix A** and **Appendix B**.

7.1 Findings

Two AOIs related to potential PFAS releases were identified at the facility during the PA. Additionally, multiple adjacent offsite releases were identified. A summary of the AOIs is shown in **Table 7-1**, and the locations of the AOIs and these offsite releases are shown **Figure 7-1**.

Table 7-1: AOIs at Lake Charles Chennault Airport NGLA

Area of Interest	Name	Used by	Release Dates
AOI 1	Former WWTP A	CIAA	Unknown-1990s
AOI 2	Drainage Ditch	CIAA	Unknown-current

Based on potential PFAS releases at AOI 1, AOI 2and offsite adjacent source areas, there is potential for exposure to PFAS contamination in media at or near the facility. The preliminary CSMs for the AOIs at the facility, which present the potential receptors and media impacted, are shown on **Figures 6-2** and **6-3**.

7.2 Uncertainties

Available 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 or historically maintained by the facility or available during the PA on the use of PFAS in training, firefighting, or other non-traditional activities, or on its disposal.

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

In order to minimize the level of uncertainty, readily available data regarding the use and storage of PFAS were reviewed, current personnel were interviewed, multiple persons were interviewed for the same potential source area, and potential source areas were visually inspected. **Table 7-2** summarizes the uncertainties associated with the PA.

Table 7-2: Uncertainties

Area of Interest	Source of Uncertainty
Northrop Grumman Hangars A and C, and Citadel Completions Hangar D	The dates of installation for the three fire suppression systems are unknown. No information was provided regarding the size of the fire suppression system AFFF tanks or how much AFFF was released during system tests.
CIAA Fire Department	Details on the disposal of the OWS sludge are uncertain and were not provided during interviews.
CIAA Northern and Southern Nozzle Testing Areas	No information was provided on the amount of AFFF discharged during each testing event.
Lear Jet Crash and Helicopter Emergency	It is not clear if AFFF were used during responses to either the jet crash or the helicopter emergency landing.
Former WWTPs A and B	It is unclear what areas drained to the WWTPs. The date of construction is unknown.

