FINAL
Preliminary Assessment Report
Papago Park Military Reservation
Phoenix, Arizona

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

September 2020

Prepared for:

Army National Guard Bureau
111 S. George Mason Drive
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UNCLASSIFIED

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Acronyms and Abbreviations

AASF	Army Aviation Support Facility
ADEQ	Arizona Department of Environmental Quality
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
AOI	Area of Interest
ARNG	Army National Guard
AZ	Arizona
AZARNG	Arizona Army National Guard
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and LiabilityAct
CFR	Code of Federal Regulations
CSM	conceptual site model
EDR™	Environmental Data Resources, Inc.™
°F	degrees Fahrenheit
FTA	Fire Training Areas
ft	feet
PA	Preliminary Assessment
PFAS	per- and poly-fluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PPMR	Papago Park Military Reservation
SI	Site Inspection
SRP	Salt River Project
UCMR3	Unregulated Contaminant Monitoring Rule 3
US	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
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 Arizona ARNG (AZARNG) Papago Park Military Reservation (PPMR; also referred to as the "facility") in Phoenix, Arizona (AZ), to identify areas of known or suspected releases known as areas of interest (AOIs) and possible exposure pathways to receptors. The performance of this PA included the following tasks:

- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR)™ report packages to obtain information relevant to potential PFAS releases, such as: drinking water well locations, historical aerial photographs, Sanborn maps, and environmental compliance actions in the area surrounding the facility;
- Conducted a 1-day PA site visit on 7 November 2018 and completed visual site inspections (VSIs) at locations where PFAS-containing materials were suspected of being stored, used, or disposed;
- Interviewed current PPMR AZARNG personnel during the site visit and AZARNG environmental managers and operations staff; and
- Identified Area(s) of Interest (AOIs) and developed a preliminary conceptual site model (CSM) to summarize potential source-pathway-receptor linkages of potential PFAS in soil, groundwater, surface water, and sediment for each AOI.

During the PA, one AOI related to PFAS release was identified at PPMR based on PA data. The AOI is shown on **Figure ES-1** and described in **Table ES-1** below:

Table ES-1: Areas of Interest at Papago Park Military Reservation

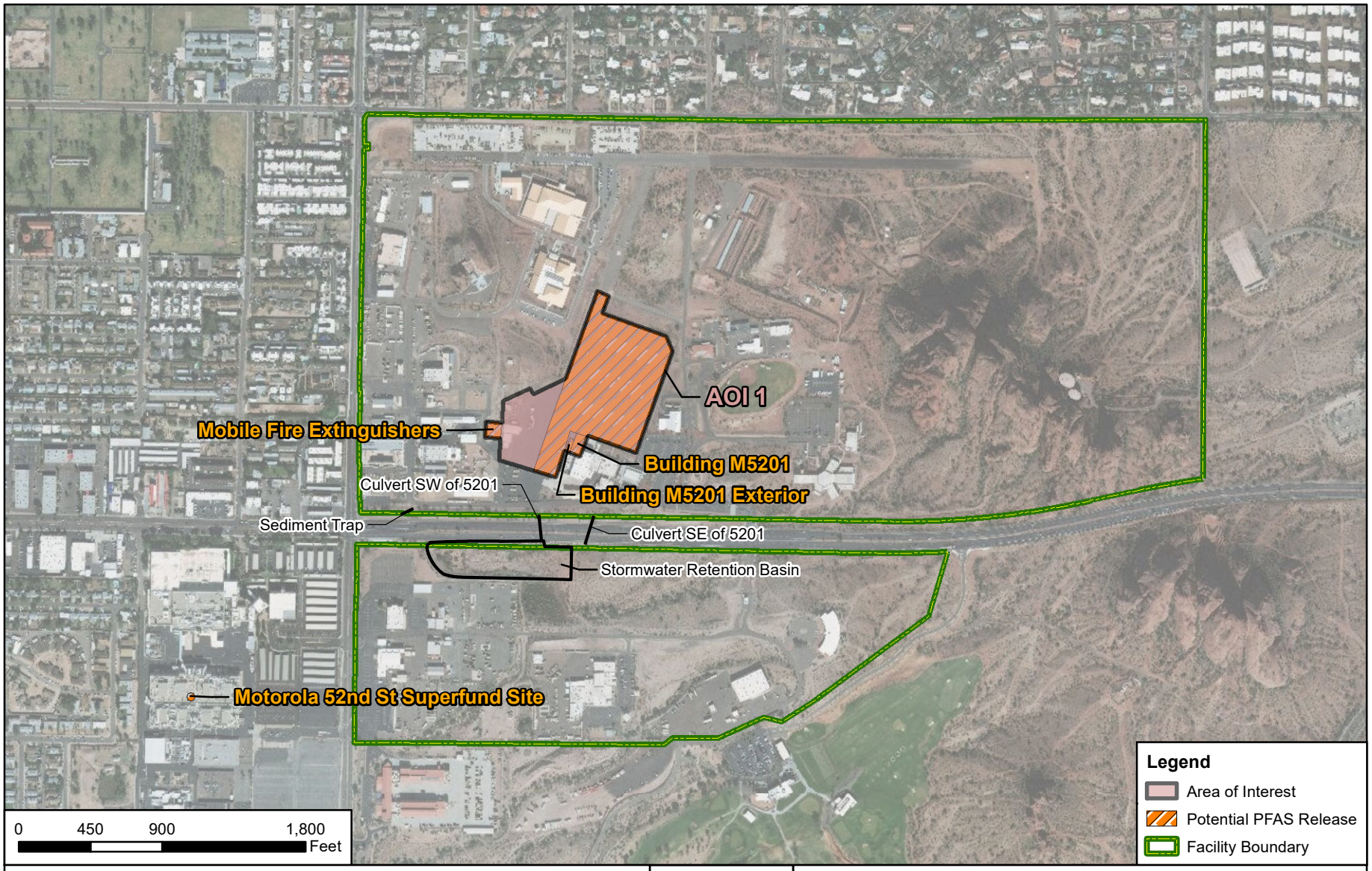
Area of Interest	Name	Used by	Potential Release Dates
AOI 1	Army Aviation Support Facility #1 and Vicinity	AZARNG	mid 1990s – mid 2000s

Based on the PA findings, direct interviewee knowledge of releases at this facility, and a lack of robust institutional knowledge regarding historical activities concerning AFFF use and storage at the facility, there is potential for exposure to PFAS contamination in media at or near the facility. The following are potential receptors: site workers (e.g., PPMR military and non-military staff and visitors), onsite construction workers, trespassers, and off-site residents.

Ground-disturbing activities at the AOI could result in site worker, construction worker, and trespasser exposure to suspected PFAS contamination via inhalation of dust or ingestion of surface soil. In addition, several residences are located north, west, and south of the facility. Nearby residents may be exposed to suspected PFAS contamination via inhalation of fugitive dust from ground disturbing activities at the facility if a release occurred. Ground-disturbing activities to surface soil could result in site and construction worker exposure. Construction workers may also be exposure to subsurface soil. PFAS are water soluble and can migrate readily from soil to groundwater or surface water via leaching and run-off. Groundwater beneath the facility ranges from 6 to 42 feet (ft) below ground surface (bgs) but is not used for domestic water supply. Current migration of PFAS from the suspected release area to surface water is unlikely based on the direction and fate of surface water runoff on the facility. PPMR occupies the land on both the north

and south side of McDowell Road, and surface water runoff from the aviation area travels overland and then enters a pipe that flows from the north side under East McDowell Road to a retention basin directly on the south side of East McDowell Road. This runoff then either evaporates (due to the high rates of evapotranspiration in Arizona) or infiltrates. Overall, the surface water to drinking water pathway is considered incomplete due to the distance the water would need to travel to reach a drinking water source, lack of perennial water, and high rates of evapotranspiration.

Based on the USEPA Unregulated Contaminant Monitoring Rule 3 (UCMR3) data, it was indicated that PFAS were detected in the City of Tempe public water system above the USEPA's lifetime Health Advisory (70 parts per trillion for PFOA and PFOS) within 5 miles of the facility. The UCMR3 data are included in **Appendix A**. 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. A summary of PA findings is shown on **Figure ES-1**. The preliminary CSM for PPMR is shown on **Figure ES-2**.



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PROJECT	Preliminary Assessment for PFAS at Papago Park Military Res, AZ			
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SCALE	1:10,800	CHK BY	MW	9/16/2020
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	9/16/2020

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Summary of Findings

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Figure ES-1

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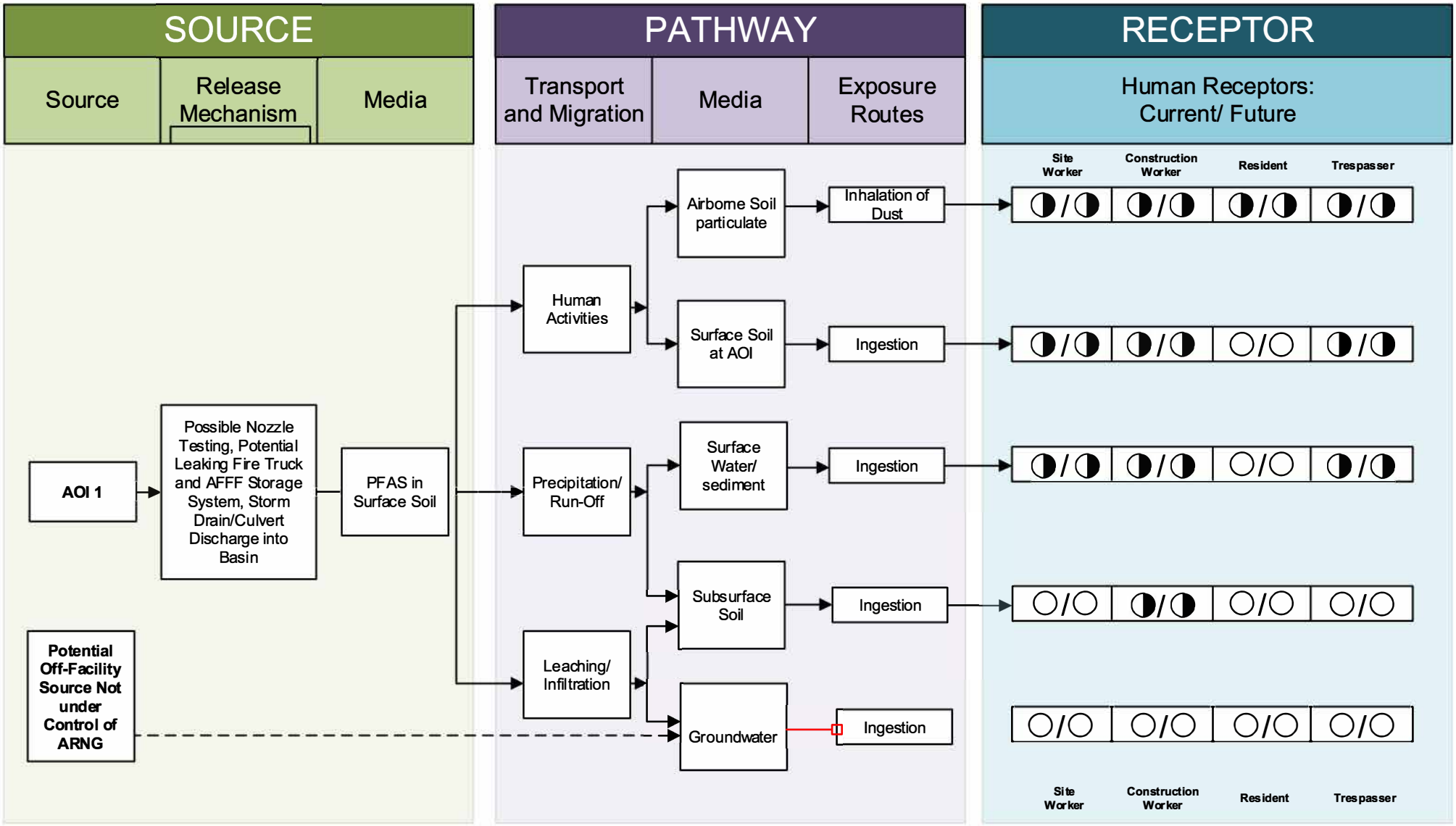


