FINAL
Site Inspection Report
Aviation Classification Repair Activity Depot
Gulfport, Mississippi

Site Inspection for Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorohexanesulfonic acid (PFHxS), Perfluorononanoic acid (PFNA), Hexafluoropropylene oxide dimer acid (HFPO-DA), and Perfluorobutanesulfonic acid (PFBS) at ARNG Installations, Nationwide

August 2023

Prepared for:

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

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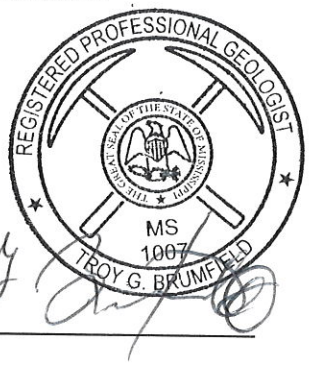
RPG Certification

ARNG PFAS Report:	Site Inspection (SI) Report for the Aviation Classification Repair Activity Depot (AVCRAD)
Activity:	Site Inspection for Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorohexanesulfonic acid (PFHxS), Perfluorononanoic acid (PFNA), Hexafluoropropylene oxide dimer acid (HFPO-DA), and Perfluorobutanesulfonic acid (PFBS)
Prepared for:	U.S. Army Corps of Engineers, Baltimore District
Prepared by:	AECOM Technical Services, Inc.
SI Location:	AVCRAD, Gulfport Mississippi
Date:	28 June 2023

This report, prepared by AECOM Technical Services, Inc. (AECOM), documents the referenced Site Investigation activities and findings associated with the July 2021 field investigation. I, Troy Brumfield, have reviewed this document in sufficient depth to accept responsibility for its contents related to the geologic discussion contained herein.



Troy Brumfield, RPG (Mississippi)
28 June 2023

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Acronyms and Abbreviations

%	percent
°C	degrees Celsius
°F	degrees Fahrenheit
µg/kg	micrograms per kilogram
AASF	Army Aviation Support Facility
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film-forming foam
amsl	above mean sea level
ANG	Air National Guard
AOI	Area of Interest
ARNG	Army National Guard
AVCRAD	Aviation Classification Repair Activity Depot
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CoC	chain of custody
CRTC	Combat Readiness Training Center
DA	Department of the Army
DoD	Department of Defense
DPT	direct push technology
DQO	data quality objective
DUA	data usability assessment
EDR™	Environmental Data Resources, Inc.™
ELAP	Environmental Laboratory Accreditation Program
EM	Engineer Manual
FedEx	Federal Express
FTA	Fire Training Area
GPS	Global positioning system
GPRS	Ground Penetrating Radar Systems, LLC
HDPE	high-density polyethylene
HFPO-DA	hexafluoropropylene oxide dimer acid
IDW	investigation-derived waste
ITRC	Interstate Technology Regulatory Council
LC/MS/MS	liquid chromatography with tandem mass spectrometry
MIL-SPEC	military specification
MSANG	Mississippi Air National Guard
MSARNG	Mississippi Army National Guard
NELAP	National Environmental Laboratory Accreditation Program
ng/L	nanograms per liter
OSD	Office of the Secretary of Defense
OWS	oil/water separator
PA	Preliminary Assessment
PFAS	per- and polyfluoroalkyl substances
PFBS	perfluorobutanesulfonic acid

PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PID	photoionization detector
PQAPP	Programmatic UFP-QAPP
PVC	polyvinyl chloride
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
QSM	Quality Systems Manual
SI	Site Inspection
SL	screening level
SOP	standard operating procedure
TOC	total organic carbon
TPP	Technical Project Planning
UFP	Uniform Federal Policy
US	United States
USACE	United States Army Corps of Engineers
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VSI	Visual Site Inspection
WWTP	Waste Water Treatment Plant

Executive Summary

The Army National Guard (ARNG) G-9 is performing Preliminary Assessments (PAs) and Site Inspections (SIs) on the current or potential historical use of per- and polyfluoroalkyl substances (PFAS) with a focus on the six compounds presented in the memorandum from the Office of the Secretary of Defense (OSD) dated 6 July 2022 (Assistant Secretary of Defense, 2022). The six compounds listed in the OSD memorandum include perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA), perfluorononanoic acid (PFNA), perfluorohexanesulfonic acid (PFHxS), hexafluoropropylene oxide dimer acid (HFPO-DA)[1], and perfluorobutanesulfonic acid (PFBS). These compounds are collectively referred to as "relevant compounds" throughout the document and the applicable screening levels (SLs) are provided in **Table ES-1**.

The PA identified four Areas of Interest (AOIs) where PFAS-containing materials may have been used, stored, disposed, or released historically (see **Table ES-2**). The objective of the SI is to identify whether there has been a release to the environment from the AOIs identified in the PA and determine whether further investigation is warranted, a removal action is required to address immediate threats, or no further action is required based on SLs for relevant compounds. This SI was completed at the Gulfport Aviation Classification Repair Activity Depot (AVCRAD) in Gulfport, Mississippi and determined further evaluation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is warranted for AOI 1, AOI 2, AOI 3, and AOI 4. The Gulfport AVCRAD will also be referred to as the "facility" throughout this document.

The AVCRAD is located within the City of Gulfport, Harrison County, on the coast of Mississippi. Located on Gulfport-Biloxi International Airport property, the AVCRAD facility is co-located with the Air National Guard Combat Readiness Training Center (CRTC). The AVCRAD and the CRTC are tenants under lease from Gulfport-Biloxi Regional Airport Authority until June 2066. At present, AVCRAD includes approximately 33 acres of land and operates as a full Army aviation maintenance depot facility.

The PA identified four AOIs for investigation during the SI phase. SI sampling results from the four AOIs were compared to OSD SLs. **Table ES-2** summarizes the SI results for each AOI. Based on the results of this SI, further evaluation under CERCLA is warranted in a Remedial Investigation (RI) for AOI 1, AOI 2, AOI 3, and AOI 4.

[1] Of the six PFAS compounds presented in the 6 July 2022 OSD memorandum, HFPO-DA (commonly referred to as GenX) was not included as an analyte at the time of this SI. Based on the conceptual site model (CSM) developed during the PA and revised based on SI findings, the presence of HFPO-DA is not anticipated at the facility because HFPO-DA is generally not a component of military specification (MIL-SPEC) aqueous film forming foam (AFFF) and based on its history including distribution limitations that restricted use of GenX, it is generally not a component of other products the military used. In addition, it is unlikely that GenX would be an individual chemical of concern in the absence of other PFAS.

Table ES-1: Screening Levels (Soil and Groundwater)

Analyte[b]	Residential (Soil) (µg/kg)[a] 0-2 feet bgs	Industrial/ Commercial Composite Worker (Soil) (µg/kg)[a] 2-15 feet bgs	Tap Water (Groundwater) (ng/L)[a]
PFOA	19	250	6
PFOS	13	160	4
PFBS	1,900	25,000	601
PFHxS	130	1,600	39
PFNA	19	250	6

Notes:
bgs = below ground surface; µg/kg = micrograms per kilogram; ng/L = nanograms per liter

a.) Assistant Secretary of Defense, 2022. Risk Based Screening Levels in Groundwater and Soil using United States Environmental Protection Agency's (USEPA's) Regional Screening Level Calculator. Hazard Quotient (HQ) = 0.1. 6 July 2022.

b.) Of the six PFAS compounds presented in the 6 July 2022 OSD memorandum, HFPO-DA (commonly referred to as GenX) was not included as an analyte at the time of this SI. Based on the CSM developed during the PA and revised based on SI findings, the presence of HFPO-DA is not anticipated at the facility because HFPO-DA is generally not a component of MIL-SPEC AFFF and based on its history including distribution limitations that restricted use of GenX, it is generally not a component of other products the military used. In addition, it is unlikely that GenX would be an individual chemical of concern in the absence of other PFAS.

Table ES-2: Summary of Site Inspection Findings and Recommendations

AOI	Potential Release Area	Soil – Source Area	Groundwater – Source Area	Future Action
1	New Paint Hangar	◐	●	Proceed to RI
2	Main Hangar and Tank Room	◐	●	Proceed to RI
3	Mississippi ANG Aircraft Parking Ramp	◐	●	Proceed to RI
4	Old Aircraft Staging Ramp	◐	●	Proceed to RI

Notes: ANG = Air National Guard; AOI = Area of Interest; N/A = not applicable; RI = Remedial Investigation

Legend:
● = detected; exceedance of the screening levels
◐ = detected; no exceedance of the screening levels
○ = not detected

1. Introduction

1.1 Project Authorization

The Army National Guard (ARNG) G-9 is the lead agency in performing Preliminary Assessments (PAs) and Site Inspections (SIs) on the current or potential historical use of per- and polyfluoroalkyl substances (PFAS) with a focus on the six compounds presented in the memorandum from the Office of the Secretary of Defense (OSD) dated 6 July 2022 (Assistant Secretary of Defense, 2022). The six compounds listed in the OSD memorandum will be referred to as "relevant compounds" throughout this document and include perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), perfluorohexanesulfonic acid (PFHxS), perfluorononanoic acid (PFNA), hexafluoropropylene oxide dimer acid (HFPO-DA)[1], and perfluorobutanesulfonic acid (PFBS) at ARNG facilities nationwide. The ARNG performed this SI at the Aviation Classification Repair Activity Depot (AVCRAD) in Gulfport, Mississippi. The AVCRAD is also referred to as the "facility" throughout this document.

The SI project elements were performed in compliance with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; United States [US] Environmental Protection Agency [USEPA], 1980), as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations Part 300; USEPA, 1994), and in compliance with US Department of the Army (DA) requirements and guidance for field investigations.

1.2 SI Purpose

A PA was performed at the AVCRAD (AECOM Technical Services, Inc. [AECOM], 2022) that identified four Areas of Interest (AOIs) where PFAS-containing materials may have been used, stored, disposed, or released historically. The objective of the SI is to identify whether there has been a release to the environment from the AOIs identified in the PA and determine whether further investigation is warranted, a removal action is required to address immediate threats, or no further action is required based on screening levels (SLs) for the relevant compounds.

[1] Of the six PFAS compounds presented in the 6 July 2022 OSD memorandum, HFPO-DA (commonly referred to as GenX) was not included as an analyte at the time of this SI. Based on the conceptual site model (CSM) developed during the PA and revised based on SI findings, the presence of HFPO-DA is not anticipated at the facility because HFPO-DA is generally not a component of military specification (MIL-SPEC) aqueous film forming foam (AFFF) and based on its history including distribution limitations that restricted use of GenX, it is generally not a component of other products the military used. In addition, it is unlikely that GenX would be an individual chemical of concern in the absence of other PFAS.

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2. Facility Background

2.1 Facility Location and Description

The AVCRAD is located within the City of Gulfport, Harrison County, on the coast of Mississippi (**Figure 2-1**). Located on Gulfport-Biloxi International Airport property, the AVCRAD facility is co-located with the Air National Guard (ANG) Combat Readiness Training Center (CRTC). The AVCRAD and the ANG CRTC are tenants under lease from Gulfport-Biloxi Regional Airport Authority until June 2066. At present, AVCRAD includes approximately 33 acres of land and operates as a full Army aviation maintenance depot facility. The Mississippi ARNG (MSARNG) has been occupying the present location since 1989. Prior to 1989, the MSARNG occupied an army aviation support facility (AASF) on the south end of the taxiway. The former AASF property is still used by the MSARNG, and the buildings are used as a facility maintenance shop and armory.

2.2 Facility Environmental Setting

The AVCRAD is located within the Gulf Coastal Plain, less than 3 miles from the Gulf Coast of Mississippi. The Coastal Plain is a gently sloping area of unconsolidated fluvial and deltaic sediments. The topography at the facility is generally flat (**Figure 2-2**), and elevations at the facility range from approximately 22 to 26 feet above mean sea level (amsl).

2.2.1 Geology

The facility is underlain by the unconsolidated sediments of the Gulf Coast Plain, which were deposited during the transgressive late Pleistocene Sangamonian Interglacial Stage. At the beginning of the coastal transgression, sea level stood at a much lower elevation than it does today. The facility is directly underlain by the late Pleistocene-aged Prairie Formation and is characterized as a 14.7 to 39 feet-thick wedge of alluvial deposits. The Prairie Formation (previously described as the Pamlico Sand Formation) interfingers with the Biloxi Formation, which was deposited during sea level rise. The Biloxi Formation consists of muddy and sandy marine and estuarine sediments that range up to 33 feet in thickness. The Gulfport Formation barrier island progradation coincided with a coalescing of Prairie Formation floodplains, which created an interfingering of the two units. The sea level eventually exceeded modern levels before it fell again approximately 122,000 to 125,000 years ago. During this time, barrier strandplains built out seaward from the edge of the Prairie Coastal Plain. Below the Sangamonian sediments lie undifferentiated alluvium and Neogene fluvial siliclastic sediments. The Prairie and Biloxi formations are underlain by the Citronelle, Graham Ferry, and Pascagoula formations (Otvos, 2001). The geologic units are depicted on **Figure 2-3**.

Direct push soil borings were completed during the SI at depths ranging between 8 to 24 feet below ground surface (bgs). The soil borings generally encountered silts, clays, and sands in the unconsolidated sediments. Observed sands were generally fine- to very-fined grained with varying amounts of fines (silts and clays). Silts were observed in all boreholes and contained varying amounts of clay and sand. Clay was observed in all borings, except AOI03-01, at depths ranging from 2 to 14 feet bgs and ranging in thickness from 2 to 19 feet. The clay contained varying amounts of sand and silt.

Samples for grain size analyses were collected at location AOI03-01 and analyzed via American Society for Testing and Materials (ASTM) Method D-422. The results indicate that the soil samples are comprised primarily of clay (32.85 percent [%]), silt (37.19%), and fine sand (29.41%). These results and facility observations are consistent with the reported depositional

environment of the region. Boring logs are presented in **Appendix E** and grain size results are presented in **Appendix F**.

2.2.2 Hydrogeology

Two major aquifer systems, the Mississippi embayment and the coastal lowlands aquifer systems, occur in the Gulf Coast of Mississippi. The coastal lowlands aquifer is present in the southern third of the state, which includes AVCRAD. In southern Mississippi, the coastal lowlands aquifer system is more than 5,000 feet-thick and is composed of several individual aquifers and confining units. The base of the coastal lowlands aquifer system is a thick sequence of marine clays of the Jackson and Vicksburg Groups, which outcrop across the middle of Mississippi. The facility is located to the south of a principle regional recharge area and just to the east of a principle regional discharge area that is related to the flow of the Mississippi River (Grubb, 1986).

The individual primary aquifers in the Gulfport area are (from youngest to oldest) the Citronelle, Graham Ferry, Pascagoula, Hattiesburg, and Catahoula aquifers, which consist of thick, lenticular beds of sand or gravel that are not continuous over large areas. The groundwater is primarily sourced from the Graham Ferry and the Pascagoula aquifers and are used for domestic, industrial, and public water supply in the area. The Graham Ferry and Pascagoula aquifers include confining clay layers and contain well fields operated by the City of Gulfport for water supply to the facility and surrounding areas (BB&E, 2016; Leidos, 2019). The Citronelle aquifer was not identified in the previous studies at the ANG CRTC and may be absent in the vicinity of AVCRAD (Leidos, 2019).

The water table aquifer underlying the facility (also referred to as the Pamlico aquifer) ranges from 0 to 75 feet in thickness. Historically, the aquifer was locally used for irrigation and limited water supply; however, it has become contaminated with sewage and other contaminants from various sources in the general Gulfport area, making it unsuitable for drinking water (Brown et al., 1944; Leidos, 2019). During a 2019 SI at the adjacent ANG CRTC facility, groundwater levels were measured at depths of 1.95 feet bgs to 6.25 feet bgs. The groundwater flow direction is generally north-northwest towards Bayou Bernard (Leidos, 2019).

Drinking water for AVCRAD is drawn from a city municipal supply, and the Environmental Data Resources, Inc.™ (EDR™) report lists two City of Gulfport public supply wells approximately 1,400 feet east-southeast of the southern part of the facility screened within the Graham Ferry aquifer with depths of 645 and 740 feet. There are multiple domestic drinking water wells listed within 1 mile to the north of the facility boundary. These wells are generally drilled at depths of 170 to 220 feet bgs (EDR™, 2019). Additionally, several wells of unknown use are located within 4 miles of the facility and are screened at depths of less than 75 feet bgs (Mississippi Automated Resource Information System, 2009).

Depths to water measured in July 2021 during the SI ranged from 0.88 to 5.13 feet bgs. Groundwater elevation contours from the SI are presented on **Figure 2-4** and indicate the groundwater flow direction at the facility is primarily to the northwest.

2.2.3 Hydrology

The AVCRAD lies within the Bernard Bayou-Big Lake Watershed. Two drainage ditches direct surface water and stormwater off-site to the north via Outfalls 002 and 003. Stormwater in the eastern portion of the facility is conveyed to the eastern facility boundary near Washington Avenue via Outfall 001. There is a pond in the northeast corner of the facility that is potentially used for stormwater and does not appear to be a permanent feature. The hangar floor drains flow to an oil/water separator (OWS) prior to discharging to the sanitary sewer. The sanitary sewer flows to the Gulfport South Wastewater Treatment Plant (WWTP). The AVCRAD does not use reclaimed water for irrigation or biosolids/biosolid derived fertilizer at the facility.

The primary drainage in the area is Bayou Bernard, about 0.5 miles to the north. The bayou drains east to Big Lake and eventually to the Mississippi Sound and the Gulf of Mexico. The upgradient Brickyard Bayou flows towards the east about 1 mile south of the facility and joins with Bayou Bernard before entering into Big Lake. Bayou Bernard, Big Lake, and Brickyard Bayou are all used recreationally for fishing. Surface water features are presented on **Figure 2-5**.

2.2.4 Climate

The Gulfport, Mississippi climate is humid and subtropical, and the annual mean temperature is 68.25 degrees Fahrenheit (°F). The average high temperature in Gulfport, Mississippi is 77.1°F, and the average low temperature is 59.4°F; the mean annual precipitation is 65.19 inches of rain (WorldClimate, 2022).

2.2.5 Current and Future Land Use

At present, the AVCRAD has a total land area of approximately 33 acres. The primary mission of the facility is to provide aircraft maintenance, component rebuilding, and painting. The facility buildings provide space for the main operations and storage. Land use surrounding the facility is a mixture of residential and industrial and includes the co-located ANG CRTC and Gulfport-Biloxi International Airport. The northern tip of the facility is used as a golf driving range and is fenced off from the rest of the facility. Reasonably anticipated future land use is not expected to change from the current land use.