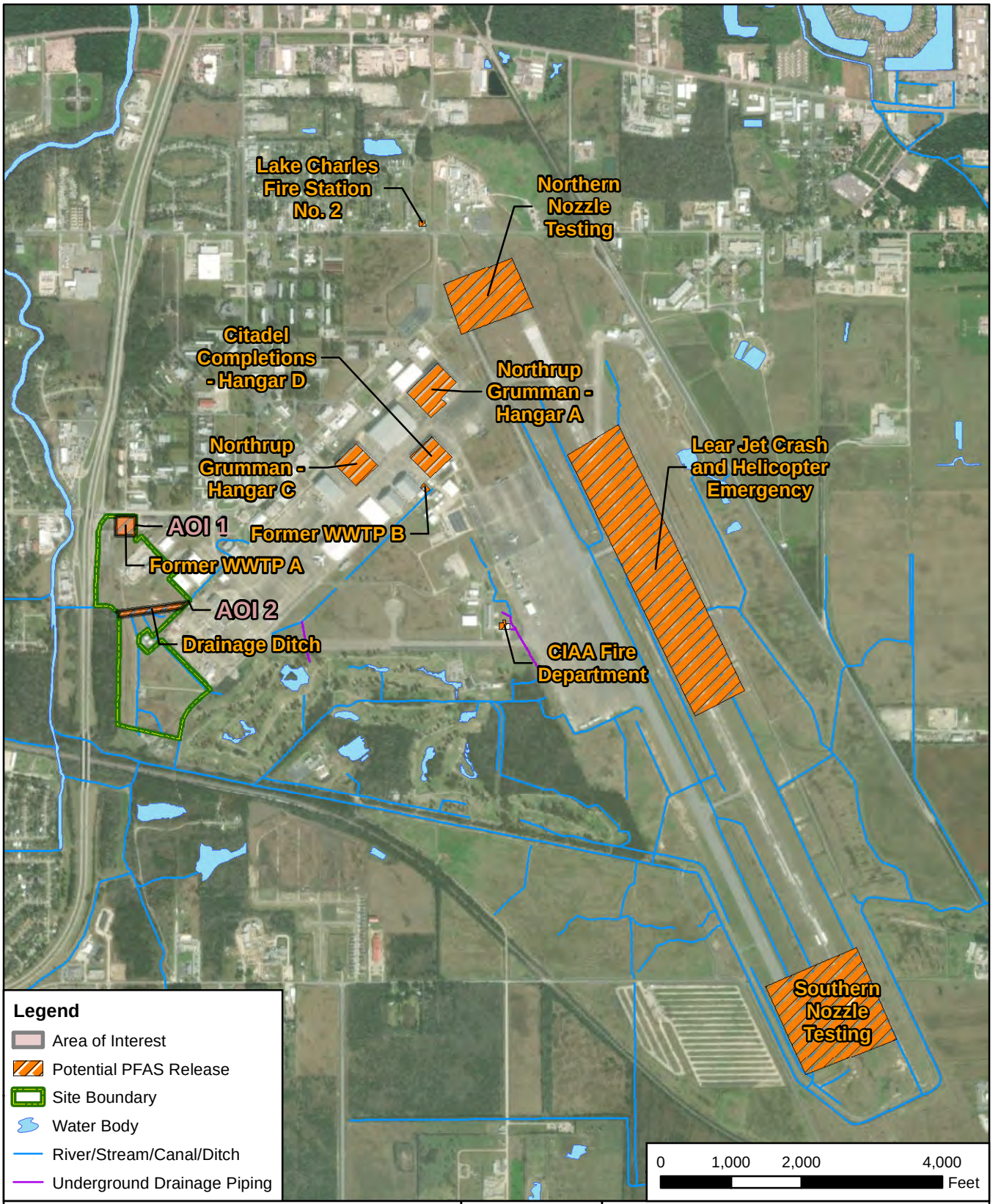
7.3 Potential Future Actions

Interviews and records (covering 1995 to present) gathered during the PA indicate that LAARNG activity did not result in potential PFAS releases at the facility. Prior to LAARNG involvement, use of former WWTP A (until it was demolished in the 1990s) and the Drainage Ditch could have resulted in PFAS releases within the current LAARNG facility boundary. Based on the preliminary CSM developed for the facility, there is potential for receptors to be exposed to PFAS contamination in soil, groundwater, surface water, and sediment due to historical onsite and/or adjacent sources. **Table 7-3** summarizes the rationale used to determine if the facility should be considered for further investigation under the CERCLA process and undergo an SI.

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

Table 7-3: PA Findings Summary

Area of Interest	AOI Location	Rationale	Potential Future Action
AOI 1 Former WWTP A	30°12'58.0"N; 93°10'07.3"W	Releases of AFFF from adjacent sources may have been directed to AOI 1.	Proceed to an SI, focus on soil, surface water, sediment, and groundwater
AOI 2 Drainage Ditch	30°12'46.0"N; 93°10'03.7"W	Releases of AFFF from adjacent sources may have been directed to AOI 2	Proceed to an SI, focus on soil, surface water, sediment, and groundwater



CLIENT	ARNG			
Preliminary Assessment for PFAS at Lake Charles Chennault Airport NGLA, LA				
REVISED	9/25/2020	GIS BY	MS	9/25/2020
SCALE	1:24,000	CHK BY	JH	9/25/2020
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	9/25/2020

N

Summary of Findings

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 7-1

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Appendix A
Data Resources

Data Resources will be provided separately on CD. Data Resources for Lake Charles Chennault Airport include:

Previous Studies at Lake Charles Chennault Airport

- Draft Report, Preconstruction Assessment for the Lake Charles Readiness Center and Future Facility Maintenance Shop, Chennault International Airport Authority (CIAA), Lake Charles, LA, Prepared by LAARNG CFMO-EM (June 5, 2020)

Lease for Lake Charles Chennault Airport

- Legal Description and CIAA Lease Agreement

Maps

- Site Plan, Figure 1-2, Monitor Well Closure Plan, Boeing Louisiana, Inc., Lake Charles, LA, G & E Engineering, Inc. Environmental Consultants (1992)

Safety Data Sheets

- Ansulite 1%
- Chemguard 3%

Environmental Data Resources, Inc.™ Report

- EDR™ Report, Lake Charles Chennault Airfield, Lake Charles, LA (2020)

Appendix B
Preliminary Assessment Documentation

Appendix B.1
Interview Records

Preliminary Assessment – Pre-Interview Form

1. Installation Name: Chennault International Airport Authority	
2. Primary Points of Contact:(Name/Title/Telephone Number/Email Address):	
ARNG:	
USACE:	
Installation:	[redacted]
3. Suggested Personnel to Interview (Name/Title/Number of Years at Installation/Retired):	
4. Is the ARNG property an enclave of a larger facility? What command or authority controls that facility? DoD or non-DoD? Does the facility have other DoD enclaves? Yes, CIAA, Non-DoD, No	
5. Installation History (dates of operation, types of activity, active airfield, firefighting training): 1941- 1963 U.S. Army Air Field 1964- Lake Charles Airport	
6. Potential Sites to Investigate (hangars, airstrips, FTAs, TAs, paint shops and kitchen AFFF, plating areas): CIAA – Airport Fire Station Northrup Grumman Hangers A+C Citadel Completions – Hanger D	

7. Have we requested the following information from ARNG?

Lease Information	(YES) / NO	Comment:
Material Purchase Information	YES / NO	Comment:
Permit/Transfer Documents	YES / NO	Comment:
Disposition Records for AFFF	YES / NO	Comment:

(Attach to the front of the Interview Form)

Preliminary Assessment – Pre-Interview Form

8. Does the Installation have an Administrative Record or a Document Repository? If so, does the installation have the following types of documents? Circle all that apply.

Historical Records Review

Preliminary Assessment

Site Inspections

Remedial Investigation

Remedial Action Documentation

Cultural Resources Management Plan

Natural Resources Management Plan

Annual TAG Reports

Firefighting Training Records (if documented) ?

As Built Drawings for Buildings with AFFF Systems ?

Fire Suppression in Dining Facilities

Responded to an Aircraft Crash ?

Responded to Forest Fires

Federal Facility Agreement

State Permit

RCRA Permit

NPDES Permit

Environmental Baseline Study

Groundwater Flow Information

Groundwater Studies

Groundwater Treatment Units

Groundwater Monitoring Well Location Map

Surface Water Flow Information

Historical Aerials

On-site Production Wells well #s?
drinking water source - GW
Sanitary water disposal
Crash sites
Fire Training sites
Fire Dept info CIAA
Shapefile of property from GIS

9. What GIS data do we have (e.g., HQANG GIS)? Do we need (e.g., State GIS)? Will aerial photographs be needed? (These files will be asked for during the interview)

(Attach to the front of the Interview Form)

PA Interview Questionnaire - Environmental Manager

Facility: Chennault
Interviewer: [redacted]
Date/Time: 7/1/2020

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

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

11 years 1998 – 2009 w/ Northrop
Director of Operations
Env. outfall + releases
OWS

2. Where can I find previous facility ownership information?

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

Maintenance No
Fire Training Areas –
Firefighting (Active Fire) –
Crash
Fire Suppression Systems (Hangers/Dining Facilities) – A, C, D hangars
Fire Protection at Fueling Stations
Non-Technical/Recreational/ Pest Management No
Metals Plating Facility No
Waterproofing Uniforms (Laundry Facilities) No
Other No

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

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

A, C, D hangars
– yes on "As-Builts" – will check w/ [redacted]

* check on 3% Ansulite SDS for suppression systems for hangars C & D.