LEGEND

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

Notes:

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

Figure ES-2
Preliminary Conceptual Site Model
Papago Park Military Reservation, AZ

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) Impacted Sites at ARNG Facilities Nationwide*. This work is supported by the United States (US) Army Corps of Engineers (USACE) Baltimore District and their contractor AECOM Technical Services, Inc. (AECOM) under Contract Number W912DR-12-D-0014, Task Order W912DR17F0192, issued 11 August 2017.

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

PFAS are classified as emerging environmental contaminants that are garnering increasing regulatory interest due to their potential risks to human health and the environment. PFAS formulations contain highly diverse mixtures of compounds. Thus, the fate of PFAS compounds in the environment varies. The US Environmental Protection Agency (USEPA) issued lifetime Drinking Water Health Advisories for PFOA and PFOS in May 2016, but there are currently no promulgated national standards regulating PFAS. In the absence of federal standards, some States have adopted their own standards; however, the State of Arizona (AZ) does not currently have promulgated standards for PFAS.

This report presents the findings of a PA for PFAS-containing materials at the current Papago Park Military Reservation (PPMR; also referred to as the “facility”), AZ, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations [CFR] Part 300), and Army requirements and guidance.

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

1.2 Preliminary Assessment Methods

The following tasks were performed as part 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 PA site visit on 07 November 2018 and completed visual site inspections (VSIs) at locations where PFAS-containing materials were suspected of being stored, used, or disposed.

- Interviewed current Arizona ARNG (AZARNG) personnel including environmental managers and operations staff during the site visit
- Identified Area(s) of Interest (AOIs) and developed a preliminary conceptual site model (CSM) to summarize potential source-pathway-receptor linkages of potential PFAS in soil, groundwater, surface water, and sediment for each AOI.

1.3 Report Organization

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

- **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 suspected PFAS releases at the facility identified during the site visit
- **Section 4 – Emergency Response Areas:** describes areas of suspected AFFF discharge at the facility, specifically in response to emergency situations
- **Section 5 – Adjacent Sources:** describes sources of suspected PFAS release adjacent to the facility that are not under the control of ARNG
- **Section 6 – Preliminary Conceptual Site Model:** describes the pathways of suspected PFAS transport and receptors at the facility
- **Section 7 – Conclusions:** summarizes the data findings and presents the conclusions of the PA
- **Section 8 – References:** provides the references used to develop this document
- **Appendix A –** Data Resources
- **Appendix B –** Preliminary Assessment Documentation
- **Appendix C –** Photographic Log

1.4 Facility Location and Description

PPMR occupies approximately 480 acres in the eastern portion of Maricopa County, about 7 miles east of downtown Phoenix and 1.5 miles from Phoenix Sky Harbor International Airport (**Figure 1-1**). The properties south and east of PPMR are public parks and recreational areas owned by the City of Phoenix (Arizona Department of Environmental Quality [ADEQ], 2018). Residential properties are to the east and south of PPMR.

PPMR has been an active military facility and rifle range since its congressional designation in 1930. PPMR serves as the Joint Forces Headquarters for the AZARNG and also hosts operational National Guard units at the facility. The facility includes numerous structures, open storage areas, and training areas, which are primarily located near the western portion of the facility. The current and historical activities at the facility include training and administration, aircraft fueling and maintenance activities, motor vehicle fueling and maintenance activities, fuel and solvent storage

areas, gunnery ranges, detonation areas, and bunkers. The AZARNG leases portions of the facility to the US Air Force for administrative and training purposes (ADEQ, 2018). Historical records indicate that a runway exists at the facility that is oriented 080°/260° and is 3,500 feet (ft) long. According to the Department of Emergency and Military Affairs, this runway is abandoned and has not been used by any fixed-wing aircraft for several decades. An active helicopter landing pad and taxiway have operated at PPMR since 1974.

1.5 Facility Environmental Setting

PPMR is located in the central portion of Maricopa County, AZ, within the City of Phoenix, and is approximately 1,242 ft above sea level. Major geographic features in this area are the Papago Buttes to the east, the Salt River, which flows westerly about one mile to the south, the Old Crosscut Canal, located along 46th Street, and the Grand Canal, which flows northwesterly through the area west of 40th Street and Van Buren Street. The majority of the facility is developed with buildings, concrete, and asphalt features, with exception of an area to the east, which is undeveloped, and a retention basin that lies to the south-central portion of the facility.

1.5.1 Geology

PPMR is constructed on a Quaternary pediment (colluvium/alluvium) that originated from the western and southwestern flanks of Barnes Butte. The pediment is the erosional remnant of the upthrown fault block, which has been cut by several smaller northwest-trending faults (EEC, 2005).

Bedrock in the area around and including PPMR is covered by a thin colluvium/alluvium veneer up to 30 ft thick in some areas. The bedrock is composed of calichified angular to subangular sediments and rock fragments. Tertiary sedimentary rocks exposed at PPMR indicate a variation of sediment sources and reflect separate lobes of alluvial fans that coalesce with and overlie each other. The older, proximal facies are members of the Camel's Head Formation (Stadium Breccia, Barnes Butte Breccia, Zoo Breccia) and are typically very coarse and poorly stratified arkosic breccias, having originated as talus, bud flows, and debris flows. Mid-fan facies are represented by the Papago Park member and consist of water laid deposits that were interbedded with debris flow deposits. Distal-facies are represented by the Tempe Beds, which are finer-grained, well stratified, and well sorted (TechLaw, 2004).

Basement rocks beneath PPMR consist of Proterozoic Porphyritic Camelback granite and metarhyolite. Larger feldspar crystals characterize the Camelback Granite. Metarhyolitic rocks consist of gray to pink, blocky, low-grade, metamorphosed rhyolite, which are common throughout the subsurface of PPMR (EEC, 2005).

The soils at PPMR are composed of fine- to medium-grained sands. Variable amounts of clay, silt, and gravel are also present. Intervals of gravel or gravel and sand/silt mixtures are present at depths greater than 10 ft below ground surface (bgs). The content of the gravel and sand is indicative of weather and eroded material originating from proximal sources of exposed bedrock around the facility. The thickness of soil/alluvium varies across PPMR; however, thicker deposits are typically found in the western portions of the facility (TechLaw, 2004).

In addition to the soil and alluvial material described above, many areas at PPMR have been overlain with variable amounts of backfill or artificial cover during the operational history of the facility. The types of artificial fill material found at PPMR range in content from pea gravel to aggregate base course (TechLaw, 2004).

1.5.2 Hydrogeology

PPMR lies within the West Salt River Valley area of the Phoenix Active Management Area. Since 1947, groundwater extraction for irrigation has lowered groundwater levels and caused changes in regional and local flow directions. Despite these changes, groundwater movement is still primarily westward toward the Salt River and Gila Rivers (ADEQ, 2017). PPMR is on a bedrock highland which is underlain by crystalline rock. Consequently, very little water, if any, is present beneath the facility. Water-saturated layers have been historically identified at points near the western margin of PPMR from 6 ft to 42 ft below grade; however, a continuous groundwater zone does not appear to exist beneath most of the facility. Based on lithologic logs from historical monitoring wells, the main occurrence of groundwater exists under unconfined conditions within fractured Precambrian Camelback granite and/or metarhyolite. In some portions of PPMR, locally perched groundwater layers are found in the artificial fill material and calichified pediment colluvium/alluvium (EEC, 2005).

According to data received from ADEQ and the EDR™ report for the facility, several dozen wells are located within a one-mile radius of the facility. Outside of the facility, most of these wells are classified as monitoring wells, but several are listed as exempt, non-exempt, or other type of wells (**Figure 1-2**). Records from AZDEMA indicate that there are 25 monitoring wells, and no drinking water or irrigation wells present at the facility or downgradient of the facility. The State of Arizona describes exempt wells as small, non-irrigation wells typically used to provide water for domestic purposes, and non-exempt wells as a well drilled within an Active Management Area pursuant to different groundwater rights.

1.5.3 Hydrology

The City of Phoenix's water supply comes primarily from the Salt River Project (SRP), which brings water by canal and pipeline from the Salt and Verde Rivers, and the Central Arizona Project, which transports Colorado River water. Approximately 3% of the water supply comes from groundwater. The City of Phoenix also uses a portion of its reclaimed effluent to maintain parks and for recharging local groundwater aquifers. The surface water near PPMR flows generally northeast to southwest (TechLaw, 2004).

