FINAL
Preliminary Assessment Report
Camp Dawson
Kingwood, West Virginia

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

May 2020

Prepared for:

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

UNCLASSIFIED

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Acronyms and Abbreviations

%	percent
°F	degrees Fahrenheit
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
AOI	Area of Interest
ARNG	Army National Guard
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSM	conceptual site model
DLA	Defense Logistics Agency
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
EDR	Environmental Data Resources, LLC
FTA	fire training area
HA	Health Advisory
NWS	National Weather Service
PA	Preliminary Assessment
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
SI	Site Inspection
US	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VSI	visual site inspection
WVARNG	West Virginia Army National Guard
WVDHHR	West Virginia Department of Health and Human Resources
WVGES	West Virginia Geological and Economic Survey
WTP	Water Treatment Plant
ZCC	Zone of Critical Concern

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 Camp Dawson Army Training Site in Kingwood, West Virginia (also referred to as the "facility") to assess potential PFAS release areas and exposure pathways to receptors. Camp Dawson is operated through a deed between the State of West Virginia and the State Armory Board, effective 1989 (Daily & Miller, 1989). The current agreement expires in 2040. The performance of this PA included the following tasks:

- Reviewed data resources to obtain information relevant to suspected PFAS releases;
- Conducted a site visit on 21 June 2018;
- Interviewed current West Virginia ARNG (WVARNG) personnel during the site visit, including Camp Dawson Logistics, WVARNG environmental managers, and local emergency management system personnel;
- Completed visual site inspections (VSIs) at known or suspected PFAS release locations and documented with photographs; and
- Developed a preliminary conceptual site model (CSM) to outline the potential release and pathway of PFAS for the Area(s) of Interest (AOIs) and the facility.

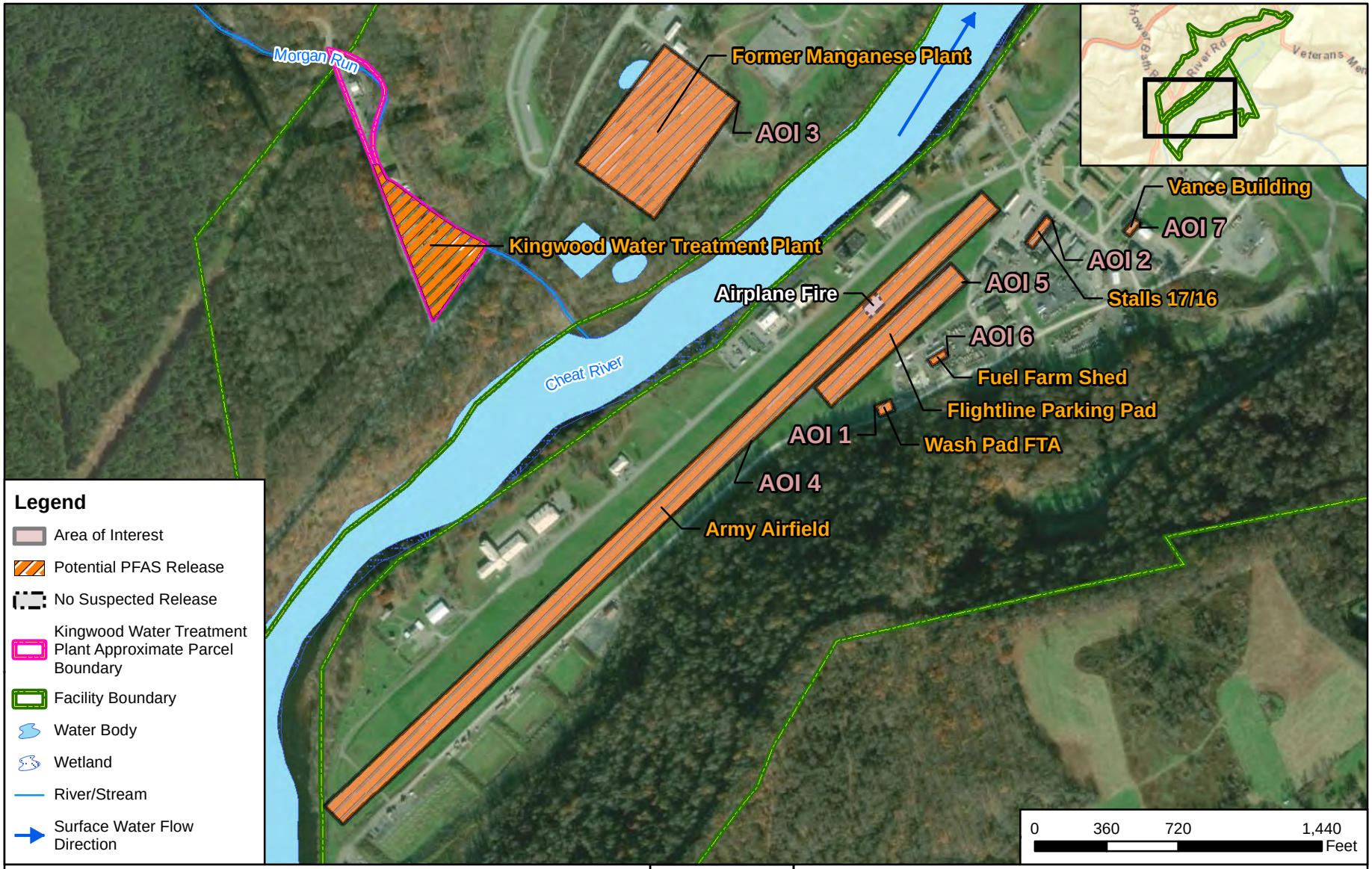
Seven AOIs related to a PFAS release were identified at Camp Dawson during the PA. These AOIs are shown on **Figure ES-1** and described in **Table ES-1** below:

Table ES-1 AOIs at Camp Dawson

Area of Interest	Name	Used by	Potential Release Dates
AOI 1	Wash Pad FTA	WVARNG	Approx. 2002 or 2003
AOI 2	Stalls 17/16	WVARNG	Unknown
AOI 3	Former Manganese Plant	Volkstone Company	Unknown
AOI 4	Army Airfield	WVARNG, US Army, Marine Corps, Navy, and other state National Guard units	Unknown
AOI 5	Flightline Parking Pad	WVARNG	Unknown
AOI 6	Fuel Farm Shed	WVARNG	Unknown
AOI 7	Vance Building	WVARNG	Unknown

Based on documented and potential AFFF releases at these AOIs, there is potential for exposure to PFAS contamination in media at or near the facility. The preliminary CSM for Camp Dawson, which presents the potential receptors and media impacted, is shown on **Figure ES-2**.

Based on the USEPA Unregulated Contaminant Monitoring Rule 3 data, PFAS were not detected in a public water system above the USEPA lifetime Health Advisories (HAs) within 20 miles of the facility (**Appendix A**).



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PROJECT	Preliminary Assessment for PFAS at Camp Dawson, WV			
REVISED	4/13/2020	GIS BY	MS	4/13/2020
SCALE	1:8,640	CHK BY	TK	4/13/2020
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	4/13/2020

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Summary of Findings

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure ES-1

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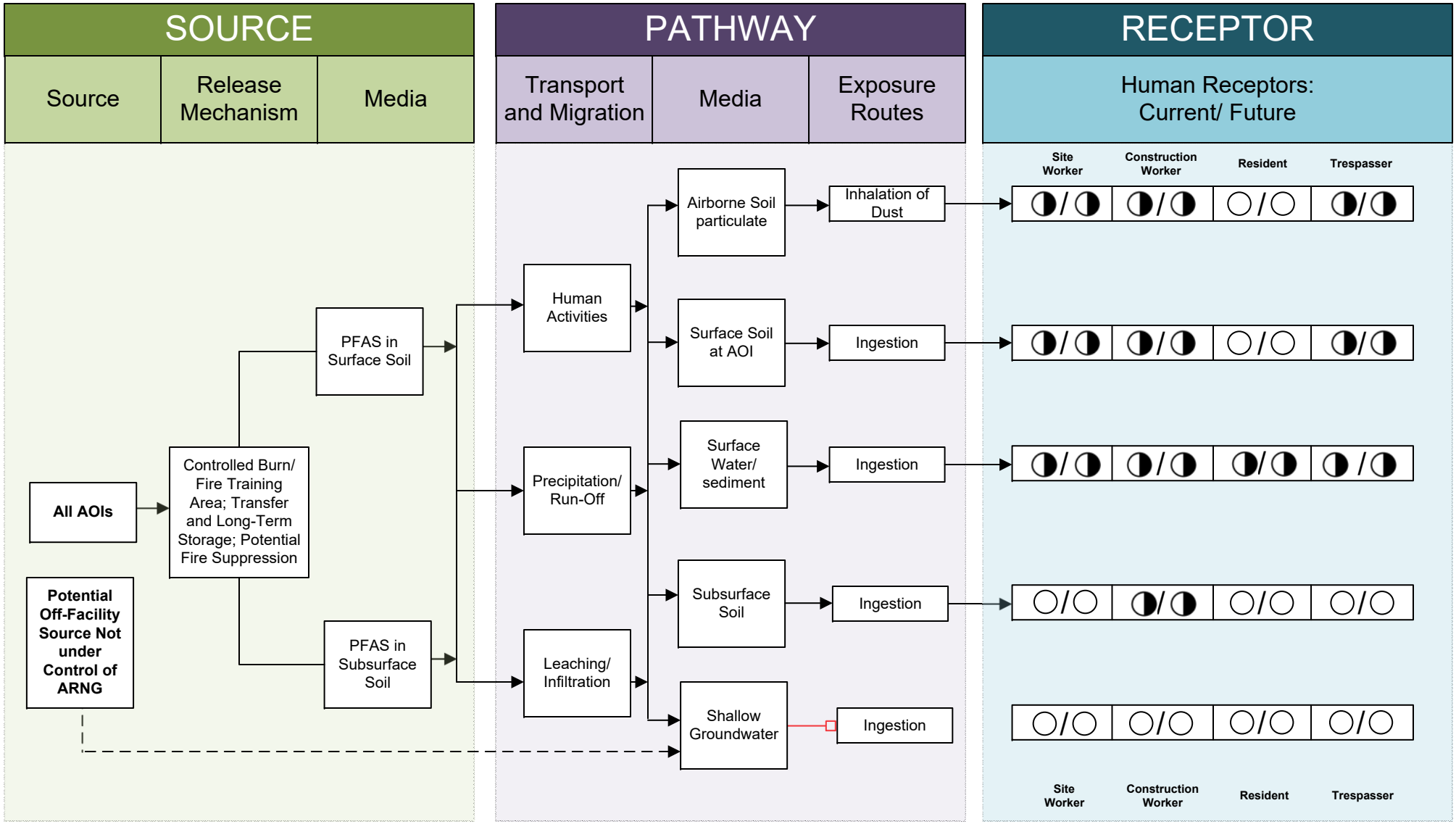


LEGEND

- 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.
2. Dermal contact exposure pathway is incomplete for PFAS.