2.2.6 Sensitive Habitat and Threatened/ Endangered Species

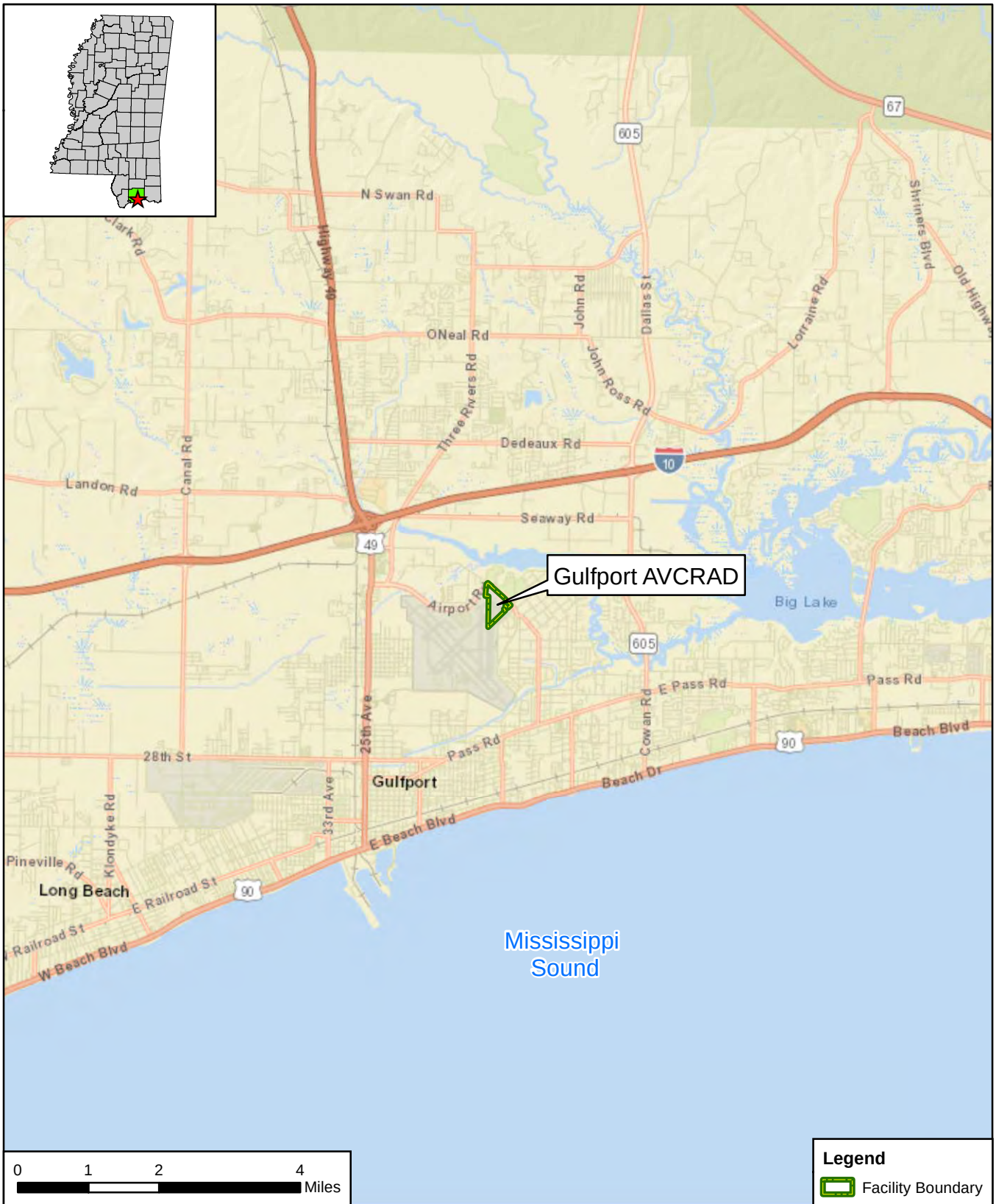
A wildlife survey has not occurred at the facility, and the facility does not have any significant areas of habitat. The following species have not been identified at the facility but may be present in the surrounding area. The following amphibians, birds, fish, insects, mammals, and reptiles are federally endangered, threatened, proposed, and/ or are listed as candidate species in Harrison County, Mississippi (US Fish and Wildlife Service [USFWS], 2022).

- **Amphibians:** Dusky gopher frog, *Rana sevosa* (endangered)
- **Birds:** Red knot, *Calidris canutus rufa* (threatened); Red-cockaded woodpecker, *Picoides borealis* (endangered); Eastern Black rail, *Laterallus jamaicensis* (threatened); Piping Plover, *Charadrius melodus* (threatened)
- **Fishes:** Gulf sturgeon, *Acipenser oxyrinchus* (threatened)
- **Insects:** Monarch butterfly, *Danaus plexippus* (candidate)
- **Mammals**: Tricolored bat, *Perimyotis subflavus* (proposed endangered); Little brown bat, *Myotis lucifugus* (under review); West Indian Manatee, *Trichechus manatus* (threatened)
- **Reptiles**: Kemp's ridley sea turtle, *Lepidochelys kempii* (endangered); Loggerhead sea turtle, *Caretta caretta* (threatened); Alabama red-bellied turtle, *Pseudemys alabamensis* (endangered); Leatherback sea turtle, *Dermochelys coriacea* (endangered); Gopher tortoise, *Gopherus polyphemus* (threatened); Hawksbill sea turtle, *Eretmochelys imbricata* (endangered); Black pinesnake, *Pituophis melanoleucus lodingi* (threatened)

2.3 History of PFAS Use

Five potential release areas were identified in the PA where AFFF may have been used, stored, disposed, or released historically at AVCRAD (AECOM, 2020). PFAS-containing materials were potentially released to surface soil within the boundary of the facility and to the sanitary sewer

through fire suppression system testing, accidental leaks and spills, nozzle testing, and any potential undocumented releases. The potential release areas were grouped into four AOIs based on proximity to one another and presumed groundwater flow. Descriptions of each AOI are further presented in **Section 3**.



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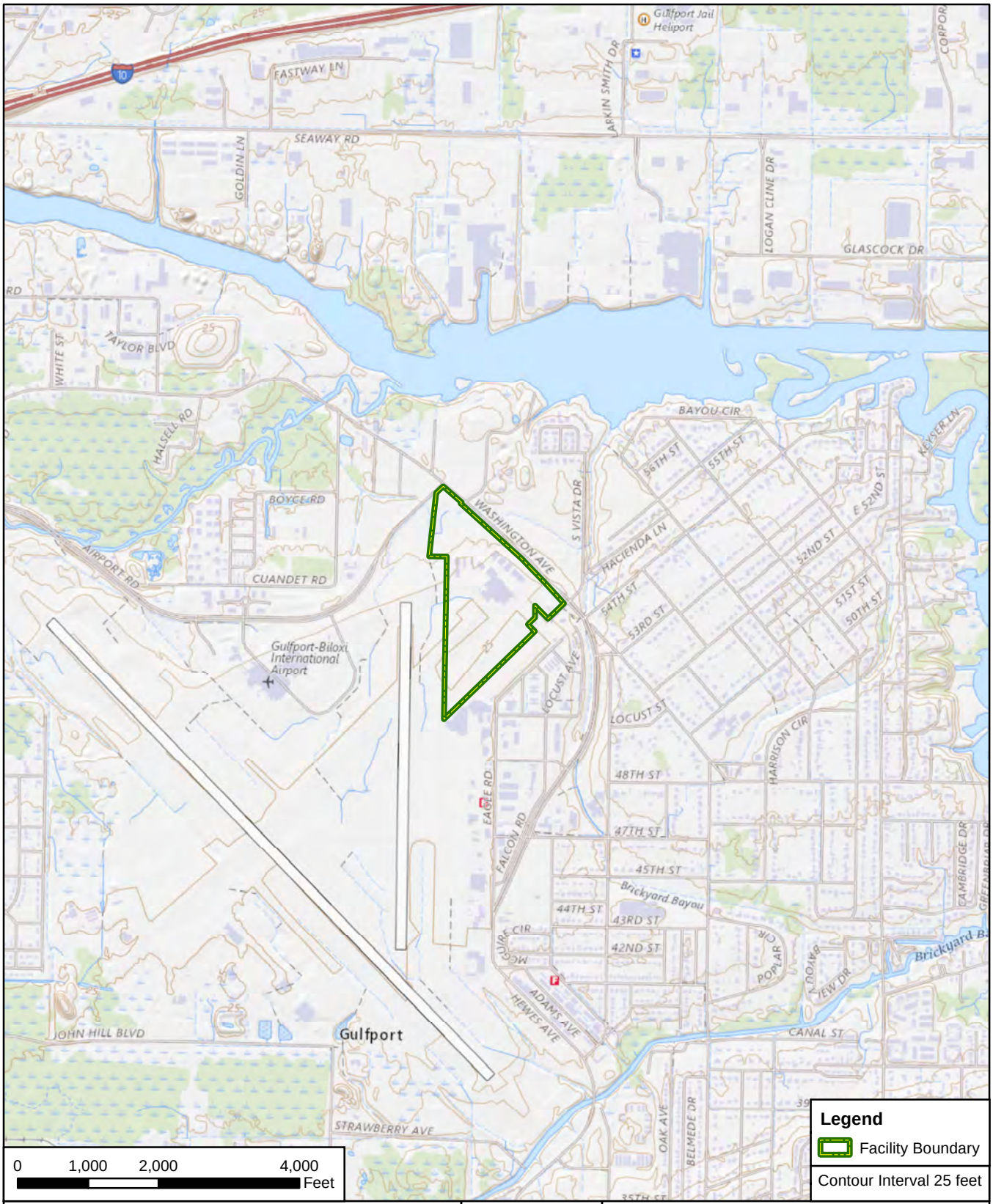
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	CM	10/3/2022

N

Facility Location

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 2-1



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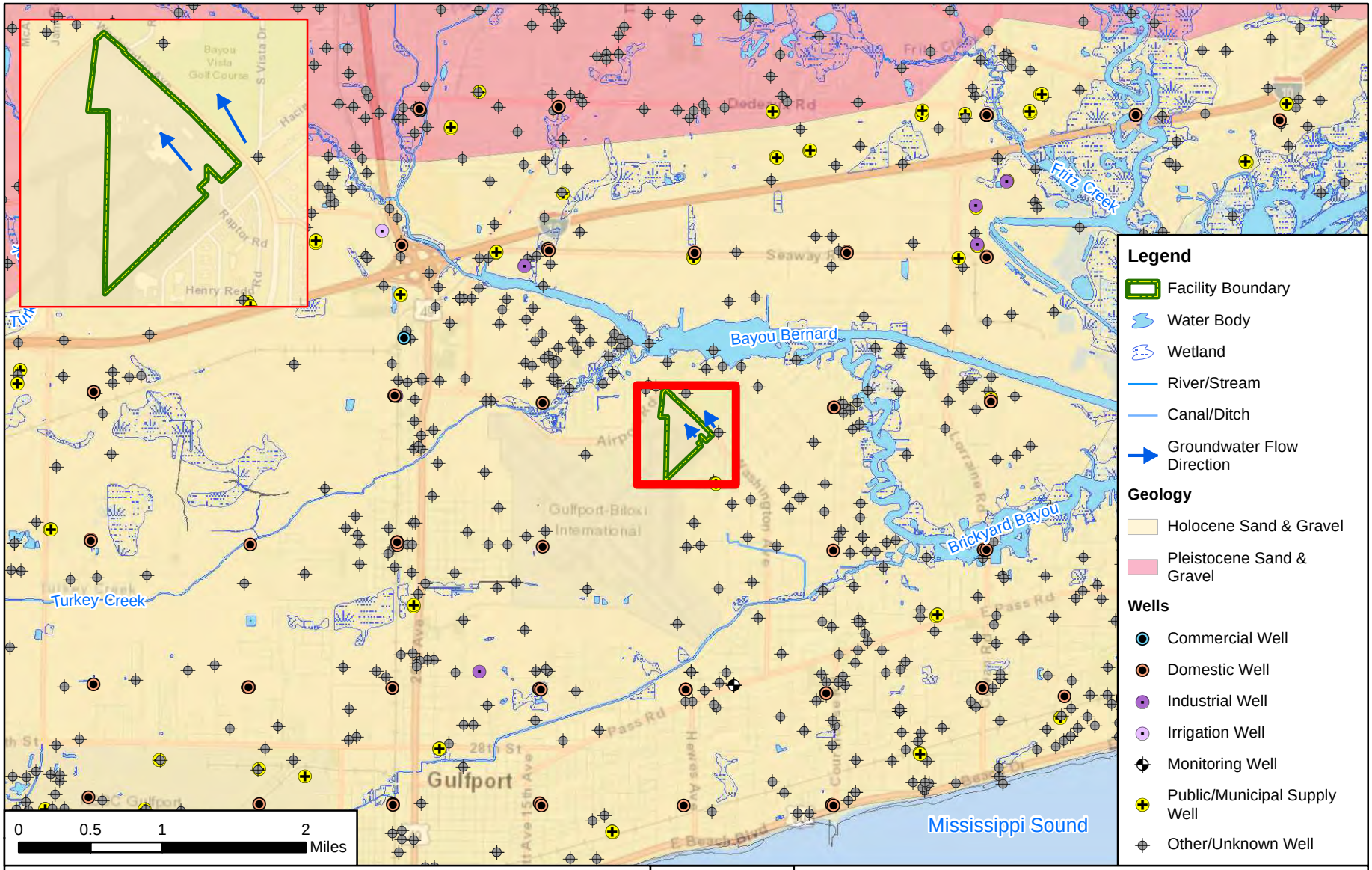
Facility Topography

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 2-2



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Groundwater Features

AECOM
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Figure 2-3

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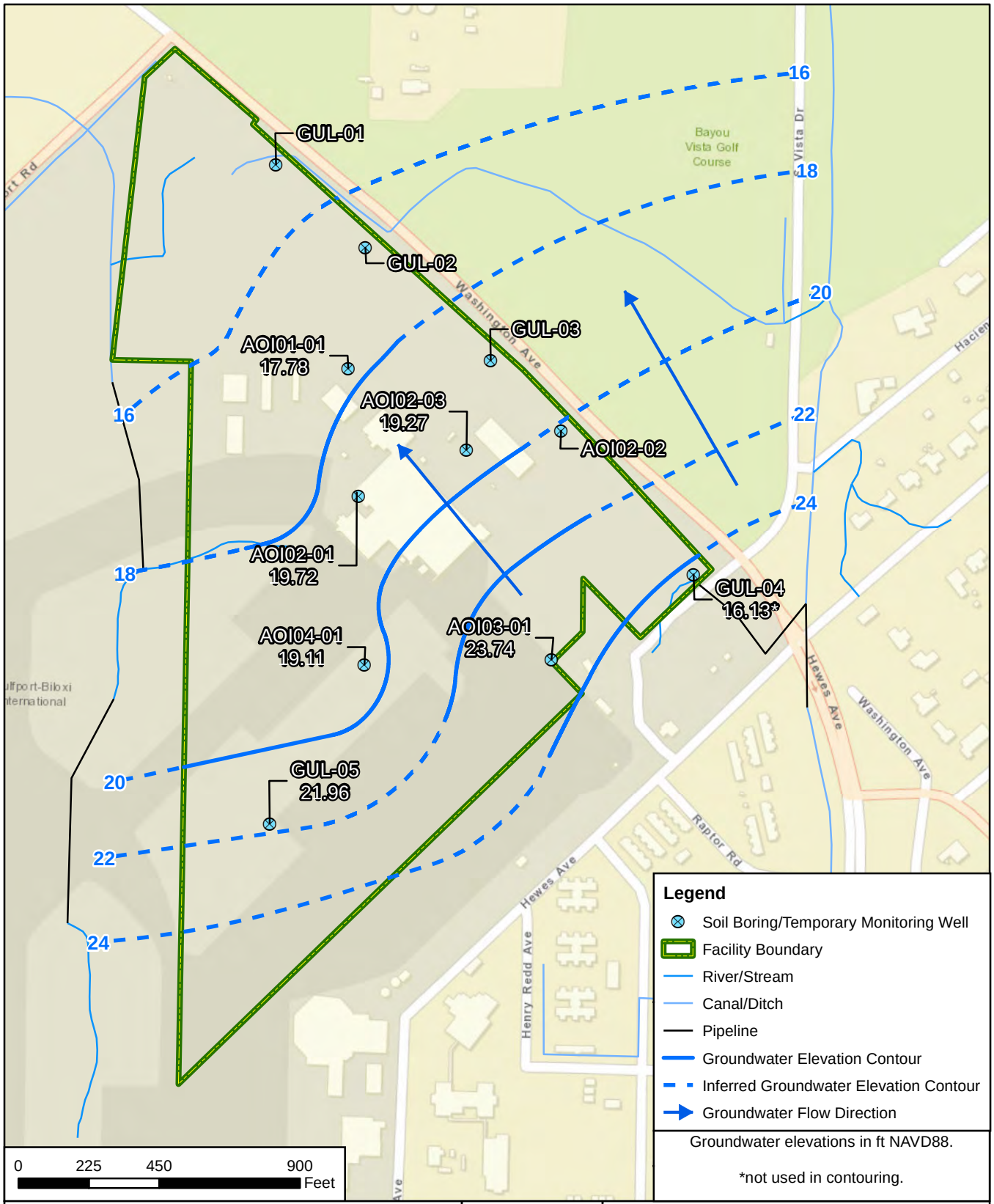

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Groundwater Elevations, May 2022

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Germantown, MD 20876

Figure 2-4

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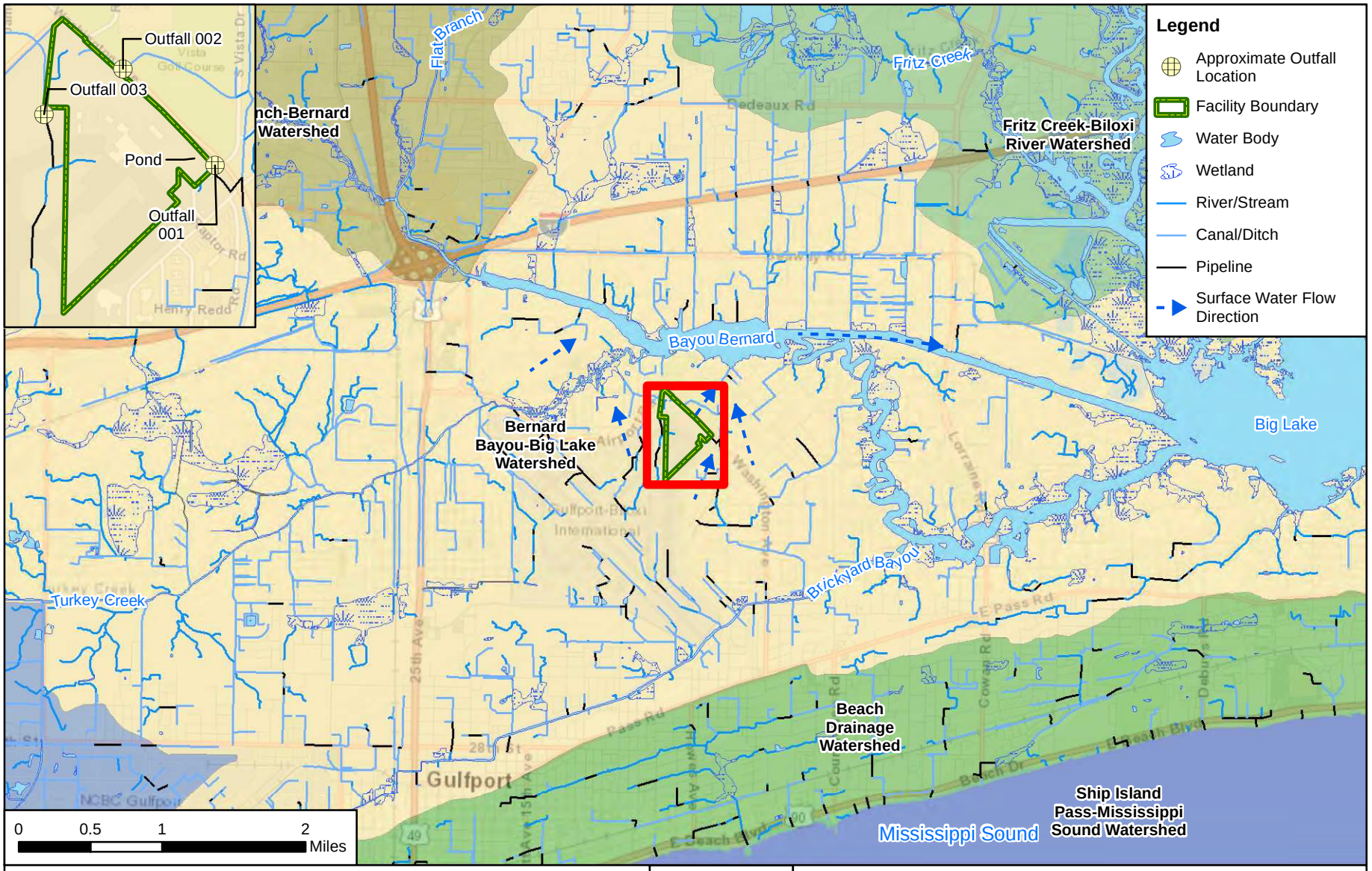

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Surface Water Features

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 2-5

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3. Summary of Areas of Interest

The PA evaluated areas where PFAS-containing materials may have been used, stored, disposed, or released historically. Based on the PA findings, five potential release areas were identified at the AVCRAD and grouped into four AOIs (AECOM, 2020). The potential release areas are shown on **Figure 3-1**.