The Salt River is the principal drainage feature of the Phoenix Basin and is the nearest surface water body to the facility, approximately 2.5 miles south of PPMR. The Salt River is typically dry through the greater Phoenix metropolitan area due to flood control/water retention structures; however, the river occasionally flows after heavy rainfall events or controlled releases from upstream structures (GEC-SA&B, 2005). There are surface water features onsite at PPMR; however, there are no perennial surface water bodies. Surface water drainage at PPMR runs from the north portion of the facility, under East McDowell Road, to a retention basin on the southern part of the facility via a culvert. Prior to 1987, the Water Retention Basin (84748) located on South PPMR did not exist. Surface water from PPMR may have flowed southwest and flooded the Motorola complex during extreme or high precipitation events. After construction of the retention basin, however, and reconfiguration of the surface flow on the northern portion of PPMR, surface water from north PPMR entered the retention basin and either evaporated (due to the high rates of evapotranspiration in Arizona) or infiltrated. Surface water features near the facility are shown in **Figure 1-3**.

Based on the USEPA Unregulated Contaminant Monitoring Rule 3 (UCMR3) data, it was indicated that PFAS were detected in the City of Tempe public water system above the USEPA's lifetime Health Advisory within 5 miles of the facility. The UCMR3 data are located in **Appendix A**. PFAS

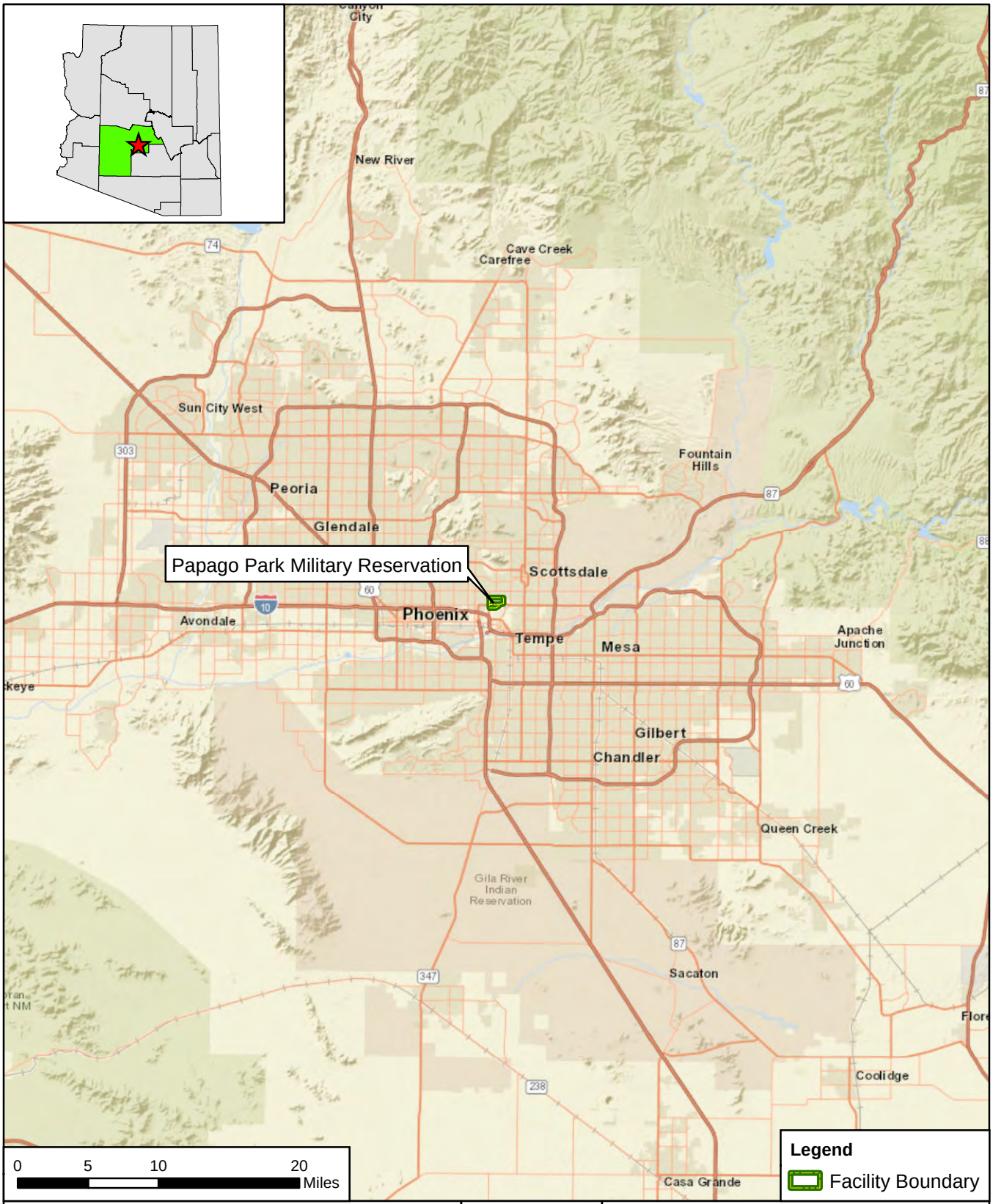
analyses performed in 2016 had method detection limits that were higher than currently achievable. Thus, it is possible that low concentrations of PFAS were not detected during the UCMR3 but might be detected if analyzed today.

1.5.4 Current and Future Land Use

PPMR is federally owned and operated by AZARNG and has been an active military facility and rifle range since its congressional designation in 1930. The facility development includes numerous structures, open storage areas, and training areas, including an abandoned runway and active heliport. Land surrounding the facility is mostly a mix of residential, recreational, and light industrial use. According to the City of Phoenix Zoning Database, the facility is zoned for R1-6, single family residential; however, it is a military industrial complex that will not be used for residential development. Reasonably anticipated future land use is not expected to change from the current land use and will continue to be used as a military industrial complex.

1.5.5 Climate

PPMR is situated in central Arizona, and the climate is characterized as arid, with low annual rainfall and low relative humidity. Daytime temperatures are high through the summer months. Winters are mild, and temperatures can drop below freezing during winter months (Arizona State Climate Office, 2019). There are two separate rainfall seasons. The first rainfall season occurs during winter months, from November through March, when the area is subject to storms from the Pacific Ocean. The second rainfall season occurs during July and August, when Arizona is subject to thunderstorms whose moisture supply originates in the Gulf of Mexico, in the Pacific Ocean, off the west coast of Mexico, and the Gulf of California. Although these periods are classified as rainy seasons, there can be periods of a month or more in any season when zero to less than one inch of precipitation occurs. Light snow occurs in the higher mountains surrounding the Salt River Valley. Snowfall within the Salt River Valley, although rare, can occur (Arizona State Climate Office, 2019). The maximum average monthly temperature in nearby Phoenix, AZ occurs in July (106.1 degrees Fahrenheit [°F]), with an average maximum annual temperature of 86.6°F. The minimum average monthly temperature occurs in December (44.8 °F), with an average minimum annual temperature of 63.4°F. The average annual precipitation in Phoenix, AZ from 1981-2010 was 8.03 inches (NOAA, 2019).



CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at Papago Park Military Res, AZ			
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SCALE	1:633,600	CHK BY	MW	8/7/2019
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	RG	8/7/2019

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Facility Location

AECOM
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Figure 1-1

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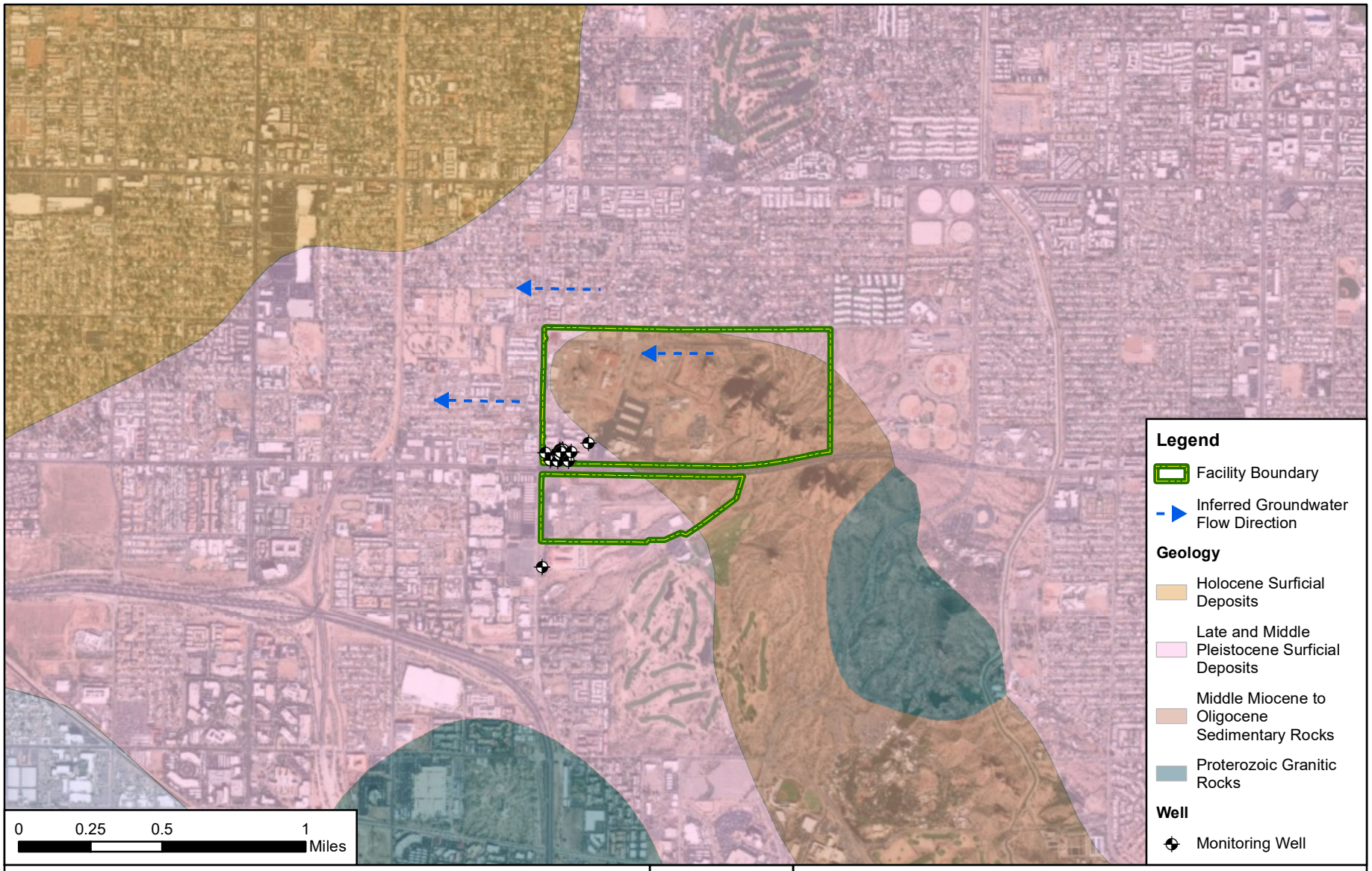