Figure ES-2
Preliminary Conceptual Site Model
Camp Dawson

1. Introduction

1.1 Authority and Purpose

The Army National Guard (ARNG)-Installations & Environment Division 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 facilities that used, stored, or released per- and polyfluoroalkyl substances (PFAS), primarily in the form of aqueous film forming foam (AFFF) released as part of firefighting activities, although other PFAS sources are possible. In addition, the ARNG is assessing businesses or operations adjacent to the ARNG facility (not under the control of ARNG) that could potentially be responsible for a PFAS release.

PFAS are classified as emerging environmental contaminants that are garnering increasing regulatory interest due to their potential risks to human health and the environment. PFAS formulations contain highly diverse mixtures of compounds. Thus, the fate of PFAS compounds in the environment varies. The regulatory framework at both federal and state levels continues to evolve. The US Environmental Protection Agency (USEPA) issued drinking water lifetime Health Advisories (HAs) for PFOA and PFOS in May 2016, but there are currently no promulgated national standards regulating PFAS in drinking water (USEPA, 2016a; USEPA, 2016b). In the absence of federal maximum contaminant levels, some states have adopted their own drinking water standards for PFAS; however, West Virginia has no standards regulating PFAS in drinking water.

This report presents findings of a PA for PFAS-containing materials at the Camp Dawson Army Training Site (also referred to as “Camp Dawson” and the “facility”) in Kingwood, West Virginia, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; USEPA, 1980), as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations Part 300; USEPA, 1994), 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 Camp Dawson. 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 data resources to obtain information relevant to suspected PFAS releases;
- Conducted a site visit on 21 June 2018;
- Interviewed current West Virginia ARNG (WVARNG) personnel during the site visit, including Camp Dawson Logistics, WVARNG environmental managers, and local emergency management system personnel;

- Completed visual site inspection (VSIs) at known or suspected PFAS release locations and documented with photographs; and
- Developed a preliminary conceptual site model (CSM) to outline the potential release and pathway of PFAS for the Areas of Interest (AOIs) and the facility (**Figure ES-2**).

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

1.4 Facility Location and Description

The Camp Dawson Army Training Site is in Kingwood, West Virginia, within Preston County, near the Pennsylvania and Maryland borders (**Figure 1-1**). Camp Dawson was established in 1908 as a 196-acre training facility and continued training military troops until the start of World War I in 1917. Training activities ceased at Camp Dawson until 1928, when it reestablished as a training site for the West Virginia State Militia. Regular training occurred at Camp Dawson until the beginning of World War II in 1939. At this time, the West Virginia government leased the camp for use as a prisoner of war facility.

Since its establishment in 1908, Camp Dawson has acquired additional parcels of land, totaling over 4,100 acres (Bailey, 2016). Camp Dawson consists of multiple distinct tracts. Based on interviews and the VSI, only Camp Dawson Proper and Volkstone Tracts were assessed during this PA. The facility became a permanent, year-round, training facility for the WVARNG and other state National Guard units, US Army, Marine Corps, Navy, the Reserve Officers Training Corps, and active reserve units associated with the military in 1985. In 1989, the WVARNG was granted a deed from the State of West Virginia for the permanent use and occupancy of Camp Dawson.

Sometime in the 1960s, Camp Dawson constructed an airfield on the right-descending bank just south of the main base, which replaced the original Dawson Army Airfield that was constructed on the left-descending bank of the Cheat River, across from the Camp Dawson base. Historical ownership and use documents were not available for this PA. It is unknown what potential public, private, or Department of Defense (DoD) entities used this airfield, or whether PFAS-related activities occurred prior to WVARNG taking ownership in 1989.

Camp Dawson is located amid the rugged Allegheny Mountain range, making it an ideal site for mountain area training. The nearby Mountaineer Challenge Academy provides guidance and military training to at-risk youth. Apart from Camp Dawson, the nearby Mountaineer Challenge Academy, and the Preston Country Club Golf Course, the area around the facility is largely remote, with few settlements and developments. The facility is near the city of Kingwood, which has a population of 2,951 residents (DataUSA, 2018).

1.5 Facility Environmental Setting

Camp Dawson lies on the western edge of the Briery Mountains, with elevations averaging around 1,880 feet. Previously, over 1,150 acres of this mountainous area consisted of the former Brierty Mountain Wildlife Management Area, which was established as part of Camp Dawson, owned by the West Virginia State Armory Board. In 2011, a live firing range area was established, which forced the closure of this area.

