FINAL
Preliminary Assessment Report
E.J. Garn Aviation Complex, Utah

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

July 2020

Prepared for:

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

UNCLASSIFIED

Table of Contents

Executive Summary 1
1. Introduction 4
    1.1 Authority and Purpose 4
    1.2 Preliminary Assessment Methods 4
    1.3 Report Organization 5
    1.4 Facility Location and Description 5
    1.5 Facility Environmental Setting 5
        1.5.1 Soil 6
        1.5.2 Geology 6
        1.5.3 Hydrogeology 6
        1.5.4 Hydrology 7
        1.5.5 Climate 8
        1.5.6 Current and Future Land Use 8
2. Fire Training Areas 12
    2.1 Hangar/Ramp Area 12
3. Non-Fire Training Areas 14
    3.1 Building 00001 14
    3.2 Building 00002 14
    3.3 Building 00004 15
    3.4 Building 00010 15
4. Emergency Response Areas 17
5. Adjacent Sources 19
    5.1 Emergency Response Area 19
    5.2 Private Aviation Companies at South Valley Regional Airport 19
6. Preliminary Conceptual Site Model 21
    6.1 AOI 1: Building 00001 21
    6.2 AOI 2: Hangar/Ramp Area 21
    6.3 AOI 3: Building 00003 Dumpster Fire 22
7. Conclusions 28
    7.1 Findings 28
    7.2 Uncertainties 28
    7.3 Potential Future Actions 29
References 32

Tables

Table ES-1 AOIs at E.J. Garn Aviation Complex
Table 7-1 AOIs at E.J. Garn Aviation Complex
Table 7-2 Uncertainties within the PA
Table 7-3 PA Findings Summary

Figures

Figure ES-1 Summary of Findings
Figure ES-2 Preliminary Conceptual Site Model E.J. Garn Aviation Complex
Figure 1-1 Facility Location
Figure 1-2 Groundwater Features
Figure 1-3 Surface Water Features
Figure 2-1 Fire Training Area
Figure 3-1 Non-Fire Training Areas
Figure 4-1 Emergency Response Area
Figure 5-1 Adjacent Sources
Figure 6-1 Area of Interest
Figure 6-2 Preliminary Conceptual Site Model AOI 1
Figure 6-3 Preliminary Conceptual Site Model AOI 2
Figure 6-4 Preliminary Conceptual Site Model AOI 3
Figure 7-1 Summary of Findings

Appendices

Appendix A Data Resources
Appendix B Preliminary Assessment Documentation
B.1 Interview Records
B.2 Visual Site Inspection Checklists
B.3 Conceptual Site Model Information
Appendix C Photographic Log

Acronyms and Abbreviations

%	percent
AASF	Army Aviation Support Facility
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
amsl	above mean sea level
AOI	area of interest
ARNG	Army National Guard
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSM	conceptual site model
°F	degrees Fahrenheit
EDR™	Environmental Data Resources, Inc.™
ELU	Equivalent Livestock Units
ft	feet
FTA	fire training area
FBO	Fixed Base Operator
HA	Health Advisory
HAZMAT	Hazardous Materials
NCO	Non-Commissioned Officer
NOAA	National Oceanic and Atmospheric Administration
PA	Preliminary Assessment
PFAS	per- and poly-fluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
ppt	parts per trillion
SI	Site Inspection
UCMR3	Third Unregulated Contaminant Monitoring Rule
UDWR	Utah Division of Water Rights
US	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UTARNG	Utah Army National Guard
VSI	visual site inspection

Executive Summary

The Army National Guard (ARNG) is performing *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide*. A PA for per- and polyfluoroalkyl substances (PFAS)-containing materials was completed for E.J. Garn Aviation Complex (the "facility") at West Jordan, Utah, to assess potential PFAS release areas and exposure pathways to possible receptors. The performance of this PA included the following tasks:

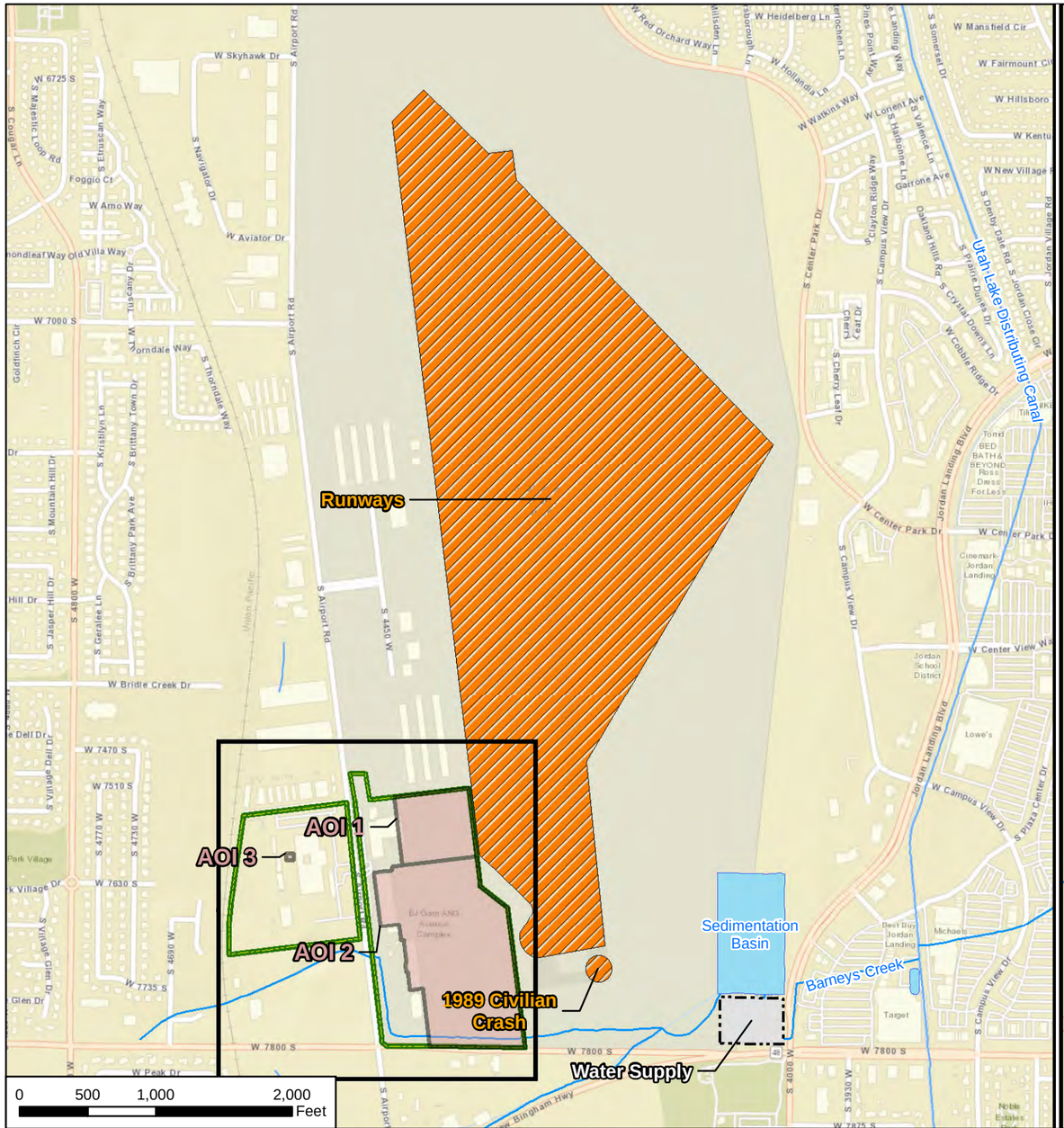
- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)™ report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility;
- Conducted a 1-day site visit on 16 July 2019 and completed visual site inspections at locations where PFAS-containing materials were suspected of being stored, used, or disposed;
- Interviewed current facility personnel during the site visit including the Utah ARNG (UTARNG) Safety Non-Commissioned Officer /Hazardous Materials Training Manager, the UTANRG Environmental Manager, and the UTARNG Facilities Manager;
- Identified an Area of Interest (AOI) and developed a preliminary conceptual site model (CSM) to summarize potential source-pathway-receptor linkages of potential PFAS in soil, groundwater, surface water, and sediment for the AOI.

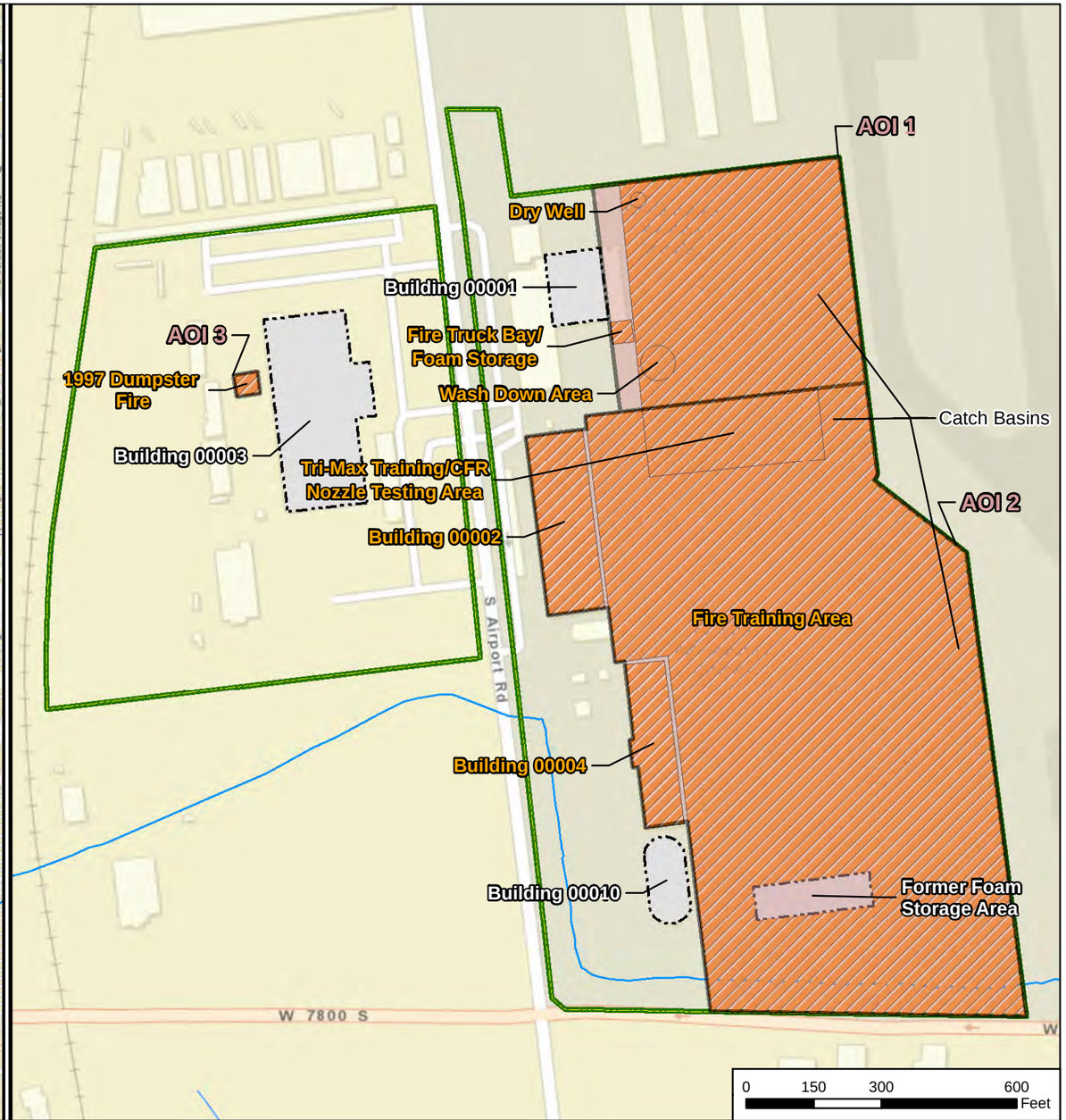
Three AOIs related to potential PFAS releases was identified at the E.J. Garn Aviation Complex during the PA. The AOIs are shown on **Figure 6-1** and described in **Table ES-1** below:

Table ES-1: AOIs at E.J. Garn Aviation Complex

Area of Interest	Name	Used by	Release Dates
AOI 1	Building 00001	UTARNG	Prior to 2009
AOI 2	Hangar/Ramp Area	UTARNG	Since at least 1991 until approximately 2016.
AOI 3	Building 00003 Dumpster Fire	UTARNG	1997

Based on information obtained during the PA, there is potential for exposure to PFAS contamination in surface soil to site workers, construction workers, and trespassers via ingestion and inhalation; subsurface soil to construction workers via ingestion; surface water and sediments to off-facility residents and off-facility recreational users via ingestion; and groundwater to off-facility residents via ingestion. The preliminary CSM for the E.J. Garn Aviation Complex is shown on **Figures ES-2.** Several off-facility municipal, domestic, and stock water wells have been identified in the vicinity of the facility (**Figure 1-2**). The third Unregulated Contaminant Monitoring Rule (UCMR3) data were reviewed to identify nearby sites which exceed USEPA's Health Advisory for PFAS; however, none were identified (USEPA, 2017). PFAS analyses performed in 2016 had method detection limits that were higher than currently achievable. Thus, it is possible that low concentrations of PFAS were not detected during the UCMR3 but might be detected if analyzed today.





CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at E.J. Garn Aviation Complex, UT			
REVISED	5/1/2020	GIS BY	MS	5/1/2020
SCALE	1:12,000	CHK BY	AG	5/1/2020
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	RG	5/1/2020

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

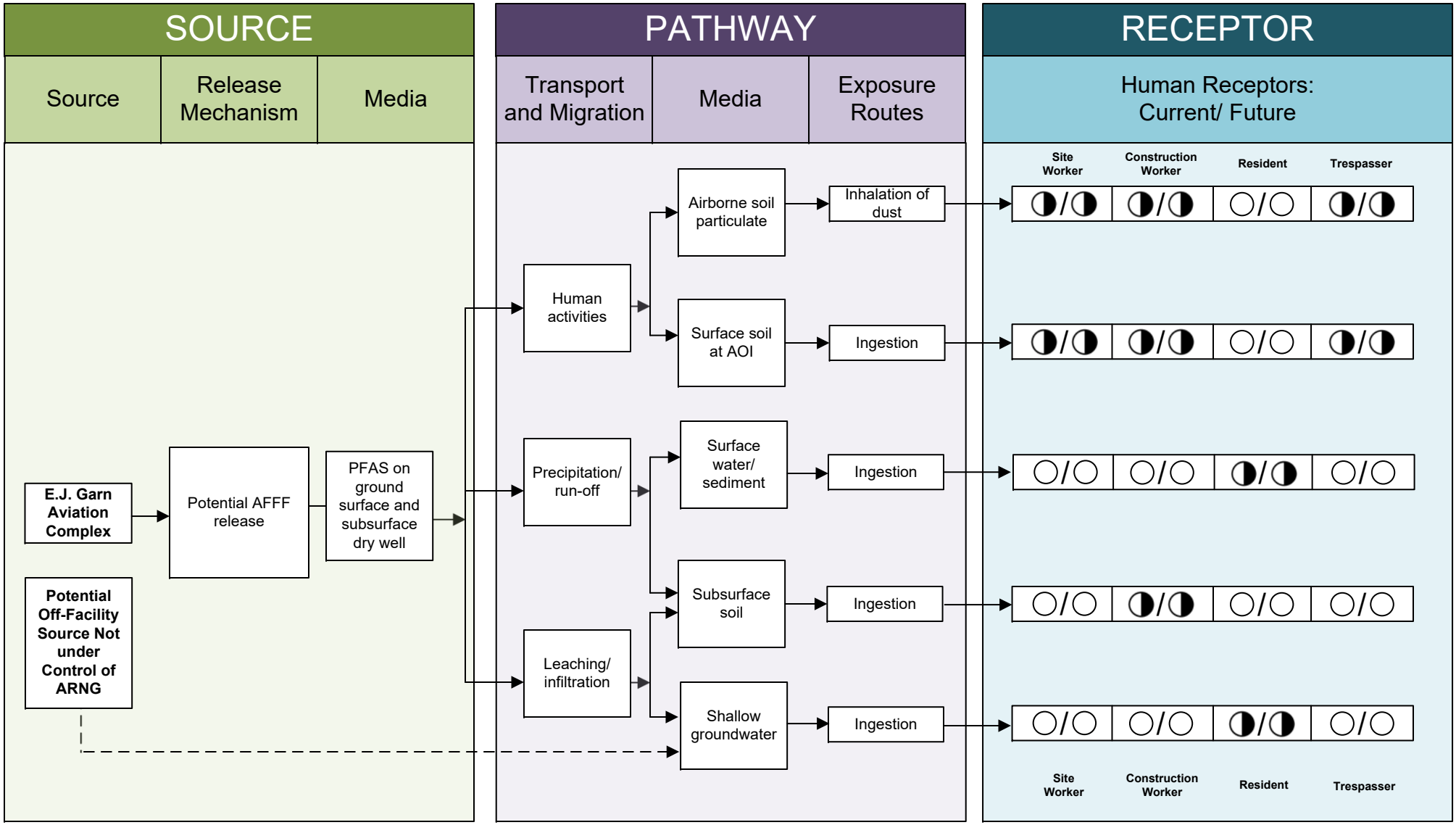
N

Summary of Findings

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure ES-1

C:\Users\stankevichm\OneDrive - AECOM Directory\ARNG_PFAS_GIS_60552172\MXDs\UT\EJ_Garn_AASF_Figures\EJ_Garn_PA_Figures\Fig_ES-1_EJ_Garn_AASF_Summary.mxd



LEGEND

- Flow-chart stops
- Flow-chart continues
- Partial/ possible flow
- Incomplete pathway
- Possible complete pathway
- Complete pathway

Notes:

1. The resident receptor refers to an off-site resident.

2. Current risk practice suggests the exposure pathway for dermal contact is insignificant compared to ingestion, but supporting data is sparse and continues to be studied.

Figure ES-2
Preliminary Conceptual Site Model
E.J. Garn Aviation Complex West Jordan, UT

1. Introduction

1.1 Authority and Purpose

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

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

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

This report presents findings of a PA for PFAS-containing materials at the Utah ARNG (UTARNG) E.J. Garn Aviation Complex (the “facility”), at West Jordan, Utah, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations Part 300), and Army requirements and guidance.

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

1.2 Preliminary Assessment Methods

The performance of this PA included the following tasks:

- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)™ report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility;
- Conducted a 1-day site visit on 16 July 2019 and completed visual site inspections (VSIs) at locations where PFAS-containing materials were suspected of being stored, used, or disposed;
- Interviewed current facility personnel during the site visit including the Utah ARNG (UTARNG) Safety Non-Commissioned Officer (NCO)/Hazardous Materials (HAZMAT) Training Manager, the UANRG Environmental Manager, and the UTARNG Facilities Manager;

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

1.3 Report Organization

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

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

1.4 Facility Location and Description

The E.J. Garn Aviation Complex is located at 7563 South 4570 West, West Jordan, Utah, 84084, within Salt Lake County. The facility was established in 1989 and serves as the base operations for military helicopter maintenance and support (Kleinfelder, 2018). The facility consists of two main ARNG areas divided by Airport Road, which runs through the middle of the facility; the Army Facility Maintenance Support-2 (Building 00003) is located on the west side, and the Army Aviation Support Facility (AASF) is located on the east side.

West Jordan is a suburb of Salt Lake City, bordered on the west by the Oquirrh Mountains and on the east by the Jordan River. The facility borders the South Valley Regional Airport to the east and is situated west of Interstate 15 (**Figure 1-1**). The facility is about 9.3 miles southwest of Salt Lake City.

1.5 Facility Environmental Setting

The E.J. Garn Aviation Complex occupies approximately 57 acres, approximately 77 percent (%) of which is composed of impervious surfaces. The areas surrounding the facility are primarily the

railroad to the west, and general aviation facilities at the South Valley Regional Airport to the north and east. Other surrounding areas include self-storage and manufacturing companies to the northwest, a Utah Department of Transportation facility to the southwest, and a water tank facility for the city of West Jordan to the east. The facility sits at an elevation of 4,620 feet (ft) above mean sea level (amsl), with a slight general topographic gradient to the east. There are no significant natural topographic features immediately surrounding the facility.

To the west of the city is the railroad, and at the southwest of the facility is a UDOT transportation facility.

1.5.1 Soil

The soils at the facility generally consist of Hans and Red Rock well-drained silt loam with very slow infiltration rates. Soils are present to a shallow depth above an impervious layer of bedrock. The fine-grained soils are relatively uniform, with clay and water content slightly increasing at depths greater than 7 ft below ground surface (bgs) (USDA, 2019). The soils are primarily derived from alluvial deposits from historic Lake Bonneville (Marine and Price, 1964).

1.5.2 Geology

The E.J. Garn Aviation Complex is located within the Jordan Valley, at the eastern margin of the Basin and Range physiographic province. The valley is bounded on the east by the Wasatch Range, on the south by the Traverse Mountains, on the west by the Oquirrh Mountains, and on the north by the Great Salt Lake and a low east-west salient of the Wasatch Range (Marine and Price, 1964). At the facility, Holocene-aged alluvium and Pleistocene-aged silt and clay deposits of the regressive Phase of Lake Bonneville overlie volcanic and sedimentary rocks of the Salt Lake Formation of Tertiary age, which were largely of mud-rock flow origin (Marine and Price, 1964). Geologic units are depicted on **Figure 1-2**.

The uppermost geologic units at the facility are comprised of massive to thinly bedded silt and clay deposits (7-16 ft), with boulder to pebble gravel, sand, silt, and clay deposited in channels and flood plain of streams (USDA, 2019). The Jordan Narrows unit of the Salt Lake Formation commonly underlies the alluvial or lacustrine material and consists of fine-grained sediments with a few thin gravel lenses, principally of andesite. The fine-grained sediments are mostly volcanic tuff, freshwater limestone, and clay, and can be 300 to 2,000 ft thick (Marine and Price, 1964).

1.5.3 Hydrogeology

The complex pattern of sediment deposition in the Jordan Valley resulted in a widely varying groundwater reservoir. Specific aquifers are generally not distinguishable over large areas, and they are underlain, overlain, and graded into beds with lesser permeability. The Jordan Valley has been divided into six groundwater districts based on geology and hydrology. The facility is in the West Slope District, within the North Pediment subdistrict (Marine and Price, 1964).

In the North Pediment subdistrict, groundwater wells obtain water that is perched on the relatively impermeable beds of the Jordan Narrows Unit. Most of the ground water in the subdistrict is confined in the Jordan Narrows unit or in the overlying Pleistocene or late Tertiary gravel. Shallow wells screened in gravel layers, especially those in the lower part of the subdistrict near the facility flow at the land surface. Deep wells (deeper than 150 ft) set within the Jordan Narrows unit, however, generally do not flow. Much of the recharge to the gravel beds comes from irrigation water obtained from surface sources (Marine and Price, 1964).

According to Marine and Price, groundwater in the North Pediment subdistrict generally moves toward the northeast. Based on the topography and water bodies in the vicinity of the facility, it is assumed groundwater moves from west to east, towards the Jordan River.

The EDR™ database search returned a number of groundwater wells in the vicinity of the facility. The Utah Division of Water Rights (UDWR) interactive map was reviewed to determine the status of each reported water right. Active points of diversion located down or cross-gradient to the facility are described below.

- Water Right 59-2123 is an active point of diversion located approximately 1,750 ft southeast and cross-gradient of the facility. The well is an underground water well used for stock water, with a beneficial use amount of 400 Equivalent Livestock Units (ELUs).
- Water Rights 59-1615 and 59-5157 are tied to an active point of diversion located approximately 2,400 ft south and cross-gradient of the facility. The well (also known as Steadman Well) is an inactive underground water well used for municipal water for the City of West Jordan, limited to the use of 750 families if it became active.
- Water Right 59-2122 is an active point of diversion water well located approximately 2,700 ft southeast and cross-gradient of the facility. The well is an underground water well used for the domestic water supply for a single family.
- Water Right 59-2733 is an active point of diversion located approximately 3,800 ft east and downgradient of the facility. The well is an underground water well used for stock water, with a beneficial use amount of 50 ELUs to be used for 45 cattle and 5 horses.

During the site visit, it was reported that a groundwater well serving the City of West Jordan was located approximately 1,300 ft east and downgradient of the facility, near the water tanks, identified as Water Right 59-2024 in the EDR™. According to the UDWR, this well was formerly used for stock water since 1886; however, in 1976, the water right (59-2024) was disallowed, and the well was abandoned (UDWR, 2019). According to the West Jordan Utilities Manager, none of the wells within the area supply municipal water for West Jordan. The adjacent tanks are supplied by piped water from the Jordan Valley Water Conservancy District.

Three federal United States Geological Survey (USGS) monitoring wells were identified within one mile of the facility. The wells are inactive; however, according to the most recent groundwater levels measured in each well, groundwater in the area ranges from approximately 28 ft bgs to 68 ft bgs (UDWR, 2019). Several off-facility municipal, domestic, and stock water wells have been identified in the vicinity of the facility (**Figure 1-2**). The third Unregulated Contaminant Monitoring Rule (UCMR3) data were reviewed to identify nearby sites which exceed USEPA HA levels for PFAS; however, none were identified (USEPA, 2017). PFAS analyses performed in 2016 had method detection limits that were higher than currently achievable. Thus, it is possible that low concentrations of PFAS were not detected during the UCMR3 but might be detected if analyzed today. Groundwater features are presented on **Figure 1-2**.

1.5.4 Hydrology

Based on a desktop review of the National Wetlands Inventory online mapping system (http://wetlands.fws.gov/), the facility does not contain any mapped wetlands or surface waters, although the southern portion is located within the 100-year flood zone. Topographic maps depict a portion of Barney's Creek on the west and south borders of the property. The creek follows the location of a historic irrigation system/stormwater discharge canal described by the ARNG Environmental Manager, which was reportedly dry 90% of the time and filled in circa 2013/2014. No surface water was observed during the site visit.

Surface water runoff generally drains from west to east, with certain drainage areas draining north to south (Kleinfelder, 2018). There is a series of unlined catch basins along the east side of the facility, between the air field and the runways. The catch basins also receive snow plowed from

the Hangar/Ramp Area in the winter. The catch basins are usually dry, except during major storm events.