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SCALE	1:31,680	CHK BY	MW	4/24/2020
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	4/24/2020

Geology and Groundwater Features

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 1-2

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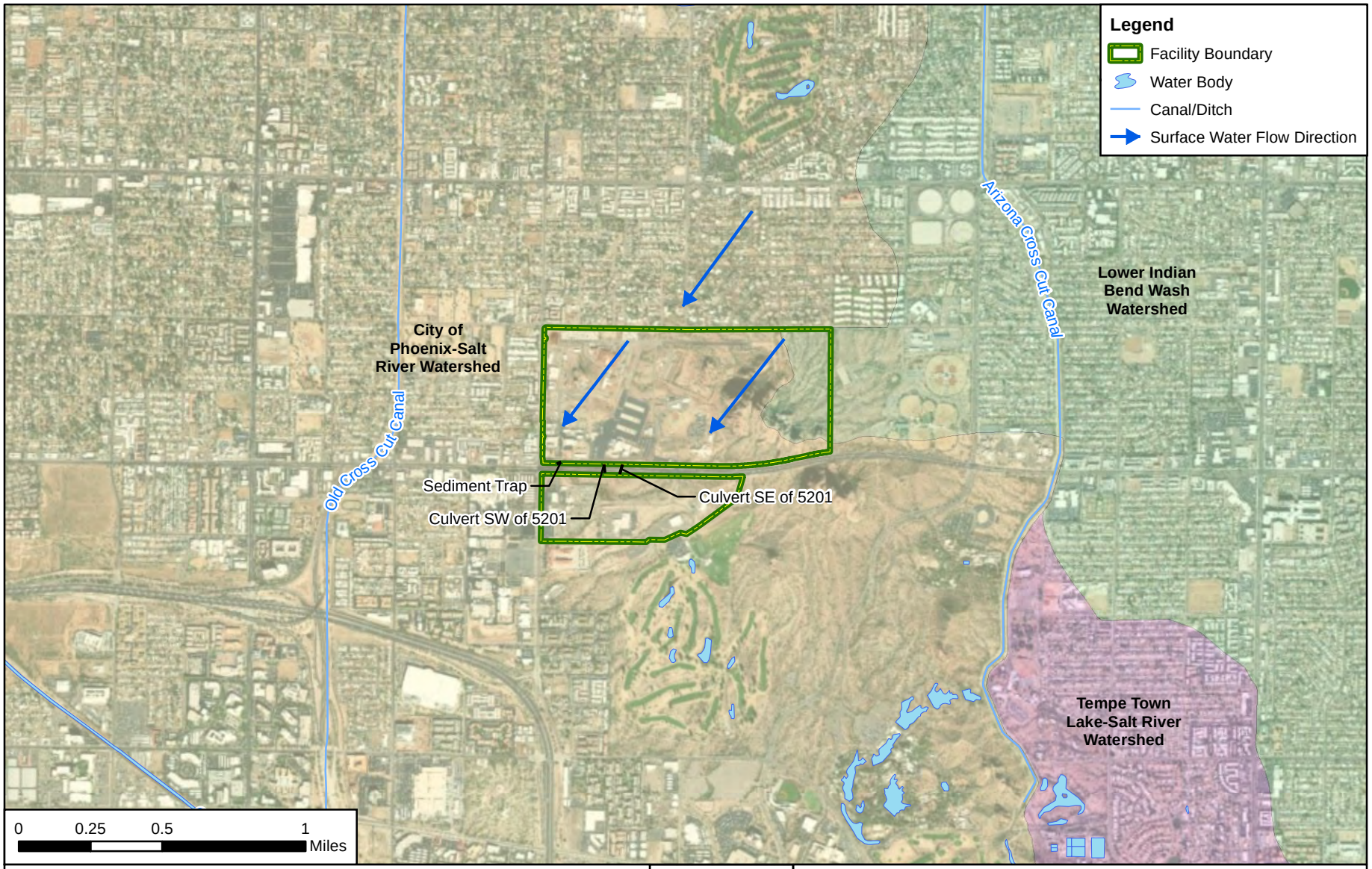

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Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	9/16/2019

Surface Water Features

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 1-3

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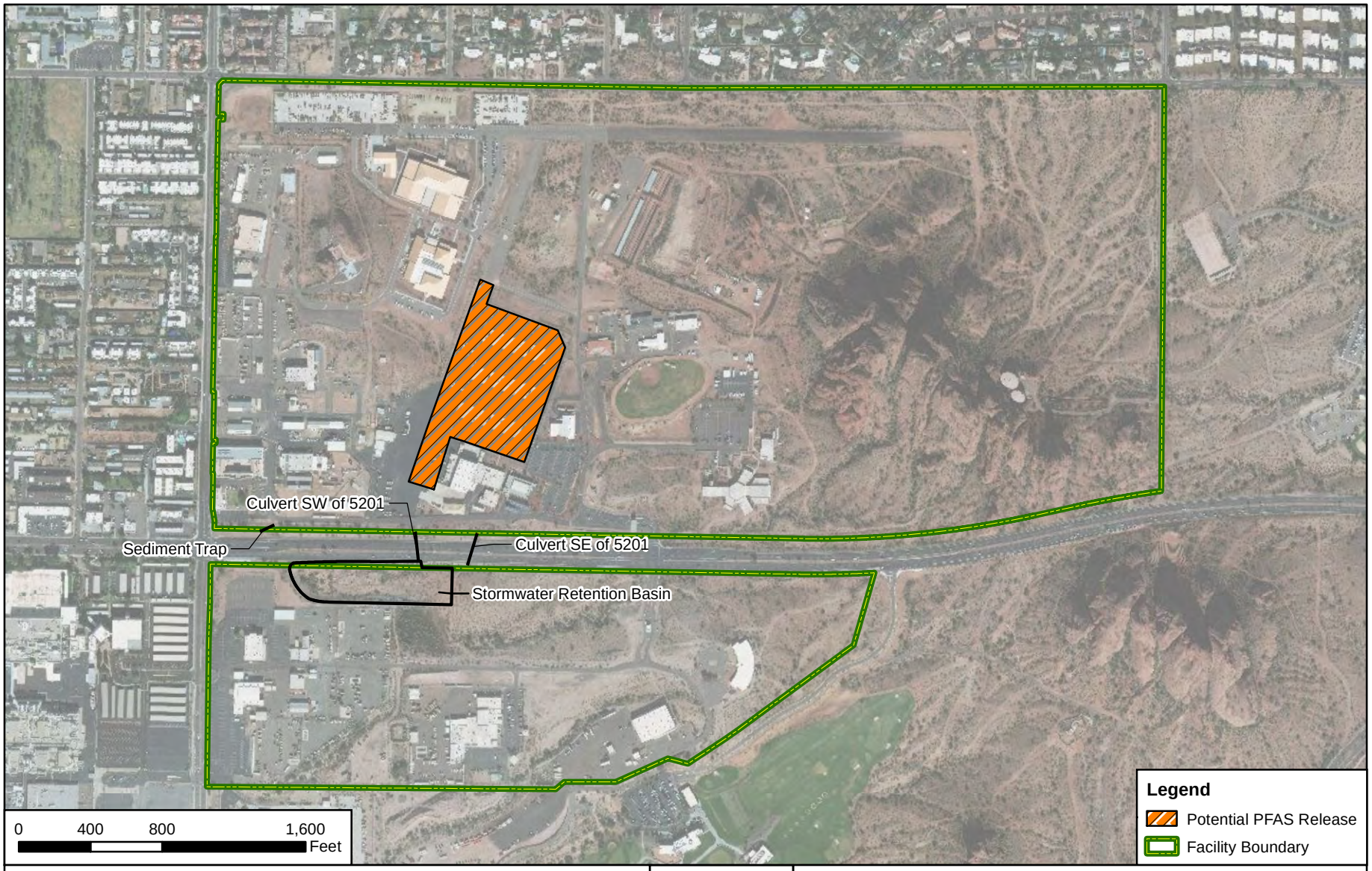
2. Fire Training Areas

Based on personnel interviews, PPMR historically had a firefighting unit consisting of one fire truck and one or two people onsite for handling fire incidents until the mid-2000s. Based on interviewee's knowledge of facility and operations history since the 1990s, fire training was conducted on the runway of the facility (**Figure 2-1**) using only water; however, information regarding facility activities prior to the 1990s is incomplete, and AFFF may have been used (**Appendix B**).



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Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	9/16/2020

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Fire Training Area

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Figure 2-1

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3. Non-Fire Training Areas

In addition to the 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**. Three non-FTAs were identified during the PA. A description of each non-FTA is presented below, and the non-FTAs are shown on **Figure 3-1**. Interview records with relevant information appear in **Appendix B**, and photographs appear in **Appendix C**.

3.1 Building M5201

The former fire truck bay is located in the Army Aviation Support Facility (AASF) #1 (M5201). This fire truck bay housed a single standard crash fire rescue truck and related equipment for the airfield from the time the building was constructed in 1973, until the mid-2000s when it was converted into a gym. According to personnel interviews, the former fire truck bay stored AFFF, and AFFF was managed in the bay, but it is unclear what methods of storage were used or if AFFF were transferred between containers. No floor drains were observed in the former fire truck bay during the field visit. If no floor drains exist, the fire truck housed in the bay was likely washed out and maintained outside of the bay. The former fire truck bay is currently used as a gym for onsite personnel. No suspected discharge of AFFF has been recorded in historical documents, but personnel interviews have indicated that a discharge has occurred on site. (**Appendix C**).

3.2 Runway (M5228) & Rotary Wing Parking Apron (M5204)

The nozzle on the fire truck was tested weekly with AFFF from the 1970s until the fire truck was removed from the facility in the mid-2000s. Because AFFF use was not recorded, it is unclear how often AFFF was used during nozzle testing. The testing occurred on the unpaved soil of the Runway (M5228) and Rotary Wing Parking Apron (M5204), which originally was unpaved soil until 1973, when the area was paved. According to the interviewee, once the foam was deployed, it was allowed to dry on the soil. The equipment was then rinsed, and the water was directed towards the culvert located south of the building. Water from this culvert flows underneath E McDowell Road and discharges into the retention basin on the south side of E McDowell Road.