3.1 AOI 1 Release Area A

AOI 1 Release Area A encompasses the New Paint Hangar, where a large release of Jet-X occurred in 2018 during a full test of the fire suppression system. It was reported that the Jet-X foam did not escape the hangar and was drained through the floor drains to the OWS, which is located behind the Main Hangar on the northeastern side of the New Paint Hangar. The OWS subsequently drains to the Gulfport South WWTP via the city sanitary sewer system. Given the uncertainty of the chemical composition of Jet-X, relevant compounds may have infiltrated to the subsurface via leaks in drains, the OWS, underground wastewater conveyance piping beneath the hangar, or along such piping from the facility to the municipal WWTP.

3.2 AOI 2 Release Area B

AOI 2 Release Area B encompasses the Main Hangar and Tank Room. The Main Hangar houses a fire suppression system equipped with a 900-gallon Chemguard AFFF tank. During the Visual Site Inspection (VSI), staining and corrosion were noted on the exterior of the AFFF tank and the floor of the tank room, which feeds to the Main Hangar AFFF suppression system. These observations indicate potential AFFF release during the Fall 2018 bladder change. There are multiple uncertainties regarding the bladder change process. It is unknown who conducted the bladder change, how the AFFF was managed during the change, and whether any AFFF were spilled or otherwise discharged during the process. Due to these uncertainties and the visual evidence of AFFF released inside the tank room, there is the potential that AFFF has been released to the environment. Additionally, a 55-gallon drum of Chemguard AFFF was also observed in the tank room at the time of the VSI.

In October 2020, high winds from Hurricane Zeta caused significant damage to the roof of the Main Hangar. The AFFF fire suppression system in the Main Hangar was also damaged. Significant impacts to the roof and fire suppression system piping caused AFFF to be released into the surrounding environment; however, the majority of AFFF was discharged inside the building and captured by floor drains, which lead to the OWS. Although an unknown amount of AFFF was released to the environment outside of the building, precipitation and wind continued to impact the area in the wake of the hurricane, leaving no visible evidence of AFFF releases. Immediately following the post-hurricane clean-up of the facility, a contractor pumped and cleaned the OWS pit of AFFF and disposed of the foam offsite.

3.3 AOI 3 Release Area C

AOI 3 Release Area C encompasses the MSANG Aircraft Parking Ramp. The northern portion of the MSANG Parking Ramp is bisected by the MSANG-MSARNG property line (approximately at the central trench drain) that runs northeast to southwest down the middle of the ramp. Therefore, the northwestern half of the ramp is situated on the MSARNG property (AOI 3 Release Area C), while the southeastern half is situated on the MSANG property (MSANG Release Area 5). In the 1990s, nozzle testing with AFFF was conducted by MSANG CRTC personnel and is known to have occurred on both sides of the Aircraft Parking Ramp (Leidos, 2019).

The AFFF released on the Aircraft Parking Ramp would have been left to dissipate or enter the trench drains on the ramp. Some AFFF may have directly contacted surface soil adjacent to the ramp. The northeast to southwest-trending drain leads to an off-facility detention pond and the off-facility MSANG Outfall 003. The off-facility detention pond is located approximately 600 feet east of AOI 3, and MSANG Outfall 003 is located to the northeast of the facility. During the 2019 MSANG PFAS SI, relevant compounds were detected in soil, groundwater, sediment, and surface water samples collected at MSANG Outfall 003. PFOA and PFOS were detected above the groundwater SLs but below the soil SLs (Leidos, 2019). These compounds may have also infiltrated through potential cracks and seams in the Aircraft Parking Ramp and into the subsurface soil or shallow groundwater.

3.4 AOI 4 Release Areas D & E

AOI 4 Release Areas D and E encompasses the Old Aircraft Staging Ramp; Tri-Max™ extinguisher units were historically staged in this area. Given a lack of information prior to 1991 and uncertainty regarding the maintenance of these units, there is the potential for PFAS to have been released into the environment.

3.5 Adjacent Sources

Nine off-facility, potential sources not under control of the MSARNG were identified adjacent to the AVCRAD during the PA. These sources include release areas identified in a Mississippi Air National Guard (MSANG) SI Report for the Gulfport CRTC (Leidos, 2019). The adjacent potential sources are shown on **Figure 3-1** and described in the following sections for informational purposes only and will not be investigated as part of this SI.

3.5.1 Release Area #1

The MSANG Building 75 (Aircraft Hangar) is located to the south and approximately 80 feet upgradient of the AVCRAD facility boundary. An AFFF suppression system was installed in the hangar in 2002. The suppression system consists of a 1,200-gallon AFFF tank and additional AFFF storage containers. A release of AFFF was reported to likely have occurred during testing of the system after installation. Additionally, a 2009 aircraft crash into the hangar triggered an AFFF release of unknown quantity. Lastly, a small release of AFFF was reported during pipeline maintenance in 2013. During the MSANG SI, PFOA, PFOS, PFHxS, and PFNA exceeded the SLs in groundwater (Leidos, 2019).

3.5.2 Release Area #2

MSANG Building 77 was built in 1957 and operated as the CRTC Fire Station until it was demolished in 2008, and it is located upgradient and approximately 820 feet south of the AVCRAD facility boundary. During its operation, Building 77 stored AFFF on trucks and in drums. The 2019 SI reported that on one occasion, a drum of AFFF ruptured outside of the building. No other known releases of AFFF occurred at Building 77 (Leidos, 2019).

During the MSANG SI, groundwater and soil samples for Release Area #2 were co-located with Release Area #3. In groundwater, PFOA, PFOS, PFHxS, PFNA, and PFBS exceeded their SLs. Additionally, PFOS in soil exceeded the SL (Leidos, 2019).

3.5.3 Release Area #3

The MSANG Building W-1 (Former Warehouse) is located approximately 1,000 feet upgradient of the AVCRAD facility boundary, to the south. Building W-1 was built in 1957, and surplus AFFF

was likely stored at the building before the building was demolished in 2007. The MSANG SI at the CRTC evaluated Release Area #3 with Release Area #2 (Leidos, 2019). See **Section 3.5.2** for results from the MSANG SI.

3.5.4 Release Area #4

MSANG Building 66 was built in 2008 to replace Building 77 as the Fire Station, and it is located south and approximately 0.25-mile upgradient of the AVCRAD facility boundary. Historically and presently, multiple firetrucks hold AFFF at the station, in addition to three 500-gallon AFFF tanks that supply a gravity-fed refill system for the trucks. AFFF drips slowly into secondary containment from these tanks. Vehicles that hold AFFF are washed in the parking bays or outside on the west side of the building. During the MSANG SI, PFOA, PFOS, PFHxS, and PFNA exceeded the SLs in groundwater. (Leidos, 2019).

3.5.5 Release Area #5

The MSANG Aircraft Parking Ramp is located along the southeast boundary of the facility, upgradient from the majority of the remaining AVCRAD land. Ownership of the northeast trending segment of the ramp is split between the MSANG and the MSARNG. **Section 3.3** details the nozzle testing that occurred at Release Area C.

Additionally, line purging of Aircraft Rescue and Firefighting (ARFF) vehicles that carried AFFF was performed on the Aircraft Parking Ramp in the area of MSANG Building 77 (Former Fire Station) and Building W-1 (Former Warehouse), as discussed above. Foam expended on the MSANG Aircraft Parking Ramp by CRTC personnel would have been left to dissipate or drain into the trench drain in the middle of the ramp. This trench drain leads to a detention pond and an outfall off-site to the northeast of the AVCRAD facility boundary. During the MSANG SI at the CRTC in 2019, PFOA, PFOS, and PFHxS exceeded their SLs in groundwater near this outfall (Leidos, 2019).

3.5.6 Release Area #6

The former AASF was in operation from 1974 to the mid-1990s and consisted of multiple hangars off the south end of the taxiway. The property is still used by the MSARNG as a facility maintenance shop and armory. No information was obtained during the PA regarding the potential use, storage, or management of AFFF at this facility.

3.5.7 Release Area #7

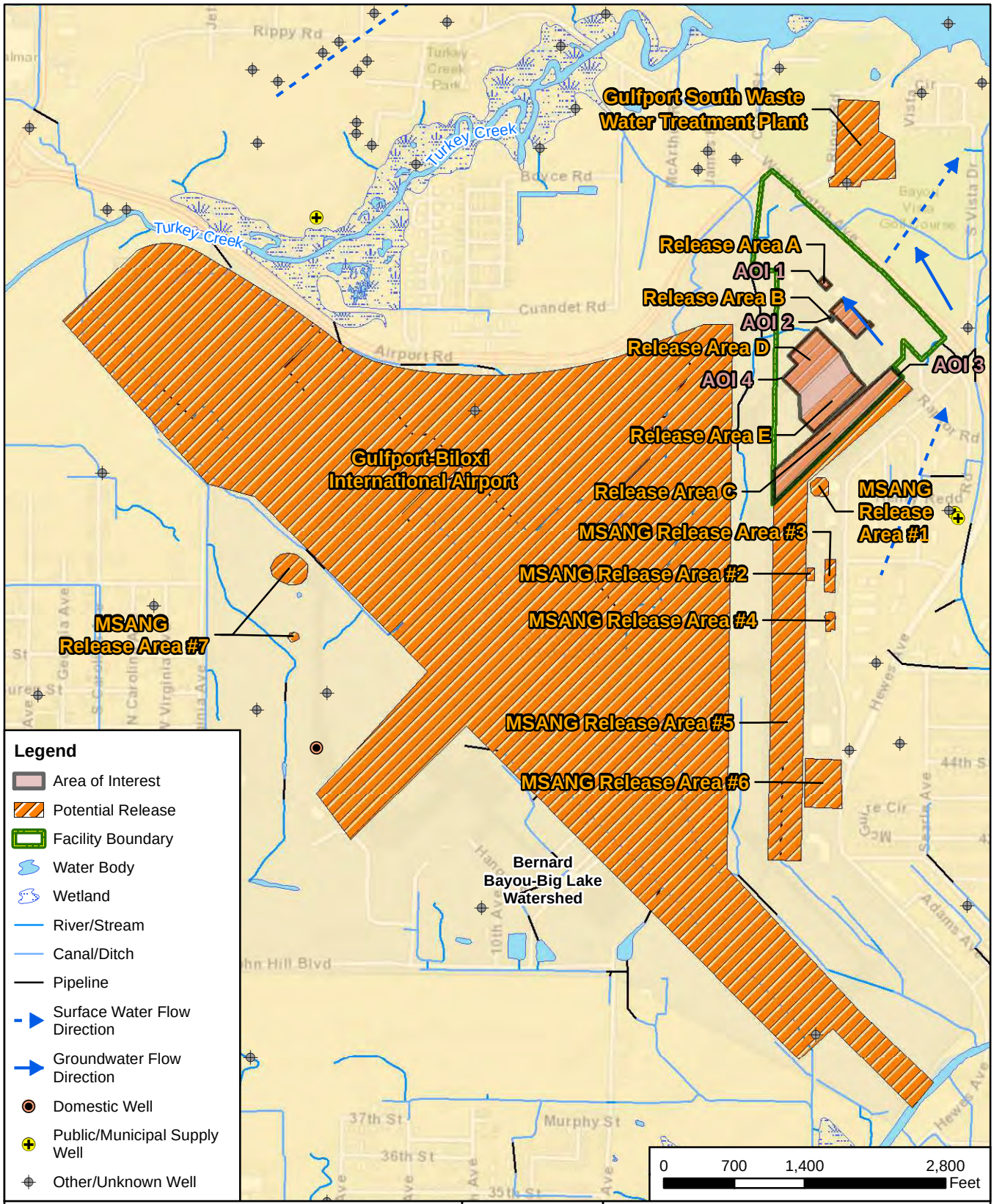
The former and current MSANG fire training areas (FTAs) (used from 1972 to 1988 and since 1999, respectively) are located approximately 0.8-miles to the west of AVCRAD. During the MSANG SI, PFOA, PFOS, PFHxS, and PFNA exceeded their SLs in groundwater (Leidos, 2019). Additionally, PFOS exceeded the SL in surface soil.

3.5.8 Gulfport-Biloxi International Airport

The AVCRAD is located along the northeast corner of the Gulfport-Biloxi International Airport. Airport personnel were not interviewed during the PA because the focus of the assessment was to evaluate potential releases related to activities and sources at the MSARNG properties, not formally assess adjacent sources. Therefore, it is not known if AFFF is used or stored at the airport currently or historically. Because the presence of AFFF at the airport cannot be confirmed, Gulfport-Biloxi International Airport has been identified as a potential off-site source area.

3.5.9 Gulfport South WWTP

The Gulfport South WWTP is located immediately to the north of the facility. WWTPs can be secondary sources depending on the areas that they serve. WWTP biosolids have specifically been found to be secondary sources of contamination. Because WWTP personnel were not interviewed during the VSI, it is unknown where and how the biosolids from the WWTP are treated or disposed of. It is known that the WWTP discharges effluent to local streams. As such, the WWTP could be a potential adjacent source.



CLIENT	ARNG			
PROJECT	Site Inspection at Gulfport AVCRAD, MS			
REVISED	10/3/2022	GIS BY	MS	10/3/2022
SCALE	1:16,800	CHK BY	JH	10/3/2022
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	CM	10/3/2022

Areas of Interest

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 3-1

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4. Project Data Quality Objectives

As identified during the Data Quality Objective (DQO) process and outlined in the SI Quality Assurance Project Plan (QAPP) Addendum (AECOM, 2021a), the objective of the SI is to identify whether there has been a release to the environment at the AOIs identified in the PA. For each AOI, ARNG determines if further investigation is warranted, a removal action is required to address immediate threats, or whether no further action is warranted. This SI evaluated groundwater and soil for presence or absence of relevant compounds at each of the sampled AOIs.

4.1 Problem Statement

ARNG will recommend an AOI for Remedial Investigation (RI) if related soil and groundwater samples have concentrations of the relevant compounds above the OSD risk-based SLs. The SLs are presented in **Section 6.1** of this report.

4.2 Information Inputs

Primary information inputs included:

- The PA for AVCRAD, Gulfport, Mississippi (AECOM, 2020);
- The PA for the adjacent MSANG CRTC in Gulfport, Mississippi (BB&E, 2016);
- Analytical data from samples collected as part of the SI at the adjacent MSANG CRTC in Gulfport, Mississippi (Leidos, 2019);
- Analytical data from groundwater and soil samples collected as part of this SI in accordance with the site-specific Uniform Federal Policy (UFP)-QAPP Addendum (AECOM, 2022a); and
- Field data collected during the SI, including groundwater elevation and water quality parameters measured at the time of sampling.

4.3 Study Boundaries

The scope of the SI was laterally bounded by the property limits of the facility (**Figure 2-2**). Off-facility sampling was not included in the scope of this SI. If future off-facility sampling is required, the proper stakeholders will be notified, and necessary rights of entry will be obtained by ARNG with property owner(s). The scope of the SI was vertically bounded by the top of groundwater. Field activities were conducted in the springtime, before the start of hurricane season.

4.4 Analytical Approach

Samples were analyzed by Pace Analytical Gulf Coast, accredited under the Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP; Accreditation Number 74960) and the National Environmental Laboratory Accreditation Program (NELAP; Certificate Number 01955). Data were compared to applicable SLs within this document and decision rules as defined in the SI QAPP Addendum (AECOM, 2021a).

4.5 Data Usability Assessment

The Data Usability Assessment (DUA), which is provided in **Appendix A**, is an evaluation at the conclusion of data collection activities that uses the results of both data verification and validation

in the context of the overall project decisions or objectives. Using both quantitative and qualitative methods, the assessment determines whether project execution and the resulting data have met installation-specific DQOs. Both sampling and analytical activities are considered to assess whether the collected data are of the right type, quality, and quantity to support the decision-making (DoD, 2019a; DoD, 2019b; USEPA, 2017).

Based on the DUA, the environmental data collected during the SI were found to be acceptable and usable for this SI evaluation with the qualifications documented in the DUA and its associated data validation reports. These data are of sufficient quality to meet the objectives and requirements of the SI QAPP Addendum (AECOM, 2022a).

5. Site Inspection Activities

This section describes the environmental investigation and sampling activities that occurred as part of the SI. The SI sampling approach was based on the findings of the PA and implemented in accordance with the following approved documents:

- *Final Site Inspection Programmatic Uniform Federal Policy-Quality Assurance Project Plan (PQAPP)* dated March 2018 (AECOM, 2018a);
- *Final Programmatic Accident Prevention Plan* dated July 2018 (AECOM, 2018b);
- *Final Preliminary Assessment Report, 1108th Theatre Aviation Sustainment Maintenance Group (TASMG), Gulfport, Mississippi* dated September 2020 (AECOM, 2020);
- *Final Site Inspection Uniform Federal Policy-Quality Assurance Project Plan Addendum, Aviation Classification Repair Activity Depot, Gulfport, Mississippi* dated May 2022 (AECOM, 2022a); and
- *Final Site Safety and Health Plan, Aviation Classification Repair Activity Depot, Gulfport, Mississippi* dated May 2022 (AECOM, 2022b).

The SI field activities were conducted from 23 May 2022 to 25 May 2022 and consisted of utility clearance, direct push boring, soil sample collection, temporary monitoring well installation, grab groundwater sample collection, and land surveying. Field activities were conducted in accordance with the SI QAPP Addendum (AECOM, 2021a), except as noted in **Section 5.8**.

The following samples were collected during the SI and analyzed for a subset of 18 compounds by liquid chromatography with tandem mass spectrometry (LC/MS/MS) compliant with Quality Systems Manual (QSM) 5.3 Table B-15 to fulfill the project DQOs:

- Twenty-five (25) soil samples from 13 boring locations;
- Eleven (11) grab groundwater samples from 11 temporary well locations;
- Nineteen (19) quality assurance (QA)/quality control (QC) samples.

Figure 5-1 provides the sample locations for all media across the facility. **Table 5-1** presents the list of samples collected for each media. Field documentation is provided in **Appendix B**. A Log of Daily Notice of Field Activity was completed throughout the SI field activities, which is provided in **Appendix B1**. Sampling forms are provided in **Appendix B2**, a Field Change Request form is provided in **Appendix B3**, a Nonconformance and Corrective Action Report is provided in **Appendix B4**, and land survey data are provided in **Appendix B5**. Additionally, a photographic log of field activities is provided in **Appendix C**.

5.1 Pre-Investigation Activities

In preparation for the SI field activities, project team members participated in Technical Project Planning (TPP) meetings, performed utility clearance, and sampled decontamination source water. Details for each of these activities are presented below.

5.1.1 Technical Project Planning

The US Army Corps of Engineers (USACE) TPP Process, Engineer Manual (EM) 200-1-2 (USACE, 2016) defines four phases to project planning: 1.) defining the project phase; 2.) determining data needs; 3.) developing data collection strategies; and 4.) finalizing the data collection plan. The process encourages stakeholder involvement in the SI, beginning with

defining overall project objectives, including DQOs, and formulating a sampling approach to address the AOIs identified in the PA.