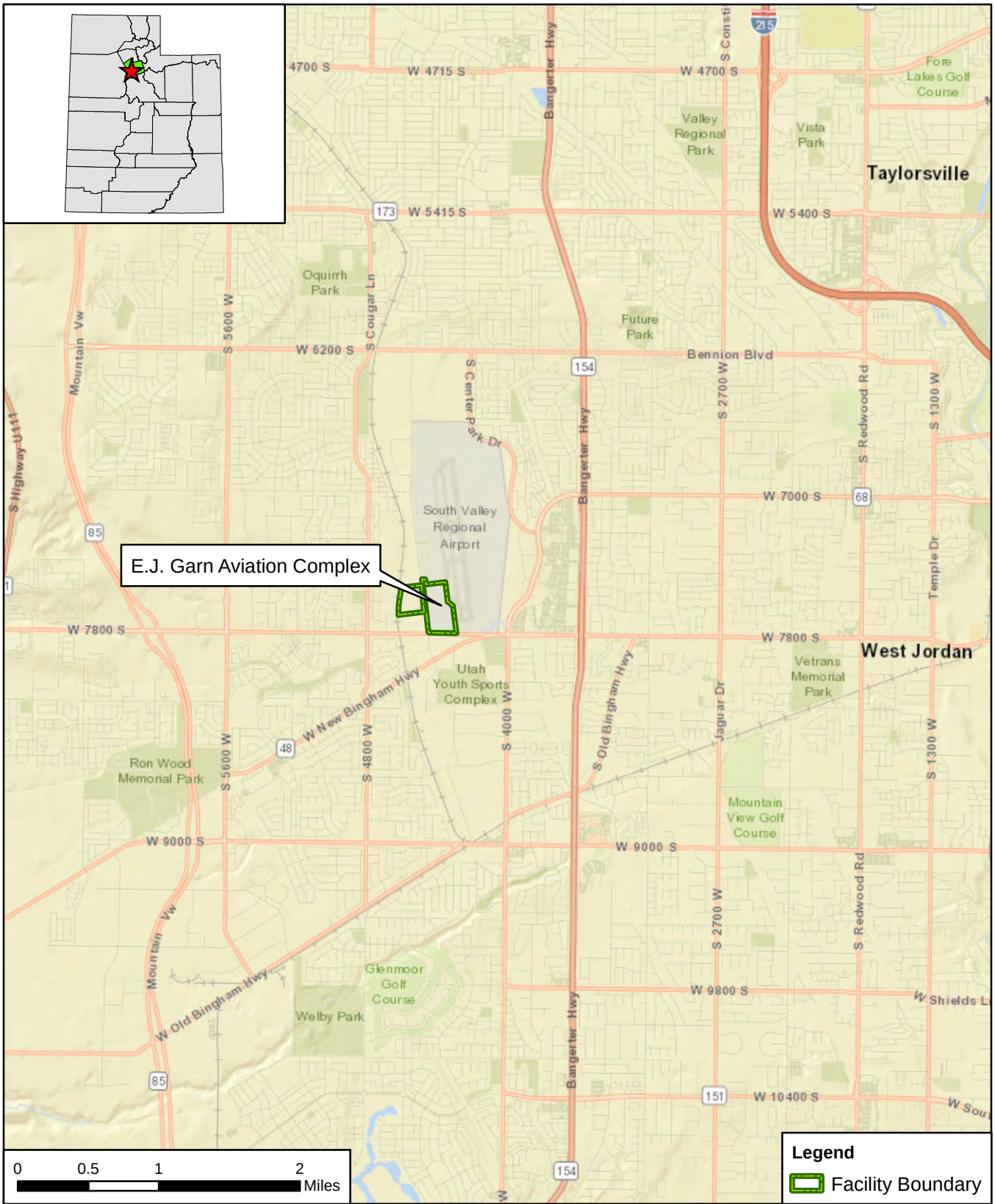
The facility sits within the Jordan River and Utah Lake Watershed Management Unit. According to the Industrial Stormwater Pollution Prevention Plan for the facility, stormwater from the facility enters Barney's creek along the southerly perimeter. The creek was observed to be dry during the site visit. Barney's Creek discharges into a large detention pond/sedimentation basin to the east, where stormwater velocity is slowed, particulates are allowed to settle, and water is discharged through a restricted outfall. Ultimately, the stormwater runoff from the facility discharges to the Jordan River, which flows in a north to south direction to Utah Lake (Kleinfelder, 2018). Surface water features are presented on **Figure 1-3**.

1.5.5 Climate

The E.J. Garn Aviation Complex is located in a semi-arid, temperate climate zone with four distinct seasons. West Jordan receives some precipitation, on average, 88 days per year. The average annual rainfall is approximately 20 inches and annual snowfall is approximately 53 inches. Summer temperatures peak in July, with an average high of 92 degrees Fahrenheit (°F) and an average low of 64°F. Winter temperatures are lowest in January with an average high of 39°F and an average low of 23°F. With the exception of two months of westerly winds in the spring, prevailing winds are southerly for the majority of the year (National Oceanic and Atmospheric Administration [NOAA], 2019).

1.5.6 Current and Future Land Use

The E.J. Garn Aviation Complex serves as a UTARNG base of operations for military helicopter maintenance and support. Building 00003 consists of an office building, a garage dedicated to light vehicle maintenance, and parking areas. West Jordan AASF is comprised of a hangar, maintenance and storage areas, operations and administrative buildings, and related infrastructure including parking lots, aircraft parking areas, and refueling pads. Reasonably anticipated future land use is not expected to change from the current land use described above.



CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at E.J. Garn Aviation Complex, UT			
REVISED	1/30/2020	GIS BY	MS	1/30/2020
SCALE	1:63,360	CHK BY	AG	1/30/2020
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	1/30/2020

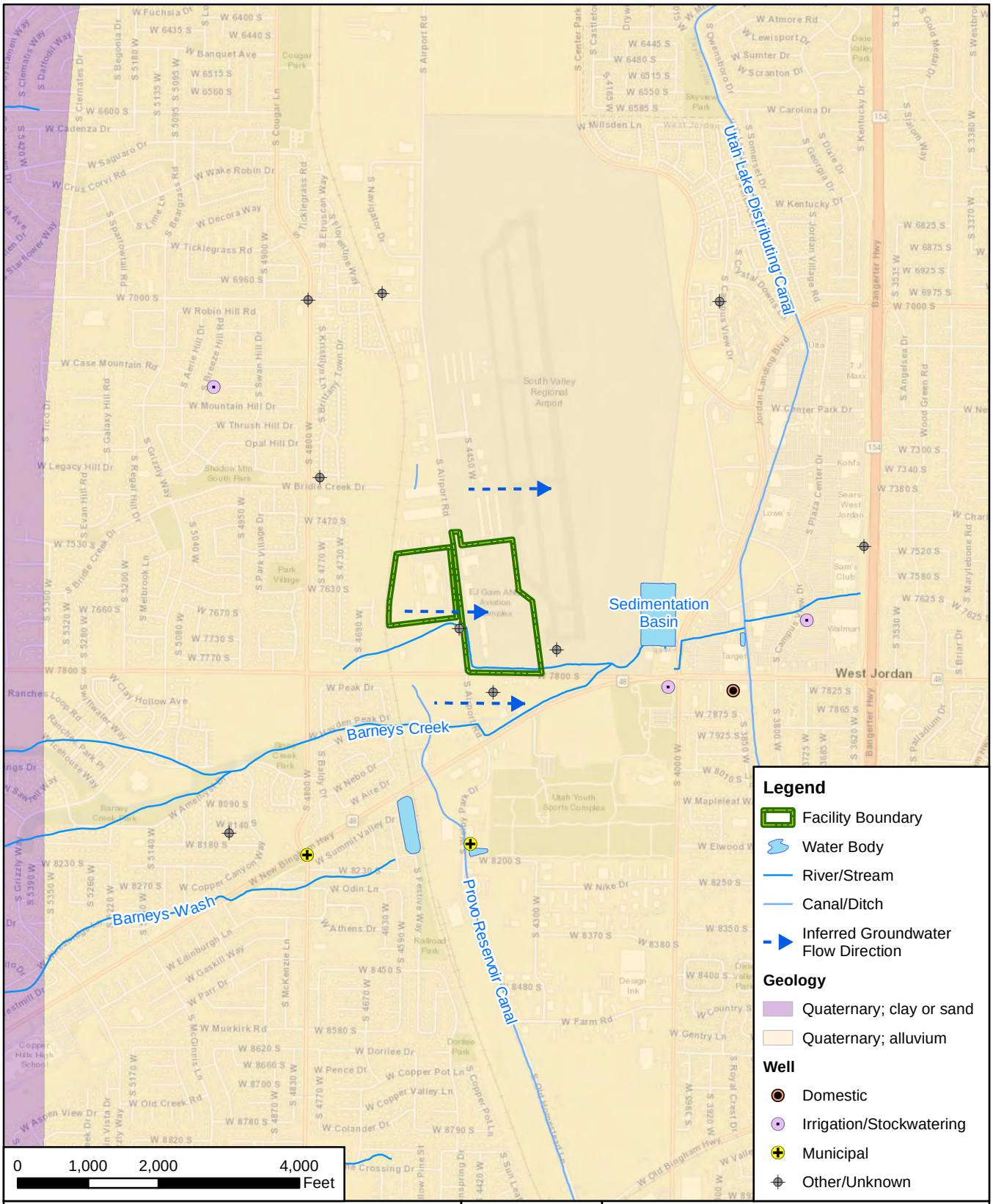
N

Facility Location

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 1-1

Q:\Projects\ENV\GEARS\GEO\ARNG PFAS\900-CAD-GIS\920-GIS or Graphics\MXD\UT\West_Jordan_AASF_Figures\West_Jordan_PA_Figures\Fig_1-1_West_Jordan_AASF_Facility_Location.mxd



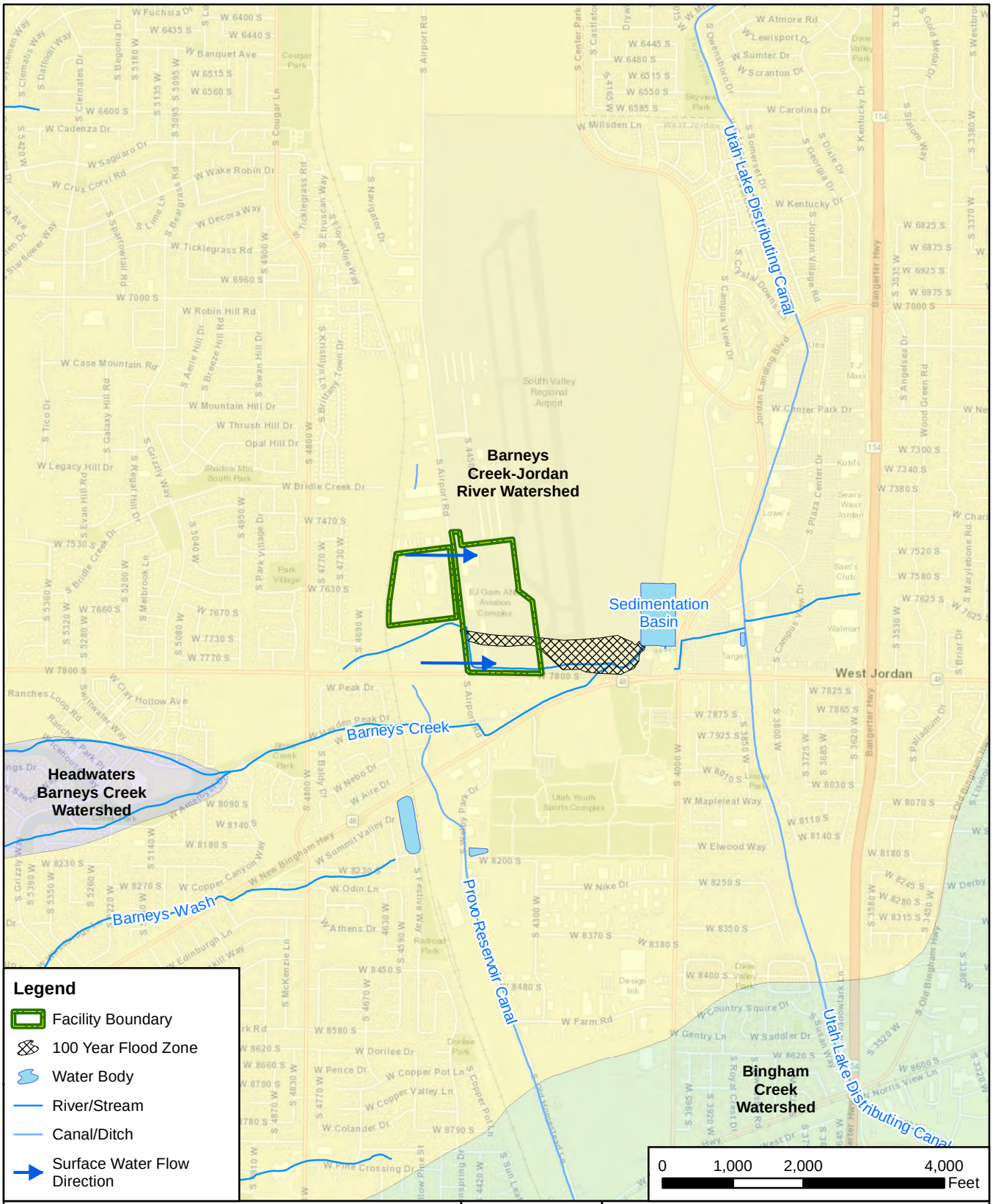
CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at E.J. Garn Aviation Complex, UT			
REVISED	4/30/2020	GIS BY	MS	4/30/2020
SCALE	1:24,000	CHK BY	AG	4/30/2020
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	4/30/2020

Groundwater Features

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 1-2

C:\Users\stankevichm\OneDrive - AECOM Directory\ARNG_PFAS_GIS_60552172\MXDs\UT\EJ_Garn_AASF_Figures\EJ_Garn_PA_Figures\Fig_1-2_EJ_Garn_AASF_Groundwater.mxd



CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at E.J. Garn Aviation Complex, UT			
REVISED	4/30/2020	GIS BY	MS	4/30/2020
SCALE	1:24,000	CHK BY	AG	4/30/2020
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	4/30/2020

Surface Water Features

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 1-3

C:\Users\stankevichm\OneDrive - AECOM Directory\ARNG_PFAS_GIS_60552172\MXDs\UT\EJ_Garn_AASF_Figures\EJ_Garn_PA_Figures\Fig_1-3_EJ_Garn_AASF_Surface_Water.mxd

2. Fire Training Areas

One former FTA was identified through interviews during the PA. The FTA is located on the north side of the Hangar/Ramp Area, as depicted on **Figure 2-1**. PA interview and VSI documents are included in **Appendix B**, and photographs are included in **Appendix C**.