The Volkstone Tract, across the Cheat River, contains a former manganese plant that has been abandoned since 1985. The Volkstone Tract is owned by the Baltimore Army Corps of Engineers, and the WVARNG has an indefinite lease on the property. The Volkstone Tract is generally overgrown with wildlife; however, occasional training activities occur at this location. The remaining areas surrounding Camp Dawson are mostly mountainous, densely forested areas. While Camp Dawson does not currently have recreational facilities, nearby areas surrounding the city of Kingwood and the Cheat River are popular recreational areas for fishing, swimming, whitewater kayaking, and rafting.

1.5.1 Geology

West Virginia is located within the Appalachian Ridge and Valley, with the facility located within the Appalachian Plateau province (West Virginia Geological and Economic Survey [WVGES], 2015). The underlying bedrock consists of sedimentary rock from the Pennsylvanian and Mississippian eras of the Paleozoic. The rock strata include layers of sandstone, shale, bituminous coal beds, and limestone (WVGES, 2015). During the Pennsylvania Era, non-marine sandstone, shale, and coal were deposited in the near-shore environment from sediments derived from mountains (**Figure 1-2**).

The formation of the Appalachian Mountains changed the landscape with the folding and thrust-faulting in the eastern part of the state, which made erosion the primary geological process during the Permian Period. The present mountains of the Appalachian Plateau are ones that were formed from uplift and erosion that occurred 30-50 million years ago. The fold geometry varies across the Appalachian Plateau, Valley & Ridge Province, Blue Ridge Mountains, and Piedmont (Renton, 2014). Chemical and physical erosion of the mountains contributed to sediment in the streams (WVGES, 2006).

Significant mining of coal started to take place in the mid-1800s, and the industry gained interest after the Civil War. Currently, there are several underground and surface mining sites in Preston County. West Virginia mines produce limestone, dolomite, sandstone, salt, clay, shale, sand, and gravel. Strip mines surround the facility.

Preston County is located in the eastern third of West Virginia, bordering Pennsylvania and Maryland. Preston County is situated in the Allegheny Mountain Section, a sub province in the northeast part of the Appalachian Plateau Province. The facility is located west of the Allegheny Front, the eastern boundary of the Appalachian Plateau. The nearest ridge is Chestnut Ridge Anticline, located west of the facility. Chestnut Ridge Anticline is a symmetrical anticline that is responsible for Chestnut Ridge, a significant topographical feature (Renton, 2014).

1.5.2 Hydrogeology

Groundwater at Camp Dawson generally flows to the north/northwest within Camp Dawson Proper, and to the east within the Volkstsone Tract, towards the Cheat River (**Figure 1-2**). According to the United States Geological Survey (USGS), depth to groundwater at Camp Dawson is generally shallow, with groundwater levels at the facility reported at around 20 feet below ground surface (bgs; USGS, 1973). The facility is located in the Cheat River watershed, surrounded by Buffalo Run, a tributary of the Cheat River. The Cheat River watershed covers five counties and reaches small parts of Pennsylvania and Maryland. In total, the Cheat River drains 1,422 square miles and consists of five major forks that function as cold-water fisheries (Friends of the Cheat, 2018). The Cheat River originates in the Monongahela National Forest. The Cheat River discharges into the Monongahela River at Point Marion in Pennsylvania. The area is dominated by forest and has limited urban and residential areas. The nearby towns of Parsons, Rowlesburg, Kingwood, and Albright obtain drinking water from the Cheat River.

A source water protection area has been established within the Cheat River watershed that covers two types of delineation. The watershed delineation area covers approximately 1,002 square miles, while the Zone of Critical Concern covers approximately 6,376 acres; Camp Dawson is covered under both watershed protection delineation areas (West Virginia Department of Health and Human Resources [WVDHHR], 2003). The runway at Camp Dawson extends into the ZCC, but the other identified AOIs at Camp Dawson are located outside the ZCC.

There are no private residential drinking wells located in or around the vicinity of Camp Dawson (Environmental Data Resources, LLC [EDR], 2018). The city of Kingwood, including Camp Dawson, obtains drinking water from the Kingwood Water Treatment Plant (WTP). The Kingwood WTP is located on a small parcel of land owned by the city of Kingwood within the southern portion of the Volkstone Tract. The WTP has a surface water intake along the Cheat River, upgradient of Morgan Run. Based on the USEPA Unregulated Contaminant Monitoring Rule 3 data, PFAS were not detected in a public water system above the USEPA lifetime HAs within 20 miles of the facility (**Appendix A**).

The Kingwood WTP also treats wastewater from the city of Kingwood, including Camp Dawson. Effluent from wastewater treatment is released into Morgan Run, a tributary of the Cheat River. It is possible for stormwater and groundwater to enter the sewer system through leaks and cracked pipes, which have historically caused backups at the plant during high-rain events, inevitably discharging minimally treated sewage into the Cheat River.

1.5.3 Hydrology

The city of Kingwood relies heavily on the Cheat River, a 78-mile tributary of the Monongahela River which, via the Ohio River, is a part of the Mississippi Watershed. The Cheat River begins in Job, West Virginia and flows north towards Morgantown, with hundreds of tributaries spanning the distance of the river. The Cheat River runs directly through the Camp Dawson Training Site, with Camp Dawson Proper to the southeast and the Volkstone Tract to the northwest (**Figure 1-3**).