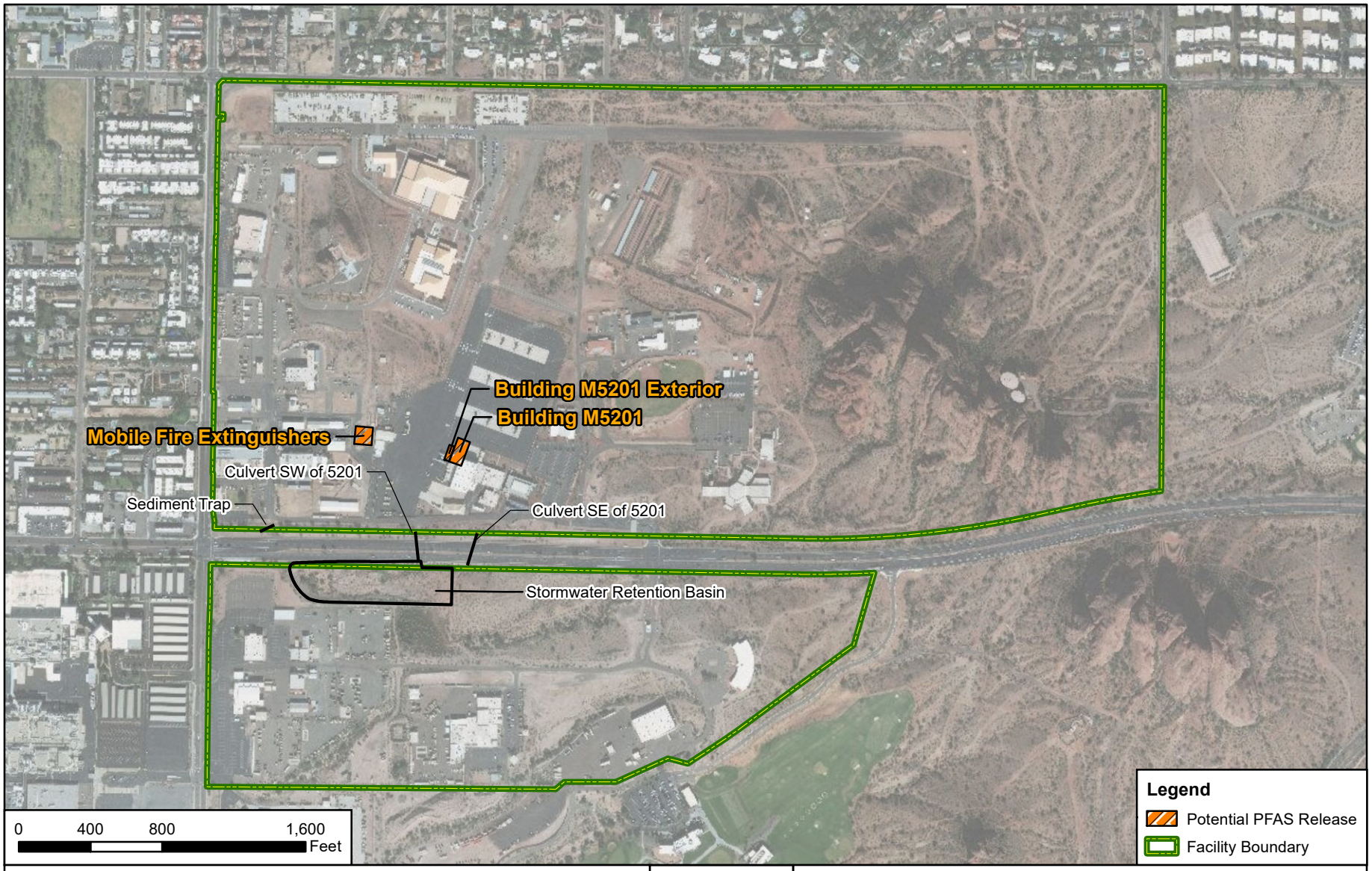
Additionally, TriMax™ mobile extinguishers were used at the AASF #1 for a number of years, though it is unknown how many units were at the AASF #1. These units, which were dispensed and replaced through the Construction Facility Management Office (CFMO), were reported to have been stored near the flight line during this time (**Appendix B**). The mobile extinguishers were demilled before disposal, which was conducted at the adjacent vehicle maintenance area, but it is unknown if the units were emptied at the AASF #1 or shipped full to the CFMO warehouse.

3.3 Mobile Fire Extinguishers at Fuel Point Station

The fuel point located on PPMR is used to refuel various vehicles and machinery. Mobile fire extinguishers have historically and currently been located at this fuel point. Currently, these mobile extinguishers were inspected and determined to be non-AFFF fire extinguishers. It is unknown if mobile extinguishers used in the past contained AFFF.

3.4 Former Storage Area Building M5201Exterior

According to interviews, the former AFFF storage area, located just outside of Building M5201 (former fire truck bay), formerly stored bulk AFFF in a covered area on the ground. The area no longer contains these storage containers and is now an open patch of land (**Appendix C**). No suspected discharge of AFFF has been recorded in historical documents, but personnel interviews have indicated that a release has occurred on site.



CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at Papago Park Military Res, AZ			
REVISED	9/16/2020	GIS BY	MS	9/16/2020
SCALE	1:9,600	CHK BY	MW	9/16/2020
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	9/16/2020

N

Non-Fire Training Areas

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Figure 3-1

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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. No emergency response areas were identified at PPMR based on information provided in the EDR™ Report or during the PA through available interviews. Interviewee recollections dated back to the 1990s.

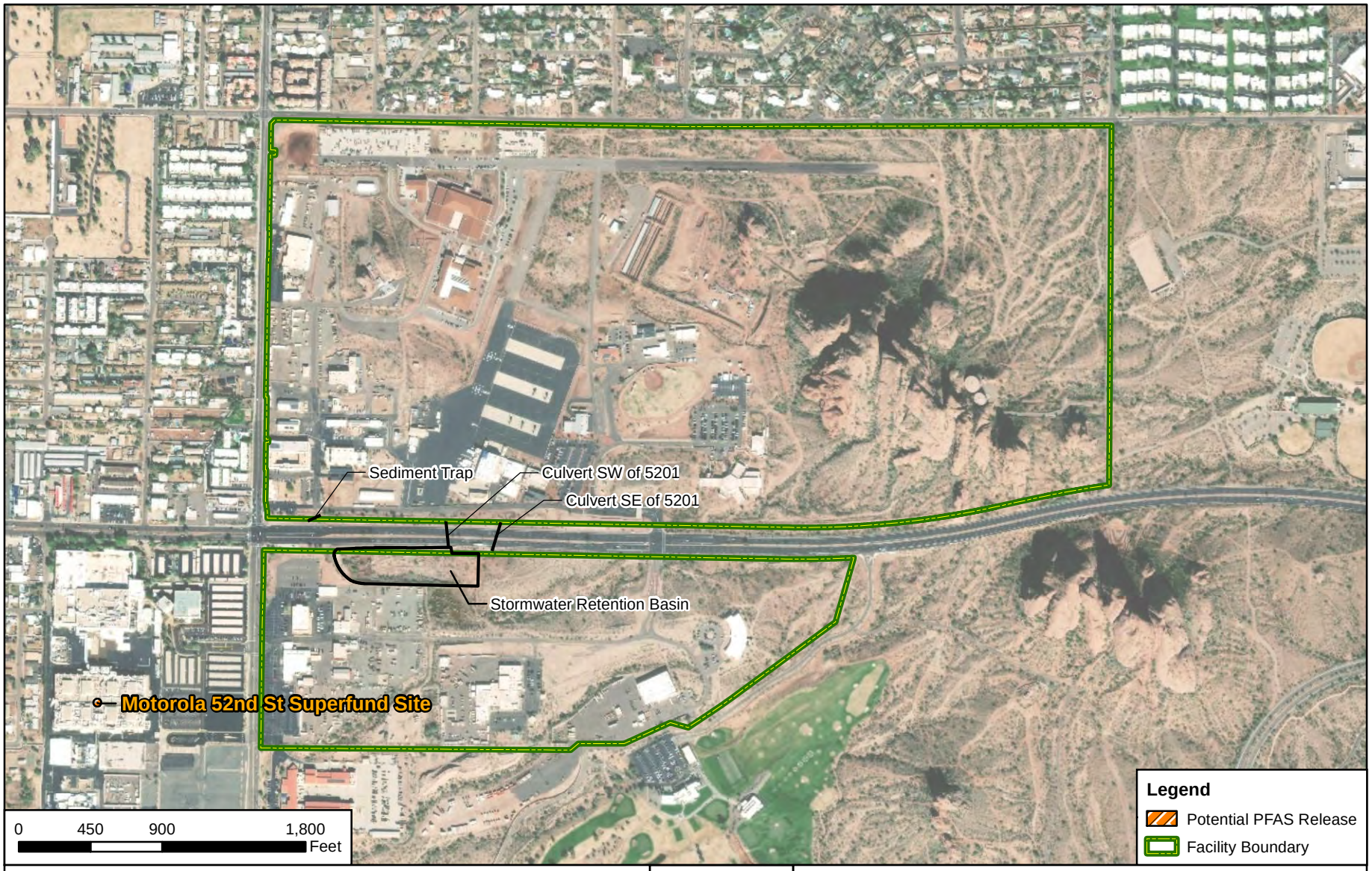
5. Adjacent Sources

One off-facility PFAS source, not under the control of AZARNG, was identified adjacent to PPMR during the PA and is discussed below. **Figure 5-1** presents the location of the suspected adjacent PFAS sources.

5.1 Motorola 52ND Street Superfund Site (Currently, ON Semiconductor)

The Motorola 52nd Street Superfund Site property borders PPMR to the west and is downgradient of the facility. The Motorola 52nd Street Superfund Site was in operation from 1956 until 1999, when Motorola's Communications, Power, and Signal Group split off to become ON Semiconductor. Motorola remains responsible for the remediation effort at the site. The site was not connected to a municipal sewer, therefore, on-site disposal of domestic and industrial waste occurred in underground tanks, leaching fields, drywells, pits, sumps, and surface disposal areas. Investigations revealed significant impact on soil and groundwater in the area by volatile organic compounds including trichloroethylene and tetrachloroethene (**Appendix A**). Cleanup, operation and maintenance activities, and monitoring are currently ongoing.