2.1 Hangar/Ramp Area

The Hangar/Ramp Area was identified as an FTA during an interview with the UTARNG Safety NCO/HAZMAT Training Manager. The Safety NCO/HAZMAT Training Manager stated that there was a single fire training event conducted at the center of the Hangar/Ramp Area in approximately 1998 (as shown in **Figure 2-1**). The fire training event involved the full discharge of one 30-gallon Tri-Max™ fire extinguisher reportedly filled with AFFF. Foam discharged during the training was left in place to evaporate or disperse with the wind. The Safety NCO/HAZMAT Training Manager stated approximately 16 mobile fire extinguishers (Tri-Max™ 30-gallon units) were historically strategically placed around the flight line, a couple at the fuel island, and several near the fire locker. Refills and hydrostatic testing for the Tri-Max™ units were completed by State Fire, and unit maintenance was reportedly not conducted on-site. Currently, no fire training is conducted with Tri-Max™ units. AFFF units are being phased out at the facility, and current mobile fire suppression includes standard handheld fire extinguishers and Purple K units. During the VSI, one Tri-Max™ fire extinguisher was observed at the Hangar/Ramp Area fuel point. The Safety NCO/HAZMAT training officer reported that there are approximately 10 units at the facility, waiting to be transferred offsite. The Tri-Max™ extinguishers are equipped with Class B AFFF. Although the Tri-Max™ units are no longer in use, it is unknown when they were last discharged.

The Safety NCO/HAZMAT Training Manager was on the crash rescue team from 1995 to 1999, and stated that during his tenure, AFFF was used at least twice a year at various locations around the Hangar/Ramp Area for training purposes. The fire training events involved the discharge of an unknown amount of AFFF from the fire truck. During the training events, a fire would be simulated at a random location, and a crash team would respond. Nozzle testing was conducted on the same day as part of the exercise. Facility personnel could not identify the exact location of the testing areas; however, it was reported that all testing and crash simulations were conducted on concrete. Foam was discharged on the concrete and left in place to evaporate or disperse with the wind.

The Hangar/Ramp Area FTA is approximately located at geographic coordinates 40°36'47.4"N; 111°59'45.9"W. Surface discharge on the Hangar/Ramp Area reportedly flows across the concrete to the south or east. There is a dry creek on the south side of the facility, and a series of unlined catch basins along the east side of the facility, between the air field and the runways.

CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at E.J. Garn Aviation Complex, UT			
REVISED	4/30/2020	GIS BY	MS	4/30/2020
SCALE	1:4,200	CHK BY	AG	4/30/2020
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	4/30/2020

N

Fire Training Area

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 2-1

C:\Users\stankevichm\OneDrive - AECOM Directory\ARNG_PFAS_GIS_60552172\MXDs\UT\EJ_Garn_AASF_Figures\EJ_Garn_PA_Figures\Fig_2-1_EJ_Garn_AASF_Fire_Training_Areas.mxd

3. Non-Fire Training Areas

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

Building 00003 Building 00003 is an approximately 74,820 square foot building located at geographic coordinates 40°36'47.4"N; 111°59'56.7"W. The building was constructed circa 1993. Fire suppression for the building includes a water sprinkler system and does not contain AFFF. No releases of AFFF were reported within the building. In 1997, a dumpster fire on the west side of the building resulted in a discharge of AFFF and is discussed further in **Section 4**.

3.1 Building 00001

Building 00001 is an approximately 52,000 square foot building located at geographic coordinates 40°36'49.5"N; 111°59'50.0"W. The building is currently undergoing renovation and was not accessed during the VSI.

The fire truck bay was historically located at Building 00001. The fire truck was taken out of use at the facility in 2007 and was auctioned off in 2009. Tanks on the fire truck were refilled with 3% AFFF concentrate from 5-gallon containers. The fire truck was washed in the fire truck bay, or to an area to the south of the fire truck bay. The ground surface to the south of the fire truck bay would have been impacted with any AFFF washed off the trucks.

Drains in the Building 00001currently discharge to the oil/water separator to the east, and then to the municipal sanitary sewer system serviced by the City of West Jordan. However, it is not clear that the drains have always been connected to the sanitary sewer. According to UTARNG staff, drains from a different section of Building 00001 were discovered to be connected to a dry well to the northeast of the building. It is unknown if a similar pathway ever existed for the piping in the fire truck bay. Therefore, potential discharges of AFFF in the fire truck bay could have released directly into the dry well.

3.2 Building 00002

Building 00002 is an approximately 52,000 square ft building located at geographic coordinates 40°36'45.0"N; 111°59'49.3"W. The hangar is equipped with a full fire suppression AFFF system with 2% high expansion foam, but the size of the tank is unknown. The Facilities Manager reported that the seal in the bottom of the AFFF tank has been leaking, which is evidence of a potential bladder rupture or damaged seal. The drains in the tank room likely connect to an oil/water separator near the hangar before discharging to the municipal sewer system. Wastewater is conveyed to the South Valley Water Reclamation Facility, where it is treated in an oxidation ditch system before it is discharged to the Jordan River (SVW, 2019).

Building 00002 had an AFFF suppression system installed when it was originally built (1989 - 1991). This system was tested when installed, and the foam was pushed out the door onto the ramp. The system was updated in 2008 for high expansion foam. There were multiple releases during the construction as well as one intentional full system test. After each incident, the discharged foam was pushed out of the building, onto the concrete, and left in place to evaporate or disperse with the wind.

3.3 Building 00004

Building 00004 is an approximately 31,025 square ft building located on the western installation boundary at geographic coordinates 40°36'40.1"N; 111°59'47.1"W. The building is equipped with a full fire suppression AFFF system. The Safety NCO/HAZMAT Training Manager stated that there was an intentional system test conducted when the building was installed in 2016. The discharged foam was pushed out of the building, onto the concrete, and left in place to evaporate or disperse with the wind.

3.4 Building 00010

Building 00010 is an approximately 15,200 square ft tent currently located at geographic coordinates 40°36'37.2"N; 111°59'46.6"W. The tent is occasionally shifted to various locations typically within about 500 ft east of its current location. The ground surface under the tent is asphalt and/or concrete. The tent is used to store supplies in support of the facility activities.

The Safety NCO/HAZMAT Training Manager reported that 3% AFFF had been stored as concentrate in 5-gallon containers within the building from at least 1989 to 2009, and he is not aware of any releases during that time. In April 2009, the Safety NCO/HAZMAT Training Manager transported 12,000 pounds (more than 250 5-gallon containers) of 3% AFFF from the facility to the Dugway Proving Grounds. There is currently no AFFF stored at the facility.

CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at E.J. Garn Aviation Complex, UT			
REVISED	5/1/2020	GIS BY	MS	5/1/2020
SCALE	1:4,200	CHK BY	AG	5/1/2020
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	5/1/2020

N

Non-Fire Training Areas

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 3-1

C:\Users\stankevichm\OneDrive - AECOM Directory\ARNG_PFAS_GIS_60552172\MXDs\UT\EJ_Garn_AASF_Figures\EJ_Garn_PA_Figures\Fig_3-1_EJ_Garn_AASF_Non-Fire_Training_Areas.mxd

4. Emergency Response Areas

Emergency responses to crashes sometimes require flame suppression, which may result in the release of PFAS to the environment in the form of AFFF.

Aircraft emergency services were provided by the West Jordan AASF since at least 1989 to 2007. Two Emergency Response Areas were identified adjacent to the facility, as described in **Section 5** (**Figure 4-1**). Current basic fire protection is provided by the West Jordan Fire Department. Once a year, the municipal fire department simulates a crash at various locations and responds using water. The municipal fire department is located approximately 0.5 miles east of the facility, at 7602 Jordan Landing Blvd, West Jordan, UT 84084.

According to the Safety NCO/HAZMAT Training Manager, there was a dumpster fire at Building 00003 in 1997, which he put out with an AFFF mobile unit. It is unknown how many gallons were discharged. The dumpster fire was approximately located at geographic coordinates 40°36'48.0"N 111°59'58.6"W.

CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at E.J. Garn Aviation Complex, UT			
REVISED	4/30/2020	GIS BY	MS	4/30/2020
SCALE	1:4,200	CHK BY	AG	4/30/2020
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	4/30/2020

N

Emergency Response Area

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 4-1

C:\Users\stankevichm\OneDrive - AECOM Directory\ARNG_PFAS_GIS_60552172\MXDs\UT\EJ_Garn_AASF_Figures\EJ_Garn_PA_Figures\Fig_4-1_EJ_Garn_AASF_Emergency_Response_Area.mxd

5. Adjacent Sources

Several potential off-facility sources of PFAS adjacent to the E.J. Garn Aviation Complex were identified during the PA. A description of each adjacent source is presented below, and the adjacent sources are shown on **Figure 5-1**.

5.1 Emergency Response Area

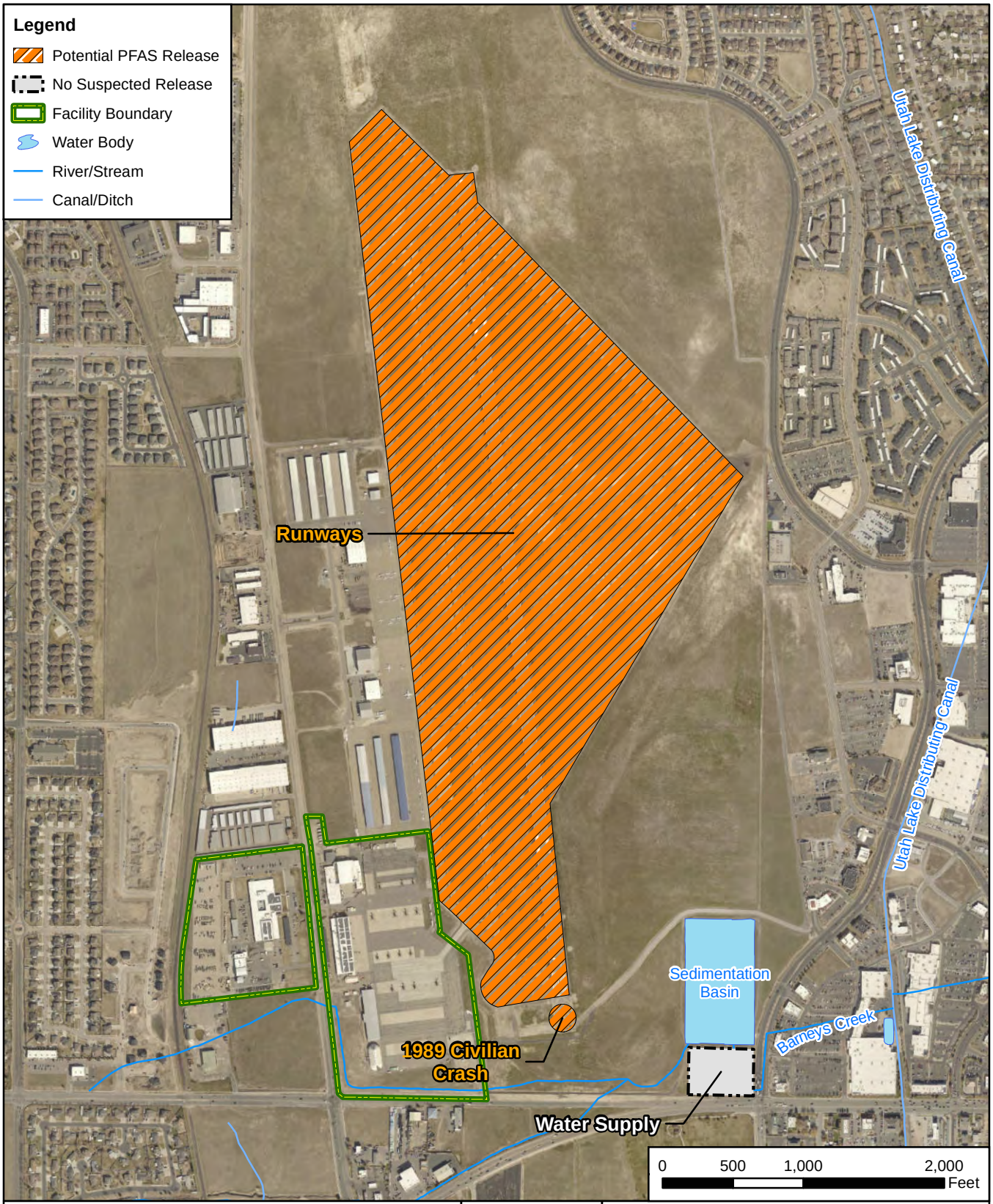
One emergency response area was identified adjacent to the current West Jordan AASF facility during the PA through interviews with facility personnel, whose knowledge covers the period of 1992 to present day.

According to the Safety NCO/HAZMAT Training Manager, there was a Civilian Plane Crash in 1989 on the runway east of the AASF and west of the City Water Supply. The fire was suppressed by the AASF emergency services, presumably using the fire truck which was equipped with 3% AFFF, although the quantity used is unknown. The Safety NCO/HAZMAT Training Manager also stated that there have been many air crashes at the runway over the years; however, the 1989 crash was the only runway crash handled by the AASF emergency services.

5.2 Private Aviation Companies at South Valley Regional Airport

The South Valley Regional Airport (U42) Fixed Base Operator (FBO) is located north of the West Jordan AASF and shares the adjacent runway. The airport is located at 7799 Airport Rd, West Jordan, UT 84084. The FBO currently supports business-related flying, law enforcement/fire/rescue flying services, recreational flying, flight training, and air charters. Flight training is conducted by Randon Aviation and Utah Helicopter, both located at 7220 S 4450 W, West Jordan, UT 84084. According to the EDR™ report, Million Air and and JK's Aviation are two additional aviation companies located at 7365 South Airport Drive, West Jordan, UT 84084. The exact location of these facilities within the South Valley Regional Airport could not be determined.

The use or storage of AFFF at the airport facilities could not be determined during the PA; however, none of the facilities have their own emergency services and are under the municipal emergency services. The municipal fire department is located approximately 0.5 miles east of the facility at 7602 Jordan Landing Blvd, West Jordan, UT 84084.



CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at E.J. Garn Aviation Complex, UT			
REVISED	4/30/2020	GIS BY	MS	4/30/2020
SCALE	1:12,000	CHK BY	AG	4/30/2020
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	4/30/2020

N

Adjacent Sources

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 5-1

C:\Users\stankevichm\OneDrive - AECOM Directory\ARNG_PFAS_GIS_60552172\MXDs\UT\EJ_Garn_AASF_Figures\EJ_Garn_PA_Figures\Fig_5-1_EJ_Garn_AASF_Adjacent_Sources.mxd

6. Preliminary Conceptual Site Model

Based on the PA findings, there were multiple events of fire training, fire suppression system testing, and emergency response with confirmed discharges of AFFF to the ground surface across the Hangar/Ramp Area. As such, the entire Hangar/Ramp Area has been determined an AOI and a probable PFAS source area. The AOIs and preliminary CSMs for the AOIs are shown on **Figures 6-1** and **6-2** and summarized below.

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

In general, the potential PFAS exposure pathways are ingestion and inhalation. Human exposure via the dermal contact pathway may occur, and current risk practice suggests it is an insignificant pathway compared to ingestion; however, exposure data for dermal pathways is sparse and continues to be the subject of PFAS toxicological studies (National Ground Water Association, 2018). Receptors for the E.J. Garn Aviation Complex include site workers, construction workers, residents, and trespassers. The preliminary CSMs for the AOIs indicate which specific receptors could potentially be exposed to PFAS.

6.1 AOI 1: Building 00001

AOI 1 comprises the ground surface and subsurface to the south and east of the Building 00001 Building 00001. Potential discharges of AFFF in the wash down area to the south of the fire truck bay for an unknown time period may have resulted in a release to the ground surface, and subsequently to the catch basins to the east of the building. Potential discharges of AFFF in the fire truck bay to the northeast adjacent dry well for an unknown time period prior to 2009 may have resulted in a release directly into the subsurface.

PFAS are water soluble and can migrate readily from soil to groundwater or surface water via leaching and run-off. If PFAS releases to the dry well occurred, it is possible that PFAS have migrated from subsurface soil at AOI 1 to groundwater and waters in the Jordan River. In addition, precipitation infiltrating into the dry well from the surface of the AOI may cause the migration of PFAS from subsurface soil to groundwater. Based on the topography and water bodies in the vicinity of the E.J. Garn Aviation Complex, it is assumed groundwater moves from west to east, towards the Jordan River. The Jordan River is the main source of irrigation water for farms in the Jordan Valley and would infiltrate into the ground surface, and there are a number of drinking water wells downgradient of the facility; therefore, the exposure pathway for groundwater to the off-facility resident receptor is potentially complete. Ground-disturbing activities to subsurface soil could present another potentially complete exposure pathway to construction workers via ingestion of subsurface soil. The preliminary CSM for AOI 1 is shown on **Figure 6-2**.

6.2 AOI 2: Hangar/Ramp Area

AOI 2 comprises the Hangar/Ramp Area east of Building 00002 and Building 00004. Releases of the fire suppression systems in the buildings from approximately 1991 to 2016 resulted in AFFF being pushed onto the Hangar/Ramp Area concrete and left in place to evaporate or disperse with the wind. In addition, fire training activities were conducted around the Hangar/Ramp Area from at least 1995 to 1999, and emergency responses using foam may have occurred on the same area since 1989.

Although the Hangar/Ramp Area within AOI 2 is made of impervious surfaces, PFAS in surface water may flow into adjacent unpaved surfaces and into surface soil. If PFAS releases to surface

soil occurred, it is possible that PFAS have migrated from surface soil at AOI 2 to groundwater and waters in the Jordan River. In addition, precipitation infiltrating into the unpaved surrounding areas of the AOI may cause the migration of PFAS from surface soil to groundwater and surface water.

AOI 2 lies within Jordan River and Utah Lake Watershed Management Unit, and surface water from the Hangar/Ramp Area generally drains from west to east, with certain drainage areas draining north to south (Kleinfelder, 2018). There are a series of unlined catch basins along the east side of the facility between the air field and the runways. Stormwater flowing east across the Hangar/Ramp Area would run into the catch basins and percolate into the soil. Stormwater flowing south across the Hangar/Ramp Area enters Barney's creek along the southerly perimeter. Barney's Creek was observed to be dry during the site visit. Barney's Creek discharges into a large detention pond/sedimentation basin to the east, where stormwater velocity is slowed, particulates are allowed to settle, and water is discharged through a restricted outfall. Ultimately, the stormwater runoff from the facility percolates into the groundwater and/or discharges to the Jordan River, which flows in a north to south direction to Utah Lake (Kleinfelder, 2018). As noted above, groundwater and the Jordan River are potential pathways to various receptors.

There are unpaved soil areas adjacent to the eastern boundary of the Hangar/Ramp Area which may receive potential discharges of AFFF or runoff or snow from affected ground surfaces. Therefore, the pathway for potential exposure to PFAS contamination via inhalation of dust particles, or ingestion of surface soil during construction or maintenance, is considered partially complete at the AOI for site workers, construction workers, and trespassers. Ground-disturbing activities to subsurface soil could present another potentially complete exposure pathway to construction workers via ingestion of subsurface soil. The preliminary CSM for AOI 2 is shown on **Figure 6-3**.

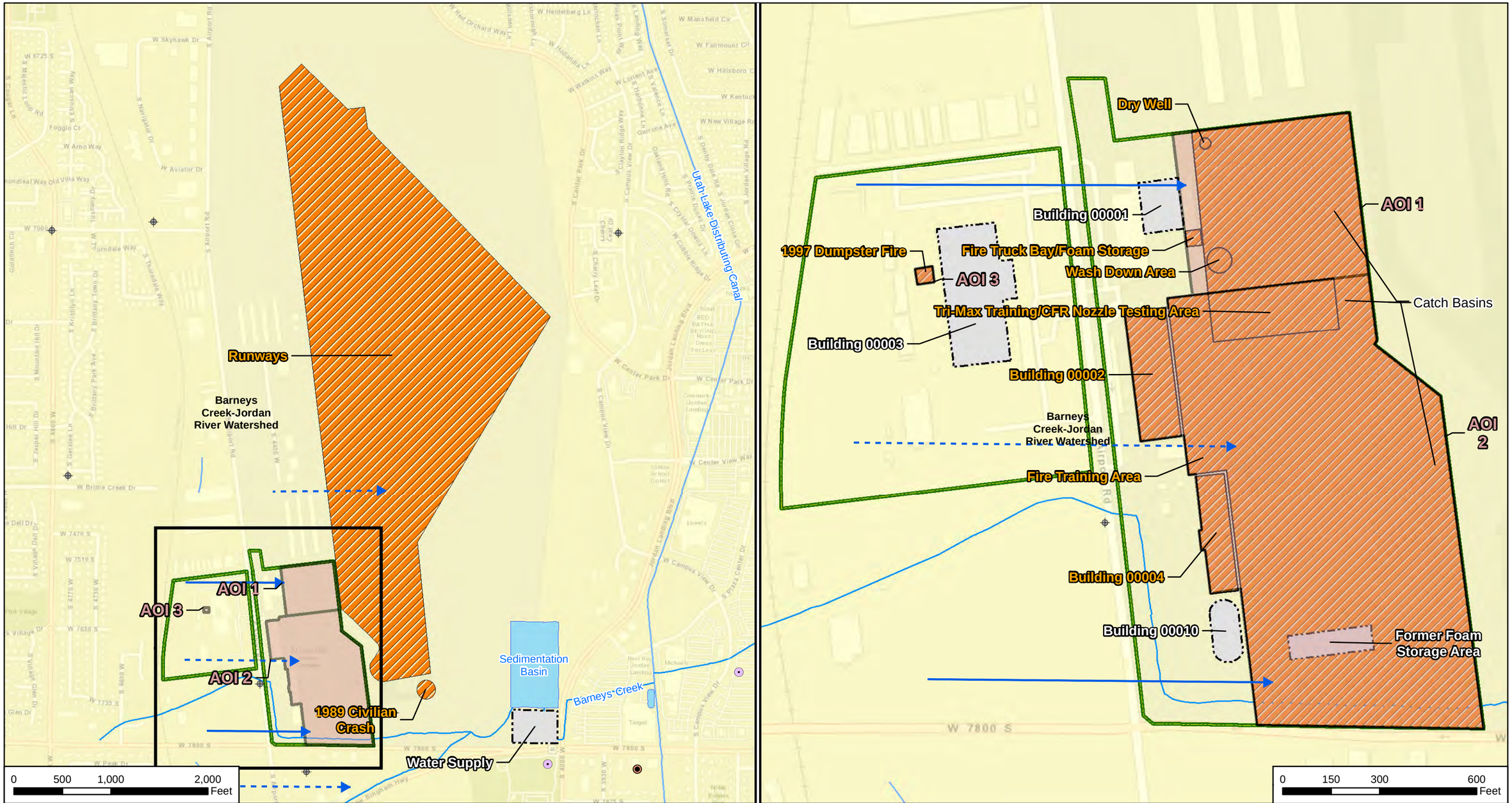
6.3 AOI 3: Building 00003 Dumpster Fire

According to the Safety NCO/HAZMAT Training Manager, there was a dumpster fire at Building 00003 in 1997, which he put out with an AFFF mobile unit. It is unknown how many gallons were discharged. The dumpster was located on asphalt, with an area of grass directly to the north of the dumpster. The surface drainage in the vicinity of AOI 3 was designed to flow into a catch basin to the south.

The parking lot around AOI 3 is made of impervious surfaces, and surface drainage does not favor a release to the unpaved grass area to the north of the dumpster. However, snow removal from PFAS-affected surfaces to unpaved surfaces may result in a PFAS release to surface soil. PFAS are water soluble and can migrate readily from soil to groundwater or surface water via leaching and run-off. If PFAS releases to surface soil occurred, it is possible that PFAS have migrated from surface soil at AOI 3 to groundwater and waters in the Jordan River. In addition, precipitation infiltrating into the unpaved surrounding areas of the AOI may cause the migration of PFAS from surface soil to groundwater and surface water.

AOI 3 lies within Jordan River and Utah Lake Watershed Management Unit, and surface water from Building 00003 generally drains from west to east, with certain drainage areas draining north to south (Kleinfelder, 2018). Stormwater from catch basins at the Building 00003 enters Barney's creek along the southerly perimeter. Barney's Creek was observed to be dry during the site visit. Barney's Creek discharges into a large detention pond/sedimentation basin to the east, where stormwater velocity is slowed, particulates are allowed to settle, and water is discharged through a restricted outfall. Ultimately, the stormwater runoff from the facility discharges to the Jordan River, which flows in a north to south direction to Utah Lake (Kleinfelder, 2018). The Jordan River is the main source of drinking water for the Jordan Valley; therefore, the exposure pathway for groundwater to the off-facility resident receptor is potentially complete.

There are unpaved soil areas adjacent to the northern boundary of the parking lot, where the dumpster fire took place, which may receive potential discharges of AFFF from snow removed from affected ground surfaces. Therefore, the pathway for potential exposure to PFAS contamination via inhalation of dust particles, or ingestion of surface soil during construction or maintenance, is considered partially complete at the AOI for site workers, construction workers, and trespassers. Ground-disturbing activities to subsurface soil could present another potentially complete exposure pathway to construction workers via ingestion of subsurface soil. The preliminary CSM for AOI 3 is shown on **Figure 6-4**



CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at E.J. Garn Aviation Complex, UT			
REVISED	5/1/2020	GIS BY	MS	5/1/2020
SCALE	1:12,000	CHK BY	AG	5/1/2020
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	RG	5/1/2020

- Area of Interest
- Potential PFAS Release
- No Suspected Release
- Facility Boundary
- Water Body
- River/Stream
- Canal/Ditch
- Surface Water Flow Direction
- Inferred Groundwater Flow Direction
- Domestic
- Irrigation/Stockwatering
- Municipal
- Other/Unknown

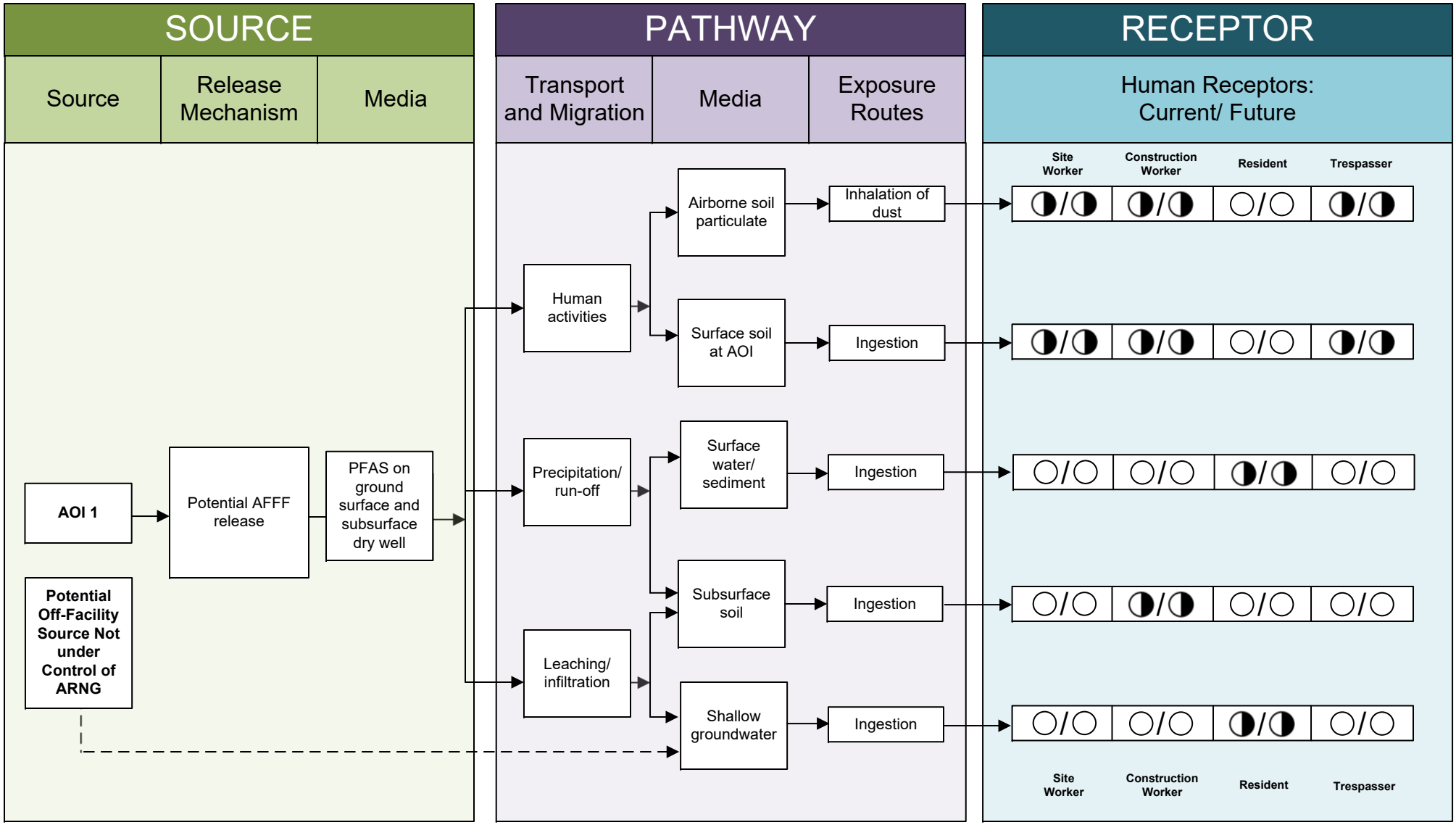
N

Area of Interest

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-1

C:\Users\stankevichm\OneDrive - AECOM Directory\ARNG_PFAS_GIS_60552172\MXDs\UT\EJ_Garn_AASF_Figures\EJ_Garn_PA_Figures\Fig_6-1_EJ_Garn_AASF_AOIs.mxd