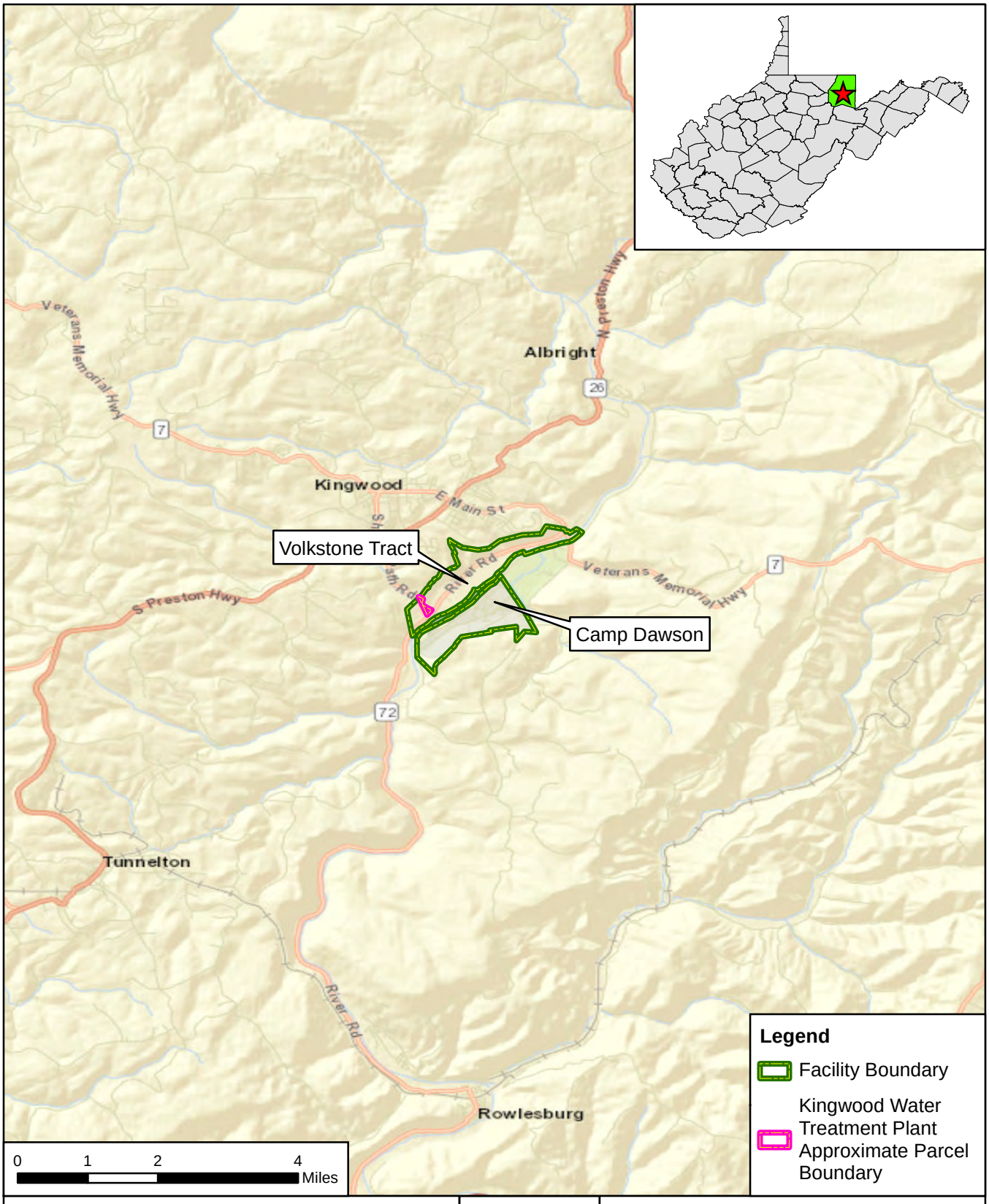
The Cheat River is primarily threatened by acid mine drainage from abandoned or defunct mines in Kingwood and surrounding areas. Abandoned mine lands release acidic and metal-containing water into the watershed, which threaten wildlife and contaminate drinking water. Stream beds are additionally affected by deforestation and agriculture. Flash floods from extreme precipitation are common in the area surrounding Camp Dawson, leading to altered stream channels through erosion and deposition.

1.5.4 Climate

The climate in West Virginia consists of warm, humid summers and cold winters. Morgantown, a city close to Camp Dawson, has an average temperature of 52.25 degrees Fahrenheit (°F), and an average annual precipitation of 43.15 inches (National Weather Service [NWS], 2018). Seasonally, temperatures vary from summer highs of 83°F to winter lows of 21°F.

1.5.5 Current and Future Land Use

The facility is a current year-round tactical training facility for the WVARNG, various other state National Guard units, the Reserve Officers Training Corps, and active reserve units. Camp Dawson is also home to the Integrated Section Operations Training Facility and National Center for Homeland Defense. Due to its size, location, and breadth of available trainings and exercises, the facility is expected to continue to be a main base for various training exercises to National Guard and reserve personnel throughout the state of West Virginia and beyond.