A combined TPP Meeting 1 and 2 was held on 22 April 2022, prior to SI field activities. The combined TPP Meeting 1 and 2 was conducted in general accordance with EM 200-1-2. The stakeholders for this SI include the ARNG, MSARNG, USACE, Mississippi Department of Environmental Quality (MDEQ), and representatives familiar with the facility, the regulations, and the community. Stakeholders were provided the opportunity to make comments on the technical sampling approach and methods at the combined TPP Meeting 1 and 2. The outcome of the combined TPP Meeting 1 and 2 was memorialized in the SI QAPP Addendum (AECOM, 2022a).

A TPP Meeting 3 will be held [date to be determined] to discuss the results of the SI. Meeting minutes for TPP 3 will be included in **Appendix D** of this report. Future TPP meetings will provide an opportunity to discuss the results and findings, and future actions, where warranted.

5.1.2 Utility Clearance

Both AECOM and their drilling subcontractor, Walker-Hill Environmental, placed a ticket with the Mississippi 811 “Call Before You Dig” utility clearance contractor to notify them of intrusive work on 17 May 2022. Because Mississippi 811 locators do not locate private utilities, such as those belonging to the AVCRAD, AECOM contracted Ground Penetrating Radar Systems, LLC (GPRS), a private utility location service, to perform utility clearance. GPRS performed utility clearance of the proposed boring locations on 23 May 2022 with input from the AECOM field team and AVCRAD facility staff. General locating services and ground-penetrating radar were used to complete the clearance. Additionally, the first 5 feet of each boring were pre-cleared using a hand auger to verify utility clearance in shallow subsurface where utilities would typically be encountered.

5.1.3 Source Water and Sampling Equipment Acceptability

Two potable water sources at the AVCRAD were sampled on 24 February 2022 to assess usability for decontamination of drilling equipment. Samples were collected from a spigot on the northeast side of the Main Hangar (GUL-DECON-01) and from the southwest side of Building #3 (GUL-DECON-02). Results of the sample collected at the spigot at Building #3 (GUL-DECON-02) confirmed this source to be acceptable for use in this investigation; therefore, the spigot was used throughout the field activities. Specifically, the samples were analyzed by LC/MS/MS compliant with QSM 5.3 Table B-15. The results of the decontamination water sample associated with the wash rack spigot source used during the SI are provided in **Appendix F**. A discussion of the results is presented in the DUA (**Appendix A**).

Materials that were used within the sampling zone were confirmed as acceptable for use in the sampling environment. The checklist of acceptable materials for use in the sampling environment was provided in the Standard Operating Procedures (SOPs) appendix to the SI QAPP Addendum (AECOM, 2022a). Prior to the start of field work each day, a Sampling Checklist was completed as an additional layer of control. The checklist served as a daily reminder to each field team member regarding the allowable materials within the sampling environment.

5.2 Soil Borings and Soil Sampling

Borings were installed in grass areas where applicable, to avoid disturbing concrete or asphalt surfaces. Soil samples were collected via direct push technology (DPT), in accordance with the SI QAPP Addendum (AECOM, 2022a). A GeoProbe® 7822DT macrocore sampling system was used to collect continuous soil cores to the target depth. A hand auger was used to collect soil

from the top five feet of the boring, in accordance with AECOM utility clearance procedures. The soil boring locations are shown on **Figure 5-1** and depths are provided **Table 5-1**.

Soil borings advanced using DPT were sampled in three discrete intervals within the vadose zone for chemical analysis: one surface soil sample (0 to 2 feet bgs), one subsurface soil sample approximately 2 feet above the groundwater table, and one subsurface soil sample at the mid-point between the surface and the groundwater table. However, at multiple locations shallow groundwater was encountered and only two discrete soil samples were collected: one surface soil sample (0 to 2 feet bgs) and one subsurface soil sample approximately 2 feet above the groundwater table. This field change is further discussed in **Section 5.8**. Additionally, five surface soil samples (0 to 2 feet bgs) were collected using a hand auger.

The soil cores were continuously logged for lithological descriptions by an AECOM field geologist using the Unified Soil Classification System (USCS). A photoionization detector (PID) was used to screen the breathing zone during boring activities as part of personal safety requirements. Observations and measurements were recorded on boring logs (**Appendix E**) and in a non-treated field logbook (i.e., composition notebook). Depth interval, recovery thickness, PID concentrations, moisture, relative density, color (using a Munsell soil color chart), and texture (using the USCS) were recorded. The boring logs are provided in **Appendix E**.

Direct push soil borings were completed during the SI at depths ranging between 8 to 24 feet bgs. The soil borings generally encountered silts, clays, and sands in the unconsolidated sediments. Observed sands were generally fine- to very-fined grained with varying amounts of fines (silts and clays). Silts were observed in all boreholes and contained varying amounts of clay and sand. Clay was observed in all borings, except AOI03-01, at depths ranging from 2 to 14 feet bgs and ranging in thickness from 2 to 19 feet. The clay contained varying amounts of sand and silt.

Each soil sample was collected into laboratory-supplied PFAS-free high-density polyethylene (HDPE) bottles and labeled using a PFAS-free marker or pen. Samples were packaged on ice and transported via Federal Express (FedEx) under standard chain of custody (CoC) procedures to the laboratory and analyzed by LC/MS/MS compliant with QSM 5.3 Table B-15, total organic carbon (TOC) (USEPA Method 9060A), pH (USEPA Method 9045D), and grain size (ASTM Method D-422) in accordance with the SI QAPP Addendum (AECOM, 2022a).

Field duplicate samples were collected at a rate of 10% and analyzed for the same parameters as the accompanying samples. Matrix spike (MS)/MS duplicates (MSDs) were collected at a rate of 5% and analyzed for the same parameters as the accompanying samples. In instances when non-dedicated sampling equipment was used, such as a hand auger for the shallow soil samples, equipment rinsate blanks were collected at a rate of 5% and analyzed for the same parameters as the soil samples. A temperature blank was placed in each cooler to ensure that samples were preserved at or below 6 degrees Celsius (°C) during shipment.

DPT borings were converted to temporary wells, which were subsequently abandoned in accordance with the SI QAPP Addendum (AECOM, 2022a) using bentonite chips at completion of sampling activities.

5.3 Temporary Well Installation and Groundwater Grab Sampling

Temporary wells were installed using a GeoProbe® 7822DT macrocore sampling system. Once the borehole was advanced to the desired depth, a temporary well was constructed of a 5-foot section of 1-inch Schedule 40 poly-vinyl chloride (PVC) screen with sufficient casing to reach ground surface. New PVC pipe and screen were used to avoid cross contamination between locations. The screen intervals for the temporary wells are provided in **Table 5-2**.

Groundwater samples were collected after a period of time following well installation to allow groundwater to infiltrate and recharge the temporary well screen intervals. After the recharge period, groundwater samples were collected using a bladder pump with PFAS-free HDPE tubing. The temporary wells were purged at a rate determined in the field to reduce turbidity and draw down prior to sampling. Water quality parameters (e.g., temperature, specific conductance, pH, dissolved oxygen, turbidity, and oxidation-reduction potential) were measured using a water quality meter and recorded on the field sampling form (**Appendix B2**) before each grab sample was collected. Additionally, a subsample of each groundwater sample was collected in a separate container, and a shaker test was completed to identify if there were any foaming. No foaming was noted in any of the groundwater samples.

Each sample was collected into laboratory-supplied PFAS-free HDPE bottles and labeled using a PFAS-free marker or pen. Samples were packaged on ice and transported via FedEx under standard CoC procedures to the laboratory and analyzed by LC/MS/MS compliant with QSM 5.3 Table B-15 in accordance with the SI QAPP Addendum (AECOM, 2022a).

Field duplicate samples were collected at a rate of 10% and analyzed for the same parameters as the accompanying samples. MS/MSDs were collected at a rate of 5% and analyzed for the same parameters as the accompanying samples. One field reagent blank was collected in accordance with the PQAPP (AECOM, 2018a). A temperature blank was placed in each cooler to ensure that samples were preserved at or below 6°C during shipment.

Following well surveying (described below in **Section 5.5**), temporary wells were abandoned in accordance with the SI QAPP Addendum (AECOM, 2022a) by removing the PVC and backfilling the hole with bentonite chips. Upon completion of well abandonment, the ground surface at each location was patched to match existing surrounding conditions.

5.4 Synoptic Water Level Measurements

A synoptic groundwater gauging event was performed on 25 May 2022. Groundwater elevation measurements were collected from the 11 new temporary monitoring wells. Water level measurements were taken from the northern side of the well casing. A groundwater flow contour map is provided in **Figure 2-4**. The groundwater elevation collected at GUL-04 was not used in constructing the groundwater contours, as the groundwater elevation was much lower than the nearby wells. Groundwater elevation data are provided in **Table 5-2**.

5.5 Surveying

The northern side of seven out of the eleven well casings were surveyed by Mississippi-licensed land surveyors following guidelines provided in the SOPs provided in the SI QAPP Addendum (AECOM, 2022a). Survey data from the newly installed wells on the facility were collected on 25 May 2022 in the applicable Universal Transverse Mercator zone projection World Geodetic System 84 datum (horizontal) and North American Vertical Datum 1988 (vertical). The surveyed well data are provided in **Appendix B5**. Four wells, GUL-01, GUL-02, GUL-03, and AOI02-02, were pulled in error prior to the survey team arriving at the locations; this is further described in **Section 5.8** and in a Nonconformance and Corrective Action Report in **Appendix B4**.

5.6 Investigation-Derived Waste

As of the date of this report, the disposal of investigation-derived waste (IDW) is not regulated federally. IDW generated during the SI is considered non-hazardous waste and was managed in accordance with the SI QAPP Addendum (AECOM, 2022a) and with the DA Guidance for Addressing Releases of PFAS, Q18 (DA, 2018).

Soil IDW (i.e., soil cuttings) generated during the SI activities were containerized in labeled, 55-gallon Department of Transportation (DOT)-approved steel drums and left onsite, northeast of the Main Hanger. ARNG will further manage soil IDW in accordance with the DA Guidance for Addressing Releases of PFAS, Q18 (DA, 2018). ARNG will coordinate profiling, transportation, and disposal of the soil IDW under a separate contract.

Liquid IDW generated during SI activities (i.e., purge water, development water, and decontamination fluids) were containerized in labeled, 55-gallon DOT-approved steel drums, and left onsite, next to the soil IDW drums. ARNG will further manage liquid IDW in accordance with the DA Guidance for Addressing Releases of PFAS, Q18 (DA, 2018). Containerized liquid IDW will be characterized, managed, and disposed of by ARNG (either by offsite disposal or onsite disposal with treatment, as appropriate) under a separate contract.

Other solids such as spent personal protective equipment, plastic sheeting, tubing, rope, unused monitoring well construction materials, and other environmental media generated during the field activities were disposed of at a licensed solid waste landfill.

5.7 Laboratory Analytical Methods

Samples were analyzed by LC/MS/MS compliant with QSM 5.3 Table B-15 at Pace Analytical Gulf Coast in Baton Rouge, Louisiana, a DoD ELAP and NELAP certified laboratory. Soil samples were also analyzed for TOC using USEPA Method 9060A and pH by USEPA Method 9045D.

5.8 Deviations from SI QAPP Addendum

Three deviations from the SI QAPP Addendum were identified during review of the field documentation. The deviations are noted below and are documented in Field Change Request Forms (**Appendix B3**) and Nonconformance and Corrective Action Reports (**Appendix B4**):

- According to the SI QAPP Addendum, three soil samples were planned to be collected from each soil boring that was converted to a temporary well. All samples were supposed to target the soil above the water table in the vadose zone. However, due to shallow groundwater encountered at the facility, only two samples could be collected from multiple boreholes. This action is documented in a Field Change Request form provided in **Appendix B3**.
- While the subcontracted licensed surveyors were surveying the temporary wells, a miscommunication occurred in which the subcontracted drilling crew started abandoning wells prior to them being surveyed. This resulted in four wells not having top of casings measured by the survey crew. These wells include: GUL-01, GUL-02, GUL-03, and AOI02-02. The remaining seven wells were appropriately surveyed, and the measured water level data were used to develop the groundwater elevation contour. The groundwater flow direction DQO was met using this data and suggests a northwesterly flow direction. This action was documented in a Nonconformance and Corrective Action Report provided in **Appendix B4**.
- Two soil samples that were submitted for analysis were not analyzed by the laboratory. Sample AOI02-03-SB-02-04 was not analyzed for PFAS or for pH/TOC, and sample AOI03-01-SB-00-02 was not analyzed for pH/TOC but was analyzed for PFAS. These deviations are documented in a Nonconformance and Corrective Action Report provided in **Appendix B4**.

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Table 5-1
Site Inspection Samples by Medium
Site Inspection Report, Aviation Classification Repair Activity Depot, Gulfport, Mississippi

Sample Identification	Sample Collection Date/Time	Sample Depth (feet bgs)	PFAS by LC/MS/MS compliant with QSM 5.3 Table B-15	TOC (USEPA Method 9060A)	pH (USEPA Method 9045D)	Grain Size (ASTM D-422)	Comments
Soil Samples							
AOI01-01-SB-00-02	5/24/2022 13:10	0 - 2	x	x	x		
AOI01-01-SB-02-3.5	5/24/2022 13:18	2 - 3.5	x				
AOI02-01-SB-00-02	5/24/2022 15:40	0 - 2	x				
AOI02-01-SB-02-04	5/24/2022 16:10	2 - 4	x				
AOI02-01-SB-04-06	5/24/2022 15:53	4 - 6	x				
AOI02-02-SB-00-02	5/23/2022 15:32	0 - 2	x				
AOI02-02-SB-02-04	5/24/2022 9:05	2 - 4	x				
AOI02-02-SB-02-04-D	5/24/2022 9:05	2 - 4	x				FD
AOI02-02-SB-5.5-7.5	5/23/2022 16:32	5.5 - 7.5	x				
AOI02-03-SB-00-02	5/24/2022 14:18	0 - 2	x				
AOI02-03-SB-02-04	5/24/2022 14:21	2 - 4	x	x	x		Sample lost by the lab*
AOI02-04-SB-00-02	5/25/2022 9:15	0 - 2	x				
AOI03-01-SB-00-02	5/23/2022 11:05	0 - 2	x	x	x		pH/TOC not analyzed*
AOI03-01-SB-02-04	5/23/2022 11:08	2 - 4	x				
AOI03-01-SB-14-16	5/23/2022 12:10	14 - 16				x	
AOI04-01-SB-00-02	5/25/2022 9:03	0 - 2	x				
AOI04-01-SB-00-02-MS	5/25/2022 9:03	0 - 2	x				MS
AOI04-01-SB-00-02-MSD	5/25/2022 9:03	0 - 2	x				MSD
AOI04-01-SB-02-04	5/25/2022 9:10	2 - 4	x	x	x		
AOI04-01-SB-02-04-D	5/25/2022 9:10	2 - 4		x	x		FD
AOI04-01-SB-02-04-MS	5/25/2022 9:10	2 - 4		x	x		MS
AOI04-01-SB-02-04-MSD	5/25/2022 9:10	2 - 4		x	x		MSD
GUL-01-SB-00-02	5/24/2022 11:30	0 - 2	x				
GUL-02-SB-00-02	5/24/2022 10:05	0 - 2	x				
GUL-02-SB-00-02-D	5/24/2022 10:05	0 - 2	x				FD
GUL-02-SB-02-04	5/24/2022 10:10	2 - 4	x				
GUL-03-SB-00-02	5/24/2022 9:30	0 - 2	x				
GUL-03-SB-00-02-D	5/24/2022 9:30	0 - 2	x				FD
GUL-03-SB-00-02-MS	5/24/2022 9:30	0 - 2	x				MS
GUL-03-SB-00-02-MSD	5/24/2022 9:30	0 - 2	x				MSD
GUL-04-SB-00-02	5/23/2022 13:15	0 - 2	x				
GUL-04-SB-13-15	5/23/2022 13:58	13 - 15	x				
GUL-04-SB-18-20	5/23/2022 14:25	18 - 20	x				
GUL-05-SB-00-02	5/25/2022 10:24	0 - 2	x				
GUL-05-SB-02-03	5/25/2022 10:28	2 - 3	x				
GUL-06-SB-00-02	5/25/2022 10:48	0 - 2	x				

Table 5-1
Site Inspection Samples by Medium
Site Inspection Report, Aviation Classification Repair Activity Depot, Gulfport, Mississippi

Sample Identification	Sample Collection Date/Time	Sample Depth (feet bgs)	PFAS by LC/MS/MS compliant with QSM 5.3 Table B-15	TOC (USEPA Method 9060A)	pH (USEPA Method 9045D)	Grain Size (ASTM D-422)	Comments
Groundwater Samples							
AOI01-01-GW	5/24/2022 15:05	NA	x				
AOI01-01-GW-D	5/24/2022 15:05	NA	x				FD
AOI02-01-GW	5/25/2022 9:30	NA	x				
AOI02-02-GW	5/24/2022 10:40	NA	x				
AOI02-03-GW	5/24/2022 16:20	NA	x				
AOI03-01-GW	5/23/2022 14:35	NA	x				
AOI03-01-GW-D	5/23/2022 14:35	NA	x				FD
AOI03-01-GW-MS	5/23/2022 14:35	NA	x				MS
AOI03-01-GW-MSD	5/23/2022 14:35	NA	x				MSD
AOI04-01-GW	5/25/2022 10:22	NA	x				
GUL-01-GW	5/24/2022 13:50	NA	x				
GUL-02-GW	5/24/2022 12:50	NA	x				
GUL-03-GW	5/24/2022 11:36	NA	x				
GUL-04-GW	5/23/2022 15:45	NA	x				
GUL-05-GW	5/25/2022 11:50	NA	x				
GUL-05-GW-D	5/25/2022 11:50	NA	x				FD
Quality Control Samples							
GUL-FRB-01	5/23/2022 16:24	NA	x				
GUL-ERB-01	5/24/2022 13:56	NA	x				Off rig shoe
GUL-ERB-02	5/24/2022 13:45	NA	x				Off driller's hand auger
GUL-ERB-03	5/25/2022 8:00	NA	x				Off AECOM hand auger
GUL-DECON-01	2/24/2022 9:55	NA	x				From spigot at hangar
GUL-DECON-02	2/24/2022 10:40	NA	x				From spigot at Bldg #3
GUL-DECON-03	5/25/2022 11:25	NA	x				From rig tank

Notes:
*Samples AOI02-03-SB-02-04 (PFAS and pH/TOC) and AOI03-01-SB-00-02 (pH/TOC) were not analyzed by the laboratory as described in Section 5.8.