PA Interview Questionnaire - Environmental Manager

Facility: _____
Interviewer: _____
Date/Time: _____

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?

Northrop + Citadel have AFFF systems

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

Purchased through procurement system

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)?

Ansulite 1% in suppression systems –
" 3% for fire trucks (Chemguard)

1% A
3% in C+D

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?

55-gal Drums (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?

S. end of Airfield

PA Interview Questionnaire - Environmental Manager

Facility:_____
Interviewer:_____
Date/Time:_____

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?

Washed off

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

N/A

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

N/A

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

N/A

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

Unaware of incident reports

PA Interview Questionnaire - Environmental Manager

Facility: _____
Interviewer: _____
Date/Time: _____

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?

Do have records of fuel spills; No AFFF used to clean fuel spills

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

N/A

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?

Yes; City of Lake Charles + 5-parish agency

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)?

N/A

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

N/A

PA Interview Questionnaire - Environmental Manager

Facility:_____
Interviewer:_____
Date/Time:_____

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?

No

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

No

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

No

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

N/A

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?

No off-spec AFFF

PA Interview Questionnaire - Environmental Manager

Facility:_____
Interviewer:_____
Date/Time:_____

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

No

nterview Questionnaire – Fire Station

Facility: Chennault Airport
Interviewer: [redacted]
Date/Time: 7/1/2020 1045

iewee: [redacted] Asst Chief **Title:** Chief **Phone Number:** [redacted] **Email:** [redacted]	Can your name/role be used in the PA Report? Y or N ~~First Title~~ Can you recommend anyone we can interview? Y or N _____

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

   Fire chief currently on-site since 1998 to present

   1996-1997 w/ fire dept

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

   Maintenance (e.g., ramp washing) – No
   Fire Training Areas – Qtly Trainings – 1998 – current – South end of airfield
   Firefighting (Active Fire) – East side of runway 2009; 1 or 2 other potentials
   Crash
   Fire Suppression Systems (Hangers/Dining Facilities) Hangar A, C, D
   Fire Protection at Fueling Stations No
   Non-Technical/Recreational/ Pest Management No

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? – Per 5 years;

   Tested & collected on a closed-loop system

4. Are fire suppression systems currently charged with AFFF or have they been retrofitted for use of high expansion foam? 3 systems AFFF – Ansulite

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

   Purchasing dept @ airport and trade conventions

* Need SDS for ~~Ansul~~ Chemguard 3% AFFF

PA Interview Questionnaire – Fire Station

Facility:_____
Interviewer:_____
Date/Time:_____

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

Chemguard 3% AFFF (PFAS Free?)
(* Photos indicate PFAS)

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

No mixing

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?

Drums - 55-gallon plastic
pumped into reservoir on truck

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?

- flightline - purple K

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

4 vehicles located @ station

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?

Minor leaks @ station then contained on OWS. Qtly 1996 - 2018; Semi-annual 2018 - present
South end off runway - south end of airfield

PA Interview Questionnaire – Fire Station

Facility:_____
Interviewer:_____
Date/Time:_____

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?

2 - South end of ramp & South end of airfield

1 - home on North end of runway

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

N/A

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

Each hangar have containment ponds that drain to sanitary sewer after anti-foam treatment (only C + D) - lined (A has some containment trenches)

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?

Yes. City of Lake Charles & Parish (~~state~~ S-parish)

yes training - No AFFF

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

No

PA Interview Questionnaire – Fire Station

Facility:_____
Interviewer:_____
Date/Time:_____

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

No

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?

Possibly - will check

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?