While previous investigations at this site did not evaluate PFAS, recent literature from the Interstate Technology Regulatory Council highlights the prevalence of PFAS chemicals in semiconductor products and production (ITRC 2017).



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REVISED	9/16/2019	GIS BY	MS	9/16/2019
SCALE	1:10,800	CHK BY	MW	9/16/2019
Base Map: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	9/16/2019

N

Adjacent Source

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Figure 5-1

\\ursgermantown.us.ie.urs\Germantown\Projects\ENV\GEARS\GEO\ARNG PFAS\900-CAD-GIS\920-GIS or Graphics\MXD\AZ\Papago_Park_MR_Figures\Papago_Park_MR_PA_Figures\Fig_5-1_Papago_Adjacent_Source.mxd

6. Preliminary Conceptual Site Model

Based on the PA, one AOI was identified at PPMR, the AASF#1 and Vicinity. The AOI location is shown on **Figure 6-1**. The following section describes the CSM components and the specific preliminary CSM developed for the AOI. The CSM includes 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.

Human exposure via the dermal contact pathway may occur, and current risk practice suggests it is a negligible pathway compared to ingestion; however, exposure data for dermal pathways is sparse and continues to be the subject of PFAS toxicological study (National Ground Water Association, 2018). Receptors for PPMR include site workers, construction workers, trespassers, and offsite residents. The CSM indicates which specific receptors could potentially be exposed to PFAS.

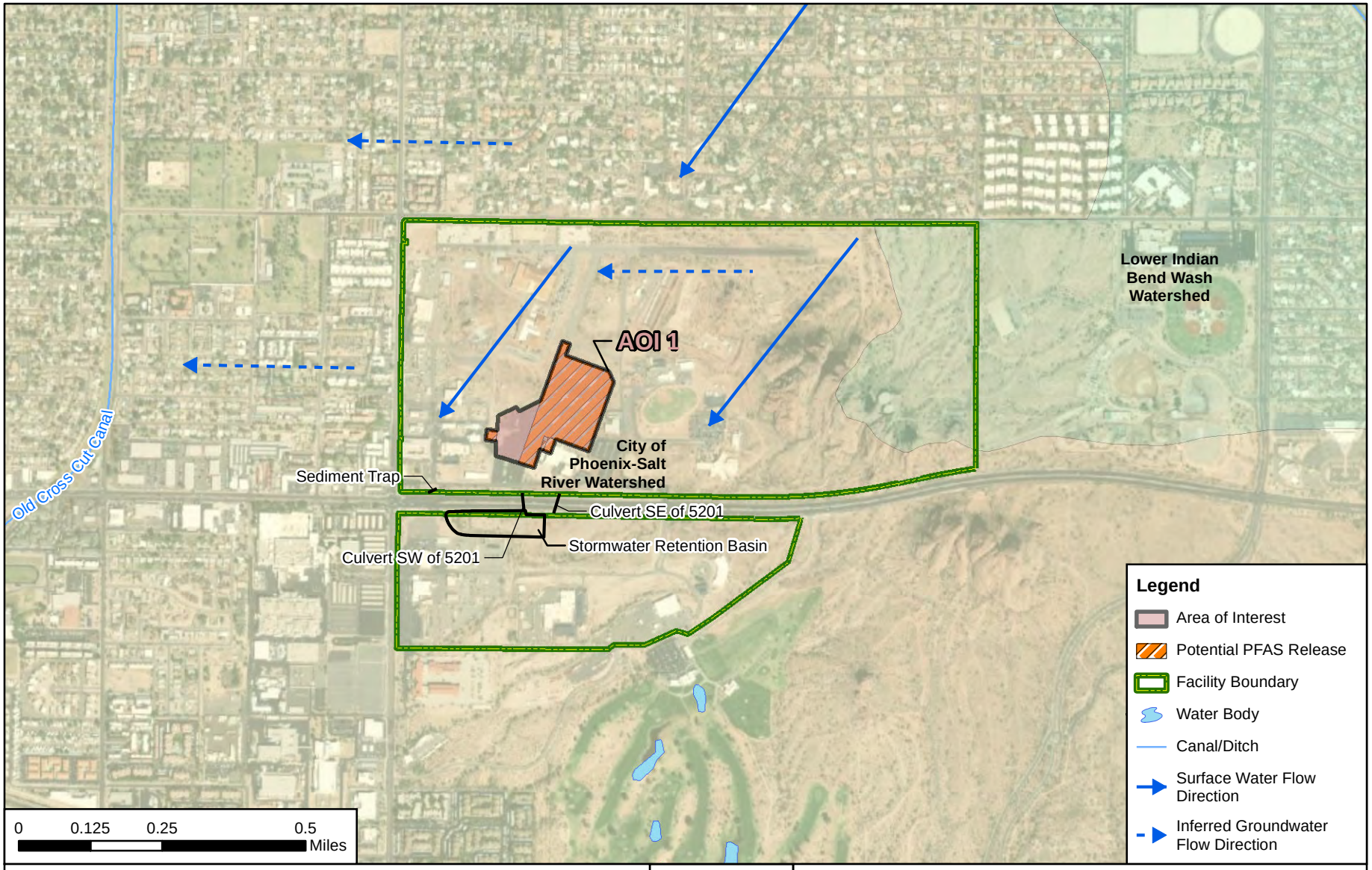
6.1 AOI 1: Army Aviation and Support Facility #1 and Vicinity

The AOI is the general location in which fire training, equipment testing, and AFFF storage occurred. These areas, described in **Sections 2** and **3**, are in close enough proximity of each other to be considered a single AOI. This area includes the runway, rotary wing parking apron, former fire truck bay, and former storage area.

The current AASF #1 gym was the location of the former fire truck bay and AFFF storage area. According to historical facility map photographs, the heliport and the building, which housed the fire truck bay and AFFF storage area, were constructed sometime between 1964 and 1976. From the 1970s until the mid-2000s, a single, standard fire truck was stationed within the bay, and weekly nozzle testing with PFAS was conducted. Since AFFF use was not recorded on site, it is unclear how often AFFF was used during nozzle testing. The equipment was then rinsed, and water was directed towards the culvert located south of the building. Water form this culvert flows underneath E McDowell Road and discharges into the retention basin on the south side of E McDowell Road.

Due to direct interviewee knowledge of multiple releases at this facility, and the lack of information specific to the activities that took place at the heliport area, it has been determined that AFFF was discharged on the runway and rotary wing parking apron and have travelled through or pooled at the culvert and the retention basin on the south side of East McDowell Road. Prior to 1987, however, the Water Retention Basin (84748) located on South PPMR did not exist. In August of 1986, ADEMA licensed land to Motorola, Inc. for the construction, operation, and maintenance of the retention basin. Although the agreement does not assign culpability, it appears that surface water from PPMR may have flooded the Motorola complex during extreme or high precipitation events. It is probable that no source of PFAS was present at PPMR until after construction of AASF #1 in 1973. Consequently, between 1973 and 1986, a release could have traveled southward over land entering a culvert below McDowell Road and then westward off PPMR. However, after construction of the retention basin and reconfiguration of the surface flow on the northern portion of PPMR, surface water from north PPMR entered the basin and either evaporated (due to the high rates of evapotranspiration in Arizona) or infiltrated. The AOI encompasses the building where AFFF and a fire truck were stored, the Fuel Point Station, the Runway, and the Rotary Wing Parking Apron, where AFFF may have been deployed. Ground-disturbing activities in these areas could result in site worker, construction worker, and trespasser exposure to suspected PFAS contamination via inhalation of dust or ingestion of surface soil. A construction worker may also be exposed to subsurface soil. Nearby offsite residents may be

exposed to suspected PFAS contamination via inhalation of fugitive dust from ground disturbing activities at the facility if a release occurred. PFAS are water soluble and can migrate readily from soil to groundwater or surface water via leaching and run-off. Groundwater beneath the facility ranges from 6 to 42 ft bgs but is not generally used for drinking water supply. From 2007-2010, on average, groundwater supplied 3% of the City of Phoenix's water supply (ADEQ, 2014). There are no known groundwater wells or drinking water sources downgradient of the facility. Current migration of PFAS from the suspected release area to surface water is unlikely based on the direction and fate of surface water runoff on the facility. PPMR occupies the land on both the north and south side of McDowell Road, and surface water runoff from the aviation area travels overland and then enters a pipe that flows from the north side under East McDowell Road to a retention basin directly on the south side of East McDowell Road. The preliminary CSM for the AOI is shown on **Figure 6-2**.



CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at Papago Park Military Res, AZ			
REVISED	9/16/2020	GIS BY	MS	9/16/2020
SCALE	1:15,840	CHK BY	MW	9/16/2020
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	9/16/2020