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Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China		PM	RG	4/13/2020

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Camp Dawson Facility Location

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 1-1

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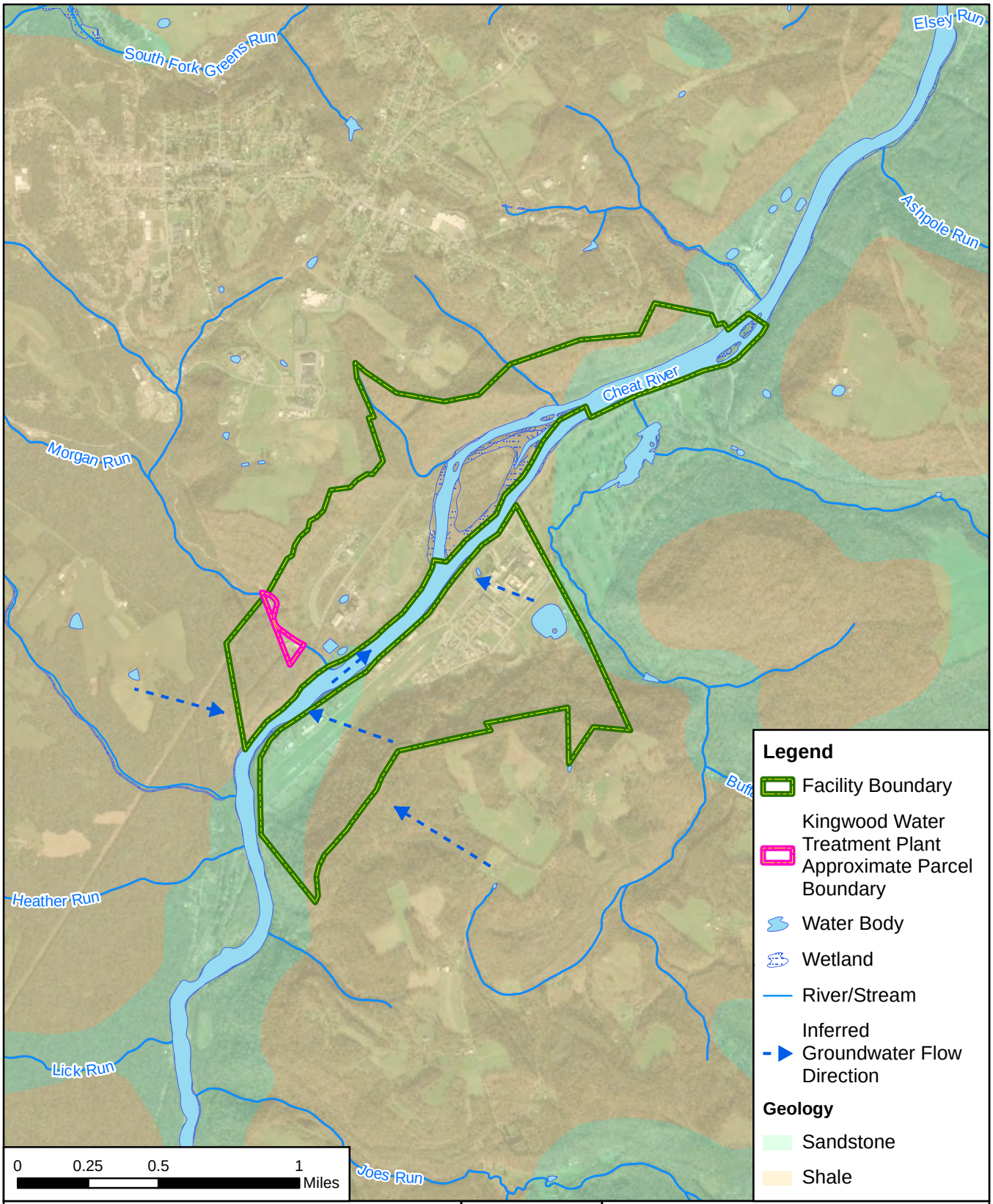