Possibly - will check

No AFFF

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

No

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

N/A

PA Interview Questionnaire – Fire Station

Facility: _____
Interviewer: _____
Date/Time: _____

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

No

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

None off-spec; gone through tanks during testing.

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

No

PA Interview Questionnaire - Other

Facility: Chennault
Interviewer: [redacted]
Date/Time: 7/1/2020

Interviewee: [redacted] **Title:** Dir. of Mtc + Construction **Phone Number:** **Email:**	Can your name/role be used in the PA Report? (Y) or N Can you recommend anyone we can interview? Y or N

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

4 years 2016 - 2020

* Check on As-builts for Hangar A, C, D

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

	Known Uses
Fire training on S. end of Runway 11	Use
	Procurement
No disposal	Disposition
	Storage (Mixed)
1% Ansulite ; 3% Chemguard	Storage (Solution)
	Inventory, Off-Spec
Containment ponds @ Hangars C+D - trench @ A	Containment
Fire Dept + tenants should have SOPs	SOP on Filling
Unknown	Leaking Vehicles
Tested / collected in closed-loop system	Nozzle and Suppression System Testing
N/A	Dining Facilities
No vehicle washing	Vehicle Washing
No ramp washing	Ramp Washing
No fuel spill washing	Fuel Spill Washing and Fueling Stations
N/A	Chrome Plating or Waterproofing

PA Interview Questionnaire - Other

Facility: Chennault
Interviewer: [redacted]
Date/Time: 7/1/2020

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

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

1996 - 2000 Northrop
2006 - present consultant to airport

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

	Known Uses
Helicopter (86-90'ish)	Use
Emergency landing - foamed runway	Procurement
	Disposition
	Storage (Mixed)
	Storage (Solution)
	Inventory, Off-Spec
	Containment
	SOP on Filling
	Leaking Vehicles
	Nozzle and Suppression System Testing
	Dining Facilities
	Vehicle Washing
	Ramp Washing
	Fuel Spill Washing and Fueling Stations
	Chrome Plating or Waterproofing

Appendix B.2
Visual Site Inspection Checklists

Preliminary Assessment – Conceptual Site Model Information

Site Name: Chennault Airport / Future ARNG Readiness Center

Why has this location been identified as a site?

Potential for AFFF use on adjacent properties

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

Yes; CIAA, Northrup Grumman, Citadel Completions

Training Events

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

If so, how often?

How much material was used? Is it documented?

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

Surface Water:

Surface water flow direction? West

Average rainfall? 62" / year

Any flooding during rainy season? minor

Direct or indirect pathway to ditches? direct via smaller drains / ditches to large ditch

Direct or indirect pathway to larger bodies of water? direct to Kayoudie Coulee

Does surface water pond any place on site? Yes; minor

Any impoundment areas or retention ponds? No

Any NPDES location points near the site? On CIAA / Tenants sites

How does surface water drain on and around the flight line? flows into storm drains @ airfield then South to Malland Cove Golf Course ponds

Preliminary Assessment – Conceptual Site Model Information

Groundwater:

Groundwater flow direction? assume West + South

Depth to groundwater? ~ 10'

Uses (agricultural, drinking water, irrigation)? irrigation

Any groundwater treatment systems? No

Any groundwater monitoring well locations near the site? yes on CIAA / Tenant Sites

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? N/A

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

Do we understand the fate of sludge waste?

Is surface water from potential contaminated sites treated?

Equipment Rinse Water

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

No training / incidents on ARNG Reserve Center property

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?

3. Other?

Preliminary Assessment – Conceptual Site Model Information

Identify Potential Receptors:

Site Worker Yes

Construction Worker Yes

Recreational User No

Residential No

Child No

Ecological Yes

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

residential < 0.5 miles to West & SW

Documentation

Ask for Engineering drawings (if applicable).