N

Area of Interest

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Figure 6-1

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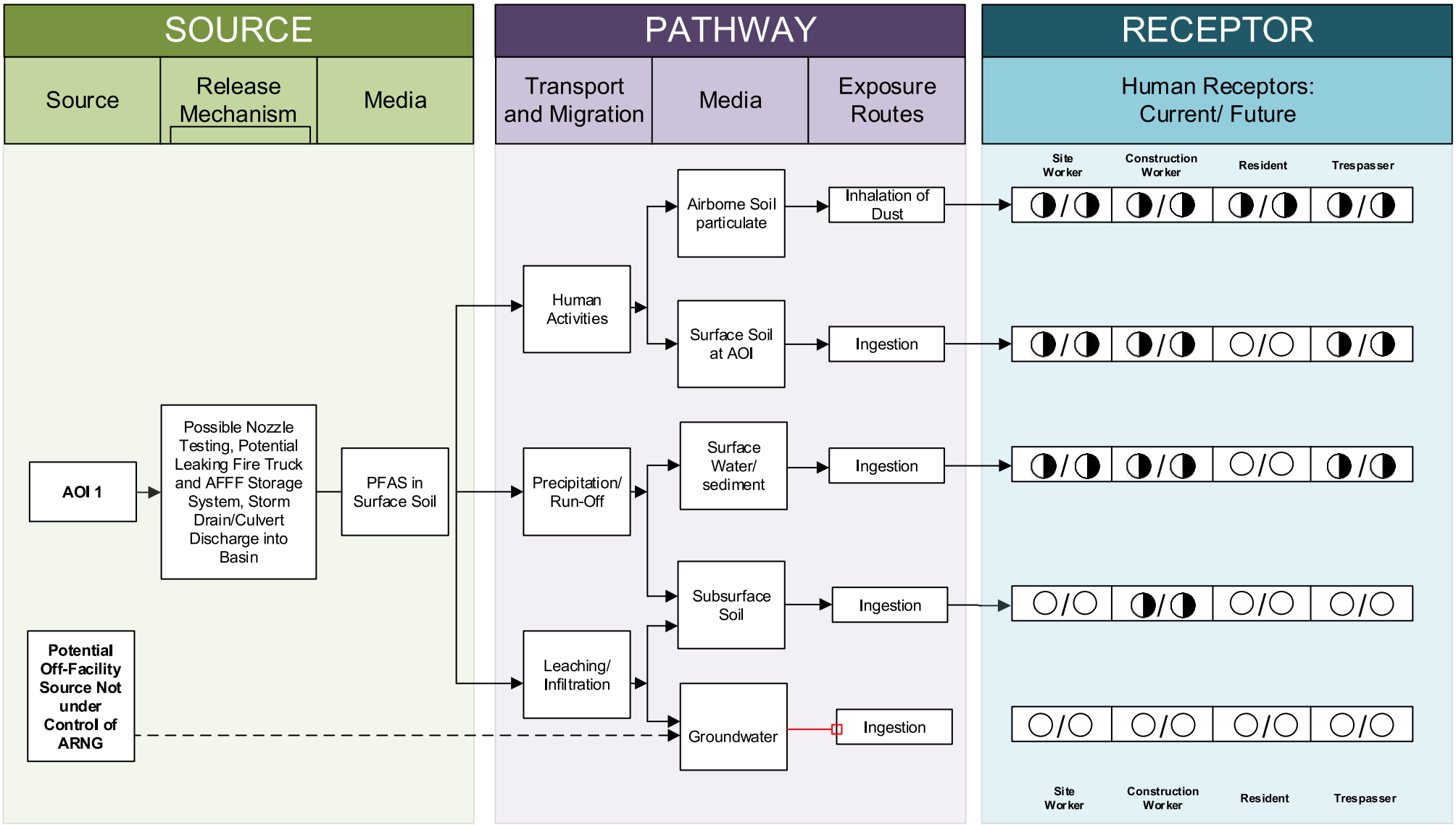


LEGEND

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

Notes:

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

Figure 6-2
Preliminary Conceptual Site Model
Papago Park Military Reservation, AZ

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 PPMR. The PA findings are based on the information presented in **Appendix A** and **Appendix B**.

7.1 Findings

One AOI related to suspected PFAS release was identified at PPMR during the PA (**Figure 7-1**) and is described in **Table 7-1** below:

Table 7-1: Areas of Interest at Papago Park Military Reservation

Area of Interest	Name	Used by	Potential Release Dates	Determination
AOI 1	AASF #1 and Vicinity	AZARNG	Mid 1990s – mid 2000s	Suspected PFAS release

The AOI is the location of the AASF #1 and vicinity, where the AZARNG previously held fire training exercises and stored AFFF materials. This area includes the Former Fire Truck Bay (M5201), Former AFF Storage Area, Fuel Station Point, Rotary Wing Parking Apron (M5204), and the Runway Surface (M5228). Based on the PA findings, direct interviewee knowledge of releases at this facility, and a lack of robust institutional knowledge regarding historical activities concerning AFFF use and storage at the facility, there is potential for exposure to PFAS contamination in media at or near the facility. The preliminary CSM is shown on **Figure 6-2**, which presents the potential receptors and media impacted.

Additionally, adjacent sources, including the Motorola 52nd Street Superfund Site (currently ON Semiconductor), may be a suspected source of PFAS release to the environment that could have an impact on the environmental media near PPMR, although it is in an apparent downgradient direction from the facility.

7.2 Uncertainties

A number of information sources were evaluated 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, 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. 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 AFFF were first used, and a reliance on personal recollection. Inaccuracies may arise in suspected AFFF discharge locations, discharge dates, discharge volumes, and PFAS concentration. There is also a possibility the PA has missed a source of PFAS, as the science of how PFAS may enter the environment continually evolves.

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

Table 7-2 summarizes the uncertainties associated with the PA:

Table 7-2: Uncertainties within the PA

Area Evaluated	Source of Uncertainty
AOI 1: AASF #1 and Vicinity	The type, volume, frequency, and concentration of AFFF discharged is unknown. Drainage pathways on the facility other than the main culvert drain identified are unclear.
Facility	Inconsistent information given from interviewees and sparse records makes it unclear if AFFF were used during training exercises and stored in this bay. The type, volume, and concentration of AFFF stored is unknown.
Retention Basin	Runoff flows south into a culvert which leads to the retention basin. It is unknown if, or how frequently AFFF may have been discharged into this retention basin.

7.3 Potential Future Actions

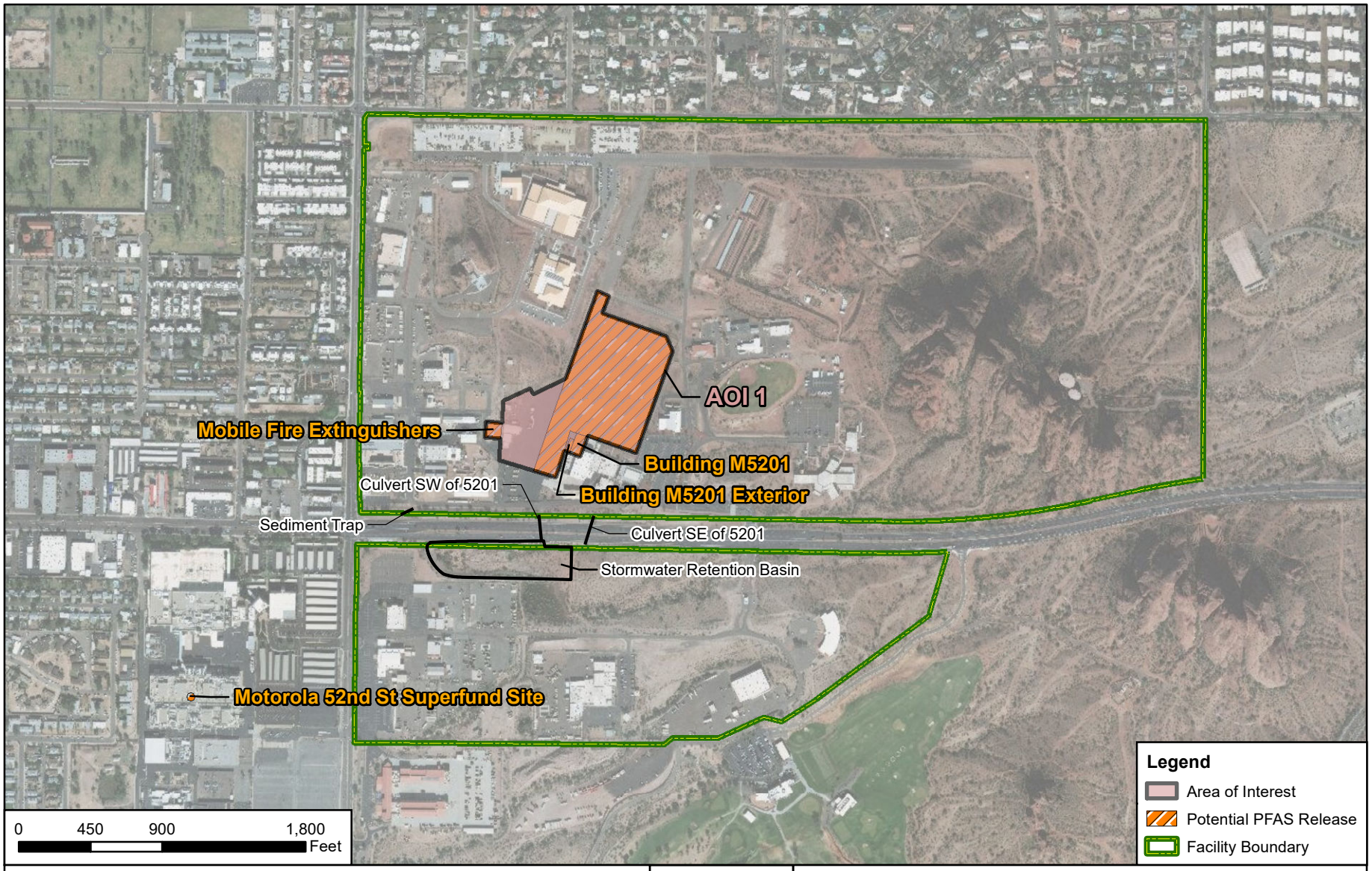
Interviews with AZARNG facility staff indicate that past ARNG activities might have contributed PFAS contamination in media at or near the facility.

Records and interviewees indicate that former AZARNG activities resulted in AFFF discharges at the AOI and areas surrounding PPMR. PFAS are suspected to be present at in the surface water pathway. Based on the preliminary CSM developed for the AOI, there is potential for receptors to be exposed to PFAS contamination in soil and sediment. **Table 7-3** summarizes the rationale used to determine if the AOI 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: AASF #1 and Vicinity	33°28'05.6"N; 111°57'54.8"W	Significant releases during equipment testing of an unknown quantity of AFFF used during fire training exercises	Proceed to an SI focusing on soil and groundwater, and potentially surface water/sediment

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



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Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	9/16/2020

N

Summary of Findings

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Figure 7-1

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8. References

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Appendix A
Data Resources

Data resources will be provided separately on CD. Data resources for Papago Park Military Reservation include:

Environmental Data Resources, Inc.™ Report

- 2018 EDR™ Report for Papago Park Military Reservation, Phoenix, Arizona

PPMR Markup Images

- 1977 Papago Park Military Reservation Aerial Markup Image.
- 1987 Papago Park Military Reservation Aerial Markup Image.