LEGEND

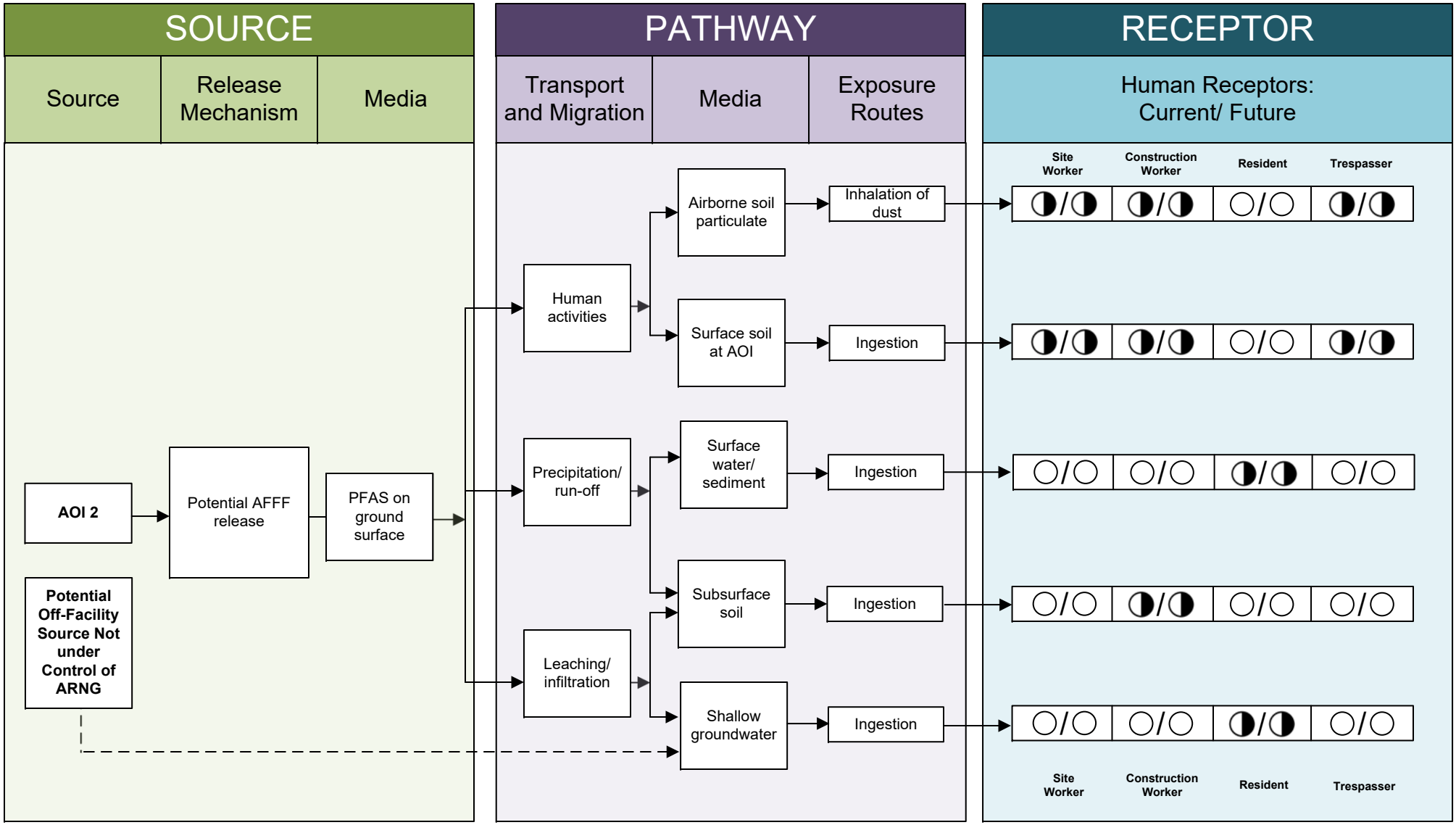
- Flow-chart stops
- Flow-chart continues
- Partial/ possible flow
- Incomplete pathway
- Possible complete pathway
- Complete pathway

Notes:

1. The resident receptor refers to an off-site resident.

2. Current risk practice suggests the exposure pathway for dermal contact is insignificant compared to ingestion, but supporting data is sparse and continues to be studied.

Figure 6-2
Preliminary Conceptual Site Model AOI 1
E.J. Garn Aviation Complex West Jordan, UT



LEGEND

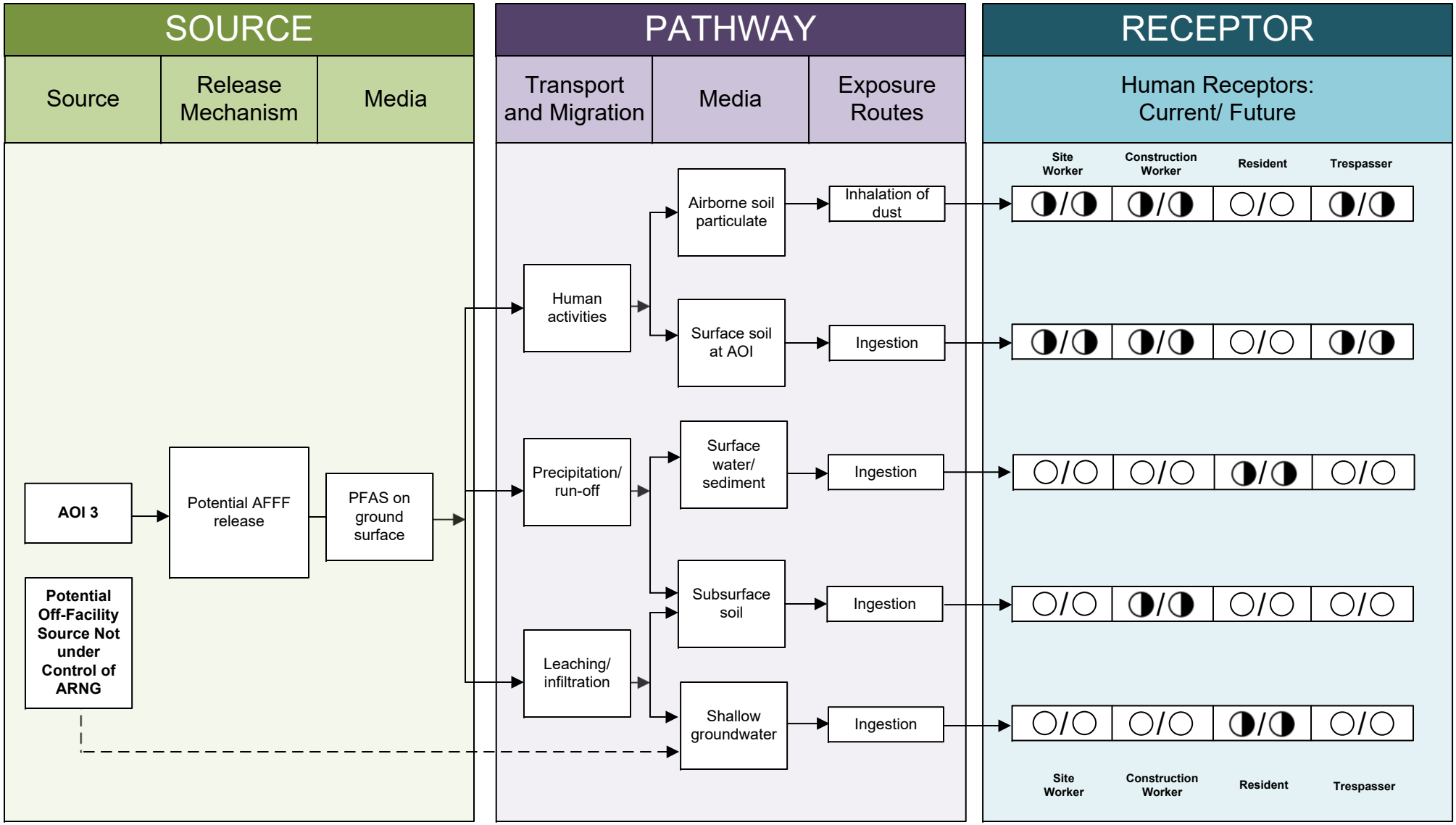
- Flow-chart stops
- Flow-chart continues
- Partial/ possible flow
- Incomplete pathway
- Possible complete pathway
- Complete pathway

Notes:

1. The resident receptor refers to an off-site resident.

2. Current risk practice suggests the exposure pathway for dermal contact is insignificant compared to ingestion, but supporting data is sparse and continues to be studied.

Figure 6-3
Preliminary Conceptual Site Model AOI 2
E.J. Garn Aviation Complex West Jordan, UT



LEGEND

- Flow-chart stops
- Flow-chart continues
- Partial/ possible flow
- Incomplete pathway
- Possible complete pathway
- Complete pathway

Notes:

1. The resident receptor refers to an off-site resident.

2. Current risk practice suggests the exposure pathway for dermal contact is insignificant compared to ingestion, but supporting data is sparse and continues to be studied.

Figure 6-4
Preliminary Conceptual Site Model AOI 3
E.J. Garn Aviation Complex West Jordan, UT

7. Conclusions

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

7.1 Findings

Three AOIs related to potential PFAS release were identified (**Table 7-1**) at the E.J. Garn Aviation Complex during the PA (**Figure 7-1**).

Table 7-1: AOIs at E.J. Garn Aviation Complex

Area of Interest	Name	Used by	Release Dates
AOI 1	Building 00001	UTARNG	Prior to 2009
AOI 2	Hangar/Ramp Area	UTARNG	Since at least 1991 until approximately 2016.
AOI 3	Building 00003 Dumpster Fire	UTARNG	1997

Based on information obtained during the PA at these AOIs, there is potential for exposure to PFAS contamination in surface soil to site workers, construction workers, and trespassers via ingestion and inhalation; subsurface soil to construction workers via ingestion; surface water and sediments to off-facility residents via ingestion; and groundwater to off-facility residents via ingestion.

The Tent Storage at the AASF was determined to have no suspected PFAS release to the environment. Although AFFF was used and stored in this location, there are no documented releases.

Numerous potential off-facility sources of PFAS were considered in the local area surrounding the E.J. Garn Aviation Complex through interviews or review of data. The majority of the adjacent sources are located in the inferred downgradient/cross-gradient groundwater and surface water flow path.

7.2 Uncertainties

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

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

possibility the PA has missed a source of PFAS, as the science of how PFAS may enter the environment continually evolves.

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

The following **Table 7-2** summarizes the uncertainties associated with the PA.

Table 7-2: Uncertainties within the PA

Area of Interest	Source of Uncertainty
E.J. Garn Aviation Complex, General	Most of the information obtained during the PA came from the UTARNG Safety NCO/HAZMAT Training Manager for the period 1995 to 1999. AFFF was present at the site since at least 1991 in Building 00002 suppression system, if not Tri-Max™ Units. There is a data gap before 1995 and after 2000.
AOI 2: Hangar/Ramp Area	The amount of discharge from the Tri-Max™ fire extinguishers used at the FTA on the Hangar/Ramp Area from 1995-1999 are unknown. The amount and exact locations of discharges during fire training events conducted circa 1995 to 1999 are unknown.
Adjacent	The amount of AFFF discharged at the emergency response areas (1989 Civilian Crash and 1997 dumpster fire) is unknown. According to the EDR™ report, Million Air and JK's Aviation are two additional aviation companies located at 7365 South Airport Drive, West Jordan, UT 84084. The exact location of these facilities within the South Valley Regional Airport could not be determined. The use or storage of AFFF at the airport facilities could not be determined during the PA; however, none of the facilities have their own emergency services and are under the municipal emergency services.