ASTM = American Society for Testing and Materials
bgs = below ground surface
ERB = equipment rinsate blank
FD = field duplicate
FRB = field reagent blank
LC/MS/MS = Liquid Chromatography Mass Spectrometry
MS/MSD = matrix spike/ matrix spike duplicate
PFAS = per- and polyfluoroalkyl substances
QSM = Quality Systems Manual
TOC = total organic carbon
USEPA = United States Environmental Protection Agency

Table 5-2
Soil Boring Depths, Temporary Well Screen Intervals, and Groundwater Elevations
Site Inspection Report, Aviation Classification Repair Activity Depot, Gulfport, Mississippi

Area of Interest	Boring Location	Soil Boring Depth (feet bgs)	Temporary Well Screen Interval (feet bgs)	Top of Casing Elevation (feet NAVD88)	Ground Surface Elevation (feet NAVD88)	Depth to Water (feet btoc)	Depth to Water (feet bgs)	Groundwater Elevation (feet NAVD88)
1	AOI01-01[1]	12	1 - 11	23.08	18.66	5.30	0.88	17.78
2	AOI02-01[1]	16	3 - 13	26.99	24.85	7.27	5.13	19.72
	AOI02-02[1,2]	16	5 - 15	N/A	18.54	0.35	N/A	N/A
	AOI02-03	12	2 - 12	24.46	21.11	5.19	1.84	19.27
3	AOI03-01[1]	16	2 - 12	28.43	25.23	4.69	1.49	23.74
4	AOI04-01	12	2 - 12	26.26	23.02	7.15	3.91	19.11
Facility-wide	GUL-01[1,2]	8	2 - 7	N/A	13.10	3.59	N/A	N/A
	GUL-02[1,2]	13	0 - 5	N/A	13.36	1.23	N/A	N/A
	GUL-03[1,2]	8	1 - 6	N/A	16.88	4.48	N/A	N/A
	GUL-04[1]	24	5 - 15	19.42	17.10	3.29	0.97	16.13
	GUL-05	8	0 - 8	25.66	24.12	3.70	2.16	21.96

Notes:
1.Temporary well screen set above total depth to capture groundwater interface
2. Well was abandoned prior to surveying top of casing as described in Section 5.8.

bgs = below ground surface
btoc = below top of casing
NA = not applicable
NAVD88 = North American Vertical Datum 1988

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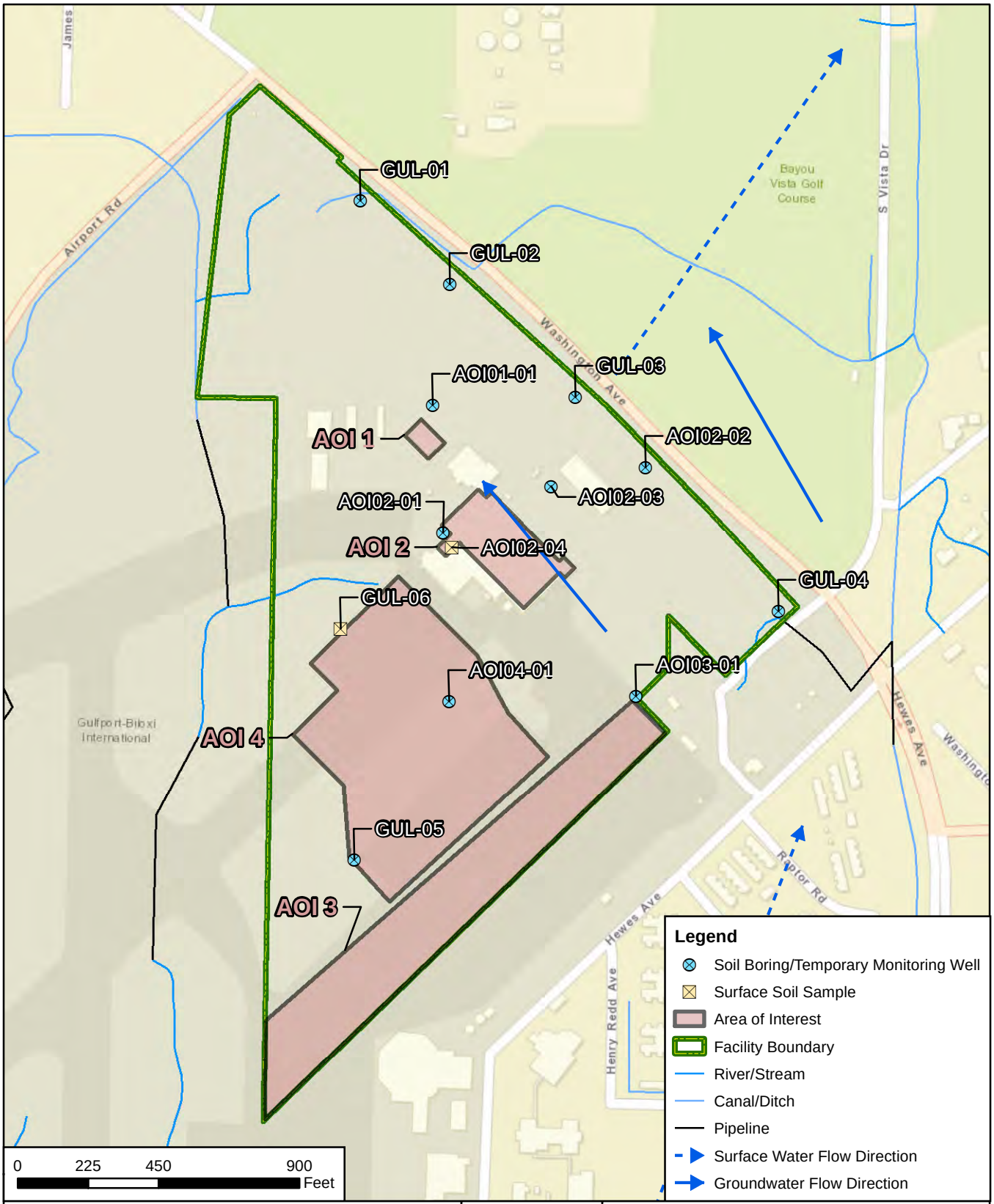

CLIENT	ARNG			
PROJECT	Site Inspection at Gulfport AVCRAD, MS			
REVISED	4/4/2023	GIS BY	MS	4/4/2023
SCALE	1:5,400	CHK BY	JH	4/4/2023
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	CM	4/4/2023

Site Inspection Sample Locations

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 5-1

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6. Site Inspection Results

This section presents the analytical results of the SI. The SLs used in this evaluation are presented in **Section 6.1**. A discussion of the results for each AOI is provided in **Section 6.3** through **Section 6.6**. **Table 6-2** through **Table 6-5** present results in soil or groundwater for the relevant compounds. Tables that contain all results are provided in **Appendix F**, and the laboratory reports are provided in **Appendix G**.

6.1 Screening Levels

The DoD has adopted a policy to retain facilities in the CERCLA process based on risk-based SLs for soil and groundwater, as described in a memorandum from the OSD dated 6 July 2022 (Assistant Secretary of Defense, 2022). The ARNG program under which this SI was performed follows this DoD policy. Should the maximum site concentration for sampled media exceed the SLs established in the OSD memorandum, the AOI will proceed to the next phase under CERCLA. The SLs established in the OSD memorandum apply to the five compounds presented on **Table 6-1** below.

Table 6-1: Screening Levels (Soil and Groundwater)

Analyte[b]	Residential (Soil) (µg/kg)[a] 0-2 feet bgs	Industrial/ Commercial Composite Worker (Soil) (µg/kg)[a] 2-15 feet bgs	Tap Water (Groundwater) (ng/L)[a]
PFOA	19	250	6
PFOS	13	160	4
PFBS	1,900	25,000	601
PFHxS	130	1,600	39
PFNA	19	250	6

Notes:
bgs = below ground surface; µg/kg = micrograms per kilogram; ng/L = nanograms per liter

a.) Assistant Secretary of Defense, 2022. Risk Based Screening Levels in Groundwater and Soil using United States Environmental Protection Agency's (USEPA's) Regional Screening Level Calculator. Hazard Quotient (HQ) = 0.1. 6 July 2022.

b.) Of the six PFAS compounds presented in the 6 July 2022 OSD memorandum, HFPO-DA (commonly referred to as GenX) was not included as an analyte at the time of this SI. Based on the CSM developed during the PA and revised based on SI findings, the presence of HFPO-DA is not anticipated at the facility because HFPO-DA is generally not a component of MIL-SPEC AFFF and based on its history including distribution limitations that restricted use of GenX, it is generally not a component of other products the military used. In addition, it is unlikely that GenX would be an individual chemical of concern in the absence of other PFAS.

The data in the subsequent sections are compared to the SLs presented in **Table 6-1**. The SLs for groundwater are based on direct ingestion. The SLs for soil are based on incidental ingestion and are applied to the depth intervals reasonably anticipated to be encountered by the receptors identified at the facility: the residential scenario is applied to surface soil results (0 to 2 feet bgs) and the industrial/commercial worker scenario is applied to shallow subsurface soil results (2 to 15 feet bgs). The SLs are not applied to deep subsurface soil results (>15 feet bgs) because 15 feet is the anticipated limit of construction activities.

6.2 Soil Physicochemical Analyses

To provide basic soil parameter information, soil samples were analyzed for TOC, pH, and grain size, which are important for evaluating transport through the soil medium. **Appendix F** contains the results of the TOC, pH, and grain size sampling.

The data collected in this investigation will be used in subsequent investigations, where appropriate, to assess fate and transport. According to the Interstate Technology Regulatory Council (ITRC), several important partitioning mechanisms include hydrophobic and lipophobic effects, electrostatic interactions, and interfacial behaviors. At relevant environmental pH values, certain PFAS are present as organic anions and are therefore relatively mobile in groundwater (Xiao et al., 2015), but tend to associate with the organic carbon fraction that may be present in soil or sediment (Higgins and Luthy, 2006; Guelfo and Higgins, 2013). When sufficient organic carbon is present, organic carbon normalized distribution coefficients (K_{oc} values) can help in evaluating transport potential, though other geochemical factors (for example, pH and presence of polyvalent cations) may also affect PFAS sorption to solid phases (ITRC, 2018).

6.3 AOI 1

This section presents the analytical results for soil and groundwater in comparison to SLs for AOI 1: Release Area A. The soil and groundwater results are summarized on **Table 6-2** through **Table 6-5**. Soil and groundwater results are presented on **Figure 6-1** through **Figure 6-7**.

6.3.1 AOI 1 Soil Analytical Results

Soil was sampled from surface soil (0 to 2 feet bgs) from boring location AOI01-01 and the downgradient borings GUL-01 and GUL-02. Shallow subsurface soil (between 2 to 4 feet bgs) was sampled from AOI01-01 and GUL-02. Deep subsurface soil was not sampled at AOI 1 due to shallow groundwater. **Figure 6-1** through **Figure 6-5** present the ranges of detections in soil. **Table 6-2** and **Table 6-3** summarize the soil results.

PFOS, PFHxS, and PFNA were detected in surface soil at all three locations at concentrations more than one order of magnitude below the SLs. The maximum detected concentration was PFOS at 0.973 J micrograms per kilogram (µg/kg). PFOA and PFBS were not detected in any of the surface soil samples.

In subsurface soil, PFOS, PFHxS, and PFNA were detected at concentrations a least two orders of magnitude below their SLs at AOI01-01. PFBS and PFOA were not detected at AOI01-01. None of the relevant compounds were detected in the downgradient boring GUL-02.

6.3.2 AOI 1 Groundwater Analytical Results

Figure 6-6 and **Figure 6-7** present the ranges of detections in groundwater. **Table 6-5** summarizes the groundwater results. Groundwater was sampled from temporary monitoring well AOI01-01 and the downgradient facility boundary temporary wells GUL-01 and GUL-02. The following exceedances of the SLs were measured:

- PFOA was detected above the SL of 6 nanograms per liter (ng/L), at a concentration of 48.2 J ng/L.
- PFOS was detected above the SL of 4 ng/L, at concentrations of 368 J ng/L and 10.5 ng/L at AOI01-01 and GUL-01, respectively.
- PFHxS was detected above the SL of 39 ng/L, at a concentration of 90.9 J ng/L at AOI01-01.

- PFNA was detected above the SL of 6 ng/L, at a concentration of 22.2 ng/L at AOI01-01.

PFBS was detected below the SL at all locations, with a maximum concentration of 11.6 ng/L at AOI01-01. No exceedances of the SLs were detected at GUL-02.

6.3.3 AOI 1 Conclusions

Based on the results of the SI, PFOS, PFHxS, and PFNA were detected in soil below their SLs. PFOA, PFOS, PFHxS, and PFNA were detected in groundwater, at concentrations above their SLs. Based on the exceedances of the SLs in groundwater, further evaluation at AOI 1 is warranted.

6.4 AOI 2

This section presents the analytical results for soil and groundwater in comparison to SLs for AOI 2: Release Area B. The results in soil and groundwater are summarized on **Table 6-2** through **Table 6-5**. Soil and groundwater results are presented on **Figure 6-1** through **Figure 6-7**.

6.4.1 AOI 2 Soil Analytical Results

Soil was sampled from surface soil (0 to 2 feet bgs) from boring locations AOI02-01 through AOI02-04 and the downgradient location GUL-03. Soil was also sampled from the shallow subsurface interval (2-foot intervals between from 2 and 7.5 feet bgs) from borings AOI02-01 and AOI02-03, although the sample from AOI02-03 was not analyzed by the laboratory (see **Section 5.8**) Deep subsurface soil was not sampled at AOI 2 location due to shallow groundwater. **Figure 6-1** through **Figure 6-5** present the ranges of detections in soil. **Table 6-2** and **Table 6-3** summarize the soil results.

PFOS and PFNA were detected in all five surface soil locations, with concentrations ranging between 0.026 J µg/kg to 2.36 µg/kg. PFOA and PFHxS were also detected in surface soil below the SLs at four of the five locations, with concentrations ranging from 0.061 J µg/kg to 0.770 J µg/kg. PFBS was detected in surface soil several orders of magnitude below the SL at location AOI02-04.

In subsurface soil, PFOS and PFNA were detected in shallow subsurface soil samples at boring AOI02-01, with concentrations several orders of magnitude below the SLs. PFOA, PFBS and PFHxS were not detected in subsurface soil at AOI 2.

6.4.2 AOI 2 Groundwater Analytical Results

Figure 6-6 and **Figure 6-7** present the ranges of detections in groundwater. **Table 6-5** summarizes the groundwater results. Groundwater was sampled from temporary monitoring wells AOI02-01 through AOI02-03 and GUL-03. The following exceedances of the SLs were measured:

- PFOA was detected above the SL of 6 ng/L in all four temporary wells at concentrations ranging from 11.9 ng/L at AOI02-02 to 59.7 ng/L at AOI02-03.
- PFOS was detected above the SL of 4 ng/L in three temporary wells at concentrations ranging from 5.94 J ng/L at GUL-03 to 41.2 ng/L at AOI02-01.
- PFNA was detected above the SL of 6 ng/L at AOI02-01, with a concentration of 6.15 ng/L.

PFBS and PFHxS were detected at concentrations below their SLs in all four wells, with respective maximum concentrations of 11.6 ng/L and 37.3 ng/L detected at AOI02-03.

6.4.3 AOI 2 Conclusions

Based on the results of the SI, PFOA, PFOS, PFBS, PFHxS, and PFNA were detected in soil below their SLs. PFOA, PFOS, and PFNA were detected in groundwater at concentrations above their SLs. Based on the exceedances of the SLs in groundwater, further evaluation at AOI 2 is warranted.

6.5 AOI 3

This section presents the analytical results for soil and groundwater in comparison to SLs for AOI 3: Release Area C. The results in soil and groundwater are presented in **Table 6-2** through **Table 6-5**. Soil and groundwater results are presented on **Figure 6-1** through **Figure 6-7**.

6.5.1 AOI 3 Soil Analytical Results

Figure 6-1 through **Figure 6-5** present the ranges of detections in soil. **Table 6-2** through **Table 6-4** summarize the soil results. Soil was sampled from surface soil (0 to 2 feet bgs) from boring locations AOI03-01, GUL-04 (located at Outfall 001), and GUL-05. Shallow subsurface soil was also sampled from 2 to 4 feet bgs at AOI03-01, from 2 to 3 feet bgs at GUL-05, and from 13 to 15 feet bgs at GUL-04. Deep subsurface soil (18 to 20 feet bgs) was sampled from boring GUL-04.

PFOA, PFOS, PFHxS, and PFNA were detected in surface soil, at locations AOI03-01 and GUL-05, at concentrations ranging from 0.147 J µg/kg to 5.37 µg/kg. PFHxS was the only relevant compound detected at GUL-04.

In shallow subsurface soil, PFOA, PFOS, PFHxS, and PFNA were detected below their SLs, with concentrations ranging from 0.053 J µg/kg to 1.21 µg/kg. PFBS was not detected in shallow subsurface soil at any of the three borings. No relevant compounds were detected in shallow subsurface soil at GUL-04. None of the relevant compounds were detected in the deep subsurface soil at GUL-04.

6.5.2 AOI 3 Groundwater Analytical Results

Figure 6-6 and **Figure 6-7** present the ranges of detections in groundwater. **Table 6-5** summarizes the groundwater results. Groundwater was sampled from temporary monitoring wells AOI03-01, GUL-04, and GUL-05. Temporary well GUL-04 is located near Outfall 001, which receives storm water from areas near AOIs 2 and 3. The following exceedances of the SLs were measured:

- PFOA was detected above the SL of 6 ng/L in two wells, at concentrations of 71.9 J ng/L and 97.1 J ng/L.
- PFOS was detected above the SL of 4 ng/L in two wells, at concentrations of 707 J ng/L and 2,090 ng/L.
- PFHxS was detected above the SL of 39 ng/L in two wells, at concentrations of 183 J ng/L and 229 J ng/L.
- PFNA was detected above the SL of 6 ng/L in two wells, at concentrations of 17.9 ng/L and 99.6 J ng/L.

PFBS was detected in all three wells, at concentrations over an order of magnitude below the SL. No exceedances of the relevant compounds were observed at GUL-04.

6.5.3 AOI 3 Conclusions

Based on the results of the SI, PFOA, PFOS, PFHxS, and PFNA were detected in soil, below their SLs. PFOA, PFOS, PFHxS and PFNA were detected in groundwater, at concentrations above their SLs. Based on the exceedances of the SLs in groundwater, further evaluation at AOI 3 is warranted.

6.6 AOI 4

This section presents the analytical results for soil and groundwater in comparison to SLs for AOI 4: Release Areas D & E. The results in soil and groundwater are presented in **Table 6-2** through **Table 6-5**. Soil and groundwater results are presented on **Figure 6-1** through **Figure 6-7**.

6.6.1 AOI 4 Soil Analytical Results

Soil was sampled from the surface (0 to 2 feet bgs) and shallow subsurface (2 to 4 feet bgs) intervals at boring location AOI04-01. Deep subsurface soil was not sampled from any AOI 4 location due to shallow groundwater. **Figure 6-1** through **Figure 6-5** present the ranges of detections in soil. **Table 6-2** and **Table 6-3** summarize the soil results.

PFOS and PFHxS were detected in surface soil, at concentrations more than one order of magnitude below their SLs, with a maximum concentration of 0.134 J- g/kg. In shallow subsurface soil, PFOS and PFBS were detected at concentrations several orders of magnitude below the SLs. PFOA and PFNA were not detected in either surface or shallow subsurface soil.

6.6.2 AOI 4 Groundwater Analytical Results

Figure 6-6 and **Figure 6-7** present the ranges of detections in groundwater. **Table 6-5** summarizes the groundwater results. Groundwater was sampled from temporary monitoring well AOI04-01. The following exceedances of the SLs were observed:

- PFOA was detected in above the SL of 6 ng/L, at a concentration of 7.07 ng/L.
- PFOS was detected above the SL of 4 ng/L, at a concentration of 7.07 ng/L.

PFBS and PFHxS were detected at concentrations below their SLs. PFNA was not detected in groundwater at AOI 4.

6.6.3 AOI 4 Conclusions

Based on the results of the SI, PFOS, PFHxS, and PFBS were detected in soil, below their SLs. PFOA and PFOS were detected in groundwater, at concentrations above their SLs. Based on the exceedances of the SLs in groundwater, further evaluation at AOI 4 is warranted.