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	RG	4/13/2020

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Groundwater Features

AECOM
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Germantown, MD 20876

Figure 1-2

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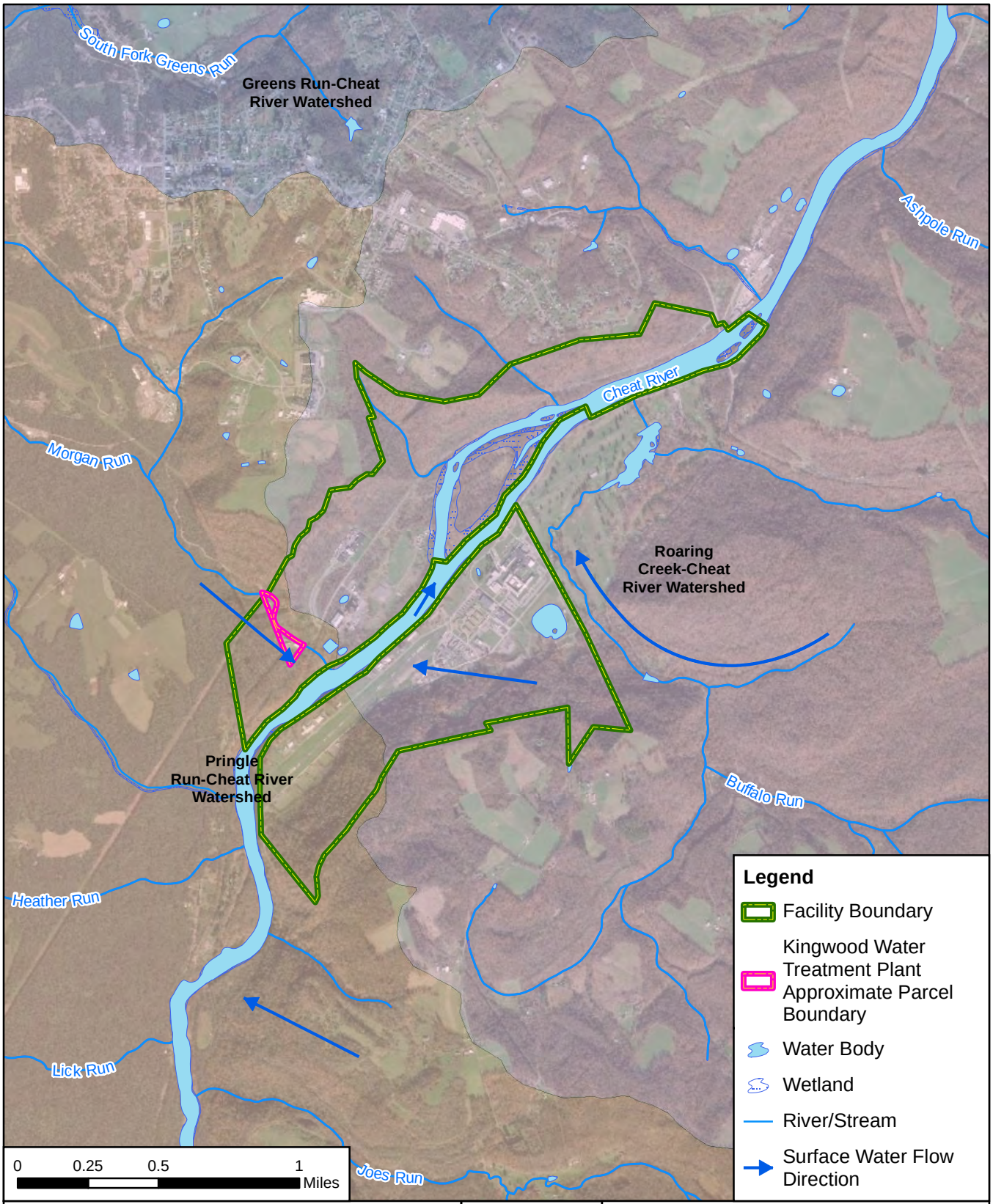

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Surface Water Features

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Germantown, MD 20876

Figure 1-3

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2. Fire Training Areas

Two FTAs were identified at Camp Dawson during the PA through interviews. A description of the FTAs are presented below and, and the FTAs are shown on **Figure 2-1**.