7.3 Potential Future Actions

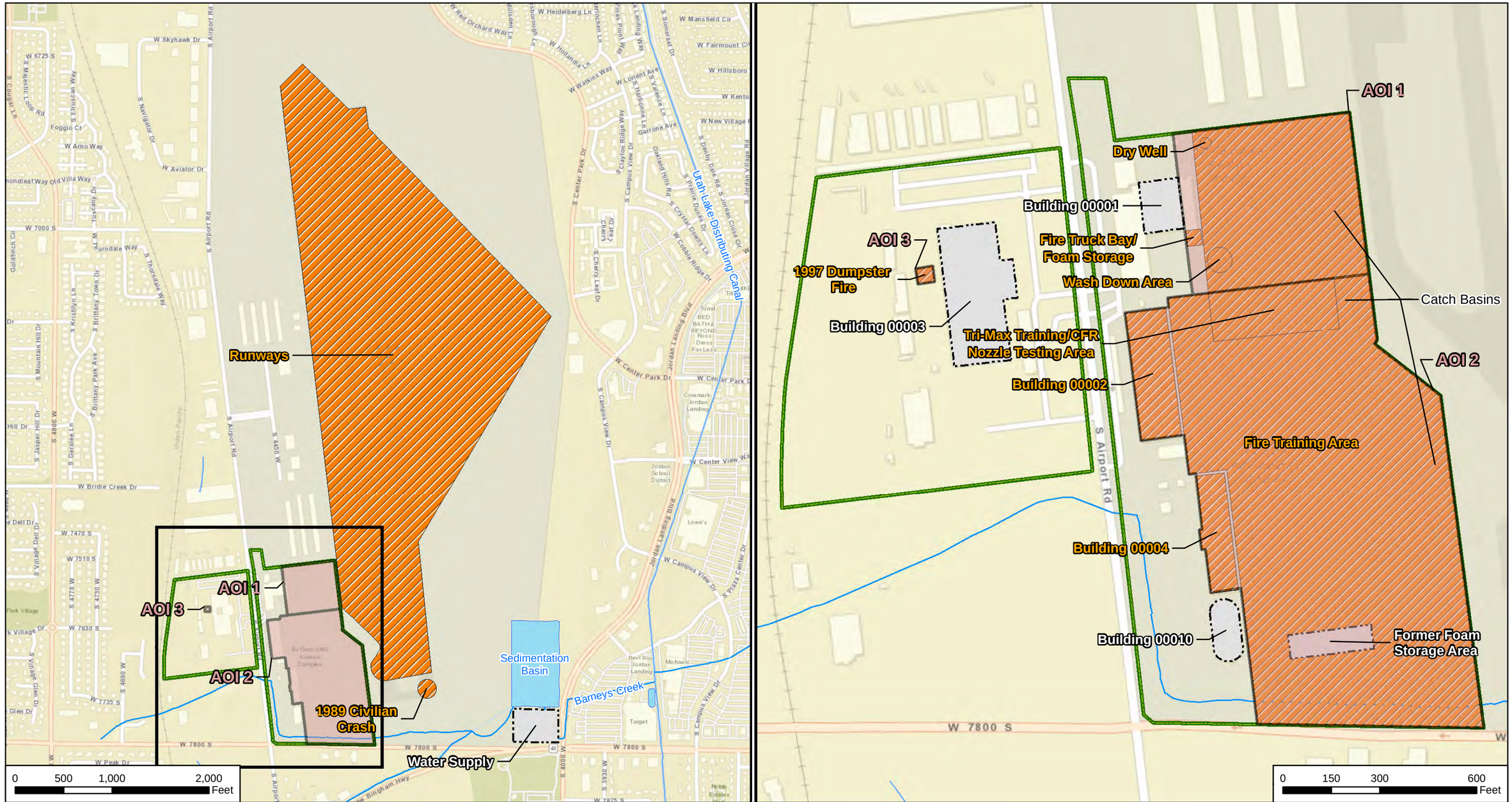
Based on the documented absence (1989 to present) of the use or release of AFFF from the Tent Storage, evidence does not indicate that current or former ARNG activities having contributed PFAS contamination to soil, groundwater, surface water, or sediment at this location.

Interviews and records (covering 1992 to present) indicate that current or former ARNG activities may have resulted in potential PFAS releases at the AOIs identified during the PA. Based on the preliminary CSMs developed for the AOIs, there is potential for receptors to be exposed to PFAS contamination in soil, groundwater, surface water, and sediment at the AOIs. **Table 7-3** summarizes the rationale used to determine if the AOIs should be considered for further investigation under the CERCLA process and undergo an SI.

Table 7-3: PA Findings Summary

Area of Interest	AOI Location	Rationale	Potential Future Action
AOI 1: Building 00001	40°36'48.7"N; 111°59'48.3"W	Confirmed location of fire truck wash area discharge directly to ground surface. Suspected location of fire truck wash water from the fire truck bay to a dry well northeast of Building 00001.	Proceed to an SI, focus on soil, groundwater
AOI 2: Hangar/Ramp Area	40°36'43.3"N; 111°59'44.3"W	Confirmed location of fire training exercises and building discharges by interviewee with direct knowledge	Proceed to an SI, focus on soil, groundwater, surface water, sediment
AOI 3: Building 00003 Dumpster Fire	40°36'48.0"N; 111°59'58.6"W	Confirmed location of AFFF used to extinguish a fire by interviewee with direct knowledge.	Proceed to an SI, focus on soil, groundwater, surface water, sediment

ARNG will evaluate the need for an SI at the E.J. Garn Aviation Complex based on the potential receptors, the potential migration of PFAS contamination off the facility, and the availability of resources.



CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at E.J. Garn Aviation Complex, UT			
REVISED	5/1/2020	GIS BY	MS	5/1/2020
SCALE	1:12,000	CHK BY	AG	5/1/2020
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	RG	5/1/2020

Area of Interest
Potential PFAS Release
No Suspected Release
Facility Boundary
Water Body
River/Stream
Canal/Ditch

N

Summary of Findings

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 7-1

C:\Users\stankevichm\OneDrive - AECOM Directory\ARNG_PFAS_GIS_60552172\MXDs\UT\EJ_Garn_AASF_Figures\EJ_Garn_PA_Figures\Fig_7-1_EJ_Garn_AASF_Summary.mxd

References

Kleinfelder, 2018. *Industrial Stormwater Pollution Prevention Plan.* E.J. Garn Aviation Installation Army Aviation Support Facility Permit No. UTR000496 7563 South Airport Road, West Jordan, Utah 84084 Kleinfelder Project No. 20181545.001A. October 12, 2018.

Marine, I.W. and Price, D., 1964. *Geology and Ground-Water resources of the Jordan Valley, Utah.* Utah Geological and Mineralogical Survey Water-Resources Bulletin 7. Prepared in cooperation with the Utah State Engineer. December 1964. Available online: https://pubs.er.usgs.gov/publication/70179723

National Ground Water Association, 2018. *Groundwater and PFAS: State of Knowledge and Practice*. January 2018.

National Oceanic and Atmospheric Administration, 2019. National Centers for Environmental Information. https://www.ncdc.noaa.gov/ (Accessed September 2019).

South Valley Water (SVW), 2019. South Valley Water Reclamation Facility Webiste. https://www.svwater.com/home (Accessed September 2019).

Utah Division of Water Rights (UDWR), 2019. Map Search; Water Right Details. https://maps.waterrights.utah.gov/EsriMap/map.asp (Accessed September 2019).

U.S. Environmental Protection Agency (USEPA),, 1991. *Guidance for Performing Preliminary Assessments under CERCLA*. EPA/540/G-91/013. September 1991.

USEPA, 2017. Occurrence Data for the Unregulated Contaminant Monitoring Rule; UCMR3 (2013-2015) Occurrence Data. January 2017. Available online: https://www.epa.gov/dwucmr/occurrence-data-unregulated-contaminant-monitoring-rule

U.S. Department of Agriculture (USDA), 2019. Natural Resources Conservation Service Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx (Accessed September 2019).

Appendix A
Data Resources

Data resources will be provided separately on CD. Data resources for the E.J. Garn Aviation Complex include:

Department of Environmental Quality Documentation

- No Further Action, Leaking Underground Storage Tank Release, Department of Environmental Quality, Division of Environmental Response and Remediation, September 7, 2016

Environmental Data Resources, Inc. Geocheck Report

- 2019 Environmental Data Resources, Inc. Geocheck Report for West Jordan AASF, UT

Industrial Stormwater Pollution Prevention Plan

- Industrial Stormwater Pollution Prevention Plan- Updated, Kleinfelder Project No. 20181545.001A, Environmental Resources Management, October 12, 2018

Fuel Release Documentation

- Documentation Regarding Fuel Release, Kleinfelder File No,: 20164574.001A, State of Utah Department of Administrative Services, March 9, 2016

Appendix B
Preliminary Assessment Documentation

Appendix B.1
Interview Records

PA Interview Questionnaire - Environmental Manager

Facility: E.J. Garn Aviation Complex
Interviewer: [redacted]
Date/Time: 07/16/2019 / 0900

Interviewee: [redacted] **Title:** Deputy Environmental Program Manager (Water Engineer)/Environmental Resource Management **Phone Number:** [redacted] **Email:** [redacted]	Can your name/role be used in the PA Report? (Y) or N Can you recommend anyone we can interview? (Y) or N [redacted] (Facilities Manager); [redacted] (Environmental Program Manager)

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

Deputy EPM (Water Engineer)/Environmental Resource Management. Has been involved with the property since 2003 as a consultant, and since 2005 as Guard Representative.

2. Where can I find previous facility ownership information?

Property was previously used as a municipal airport.

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

   Maintenance
   Fire Training Areas
   Firefighting (Active Fire)
   Crash
   Fire Suppression Systems (Hangers/Dining Facilities)
   Fire Protection at Fueling Stations
   Non-Technical/Recreational/ Pest Management
   Metals Plating Facility
   Waterproofing Uniforms (Laundry Facilities)
   Other

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

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

Test requirements are manufacturer specs (annual).

PA Interview Questionnaire - Environmental Manager

Facility: E.J. Garn Aviation Complex
Interviewer: [redacted]
Date/Time: 07/16/2019 / 0900

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

They were AFFF originally, retrofitted in 2008.

It is unknown how fire suppression system tanks were refilled at the fire house. Bladders have never ruptured.

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

Purchased through facility maintenance. Discharges tracked through building maintenance. Follow up with [redacted].

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

3%

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

Stored in Building 00010, within a cardboard container in thick plastic containers (3 gallons). Stored as concentrated.

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

Last use of the truck was 2007, sat here unused for 2 years, then it was auctioned off. Not a current FTA.

PA Interview Questionnaire - Environmental Manager

Facility: E.J. Garn Aviation Complex
Interviewer: [redacted]
Date/Time: 07/16/2019 / 0900

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

When Building 00002 was being converted from AFFF in 2008/2009 there were multiple discharge events through the nozzles in the building without control. Foam was pushed outside onto concrete and left to evaporate.

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

Municipal uses water.

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

Local unit trained at Salt Lake City Airport.

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

Units do not bring their own fire protection.

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

The Safety Officer would be responsible for that.

PA Interview Questionnaire - Environmental Manager

Facility: E.J. Garn Aviation Complex
Interviewer: [redacted]
Date/Time: 07/16/2019 / 0900

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

AFFF would only be used for reportable spills (5 gal or more) and there haven't been any for at least 20 years. Microblaze used for spills.

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

Water-only for wildfire firefighting.

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

Not applicable.

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

AFFF is stored in the Building 00010 tent, which was located in two locations on the south side of the property.

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

None

PA Interview Questionnaire - Environmental Manager

Facility: E.J. Garn Aviation Complex
Interviewer: [redacted]
Date/Time: 07/16/2019 / 0900

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

LUST reports for fuel area, possibly NEPA reports to go with the storage hangar. [redacted] to provide reports.

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

Get records from [redacted] (Facilities Manager), and [redacted] (Environmental Program Manager)

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

No

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

NA

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

NA

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

NA

PA Interview Questionnaire - Other

Facility: E.J. Garn Aviation Complex
Interviewer: [redacted]
Date/Time: 07/16/2019 / 0900

Interviewee: [redacted] **Title:** Safety Non-Commissioned Officer (NCO) and Hazardous Materials (HAZMAT) Manager **Phone Number:**_____ **Email:**_____	Can your name/role be used in the PA Report? Y or N Can you recommend anyone we can interview? (Y) or N [redacted]

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

Heyward has worked at the facility since 1992. He also has knowledge from his father, who has worked at the facility since 1977.

Heyward was on crash rescue from 1995-1999.

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

Uses/Releases

Building 00002 has full fire suppression foam system. Building 00010 has full fire suppression, originally installed when it was built in 2016. Facility Maintenance Shop (FMS) and Building 00003 have regular sprinkler systems (water).

In 1991/1992 there was a system test in Building 00002. Foam was pushed out of the building onto the concrete and left to evaporate.

1995-1999 AFFF was used at least 2x per year for training purposes. A fire would be simulated, and a crash team would respond. Nozzle testing was conducted on the same day. The test was conducted on concrete, and foam did not reach the soil.

1998 – One training event where a full 30 gallon Tri-Max was discharged in the FTA. In the past there were 16 mobile fire extinguishers (Tri-Max 30 gal units) strategically placed around flight line, a couple at fuel island, and several near fire locker. State Fire maintains the extinguishers (hydrostatic testing, etc.). Army never refills themselves. Refills are done offsite. No training with Tri-Max. With old systems they had training, but now they only use standard handheld fire extinguishers and purple K units.

In 1997 there was a dumpster fire at Building 00003 was put out with AFFF.

There was a fire truck at the facility until it was taken out of use in 2007. The truck was auctioned off in 2009. The fire truck was washed out in the fire truck bay. Tanks on the truck were refilled with 5-gallon buckets. 3% Foam was used. Building 00001 fire removal ceased in 2008 and the fire trucks were removed from the site.

In 2016 the Building 00004 system was tested. Foam was pushed out of the building onto the concrete and left to evaporate.

Recommend talking to [redacted] (Facilities Manager) about frequency of testing for suppression systems.

PA Interview Questionnaire - Other

Facility: E.J. Garn Aviation Complex
Interviewer: [redacted]
Date/Time: 07/16/2019 / 0900

Storage

3% AFFF has been kept in the tent storage from forever to 2009. In April 2009, 12,000 lbs of AFFF concentrate in 5 gallon containers were taken offsite and given to Dugway. No leaks reported.

Water

Drinking water is supplied to the site by the city. The source of the city's groundwater is a well near the water tanks to the east.

A historic irrigation system canal ran around the property line from the pump house to the city's groundwater well. The canal also received stormwater discharge. Canal was filled in in 2013/2014.