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Table 6-2
PFOA, PFOS, PFBS, PFNA, and PFHxS Results in Surface Soil
Site Inspection Report, Gulfport

Area of Interest		AOI01		AOI02								AOI03		AOI04		Sitewide					
Sample ID		AOI01-01-SB-00-02		AOI02-01-SB-00-02		AOI02-02-SB-00-02		AOI02-03-SB-00-02		AOI02-04-SB-00-02		AOI03-01-SB-00-02		AOI04-01-SB-00-02		GUL-01-SB-00-02		GUL-02-SB-00-02		GUL-02-SB-00-02-D	
Sample Date		05/24/2022		05/24/2022		05/23/2022		05/24/2022		05/25/2022		05/23/2022		05/25/2022		05/24/2022		05/24/2022		05/24/2022	
Depth		0-2 ft		0-2 ft		0-2 ft		0-2 ft		0-2 ft		0-2 ft		0-2 ft		0-2 ft		0-2 ft		0-2 ft	
Analyte	OSD Screening Level [a]	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Soil, LCMSMS compliant with QSM 5.3 Table B-15 (µg/kg)																					
PFBS	1900	ND	U	ND	U	ND	U	ND	U	0.022	J	ND	U	ND	U	ND	U	ND	U	ND	U
PFHxS	130	0.089	J	0.087	J	0.061	J	0.075	J	0.274	J	0.767	J	0.056	J	0.049	J	0.060	J	0.044	J
PFNA	19	0.021	J	0.171	J	0.105	J	0.271	J	0.213	J	0.147	J	ND	U	ND	U	0.026	J	ND	UJ
PFOA	19	ND	U	0.222	J	0.131	J	0.491	J	0.770	J	0.182	J	ND	U	0.101	J	ND	U	ND	U
PFOS	13	0.973	J	2.36		0.071	J	0.267	J	1.20		5.37		0.134	J-	0.333	J	0.155	J	0.131	J

Grey Fill — Detected concentration exceeded OSD Screening Levels

References

a. Assistant Secretary of Defense, July 2022. Risk Based Screening Levels Calculated for PFOA, PFOS, PFBS, PFHxS, and PFNA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1, May 2022. Soil screening levels based on residential scenario for incidental ingestion of contaminated soil.

Interpreted Qualifiers

J = Estimated concentration

U = The analyte was not detected at a level greater than or equal to the adjusted DL

UJ = The analyte was not detected at a level greater than or equal to the adjusted DL. However, the reported adjusted DL is approximate and may be inaccurate or imprecise.

Notes

ND = Analyte not detected above the LOD. LOD values are presented in Appendix F.

Limit of Detection (LOD) ranges for relevant compounds:

PFBS: 0.050-0.062 µg/kg

PFHxS: 0.100-0.123 µg/kg

PFNA: 0.050-0.062 µg/kg

PFOA: 0.200-0.246 µg/kg

PFOS: 0.200-0.246 µg/kg

Chemical Abbreviations

PFBS	perfluorobutanesulfonic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid

Acronyms and Abbreviations

AASF	Army Aviation Support Facility
AOI	Area of Interest
D	duplicate
DL	detection limit
ft	feet
GUL	Gulfport
HQ	hazard quotient
ID	identification
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
ND	analyte not detected above the LOD
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
SB	soil boring
USEPA	United States Environmental Protection Agency
µg/kg	micrograms per kilogram

Table 6-2
PFOA, PFOS, PFBS, PFNA, and PFHxS Results in Surface Soil
Site Inspection Report, Gulfport

	Area of Interest	Sitewide									
	Sample ID	GUL-03-SB-00-02		GUL-03-SB-00-02-D		GUL-04-SB-00-02		GUL-05-SB-00-02		GUL-06-SB-00-02	
	Sample Date	05/24/2022		05/24/2022		05/23/2022		05/25/2022		05/25/2022	
	Depth	0-2 ft		0-2 ft		0-2 ft		0-2 ft		0-2 ft	
Analyte	OSD Screening Level [a]	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Soil, LCMSMS compliant with QSM 5.3 Table B-15 (µg/kg)											
PFBS	1900	ND	U	ND	U	ND	U	ND	U	ND	U
PFHxS	130	ND	U	ND	U	0.033	J	0.230	J	0.199	J
PFNA	19	0.026	J	0.025	J	ND	U	1.23		0.022	J
PFOA	19	ND	U	ND	U	ND	U	1.34		0.162	J
PFOS	13	0.073	J	ND	UJ	ND	U	1.56		0.305	J

Grey Fill — Detected concentration exceeded OSD Screening Levels

References

a. Assistant Secretary of Defense, July 2022. Risk Based Screening Levels Calculated for PFOA, PFOS, PFBS, PFHxS, and PFNA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1, May 2022. Soil screening levels based on residential scenario for incidental ingestion of contaminated soil.

Interpreted Qualifiers

J = Estimated concentration

U = The analyte was not detected at a level greater than or equal to the adjusted DL

UJ = The analyte was not detected at a level greater than or equal to the adjusted DL. However, the reported adjusted DL is approximate and may be inaccurate or imprecise.

Notes

ND = Analyte not detected above the LOD. LOD values are presented in Appendix F.

Limit of Detection (LOD) ranges for relevant compounds:

PFBS: 0.050-0.062 µg/kg

PFHxS: 0.100-0.123 µg/kg

PFNA: 0.050-0.062 µg/kg

PFOA: 0.200-0.246 µg/kg

PFOS: 0.200-0.246 µg/kg

Chemical Abbreviations

PFBS	perfluorobutanesulfonic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid

Acronyms and Abbreviations

AASF	Army Aviation Support Facility
AOI	Area of Interest
D	duplicate
DL	detection limit
ft	feet
GUL	Gulfport
HQ	hazard quotient
ID	identification
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
ND	analyte not detected above the LOD
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
SB	soil boring
USEPA	United States Environmental Protection Agency
µg/kg	micrograms per kilogram

Table 6-3
PFOA, PFOS, PFBS, PFNA, and PFHxS Results in Shallow Subsurface Soil
Site Inspection Report, Gulfport

Area of Interest		AOI01		AOI02										AOI03		AOI04		Sitewide			
Sample ID		AOI01-01-SB-02-3.5		AOI02-01-SB-02-04		AOI02-01-SB-04-06		AOI02-02-SB-02-04		AOI02-02-SB-02-04-D		AOI02-02-SB-5.5-7.5		AOI03-01-SB-02-04		AOI04-01-SB-02-04		GUL-02-SB-02-04		GUL-04-SB-13-15	
Sample Date		05/24/2022		05/24/2022		05/24/2022		05/24/2022		05/24/2022		05/23/2022		05/23/2022		05/25/2022		05/24/2022		05/23/2022	
Depth		2-3.5 ft		2-4 ft		4-6 ft		2-4 ft		2-4 ft		5.5-7.5 ft		2-4 ft		2-4 ft		2-4 ft		13-15 ft	
Analyte	**OSD Screening Level [a]**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**
Soil, LCMSMS compliant with QSM 5.3 Table B-15 (µg/kg)																					
PFBS	25000	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.030	J	ND	U	ND	U
PFHxS	1600	0.066	J	ND	U	ND	U	ND	U	ND	U	ND	U	0.108	J	ND	U	ND	U	ND	U
PFNA	250	0.053	J	0.038	J	ND	U	ND	U	ND	U	ND	U	0.053	J	ND	U	ND	U	ND	U
PFOA	250	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
PFOS	160	1.49		0.429	J	0.085	J	ND	U	ND	U	ND	U	1.21		0.112	J	ND	U	ND	U

Grey Fill — Detected concentration exceeded OSD Screening Levels

References

a. Assistant Secretary of Defense, July 2022. Risk Based Screening Levels Calculated for PFOA, PFOS, PFBS, PFHxS, and PFNA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1, May 2022. Soil screening levels based on industrial/commercial composite worker scenario for incidental ingestion of contaminated soil.

Interpreted Qualifiers

J = Estimated concentration

U = The analyte was not detected at a level greater than or equal to the adjusted DL

Notes

ND = Analyte not detected above the LOD. LOD values are presented in Appendix F.

Limit of Detection (LOD) ranges for relevant compounds:

PFBS: 0.053-0.066 µg/kg
PFHxS: 0.105-0.132 µg/kg
PFNA: 0.053-0.066 µg/kg
PFOA: 0.210-0.265 µg/kg
PFOS: 0.210-0.265 µg/kg

Chemical Abbreviations

PFBS	perfluorobutanesulfonic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid

Acronyms and Abbreviations

AASF	Army Aviation Support Facility
AOI	Area of Interest
D	duplicate
DL	detection limit
ft	feet
GUL	Gulfport
HQ	hazard quotient
ID	identification
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
ND	analyte not detected above the LOD
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
SB	soil boring
USEPA	United States Environmental Protection Agency
µg/kg	micrograms per kilogram

Table 6-3
PFOA, PFOS, PFBS, PFNA, and PFHxS Results in Shallow Subsurface Soil
Site Inspection Report, Gulfport

	Area of Interest	Sitewide	
	Sample ID	GUL-05-SB-02-03	
	Sample Date	05/25/2022	
	Depth	2-3 ft	
Analyte	**OSD Screening Level [a]**	**Result**	**Qual**
Soil, LCMSMS compliant with QSM 5.3 Table B-15 (µg/kg)			
PFBS	25000	ND	U
PFHxS	1600	0.057	J
PFNA	250	0.145	J
PFOA	250	0.109	J
PFOS	160	0.566	J

Grey Fill — Detected concentration exceeded OSD Screening Levels

References

a. Assistant Secretary of Defense, July 2022. Risk Based Screening Levels Calculated for PFOA, PFOS, PFBS, PFHxS, and PFNA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1, May 2022. Soil screening levels based on industrial/commercial composite worker scenario for incidental ingestion of contaminated soil.

Interpreted Qualifiers

J = Estimated concentration

U = The analyte was not detected at a level greater than or equal to the adjusted DL

Notes

ND = Analyte not detected above the LOD. LOD values are presented in Appendix F.

Limit of Detection (LOD) ranges for relevant compounds:

PFBS: 0.053-0.066 µg/kg
PFHxS: 0.105-0.132 µg/kg
PFNA: 0.053-0.066 µg/kg
PFOA: 0.210-0.265 µg/kg
PFOS: 0.210-0.265 µg/kg

Chemical Abbreviations

PFBS	perfluorobutanesulfonic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid

Acronyms and Abbreviations

AASF	Army Aviation Support Facility
AOI	Area of Interest
D	duplicate
DL	detection limit
ft	feet
GUL	Gulfport
HQ	hazard quotient
ID	identification
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
ND	analyte not detected above the LOD
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
SB	soil boring
USEPA	United States Environmental Protection Agency
µg/kg	micrograms per kilogram

Table 6-4
PFOA, PFOS, PFBS, PFNA, and PFHxS Results in Deep Subsurface Soil
Site Inspection Report, Gulfport

Area of Interest	Sitewide	
Sample ID	GUL-04-SB-18-20	
Sample Date	05/23/2022	
Depth	18-20 ft	
Analyte	**Result**	**Qual**
Soil, LCMSMS compliant with QSM 5.3 Table B-15		
PFBS	ND	U
PFHxS	ND	U
PFNA	ND	U
PFOA	ND	U
PFOS	ND	U

Interpreted Qualifiers

U = The analyte was not detected at a level greater than or equal to the adjusted DL

Notes

ND = Analyte not detected above the LOD. LOD values are presented in Appendix F.

Limits of Detection (LODs) for relevant compounds:

PFBS: 0.057 µg/kg
PFHxS: 0.114 µg/kg
PFNA: 0.057 µg/kg
PFOA: 0.229 µg/kg
PFOS: 0.229 µg/kg

Chemical Abbreviations

PFBS	perfluorobutanesulfonic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid

Acronyms and Abbreviations

AASF	Army Aviation Support Facility
AOI	Area of Interest
D	duplicate
DL	detection limit
ft	feet
GUL	Gulfport
ID	identification
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
ND	analyte not detected above the LOD
QSM	Quality Systems Manual
Qual	interpreted qualifier
SB	soil boring
µg/kg	micrograms per kilogram

Table 6-5
PFOA, PFOS, PFBS, PFNA, and PFHxS Results in Groundwater
Site Inspection Report, Gulfport

Area of Interest		AOI01				AOI02						AOI03				AOI04		Sitewide	
Sample ID		AOI01-01-GW		AOI01-01-GW-D		AOI02-01-GW		AOI02-02-GW		AOI02-03-GW		AOI03-01-GW (RE)		AOI03-01-GW-D		AOI04-01-GW		GUL-01-GW	
Sample Date		05/24/2022		05/24/2022		05/25/2022		05/24/2022		05/24/2022		05/23/2022		05/23/2022		05/25/2022		05/24/2022	
Analyte	OSD Screening Level [a]	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Water, LCMSMS compliant with QSM 5.3 Table B-15 (ng/l)																			
PFBS	601	11.6		6.74		4.59		2.94	J	11.6		14.2		5.57		3.80	J	2.62	J
PFHxS	39	90.9	J	53.6	J	26.1		13.0		37.3		183	J	72.4		8.70		3.96	J
PFNA	6	22.2		14.6		6.15		2.46	J	4.99		17.9	J	9.16		ND	U	ND	U
PFOA	6	48.2	J	29.6	J	16.0		11.9		59.7		97.1	J	39.2		7.07		3.11	J
PFOS	4	368	J	248	J	41.2		1.96	J	35.2		707	J	500		7.07		10.5	

Grey Fill — Detected concentration exceeded OSD Screening Levels

References

a. Assistant Secretary of Defense, July 2022. Risk Based Screening Levels Calculated for PFOA, PFOS, PFBS, PFHxS, and PFNA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1, May 2022 Groundwater screening levels based on residential scenario for direct ingestion of groundwater.

Interpreted Qualifiers

J = Estimated concentration

U = The analyte was not detected at a level greater than or equal to the adjusted DL

Limit of Detection (LOD) ranges for relevant compounds:

PFBS: 1.91-10.0 ng/L

PFHxS: 2.86-15.0 ng/L

PFNA: 1.91-10.0 ng/L

PFOA: 1.91-10.0 ng/L

PFOS: 1.91-10.0 ng/L

Chemical Abbreviations

PFBS	perfluorobutanesulfonic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid

Acronyms and Abbreviations

AOI	Area of Interest
D	duplicate
DL	detection limit
GUL	Gulfport
GW	groundwater
HQ	hazard quotient
ID	identification
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
ND	analyte not detected above the LOD. LOD values are presented in Appendix F.
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
RE	re-extracted
USEPA	United States Environmental Protection Agency
ng/l	nanogram per liter

Table 6-5
PFOA, PFOS, PFBS, PFNA, and PFHxS Results in Groundwater
Site Inspection Report, Gulfport

Area of Interest		Sitewide									
Sample ID		GUL-02-GW		GUL-03-GW		GUL-04-GW		GUL-05-GW		GUL-05-GW-D	
Sample Date		05/24/2022		05/24/2022		05/23/2022		05/25/2022		05/25/2022	
Analyte	OSD Screening Level [a]	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Water, LCMSMS compliant with QSM 5.3 Table B-15 (ng/l)											
PFBS	601	1.70	J	3.74	J	5.41		10.1		2.69	J
PFHxS	39	1.31	J	11.5	J	25.6		229	J	48.8	J
PFNA	6	ND	U	ND	U	ND	U	99.6	J	22.9	J
PFOA	6	ND	U	40.7		3.64	J	71.9	J	16.4	J
PFOS	4	ND	U	5.94	J	1.35	J	2090	J	467	J

Grey Fill — Detected concentration exceeded OSD Screening Levels

References

a. Assistant Secretary of Defense, July 2022. Risk Based Screening Levels Calculated for PFOA, PFOS, PFBS, PFHxS, and PFNA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1, May 2022 Groundwater screening levels based on residential scenario for direct ingestion of groundwater.

Interpreted Qualifiers

J = Estimated concentration

U = The analyte was not detected at a level greater than or equal to the adjusted DL

Limit of Detection (LOD) ranges for relevant compounds:

PFBS: 1.91-10.0 ng/L

PFHxS: 2.86-15.0 ng/L

PFNA: 1.91-10.0 ng/L

PFOA: 1.91-10.0 ng/L

PFOS: 1.91-10.0 ng/L

Chemical Abbreviations

PFBS	perfluorobutanesulfonic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid

Acronyms and Abbreviations

AOI	Area of Interest
D	duplicate
DL	detection limit
GUL	Gulfport
GW	groundwater
HQ	hazard quotient
ID	identification
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
ND	analyte not detected above the LOD. LOD values are presented in Appendix F.
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
RE	re-extracted
USEPA	United States Environmental Protection Agency
ng/l	nanogram per liter

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Shallow

Intermediate

Deep

GUL-01
GUL-02
GUL-03
GUL-04
GUL-05
GUL-06
AOI01-01
AOI02-01
AOI02-02
AOI02-03
AOI02-04
AOI03-01
AOI04-01

Bayou Vista Golf Course
Washington Ave
Raptor Rd
Hewes Ave
Henry Redd Ave
Henry Redd Rd

PFOA Results (µg/Kg)

- ND
- >ND - 19
- >19 - 250
- >250 - 2,500
- >2,500

CLIENT	ARNG
PROJECT	Site Inspection at Gulfport AVCRAD, MS

REVISED	1/4/2023	GIS BY	MS	1/4/2023
SCALE	1:5,400	CHK BY	JH	1/4/2023
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	CM	1/4/2023

Facility Boundary
River/Stream
Canal/Ditch
Pipeline

0 225 450 900 Feet

Exceedances of the OSD SL are depicted with a yellow halo.
Depth intervals shown represent respective sampling position within a given soil boring location.

PFOA Detections in Soil

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-1

Shallow

Intermediate

Deep

GUL-01
GUL-02
GUL-03
GUL-04
GUL-05
GUL-06
AOI01-01
AOI02-01
AOI02-02
AOI02-03
AOI02-04
AOI03-01
AOI04-01

Bayou Vista Golf Course
Washington Ave
Raptor Rd
Hewes Ave
Henry Redd Ave
Henry Redd Rd

PFOS Results (µg/Kg)

- ND
- >ND - 13
- >13 - 160
- >160 - 1,600
- >1,600

CLIENT	ARNG			
PROJECT	Site Inspection at Gulfport AVCRAD, MS			
REVISED	1/4/2023	GIS BY	MS	1/4/2023
SCALE	1:5,400	CHK BY	JH	1/4/2023
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	CM	1/4/2023

Facility Boundary
River/Stream
Canal/Ditch
Pipeline

0 225 450 900 Feet

Exceedances of the OSD SL are depicted with a yellow halo.
Depth intervals shown represent respective sampling position within a given soil boring location.

PFOS Detections in Soil

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-2

Shallow

Intermediate

Deep

GUL-01
GUL-02
GUL-03
GUL-04
GUL-05
GUL-06
AOI01-01
AOI02-01
AOI02-02
AOI02-03
AOI02-04
AOI03-01
AOI04-01

Bayou Vista Golf Course
Washington Ave
Raptor Rd
Hewes Ave
Henry Redd Ave
Henry Redd Rd

PFBS Results (µg/Kg)

- ND
- >ND - 10
- >10 - 1,900
- >1,900 - 25,000
- >25,000

CLIENT	ARNG
PROJECT	Site Inspection at Gulfport AVCRAD, MS

REVISED	1/4/2023	GIS BY	MS	1/4/2023
SCALE	1:5,400	CHK BY	JH	1/4/2023
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	CM	1/4/2023

- Facility Boundary
- River/Stream
- Canal/Ditch
- Pipeline

0 225 450 900 Feet

Exceedances of the OSD SL are depicted with a yellow halo.
Depth intervals shown represent respective sampling position within a given soil boring location.

PFBS Detections in Soil

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-3

Shallow

Intermediate

Deep

GUL-01
GUL-02
GUL-03
GUL-04
GUL-05
GUL-06
AOI01-01
AOI02-01
AOI02-02
AOI02-03
AOI02-04
AOI03-01
AOI04-01

Bayou Vista Golf Course
Washington Ave
Raptor Rd
Hewes Ave
Henry Redd Ave
Henry Redd Rd

PFHxS Results (µg/Kg)
- ND
- >ND - 10
- >10 - 130
- >130 - 1,600
- >1,600

CLIENT	ARNG			
PROJECT	Site Inspection at Gulfport AVCRAD, MS			
REVISED	1/4/2023	GIS BY	MS	1/4/2023
SCALE	1:5,400	CHK BY	JH	1/4/2023
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	CM	1/4/2023

Facility Boundary
River/Stream
Canal/Ditch
Pipeline

0 225 450 900 Feet

Exceedances of the OSD SL are depicted with a yellow halo.
Depth intervals shown represent respective sampling position within a given soil boring location.