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

No reconstruction to drainage

Appendix B.3
Conceptual Site Model Information

Visual Site Inspection Checklist

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

Recorded by:

ARNG Contact:

Date and Time: 7/1/2020 1200

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

Source/Release Information

Site Name / Area Name / Unique ID: Lake Charles Chennault Airfield / Future ARNG Readiness Center

Site / Area Acreage: 61.352

Historic Site Use (Brief Description): Mostly undeveloped buffer for airport; 2 warehouse buildings + WWTP on N. portion

Current Site Use (Brief Description): Undeveloped field; Concrete pads on N portion; potable water storage tanks; small storage buildings

Physical barriers or access restrictions: Fenced + gated w/ access via Chennault Int'l Airport Authority (CIAA)

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

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

2. Has usage been documented? **Y / N**

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

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

3a. Indicate what businesses are located near the site

CIAA, Northrup Grummand, Citadel Completions, Sowela

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

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

Northrup, Citadel

Visual Survey Inspection Log

Other Significant Site Features:

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

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

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

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

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

Transport / Pathway Information

Migration Potential:

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

1a. If so, note observation and location:

NE to SW drainage ditch on Northern portion; drains to Kayouche Coulee

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

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

NE to SW drainage ditch on N portion

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

3a. If so, please note the location:

MW's located on CIAA primarily around hangars; Irrigation wells @ golf course

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

4a. If so, please note the location:

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

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

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

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

Northrop Grumman, Citabel completions, CIAA Fire Dpt.

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

Visual Survey Inspection Log

Significant Topographical Features:

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

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

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

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

Mostly grassy field w/ concrete slabs on N portion

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

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

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

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

Receptor Information

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

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

Gated/Fenced w/ access via CIAA

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:

< 0.5 mile to west + SW

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:

Kayouche Coulee to west

Visual Survey Inspection Log

Additional Notes

Photographic Log

Photo ID/Name	Date & Location	Photograph Description
* See Photo Log		

Appendix C
Photographic Log

PHOTOGRAPHIC LOG

Facility Name:	Site Location:	Project No.
LAARNG Lake Charles Chennault Airport	Chennault International Airport (CIAA)	60552172

Photo No.	Date:
1	07/01/20

Direction Photo Taken:

North

Description:

View of a containment structure located south of Citadel Completions Hangar D.

Photo No.	Date:
2	07/01/20

Direction Photo Taken:

Northeast

Description:

View of a containment structure located south of Citadel Completions Hangar D.

PHOTOGRAPHIC LOG

Facility Name:	Site Location:	Project No.
LAARNG Lake Charles Chennault Airport	Chennault International Airport	60552172

Photo No. 3	Date: 07/01/20

Direction Photo Taken:

Northwest

Description:

View of fuel storage system located north of Fire Station.

Photo No. 4	Date: 07/01/20

Direction Photo Taken:

North

Description:

View of oil/water separator located adjacent to the fuel storage system.

PHOTOGRAPHIC LOG

Facility Name:	Site Location:	Project No.
LAARNG Lake Charles Chennault Airport	Chennault International Airport	60552172

Photo No. 5	Date: 07/01/20

Direction Photo Taken:

West

Description:

55-gallon plastic drum of Chemguard 3% located inside of fire station stored adjacent to eastern interior wall.