Irrigation water wells are located in the vicinity of the property.

There is an industrial wastewater permit for the oil/water separator to discharge to the sanitary sewer.

Snow is removed by pushing the snow to the east off the flightline.

Depth to water is approximately 200 feet below ground surface.

Other Site Information

Current basic fire protection comes from the municipal fire department. Once a year they simulate a crash and respond. Use water.

There have been four plane crashes in the last 8 years in the soccer fields to the south; no fire suppression was required.

Warm fueling is conducted.

The municipal portion of the airport is to the north; fire control is under municipal jurisdiction. Their method of fire suppression is unknown.

Major industries around the facility include light industrial manufacturing, shipping companies, Tenant (floor scrubber company, sales only), welding companies to south, 2 plumbing companies to south.

PA Interview Questionnaire - Other

Facility: E.J. Garn Aviation Complex
Interviewer: [redacted]
Date/Time: 07/16/2019 / 1400

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

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

10 years as Facilities Manager

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

AFFF Tanks

Buildings 00002 and 00004 have AFFF tank. Size of tanks unknown. Current foam is 2% high expansion foam.

In Building 00002, the seal in the bottom of the AFFF tank is leaking. There is a potential bladder rupture or seal leaking Next Gen foam. It is unknown if floor drains in the room go to the oil/water separator before discharging to the municipal sewer.

Maintenance/Testing

Pumps are tested with water annually. PFAS was used during initial test only.

As-Builts

As-builts do not exist. Drawings show pre-design plans only and are not accurate.

Appendix B.2
Visual Site Inspection Checklists

Facility ST
Visual Survey Inspection Log

Recorded by: [redacted]
ARNG Contact: [redacted]
Date: 07/10/2019

Site Name / Area Name / Unique ID: E.J. Garn Aviation Complex
Site / Area Acreage: ~39 acres
Historic Site Use (Brief Description): Inland Army Training Site since 1942

Current Site Use (Brief Description): Base operations for military helicopter maintenance and support. established 1989

1. Was AFFF used at the site/area? (Y) N
   3a. If yes, document how AFFF was used and usage time (e.g., *fire fighting training 2001 to 2014*) See interviews
2. Has usage been documented? Y (N)
   2a. If yes, keep a record (place electronic files on a disk)

Significant Topographical Features:

1. Has the infrastructure changed at the site/area? (Y) N
   1a. If so, please describe change: *(ex. Structures structures longer exist.)* [redacted] Hangar currently under remodel, [redacted] Hangar remodeled in 2006, cold storage, Fire suppression 2016.
2. Is the site/area vegetated? Y (N)
   2a. If not vegetated, briefly describe the site/area composition: Approx 77% paved. Unpaved catch basins on east side.
3. Does the site or area exhibit evidence of erosion? Y (N)
   3a. If yes, describe the location and extent of the erosion :
4. Does the site/area exhibit any areas of ponding or standing water? Y (N)
   4a. If yes, describe the location and extent of the ponding :

Migration Potential:

1. Does site/area drainage flow off installation? (Y) N
   1a. If so, please note observation and location: Drainage flows east towards runways
2. Is there standing water or drainage issues within the site/area? Y (N)
   2a. If so, please note observation and location:
3. Is there channelized flow within the site/area? Y (N)
   3a. If so, please note observation and location:
4. Have man-made drainage channels been constructed within the site/area? Y (N)
   4a. If so, please note the location of the channel: Historical canal on west & south sides

Additional Notes
See interviews

Appendix B.3
Conceptual Site Model Information

Preliminary Assessment – Conceptual Site Model Information

Site Name: E.J. Garn Aviation Complex

Why has this location been identified as a site?

Several known AFFF releases at the site, and potential adjacent groundwater wells

Are there any other activities nearby that could also impact this location? Yes - Runways, emergency response areas, private aviation companies at South Valley Regional Airport.

Training Events

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

If so, how often? At least twice a year from 1995-1999

How much material was used? Is it documented? Unknown, not documented

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

Surface Water:

Surface water flow direction? East, south in some locations

Average rainfall? 20 inches rain, 53 inches snow

Any flooding during rainy season? None reported, but within 100 yr flood zone

Direct or indirect pathway to ditches? yes - catch basins on east

Direct or indirect pathway to larger bodies of water? Distribution canal & Jordan River to east

Does surface water pond any place on site? Not reported

Any impoundment areas or retention ponds? Catch basins

Any NPDES location points near the site? No

How does surface water drain on and around the flight line? East to catch basins

Preliminary Assessment – Conceptual Site Model Information

Groundwater:

Groundwater flow direction? East

Depth to groundwater? 28-68 ft bgs

Uses (agricultural, drinking water, irrigation)? Domestic, Stock, irrigation

Any groundwater treatment systems? Not onsite

Any groundwater monitoring well locations near the site? No, former USGS wells inactive

Is groundwater used for drinking water? No

Are there drinking water supply wells on installation? No

Do they serve off-post populations? NA

Are there off-post drinking water wells downgradient NO - Stock water, irrigation

Waste Water Treatment Plant:

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

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

Do we understand the fate of sludge waste? NA

Is surface water from potential contaminated sites treated? NA

Equipment Rinse Water

1. Is firefighting equipment washed? Where does the rinse water go? Fire truck was washed in [redacted] by until 2007. Drains discharge to O/W separator, then to municipal sewer system

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

Nozzles tested offsite by State Fire

3. Other?

Preliminary Assessment – Conceptual Site Model Information

Identify Potential Receptors:

Site Worker yes

Construction Worker yes

Recreational User yes

Residential yes

Child yes

Ecological yes

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

Sports complex to south, Residential & commercial surrounding

Documentation

Ask for Engineering drawings (if applicable). As-builts are plans and do not show actual

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

Stormwater channel on south side filled in 2013/2014

Appendix C
Photographic Log

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	E.J. Garn Aviation Complex	7563 South 4570 West, West Jordan, UT 84084

Photograph No. 1

Date 7/16/2019
Time 10:21

Description:
Photograph depicts Building 00001 (under construction) and former fire truck bay.

Orientation:
Northeast

Photograph No. 2

Date 7/16/2019
Time 10:23

Description:
Representative photograph of current fire suppression units scattered around the airfield.

Orientation:
West

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	E.J. Garn Aviation Complex	7563 South 4570 West, West Jordan, UT 84084

Photograph No. 3

Date 7/16/2019
Time 10:26

Description:
Representative photograph of oil/water separator manholes at the facility. Depicted manholes are on the northeast side of the airfield and received wash water from the fire truck bay.

Orientation:
Southwest

Photograph No. 4

Date 7/16/2019
Time 10:50

Description:
Building 00002 in background, with the area of the Airfield where AFFF evaporated after discharges in foreground.

Orientation:
Northwest

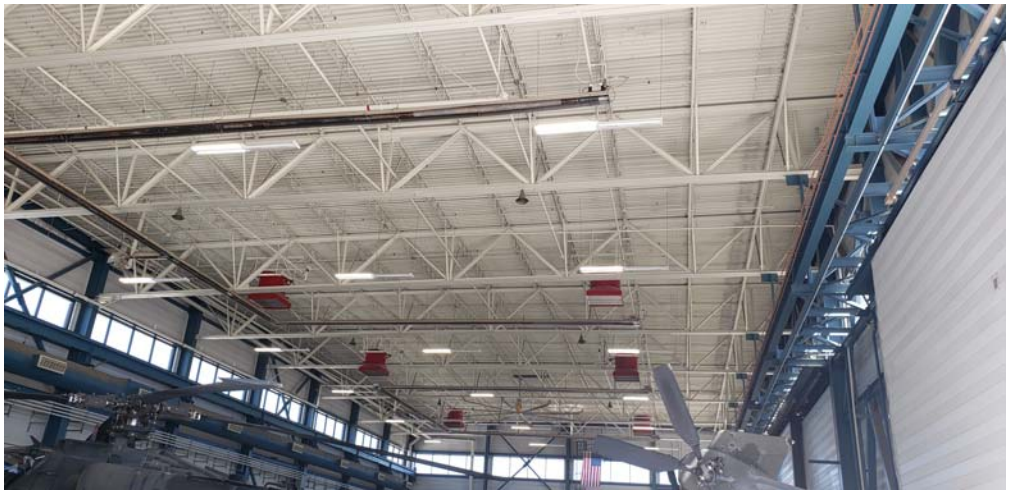
Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	E.J. Garn Aviation Complex	7563 South 4570 West, West Jordan, UT 84084

Photograph No. 5

Date 7/16/2019
Time 10:51

Description:
Fire suppression discharge points in Building 00002.



Orientation:
Northwest

Photograph No. 6

Date 7/16/2019
Time 10:49

Description:
Photograph depicts trench drains inside Building 00002 and the oil/water separator outside.

Orientation:
North

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	E.J. Garn Aviation Complex	7563 South 4570 West, West Jordan, UT 84084

Photograph No. 7

Date 7/16/2019
Time 10:42

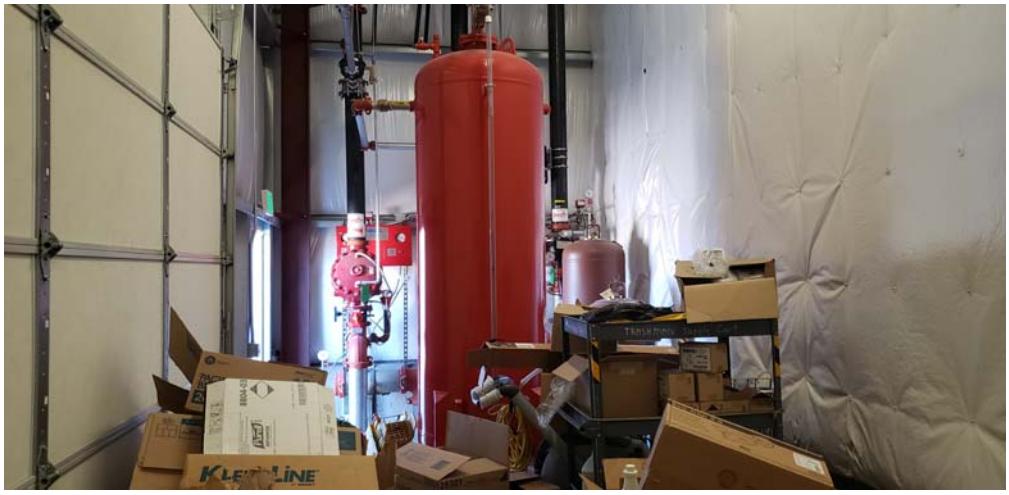
Description:
Foam discharge locations in Building 00004.

Orientation:
North

Photograph No. 8

Date 7/16/2019
Time 10:46

Description:
Fire suppression system in Building 00004.



Orientation:
North

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	E.J. Garn Aviation Complex	7563 South 4570 West, West Jordan, UT 84084

Photograph No. 9

Date 7/16/2019
Time 10:50

Description:
Area of Airfield in front of Building 00004 where AFFF evaporated after system test.

Orientation:
South

Photograph No. 10

Date 7/16/2019
Time 10:40

Description:
Photograph depicts current Building 00010 location in background with former Building 00010 location (south side of the airfield) in the foreground.

Orientation:
West

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	E.J. Garn Aviation Complex	7563 South 4570 West, West Jordan, UT 84084

Photograph No. 11

Date 7/16/2019
Time 10:33

Description:
Photograph depicts the runways east of the facility.

Orientation:
Southeast

Photograph No. 12

Date 7/16/2019
Time 10:27

Description:
Catch basins on the east side of the facility viewed from the north side of the airfield.

Orientation:
South

Appendix C - Photographic Log

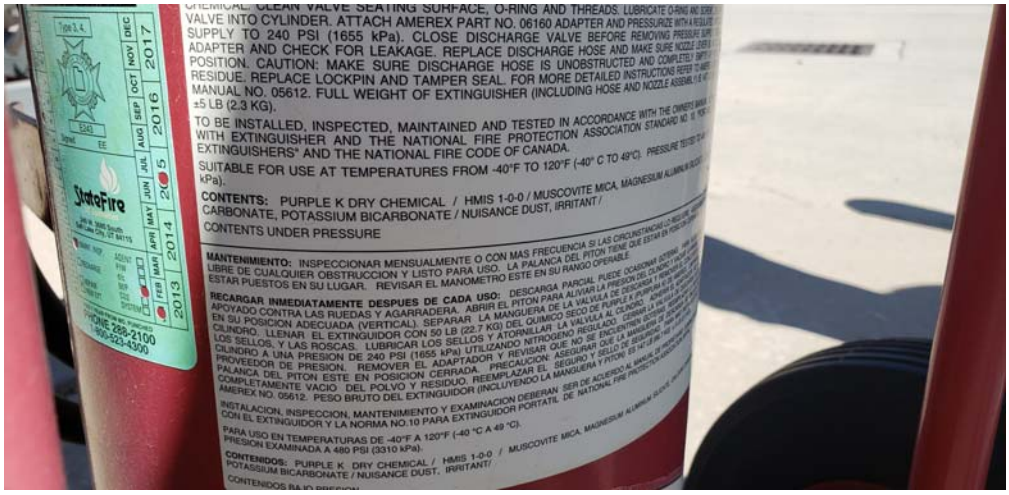
Army National Guard, Preliminary Assessment for PFAS	E.J. Garn Aviation Complex	7563 South 4570 West, West Jordan, UT 84084

Photograph No. 13

Date 7/16/2019

Time 10:35

Description:
Closeup of label on Purple K mobile unit at fuel point.



Orientation:
North

Photograph No. 14

Date 7/16/2019

Time 10:37

Description:
TriMax unit observed at fuel point.

Orientation:
West

Appendix C - Photographic Log

Army National Guard, Preliminary Assessment for PFAS	E.J. Garn Aviation Complex	7563 South 4570 West, West Jordan, UT 84084

Photograph No. 15

Date 7/16/2019
Time 10:14

Description:
Location of 1997 dumpster fire at Building 00003.

Orientation:
West