PFHxS Detections in Soil

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-4

Shallow

Intermediate

Deep

GUL-01
GUL-02
GUL-03
GUL-04
GUL-05
GUL-06
AOI01-01
AOI02-01
AOI02-02
AOI02-03
AOI02-04
AOI03-01
AOI04-01

Bayou Vista Golf Course
Washington Ave
Raptor Rd
Hewes Ave
Henry Redd Ave
Henry Redd Rd

PFNA Results (µg/Kg)

- ND
- >ND - 19
- >19 - 250
- >250 - 2,500
- >2,500

CLIENT	ARNG
PROJECT	Site Inspection at Gulfport AVCRAD, MS

REVISED	1/4/2023	GIS BY	MS	1/4/2023
SCALE	1:5,400	CHK BY	JH	1/4/2023
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	CM	1/4/2023

Facility Boundary
River/Stream
Canal/Ditch
Pipeline

0 225 450 900 Feet

Exceedances of the OSD SL are depicted with a yellow halo.
Depth intervals shown represent respective sampling position within a given soil boring location.

PFNA Detections in Soil

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-5

PFOA

PFOS

PFBS

GUL-01
GUL-02
GUL-03
GUL-04
GUL-05
AOI01-01
AOI02-01
AOI02-02
AOI02-03
AOI03-01
AOI04-01
Bayou Vista Golf Course
Washington Ave
Hewes Ave
Henry Redd Ave
Raptor

PFOA Results (ng/L)
- ND
- >ND - 6
- >6 - 40
- >40 - 70
- >70

PFOS Results (ng/L)
- ND
- >ND - 4
- >4 - 40
- >40 - 70
- >70

PFBS Results (ng/L)
- ND
- >ND - 100
- >100 - 601
- >601 - 2,000
- >2,000

CLIENT	ARNG			
PROJECT	Site Inspection at Gulfport AVCRAD, MS			
REVISED	3/31/2023	GIS BY	MS	3/31/2023
SCALE	1:5,400	CHK BY	JH	3/31/2023
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	CM	3/31/2023

- Facility Boundary
- River/Stream
- Canal/Ditch
- Pipeline
- Groundwater Flow Direction

0 225 450 900 Feet

Exceedances of the OSD SL are depicted with a yellow halo.

N W E S

PFOA, PFOS, and PFBS Detections in Groundwater

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-6

PFHxS

PFNA

GUL-01
GUL-02
GUL-03
GUL-04
GUL-05
AOI01-01
AOI02-01
AOI02-02
AOI02-03
AOI03-01
AOI04-01

Airport Rd
Washington Ave
Bayou Vista Golf Course
S Vista Dr
Gulfport-Biloxi International
Hewes Ave
Henry Redd Ave
Raptor Rd
Henry Redd Rd

PFHxS Results (ng/L)
- ND
- >ND - 39
- >39 - 100
- >100 - 1,000
- >1,000

PFNA Results (ng/L)
- ND
- >ND - 6
- >6 - 100
- >100 - 1,000
- >1,000

CLIENT	ARNG			
PROJECT	Site Inspection at Gulfport AVCRAD, MS			
REVISED	3/31/2023	GIS BY	MS	3/31/2023
SCALE	1:5,400	CHK BY	JH	3/31/2023
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	CM	3/31/2023

- Facility Boundary
- River/Stream
- Canal/Ditch
- Pipeline
- Groundwater Flow Direction

0 225 450 900 Feet

Exceedances of the OSD SL are depicted with a yellow halo.

N W E S

PFHxS and PFNA Detections in Groundwater

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-7

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7. Exposure Pathways

The conceptual site models (CSMs) for each AOI, revised based on the SI findings, are presented on **Figure 7-1** through **Figure 7-4**. Please note that while the CSM discussion assists in determining if a receptor may be impacted, the decision to move from SI to RI or interim action is determined based upon exceedances of the SLs for the relevant compounds and whether the release is more than likely attributable to the DoD. A CSM presents the current understanding of the site conditions with respect to known and suspected sources, potential transport mechanisms and migration pathways, and potentially exposed human receptors. A human exposure pathway is considered potentially complete when the following conditions are present:

1. Contaminant source;
2. Environmental fate and transport;
3. Exposure point;
4. Exposure route; and
5. Potentially exposed populations.

If any of these elements are missing, the pathway is incomplete. The CSM figures use an empty circle symbol to represent an incomplete exposure pathway. Areas with an incomplete pathway generally warrant no further action. However, the pathway is considered potentially complete if the relevant compounds are detected, in which case the CSM figure uses a half-filled circle symbol to represent a potentially complete exposure pathway. Additionally, a completely filled circle symbol is used to indicate when a potentially complete exposure pathway has detections of relevant compounds above the SLs. Areas with an identified potentially complete pathway that have detections of the relevant compounds above the SLs may warrant further investigation. Although the CSMs indicate whether potentially complete exposure pathways may exist, the recommendation for future study in an RI or no action at this time is based on the comparison of the SI analytical results for the relevant compounds to the SLs.

In general, the potential routes of exposure to the relevant compounds 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 toxicological study. The receptors evaluated are consistent with those listed in USEPA guidance for risk screening (USEPA, 2001). Receptors at the facility include site workers (e.g., facility staff and visiting soldiers), construction workers, trespassers (though unlikely due to restricted access), residents outside the facility boundary, and recreational users outside of the facility boundary.

7.1 Soil Exposure Pathway

The SI results in soil were used to determine whether a potentially complete pathway exists between the source and potential receptors at AOI 1, AOI 2, AOI 3, and AOI 4 based on the aforementioned criteria.

7.1.1 AOI 1

A large release of Jet-X at AOI 1 occurred in 2018 during a full test of the fire suppression system. The release was drained through the floor drains to the OWS, which discharges to the city sanitary sewer system.

PFOS, PFHxS, and PFNA were detected in surface soil at AOI 1. Site workers, construction workers, and trespassers could contact constituents in surface soil via incidental ingestion of soil and inhalation of dust. No ongoing construction was observed at the facility. Therefore, the surface soil exposure pathways for site workers, future construction workers, and trespassers are potentially complete. PFOS, PFHxS and PFNA were detected in subsurface soil at AOI 1. Construction workers could contact constituents in subsurface soil during future construction activities via incidental ingestion; therefore, the subsurface soil exposure pathway for future construction workers is potentially complete. The on-facility golf driving range is located approximately 500 feet northwest from AOI 1, while the off-facility golf course is located approximately 500 feet to the northeast. Therefore, the on- and off-facility recreational user exposure pathway via inhalation of dust is potentially complete. There are no nearby residents to AOI 1. Consequently, the exposure pathways for residents are considered incomplete. The CSM for AOI 1 is presented on **Figure 7-1**.

7.1.2 AOI 2

AOI 2 houses a fire suppression system equipped with a 900-gallon AFFF tank, which was observed to be stained and corroded on the exterior and throughout the fire suppression system, indicating a potential release during the 2018 bladder change. Additionally, hurricane damage to the hanger in 2020 resulted in damage to the fire suppression system and caused a release of AFFF. The majority of the release was contained to the hangar and was drained through the floor drains to the OWS, which discharges to the city sanitary sewer system.

PFOA, PFOS, PFBS, PFHxS, and PFNA were detected in surface soil at AOI 2 and at the downgradient facility boundary location GUL-03. Site workers, construction workers, and trespassers could contact constituents in surface soil via incidental ingestion of soil and inhalation of dust. Therefore, the surface soil exposure pathways for site workers, future construction workers, and trespassers are potentially complete. PFOS and PFNA were detected in subsurface soil at AOI 2. Construction workers could contact constituents in subsurface soil during future construction activities via incidental ingestion; therefore, the subsurface soil exposure pathway for future construction workers is potentially complete. The golf course is located approximately 500 feet to the northeast of AOI 2. Therefore, the off-facility recreational user exposure pathway via incidental inhalation of dust is potentially complete for AOI 2. There are no nearby residents to AOI 1. Consequently, the exposure pathways for residents are considered incomplete. The CSM for AOI 2 is presented on **Figure 7-2**.

7.1.3 AOI 3

In the 1990s, nozzle testing with AFFF was conducted by MSANG personnel at AOI 3 and is known to have occurred on both sides of the Aircraft Parking Ramp. The AFFF released on the Aircraft Parking Ramp may have directly contacted surface soil adjacent to the ramp, entered the trench drains on the ramp, or infiltrated the cracks and seams in the ramp directly to the subsurface soil or shallow groundwater. The northeast to southwest-trending drain leads to an off-facility detention pond and the MSANG Outfall 003.

PFOA, PFOS, PFHxS, and PFNA were detected in surface soil at AOI 3 and at the downgradient location GUL-05. PFHxS was detected at side-gradient location GUL-04. Site workers, construction workers, and trespassers could contact constituents in surface soil via incidental ingestion soil and inhalation of dust. Therefore, the surface soil exposure pathway for site workers, future construction workers, and trespassers are potentially complete. PFOA, PFOS, PFHxS, and PFNA were detected in subsurface soil at AOI 3 and GUL-05. Construction workers could contact constituents in subsurface soil during future construction activities via incidental ingestion; therefore, the subsurface soil exposure pathway for future construction workers is potentially complete. AOI 3 is located more than 800 feet away from off-facility residents and recreational

users. Therefore, the exposure pathways for these receptors are considered incomplete. The CSM for AOI 3 is presented on **Figure 7-3**.

7.1.4 AOI 4

Tri-Max™ extinguisher units were historically staged at AOI 4. PFOS and PFHxS were detected in surface soil at AOI 4. Site workers, construction workers, and trespassers could contact constituents in surface soil via incidental ingestion soil and inhalation of dust. Therefore, the surface soil exposure pathways for site workers, future construction workers, and trespassers are potentially complete. PFBS and PFOS were detected in subsurface soil at AOI 4. Construction workers could contact constituents in subsurface soil during future construction activities via incidental ingestion; therefore, the subsurface soil exposure pathway for future construction workers is potentially complete. There are no nearby off-facility residents and recreational users; therefore, the exposure pathways for these receptors are considered incomplete. The CSM for AOI 4 is presented on **Figure 7-4**.

7.2 Groundwater Exposure Pathway

The SI results in groundwater were used to determine whether a potentially complete pathway exists between the source and potential receptors based on the aforementioned criteria.

7.2.1 AOI 1

PFOA, PFOS, PFHxS, and PFNA were detected in groundwater above their SLs at AOI 1. PFOS and PFHxS were detected in groundwater above their SLs at the downgradient facility boundary location GUL-01. There are multiple downgradient domestic drinking water wells within 4 miles to the north of the facility boundary. These wells are generally drilled at depths of 170 to 220 feet bgs. Additionally, there are multiple wells of unknown use that are screened at much shallower depths (less than 75 feet bgs). Due to the uncertainty of well use, the ingestion exposure pathway for off-facility residents is conservatively considered potentially complete. The facility sources its drinking water from supply wells within the Graham Ferry aquifer; therefore, the drinking water pathway via groundwater to site workers and trespassers is incomplete. At AOI 1, groundwater was observed at a depth of 0.88 feet bgs. The construction worker exposure scenario assumes excavation occurs at depths at or above 15 feet bgs. Additionally, site workers may encounter shallow groundwater at depths above 2 feet bgs. Therefore, the incidental ingestion exposure pathway is considered potentially complete for future construction workers and site workers. The CSM for AOI 1 is presented on **Figure 7-1**.

7.2.2 AOI 2

PFOA, PFOS, and PFNA were detected in groundwater above their SLs at AOI 2 and at the downgradient facility boundary location GUL-03. There are multiple downgradient domestic drinking water wells within 4 miles to the north of the facility boundary screened at depths of 170 to 220 feet bgs. There are also multiple wells of unknown use screened at depths less than 75 feet bgs. Due to the uncertainty of well use, the ingestion exposure pathway for off facility residents is considered potentially complete. The facility sources its drinking water from supply wells within the Graham Ferry aquifer; therefore, the drinking water pathway via groundwater to site workers and trespassers is incomplete. At AOI 2, groundwater was observed at depths ranging between 1.84 and 5.13 feet bgs. Therefore, the incidental ingestion exposure pathway is considered potentially complete for future construction workers and current/future site workers. The CSM for AOI 2 is presented on **Figure 7-2**.

7.2.3 AOI 3

PFOA, PFOS, PFHxS, and PFNA were detected in groundwater above their SLs at AOI 3 and at the downgradient location GUL-05. There are multiple downgradient domestic drinking water wells within 4 miles to the north of the facility boundary screened at depths of 170 to 220 feet bgs. There are also multiple wells of unknown use screened at depths less than 75 feet bgs. Due to the uncertainty of well use, the ingestion exposure pathway for off facility residents is considered potentially complete. The facility sources its drinking water from supply wells within the Graham Ferry aquifer; therefore, the drinking water pathway via groundwater to site workers and trespassers is incomplete. At AOI 2, groundwater was observed at depths ranging between 0.97 and 2.16 feet bgs. Therefore, the incidental ingestion exposure pathway is considered potentially complete for future construction workers and current/future site workers. The CSM for AOI 3 is presented on **Figure 7-3**.

7.2.4 AOI 4

PFOA and PFOS were detected in groundwater above their SLs at AOI 4. There are multiple downgradient domestic drinking water wells listed within 4 miles to the north of the facility boundary screened at depths of 170 to 220 feet bgs. There are also multiple wells of unknown use screened at depths less than 75 feet bgs. Due to the uncertainty of well use, the ingestion exposure pathway for off facility residents is considered potentially complete. The facility sources its drinking water from supply wells within the Graham Ferry aquifer; therefore, the drinking water pathway via groundwater to site workers and trespassers is incomplete. At AOI 2, groundwater was observed at a depth of 3.91 feet bgs. During wet periods, the water level may rise to depths shallower than 2 feet bgs. Therefore, the incidental ingestion exposure pathway is considered potentially complete for future site workers and future construction workers. The CSM for AOI 4 is presented on **Figure 7-4**.

7.3 Surface Water and Sediment Exposure Pathway

The SI results in soil and groundwater, in combination with knowledge of the fate and transport properties of PFAS, were used to determine whether a potentially complete pathway exists between the source and potential receptors.

7.3.1 AOI 1

Releases within the New Paint Hangar were drained via floor drains to the OWS. Any releases that potentially escaped the hangar may have flowed via drainage ditches to Outfall 002. Therefore, the surface water and sediment exposure pathways for site workers, future construction workers, and trespassers via the incidental ingestion exposure pathway are potentially complete. PFAS are water soluble and can migrate readily from soil to surface water via runoff and leaching. PFOS, PFHxS, and PFNA were detected in soil, and PFOA, PFOS, PFBS, PFHxS, and PFNA were detected in groundwater at AOI 1; therefore, it is possible that these compounds may have migrated to nearby surface water bodies, such as Bayou Bernard. Bayou Bernard is not sourced for drinking water but is recreationally used. Therefore, the exposure pathway to offsite residents is incomplete and the exposure pathway to recreational users is considered potentially complete. The CSM for AOI 1 is presented on **Figure 7-1**.

7.3.2 AOI 2

Releases within the Main Hangar were drained via floor drains to the OWS. Releases that escaped the confines of the hangar may have been conveyed to Outfalls 001 or 002 or the onsite pond. Therefore, the surface water and sediment exposure pathways for site workers, future

construction workers, and trespassers via the incidental ingestion exposure pathway are potentially complete. PFOS, PFHxS, and PFNA were detected in soil, and PFOA, PFOS, PFBS, PFHxS, and PFNA were detected in groundwater at AOI 2; therefore, it is possible that these compounds may have migrated to Bayou Bernard. Therefore, the exposure pathway to offsite residents is incomplete, and the exposure pathway to recreational users is considered potentially complete. The CSM for AOI 2 is presented on **Figure 7-2**.

7.3.3 AOI 3

Releases on the pavement at AOI 3 would have primarily drained northeastward to the off-facility MSANG Outfall 003, and then to the off-facility detention pond. Any releases on the grassy areas of the facility would have been conveyed to the northwest to Outfall 003, which daylights off the facility property. Therefore, the surface water and sediment exposure pathway for future construction workers via the incidental ingestion is potentially complete, whereas the exposure pathways for site workers and trespassers in exposure pathway are considered incomplete. PFOA, PFOS, PFHxS, and PFNA were detected in soil, and PFOA, PFOS, PFBS, PFHxS, and PFNA were detected in groundwater at AOI 3. Consequently, it is possible that these compounds may have migrated to Bayou Bernard. Therefore, the exposure pathway to offsite residents is incomplete and the exposure pathway to recreational users is considered potentially complete. The CSM for AOI 3 is presented on **Figure 7-3**.

7.3.4 AOI 4

Releases at AOI 4 would have primarily drained to Outfall 003, which daylights off the facility property. Therefore, the surface water and sediment exposure pathway for future construction workers via the incidental ingestion is potentially complete, whereas the exposure pathways for site workers and trespassers in exposure pathway are considered incomplete. PFOS, PFBS and PFHxS were detected in soil, and PFOA, PFOS, PFBS, and PFHxS detected in groundwater at AOI 4. Consequently, it is possible that these compounds may have migrated to Bayou Bernard. Therefore, the exposure pathway to offsite residents is incomplete and the exposure pathway to recreational users is considered potentially complete. The CSM for AOI 4 is presented on **Figure 7-4**.