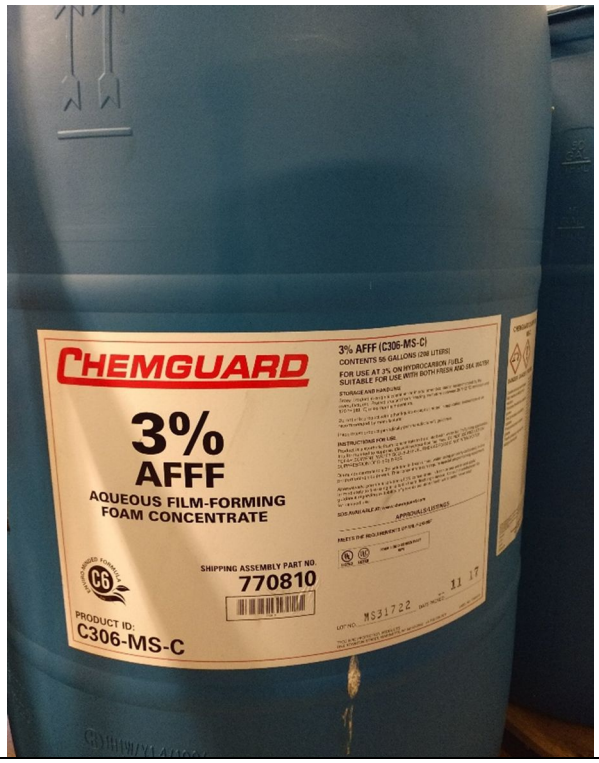

Photo No. 6	Date: 07/01/20

Direction Photo Taken:

South

Description:

Drain located on southeastern portion of driveway adjacent south of fire station. This drains to oil/water separator located east of driveway.

PHOTOGRAPHIC LOG

Facility Name:	Site Location:	Project No.
LAARNG Lake Charles Chennault Airport	Chennault International Airport	60552172

Photo No. 7	Date: 07/01/20

Direction Photo Taken:

North

Description:

Oil/water separator located east of fire station driveway. This drains to CIAA stormwater system.

Photo No. 8	Date: 07/01/20

Direction Photo Taken:

Northeast

Description:

Concrete drainage ditch which is a part of the CIAA stormwater system.

PHOTOGRAPHIC LOG

Facility Name:	Site Location:	Project No.
LAARNG Lake Charles Chennault Airport	Chennault International Airport	60552172

Photo No.	Date:
9	07/01/20

Direction Photo Taken:

East

Description:

Storm water drain that is part of CIAA storm water system.

Photo No.	Date:
10	07/01/20

Direction Photo Taken:

North

Description:

View of northern portion of ARNG Future Readiness Center property.

PHOTOGRAPHIC LOG

Facility Name:	Site Location:	Project No.
LAARNG Lake Charles Chennault Airport	Chennault International Airport	60552172

Photo No.	Date:
11	07/01/20

Direction Photo Taken:

East

Description:

View of northern portion of ARNG Future Readiness Center property. Some portions of the northern part of the property has concrete slab from former warehouse.

Photo No.	Date:
12	07/01/20

Direction Photo Taken:

South

Description:

Northern portion of ARNG Future Readiness Center property and concrete slabs. Potable water storage tanks in distance.

PHOTOGRAPHIC LOG

Facility Name:	Site Location:	Project No.
LAARNG Lake Charles Chennault Airport	Chennault International Airport	60552172

Photo No.	Date:
13	07/01/20

Direction Photo Taken:

East

Description:

Drainage ditch that flows east to west across ARNG Future Readiness Center property.

Photo No.	Date:
14	07/01/20

Direction Photo Taken:

West

Description:

Drainage ditch that flows east to west across ARNG Future Readiness Center property.

PHOTOGRAPHIC LOG

Facility Name:	Site Location:	Project No.
LAARNG Lake Charles Chennault Airport	Chennault International Airport	60552172

Photo No.	Date:
15	07/01/20

Direction Photo Taken:

Southeast

Description:

View of ARNG Future Readiness Center property and potable water storage tanks.

Photo No.	Date:
16	07/01/20

Direction Photo Taken:

Northeast

Description:

View of ARNG Future Readiness Center property from the western boundary including a paved road, unused storage building, and potable water storage tanks in distance.

AECOM

PHOTOGRAPHIC LOG

Facility Name:	Site Location:	Project No.
LAARNG Lake Charles Chennault Airport	Chennault International Airport	60552172

Photo No.	Date:
17	07/01/20

Direction Photo Taken:

Southeast

Description:

View of southern portion of ARNG Future Readiness Center property.