PPMR Site Documents

- 2004 Final Historical Records Review, Papago Park Military Reservation, Phoenix, Arizona.
- 2005 Decision Document, Administrative Closure of 13 Sites, Papago Park Military Reservation, Phoenix, Arizona.
- 2010 Papago Park Military Reservation Building M5201 Floor Plan, State of Arizona Department of Emergency and Military Affairs, Construction and Facilities Management Office.
- 2011 Papago Park Military Reservation Spill Prevention, Control, and Countermeasures Plan Drainage Map.
- 2016 North Papago Park Military Reservation Site Plan.
- 2016 South Papago Park Military Reservation Site Plan.
- 2017 Papago Park Military Reservation Installation Atlas Excerpt.
- 2018 Papago Park Military Reservation Military Reservation Plot.
- 2018 Papago Park Military Reservation Site History.
- 2019 Facility Inventory and Stationing Plan, Papago Park Military Reservation.
- 2019 Papago Park Military Reservation Wells for Per- and Poly-fluoroalkyl Substances Preliminary Assessment.
- 2019 City of Tempe Unregulated Contaminant Monitoring Rule 3 Data.

Previous Investigations Completed

- 1987 Engineering-Science Inc. Remedial Investigation Report for the Papago Military Reservation Phoenix, Arizona. Arizona Department of Environmental Quality.
- 2000 IT Corporation Project 800893. Abbreviated Preliminary Assessment Papago Park Military Reservation Phoenix, Arizona. DEMA Project AZ140M90114. DEMA PO 00-0353-EV.

Miscellaneous Data Resources

- 2014 Site Investigation Guidance Manual, Arizona Department of Environmental Quality, Waste Programs Division.
- 2017 History and Use of Per- and Poly-fluoroalkyl Substances.

- 2018 Papago Park Military Reservation Per- and Poly-Fluoroalkyl Preliminary Assessment Security.
- 2019 Phoenix Climate Data Summary of Monthly Normals, 1981-2010, U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service.

Appendix B
Preliminary Assessment Documentation

Appendix B.1
Interview Records

PA Interview Questionnaire - Other

Facility: Panago
Interviewer: [redacted]
Date/Time: 11/7/18 0945

Interviewee: Chief [redacted] Title: CW4 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]

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

- Feb. 2014
- Facility Safety officer

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

	Known Uses
	Use
	Procurement
	Disposition
	Storage (Mixed)
	Storage (Solution)
	Inventory, Off-Spec
None for the 5-gal buckets on ground	Containment
	SOP on Filling
No	Leaking Vehicles
~~N/A~~ See Notes.	Nozzle and Suppression System Testing
	Dining Facilities
	Vehicle Washing
	Ramp Washing
	Fuel Spill Washing and Fueling Stations
	Chrome Plating or Waterproofing

PA Interview Questionnaire - Other

Facility: Pavago
Interviewer: [redacted]
Date/Time: 11/7/18 0945

- Since being here she hasn't seen trimex used. Dry. Chem being used now.
- No knowledge of training
- Not aware of any trimex around site.

Note: [redacted] mentioned use of trimex formerly used.

PA Interview Questionnaire - Other

Facility: Pagano
Interviewer: [redacted]
Date/Time: 11/7/18 0915

email: [redacted]

Interviewee: Chief [redacted] **Title:** CW4 **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 See notes.

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

State Safety Manager. February 2018.

- Smelter on assignment in Saudi Arabia
- [redacted] may be a good source.
- CW5 [redacted] Site aviation officer.

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?

Mr. [redacted] would know. Mr. [redacted] can help.

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

PA Interview Questionnaire - Other

Facility: Papago
Interviewer: [redacted]
Date/Time: 11/7/18 0915

- No Suppression system in hangars onsite.
- weak record keeping here.
- Doesn't know about training incidents here at Papago.
- Used trimex to train at Silverbell & sprayed foam on ramp. (parking area for all aircraft)
- Ms. [redacted] was the former Site safety officer. Recommends interviewing.

Silverbell = CW3 [redacted] should be interviewed.

- Believes they may have trimex here at Papago.

PA Interview Questionnaire - Other

Facility: Pascagoula
Interviewer: [redacted]
Date/Time: 11/7/18

Interviewee: [redacted] **Title:** Flight Instructor 1st Sgt. **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) _____

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

- Used to be at Silverbell.
  - → Reports an incident in late 1980s/~~1990~~ early 1990s on the runway next door.

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

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

PA Interview Questionnaire - Other

Facility: Papago
Interviewer: [redacted]
Date/Time: 11/7/18

- yes, truck was used to test foam once a week. Sprayed on flight line. Flight line used to be dirt. Mid-1990s to early 2000s.
- Does not know if trimax's were changed out. Former Fire Chief [redacted]. Knows they tested trimax's on ramp Usually done close to inspection time.
- Foam just dried up on dirt. Water used to rinse up foam on concrete.
- No emergency responses.
- Never discharged foam during joint training.
- No AFFF onsite.

PA Interview Questionnaire - Other

Facility: Papago
Interviewer: [redacted]
Date/Time: 11/7/18

Interviewee: [redacted] **Title:** Logistics Management Officer **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)

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

Been onsite for 21 yrs.

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

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

PA Interview Questionnaire - Other

Facility: Papago
Interviewer: [redacted]
Date/Time: 4/7/18

- used to have trimex. Never used foam during training, only water.
- Never had a fire.
- Got rid b/c it was complicated to use.
- Serviced onsite.
- Until mid 2000s they had a fire truck. Had only 1 to 2 people onsite for fire. Truck was a standard crash fire rescue truck. Truck was for airfield.
- Truck was stored in a 1 bay stall. It's now a gym.
- Did store bulk 5-gal pails onsite in covered area.
- Fire truck was only tested w/ water. Never seen foam squirted out here.
- Trimex units were stored on flightline. Dispensed/returned through DMO.
- Training done on main ramp.

Appendix B.2
Visual Site Inspection Checklists

Facility ST
Visual Survey Inspection Log

Recorded by: [redacted]
ARNG Contact: [redacted]
Date: 11/7/18

Site Name / Area Name / Unique ID: Bldg 5201 Bay.
Site / Area Acreage: Unknown
Historic Site Use (Brief Description): Fire truck Bay

Current Site Use (Brief Description): gym

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*) Fire truck
   Stored in area when there was an onsite Fire dept.
2. Has usage been documented? Y / (N)
   2a. If yes, keep a record (place electronic files on a disk)
   Poor records

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.*) Now a gym.
2. Is the site/area vegetated? Y (N)
   2a. If not vegetated, briefly describe the site/area composition:
3. Does the site or area exhibit evidence of erosion? Y / (N)
   3a. If yes, describe the location and extent of the erosion:
4. Does the site/area exhibit any areas of ponding or standing water? Y (N)
   4a. If yes, describe the location and extent of the ponding:

Migration Potential:

1. Does site/area drainage flow off installation? Y (N)
   1a. If so, please note observation and location: No floor drains
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:

Additional Notes

Facility ST
Visual Survey Inspection Log

Photographic Log

Photo ID/Name	Date & Location	Description	Photograph
2	11/7/18	gym	Former Fire truck Bay (facing North)

Ramp drains to one storm drain

Facility ST
Visual Survey Inspection Log

Recorded by: [redacted]
ARNG Contact: [redacted]
Date: 11/7/18

Site Name / Area Name / Unique ID: 5201 Picnic area
Site / Area Acreage: Unknown.
Historic Site Use (Brief Description): AFFF Storage

Current Site Use (Brief Description): Picnic area

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*) Storage on ground
2. Has usage been documented? Y / (N)
   2a. If yes, keep a record (place electronic files on a disk) records unknown

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.*)
2. Is the site/area vegetated? Y / (N)
   2a. If not vegetated, briefly describe the site/area composition: Dirt
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:
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:

Additional Notes
No Secondary Containment was provided.

Facility ST
Visual Survey Inspection Log

Photographic Log

Photo ID/Name	Date & Location	Description	Photograph
2	4/7/18	Picnic Area	Former AFFF storage (S)

Appendix B.3
Conceptual Site Model Information

Preliminary Assessment – Conceptual Site Model Information

Site Name: Papago Park Military Reservation

Why has this location been identified as a site? Airfield for helicopters.

Are there any other activities nearby that could also impact this location? Yes. Motorola 52nd St. Superfund is to the west & downgradient.

Training Events

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

If so, how often? Once a week. Mid-1990s to early 2000s.

How much material was used? Is it documented? Not documented. From Shane Arnold interview.

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

Surface Water:

Surface water flow direction? South towards a storm drain that discharges into basin on property across McDowell.

Average rainfall? 8.04"

Any flooding during rainy season? Yes. ponding around Stormdrain area.

Direct or indirect pathway to ditches? No.

Direct or indirect pathway to larger bodies of water? No

Does surface water pond any place on site? No

Any impoundment areas or retention ponds? Yes. Southern portion of the site.

Any NPDES location points near the site? No.

How does surface water drain on and around the flight line? Directed toward a storm drain on north side of McDowell. Drains under McDowell into a large basin.

Preliminary Assessment – Conceptual Site Model Information

Groundwater:

Groundwater flow direction? West

Depth to groundwater? 6 to 42' bgs

Uses (agricultural, drinking water, irrigation)? Not used.

Any groundwater treatment systems? No

Any groundwater monitoring well locations near the site? Yes.

Is groundwater used for drinking water? No.

Are there drinking water supply wells on installation? No.

Do they serve off-post populations? N/A

Are there off-post drinking water wells downgradient Two non-exempt wells reported onsite in the ADEQ 55 database (Not used. Other had pump installed in 2015). None noted offsite immediately downgradient.

Waste Water Treatment Plant:

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

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

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

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

Equipment Rinse Water No current fire dept.

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

Most likely yes. Toward Stormdrain where flightline is directed toward.

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?

Unknown.

3. Other?

Preliminary Assessment – Conceptual Site Model Information

Identify Potential Receptors:

Site Worker yes

Construction Worker yes

Recreational User No

Residential yes. Located downgradient.

Child No

Ecological yes in basin.

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

Homes to the north & west. Large hills to the east, semi-conductor to Southwest, gas station to west, offices to south followed by residential

Documentation

Ask for Engineering drawings (if applicable). See uploaded reports on server.

Has there been a reconstruction or changes to the drainage system? When did that occur? None reported.

Appendix C
Photographic Log

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Papago Park Military Reservation	Phoenix, Arizona

Photograph No. 1

Description:

Looking East. Drainage basin for on base surface runoff.

Photo Date: 11/7/18 1150

Photograph No. 2

Description:

Looking North. Former fire truck bay.

Photo Date: 11/7/18 1015

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Papago Park Military Reservation	Phoenix, Arizona

Photograph No. 3

Description:

Looking South. Former AFFF storage area.

Photo Date: 11/7/18 1014