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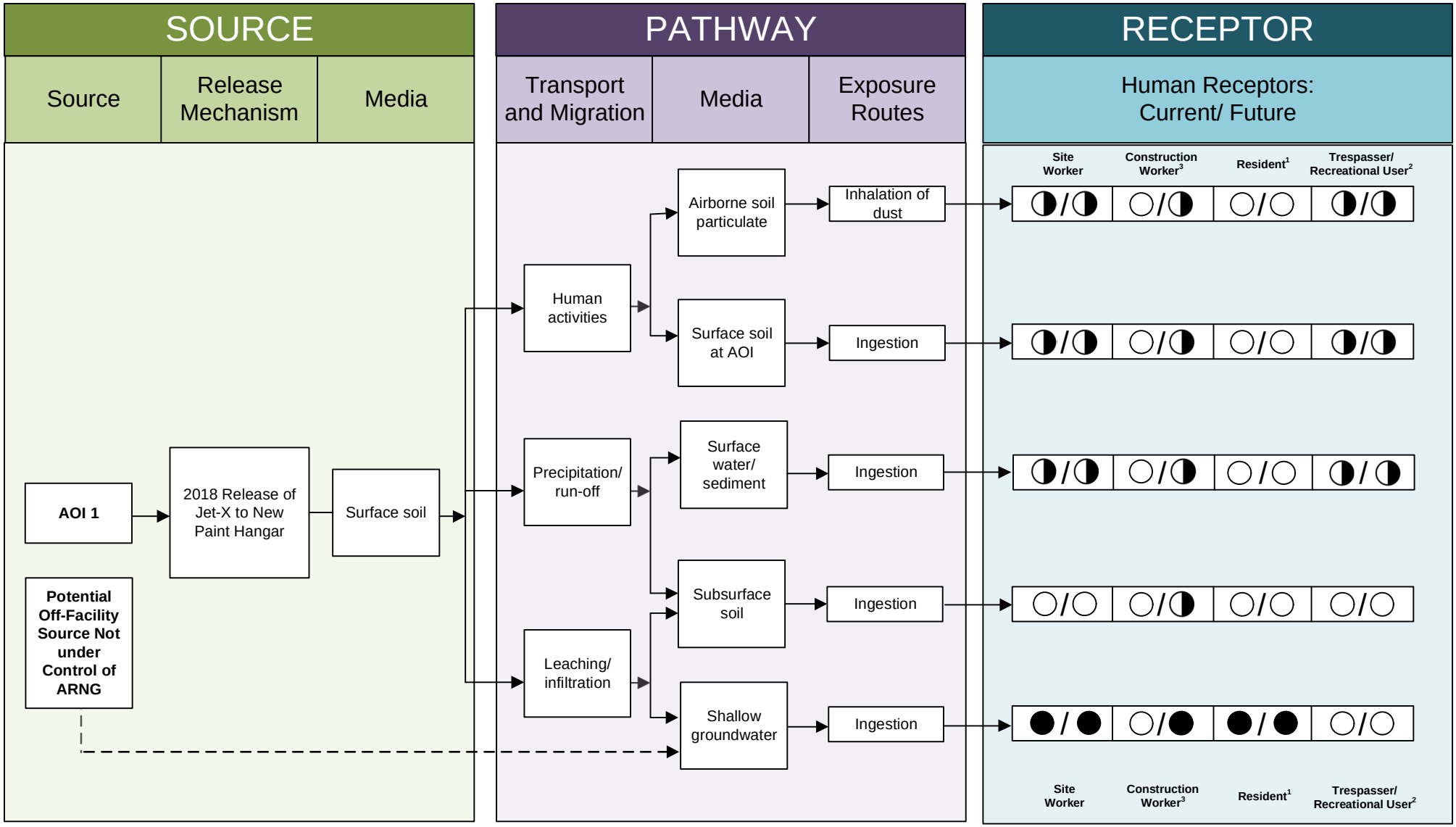


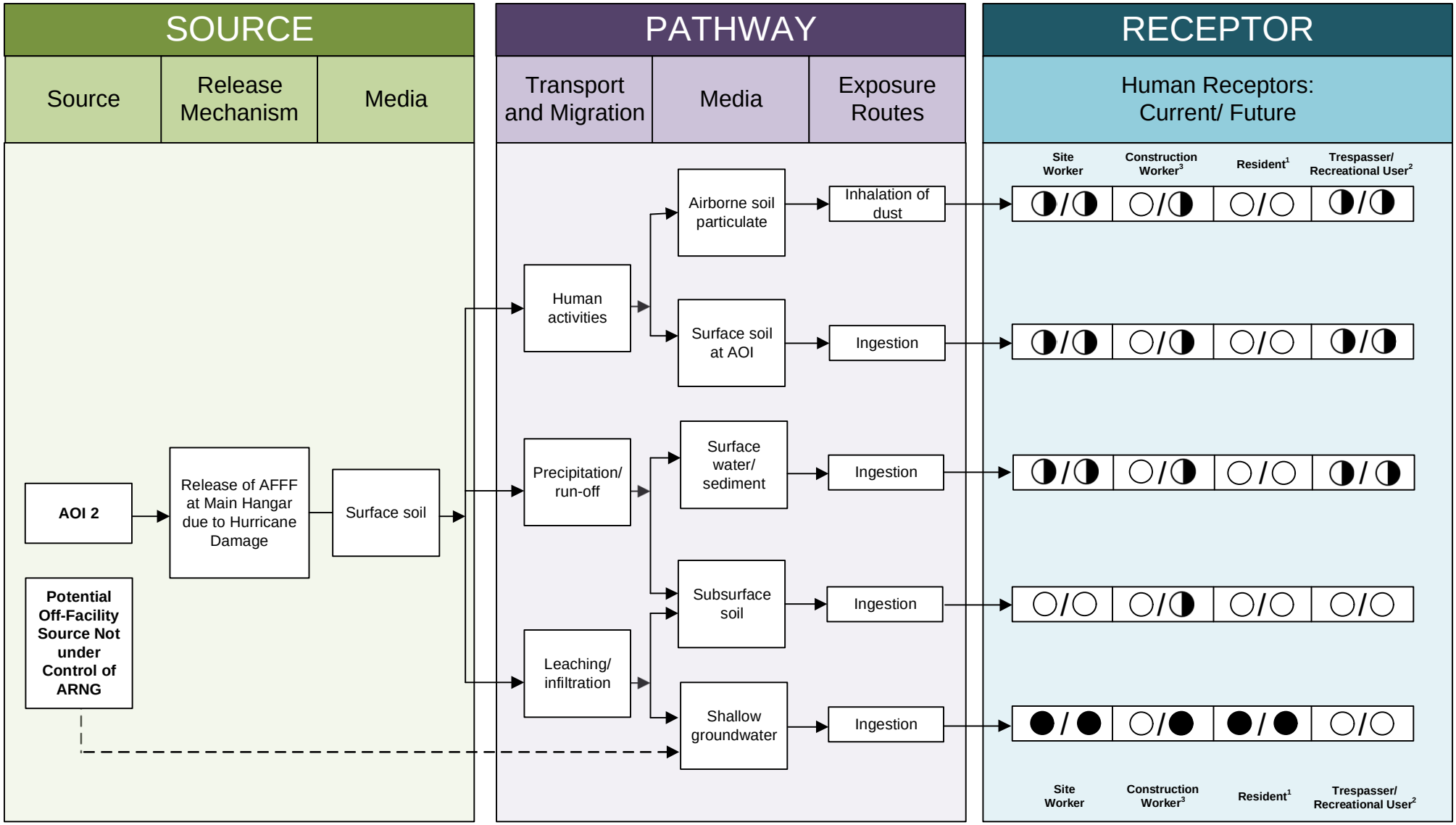
LEGEND

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

Notes:

1. Resident refer to off-site receptors.
2. Recreational Users refer to on- and off-facility receptors.
3. No current active construction at the facility.

Figure 7-1
Conceptual Site Model, AOI 1
Gulfport AVCRAD



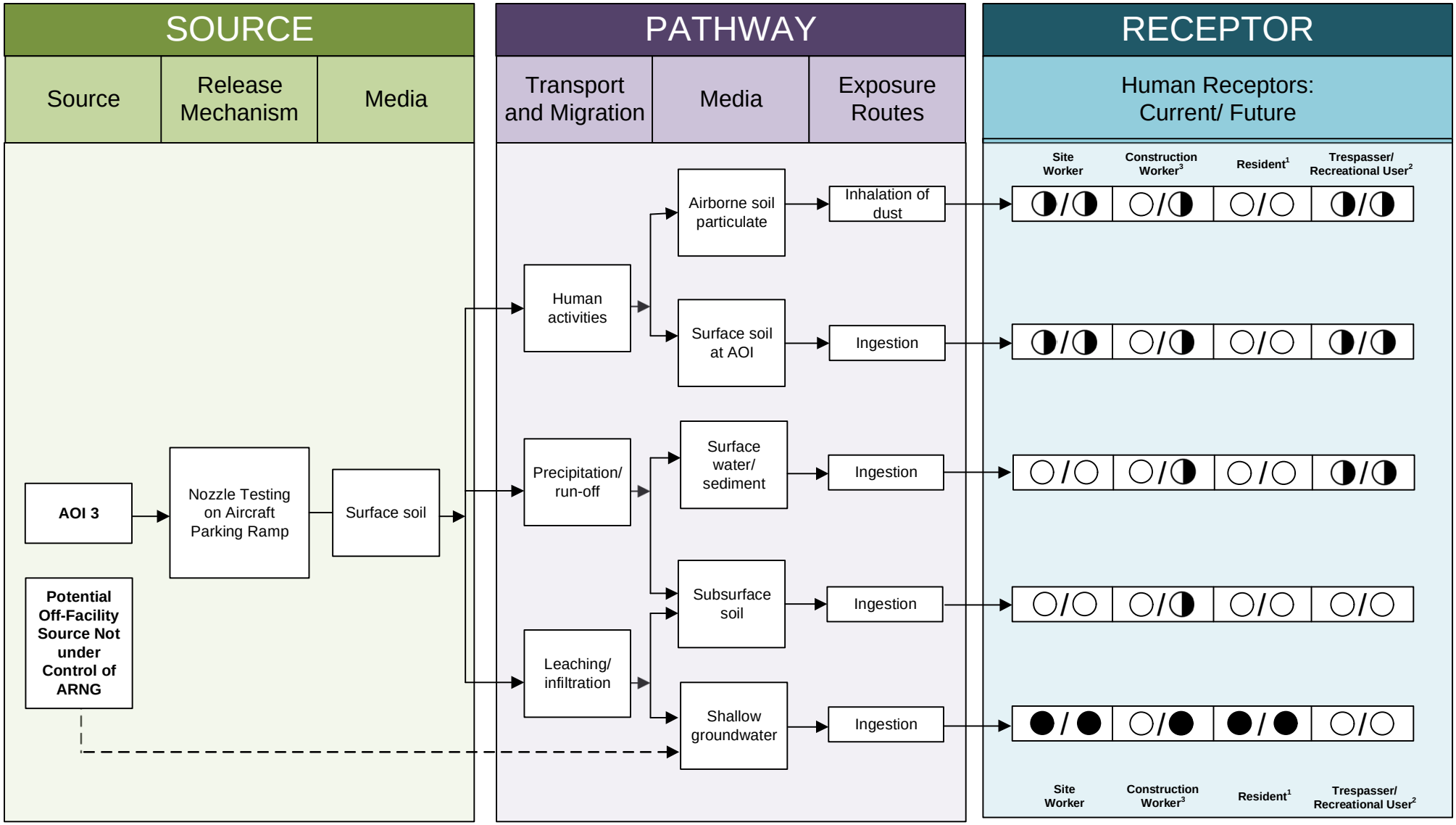
LEGEND

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

Notes:

1. Resident refer to off-site receptors.
2. Recreational Users refer to on- and off-facility receptors.
3. No current active construction at the facility.

Figure 7-2
Conceptual Site Model, AOI 2
Gulfport AVCRAD



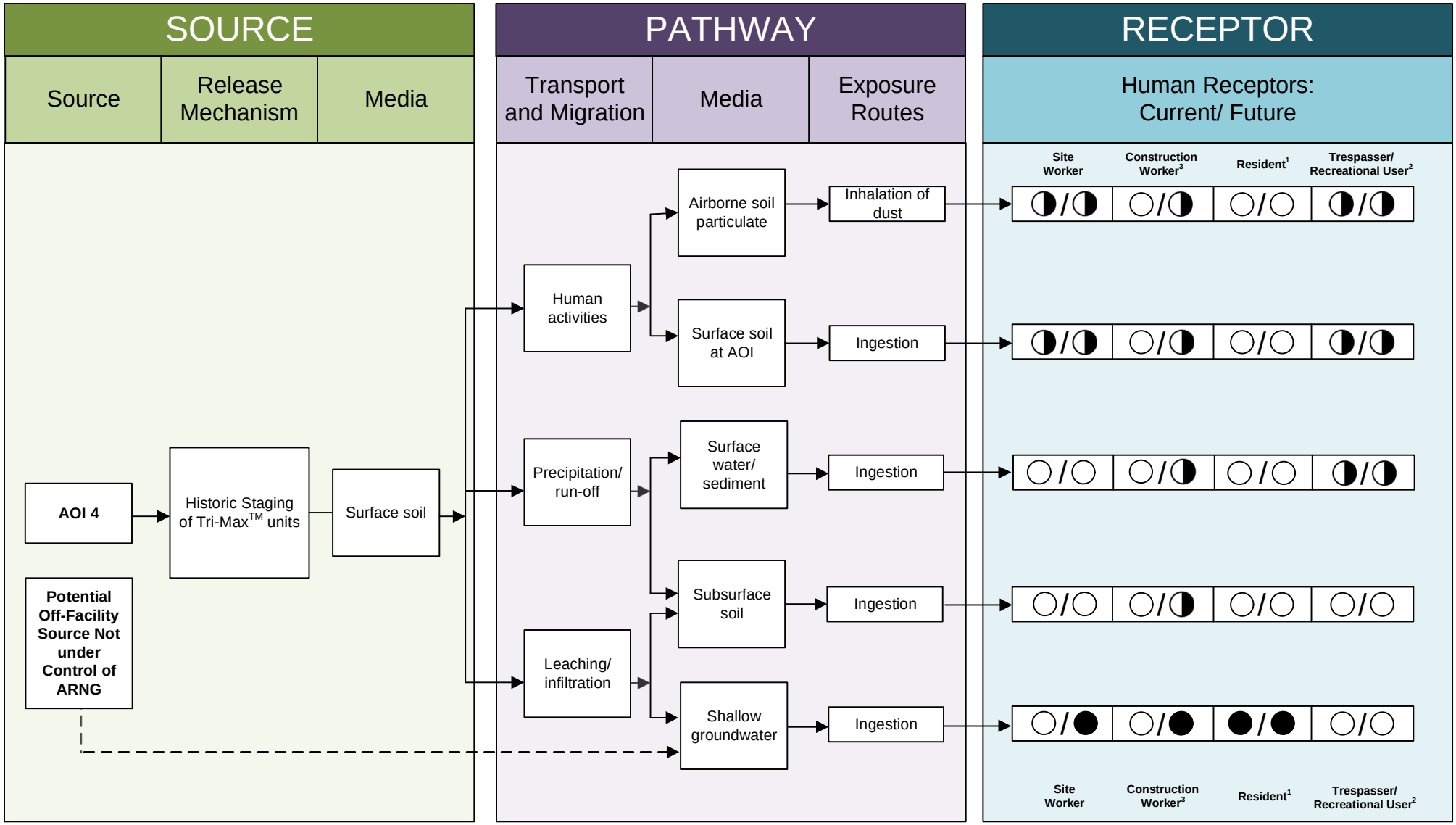
LEGEND

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

Notes:

1. Resident refer to off-site receptors.
2. Recreational Users refer to on- and off-facility receptors.
3. No current active construction at the facility.

Figure 7-3
Conceptual Site Model, AOI 3
Gulfport AVCRAD



LEGEND

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

Notes:

1. Resident refer to off-site receptors.
2. Recreational Users refer to on- and off-facility receptors.
3. No current active construction at the facility.

Figure 7-4
Conceptual Site Model, AOI 4
Gulfport AVCRAD

8. Summary and Outcome

This section summarizes SI activities and findings. The most significant findings are summarized in this section and are reproduced directly or abstracted from information contained in this report. The outcome provides general and comparative interpretations of the findings relative to the SLs.

8.1 SI Activities

The SI field activities were conducted from 23 to 25 May 2022 and consisted of utility clearance, direct push boring, soil sample collection, temporary monitoring well installation, grab groundwater sample collection, and land surveying. Field activities were conducted in accordance with the SI QAPP Addendum (AECOM, 2022a), except as previously noted in **Section 5.8**.

To fulfill the project DQOs set forth in the approved SI QAPP Addendum (AECOM, 2022a), samples were collected and analyzed for a subset of 18 compounds by LC/MS/MS compliant with QSM 5.3 Table B-15 as follows.

- Twenty-five (25) soil samples from 13 boring locations;
- Eleven (11) grab groundwater samples from 11 temporary well locations;
- Nineteen (19) QA/QC samples.

An SI is conducted when the PA determines an AOI exists based on probable use, storage, and/or disposal of PFAS-containing materials. The SI includes multi-media sampling at AOIs to determine whether or not a release has occurred. The SI may conclude further investigation is warranted, a removal action is required to address immediate threats, or no further action is required. Additionally, the CSMs were refined to assess whether a potentially complete pathway exists between the source and potential receptors for potential exposure at the AOIs, which are described in **Section 7**.

8.2 Outcome

Based on the results of this SI, further evaluation under CERCLA is warranted in an RI for AOI 1, AOI 2, AOI 3, and AOI 4 (see **Table 8-1**). Based on the CSMs developed and revised in light of the SI findings, there is potential for exposure to drinking water receptors from all AOIs from sources on the facility resulting from historical DoD activities. Sample analytical concentrations collected during the SI were compared to the project SLs in soil and groundwater, as described in **Table 6-1**. A summary of the results of the SI data relative to the SLs is as follows:

- At AOI 1:
    - The detected concentrations of PFOA, PFOS, PFHxS, PFNA, and PFBS in soil at AOI 1 were below their SLs.
    - PFOA, PFOS, PFHxS, and PFNA in groundwater exceeded their SLs. PFOA exceeded the SL of 6 ng/L, at a concentration of 48.2 ng/L at location AOI01-01. PFOS exceeded the SL of 4 ng/L, with a maximum concentration of 368 ng/L at location AOI01-01. PFHxS exceeded the SL of 39 ng/L, at a concentration of 90.9 ng/L at location AOI01-01. PFNA exceeded the SL of 6 ng/L, at a concentration of 22.2 ng/L at location AOI01-01. Based on the results of the SI, further evaluation of AOI 1 is warranted in an RI.

- At AOI 2:
    - The detected concentrations of PFOA, PFOS, PFHxS, PFNA, and PFBS in soil at AOI 2 were below their SLs.
    - PFOA, PFOS, and PFNA in groundwater exceeded their SLs. PFOA exceeded the SL of 6 ng/L at all four wells, with a maximum concentration of 59.7 ng/L at AOI02-03. PFOS exceeded the SL of 4 ng/L, with a maximum concentration of 41.2 ng/L at location AOI02-01. PFNA exceeded the SL of 6 ng/L, at a concentration of 6.15 ng/L at location AOI02-01. Based on the results of the SI, further evaluation of AOI 1 is warranted in an RI.
- At AOI 3:
    - The detected concentrations of PFOA, PFOS, PFHxS, and PFNA in soil at AOI 3 were below their SLs.
    - PFOA, PFOS, PFHxS, and PFNA in groundwater exceeded their SLs. PFOA exceeded the SL of 6 ng/L, with a maximum concentration of 97.1 J ng/L at location AOI03-01. PFOS exceeded the SL of 4 ng/L, with a maximum concentration of 2,090 ng/L at GUL-05. PFHxS exceeded the SL of 39 ng/L, with a maximum concentration of 229 ng/L at location GUL-05. PFNA exceeded the SL of 6 ng/L, with a maximum concentration of 99.6 ng/L at location GUL-05. Based on the results of the SI, further evaluation of AOI 3 is warranted in an RI.
- At AOI 4:
    - The detected concentrations of PFOS, PFHxS, and PFBS in soil at AOI 4 were below their SLs.
    - PFOA and PFOS in groundwater exceeded their SLs. PFOA exceeded the SL of 6 ng/L, at a concentration of 7.07 ng/L at location AOI04-01. PFOS exceeded the SL of 4 ng/L, at a concentration of 7.07 ng/L at location AOI04-01. Based on the results of the SI, further evaluation of AOI 3 is warranted in an RI.

Of the six PFAS compounds presented in the 6 July 2022 OSD memorandum, HFPO-DA (commonly referred to as GenX) was not included as an analyte at the time of this SI. Based on the CSM developed during the PA and revised based on SI findings, the presence of HFPO-DA is not anticipated at the facility because HFPO-DA is generally not a component of MIL-SPEC AFFF and based on its history including distribution limitations that restricted use of GenX, it is generally not a component of other products the military used. In addition, it is unlikely that GenX would be an individual chemical of concern in the absence of other PFAS.

Table 8-1 summarizes the SI results for soil and groundwater used to determine if an AOI should be considered for further investigation under CERCLA and undergo an RI.

Table 8-1: Summary of Site Inspection Findings and Recommendations

AOI	Potential Release Area	Soil – Source Area	Groundwater – Source Area	Future Action
1	New Paint Hangar	◐	●	Proceed to RI
2	Main Hangar and Tank Room	◐	●	Proceed to RI
3	Mississippi ANG Aircraft Parking Ramp	◐	●	Proceed to RI
4	Old Aircraft Staging Ramp	◐	●	Proceed to RI

Notes: ANG = Air National Guard; AOI = Area of Interest; N/A = not applicable; RI = Remedial Investigation

Legend:

● = detected; exceedance of the screening levels

◐ = detected; no exceedance of the screening levels

○ = not detected

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