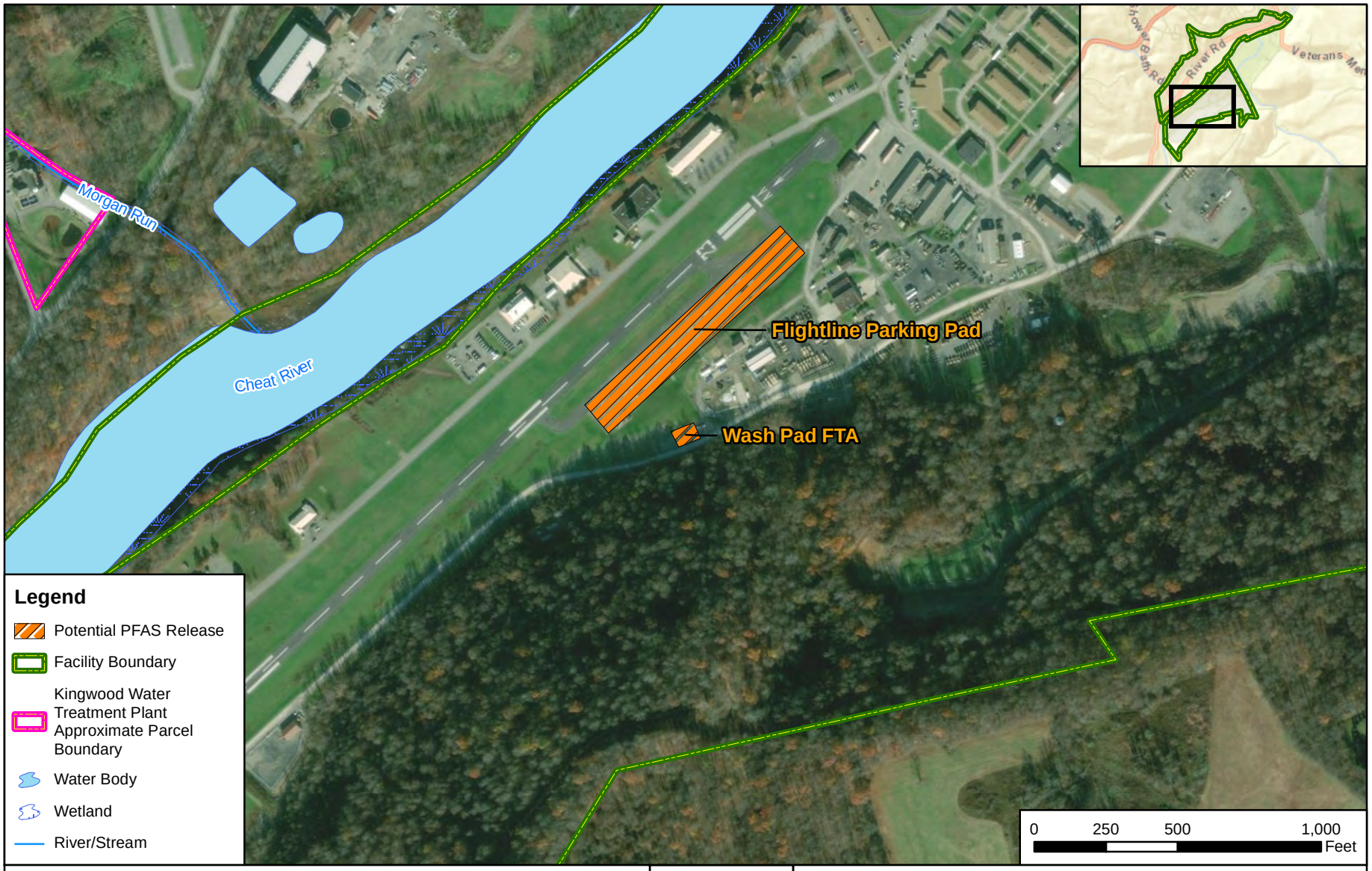
2.1 Wash Pad

In approximately 2002 or 2003, Camp Dawson personnel, along with the Wheeling and Parkersburg 2/104th Aviation Unit, conducted a controlled barrel burn. The one-time training consisted of pilots and aviation personnel and lasted for about four hours. The barrels were set on fire directly on top of a concrete wash pad located on the southern border of the facility, just south of the aircraft parking area. Several TriMax™ 30 tanks containing concentrated AFFF were used for fire suppression during this training. Interviewees estimated approximately between 30 and 60 gallons of 3 percent (%) concentrated AFFF were used for this training exercise. The training occurred at the wash pad, approximately 100 yards southwest of the aircraft parking area and the flightline, near the oil water separator. The wash pad has several grated drains which lead to a concrete pit. This concrete pit then transfers residual to an oil water separator that discharges to the nearby Cheat River. During the training exercise, there was no containment of the AFFF, leaving the potential for releases outside of the concrete wash pad. The wash pad is surrounded by a permeable grassy area. Surface water and groundwater in this area flow north, towards the adjacent Cheat River.

The Defense Reutilization and Marketing Office (DRMO), through the direction of the US Property and Fiscal Office, was contacted to initiate disposal of the empty TriMax™ 30 tanks, which occurred in approximately 2014. The empty TriMax™ 30 tanks were stored onsite until disposal in 2014; however, the exact storage location is unknown. Between the time of the training and the time of the TriMax™ 30 disposal, no additional TriMax™ 30 tanks were brought to site or used for training activities. No TriMax™ 30 tanks are currently located at Camp Dawson.

2.2 Flightline Parking Pad

During follow-up interviews, it was discovered that former fire training activities occurred at Camp Dawson near the Flightline Parking Pad. Interviewees recall barrel burns, similar to the burn described at the Wash Pad above, occurring near the Flightline Parking Pad, near where aircraft are usually parked. Barrels containing fuel were ignited and extinguished using AFFF. Following the training, the foam was left to dry on the concrete, pavement, and surrounding grassy areas near the Flightline Parking Pad. However, the exact location of the fire training activities is unknown. Additionally, the timeframe of these fire training activities, how often these trainings occurred, and the quantity of AFFF used during these fire training activities are unknown.



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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	4/13/2020

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Fire Training Area

AECOM
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Figure 2-1

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3. Non-Fire Training Areas

Five non-FTAs where AFFF was stored and/or 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**.

3.1 Fuel Farm Shed

In 2016, WVARNG personnel discovered four to five full, unopened, 5-gallon buckets of concentrated AFFF located within the Fuel Farm Shed. The concentration of AFFF in these buckets and the duration of their storage in the Fuel Farm Shed are unknown. Based on interviews, the AFFF was consolidated and relocated to Building 403, Stall 17/16 in 2016. The AFFF was wrapped tightly and stored on wooden pallets until disposal (see **Appendix C** for photographs). The AFFF was picked up for disposal in 2017 through the DRMO.

The Fuel Farm Shed is located near the Wash Pad FTA and is a non-climate controlled wooden shed raised off the ground by metal support beams, directly under an open grassy area (see **Appendix C**). Whether previous storage or releases of AFFF occurred at this location or whether unintended spills or releases occurred during storage of these buckets is unknown. Based on the undocumented original storage of the buckets and the unknown origin of these buckets, there is the potential for unintended spills or releases of AFFF to have occurred at the Fuel Farm Shed.

3.2 Stalls 17/16

In approximately 2014, a firetruck was given to Camp Dawson from the Air National Guard 130th Air Wing Division in Charleston, West Virginia. The firetruck arrived at Camp Dawson filled with concentrated AFFF. The capacity of the AFFF holding tank on the firetruck was estimated to be 50 gallons; however, the concentration of AFFF inside the truck upon arrival is unknown. The concentrated AFFF was emptied from the truck and stored in containers of various sizes; however, it is unknown how long the firetruck was located at Camp Dawson before the AFFF was removed from the holding tank, and the location where the firetruck was emptied is also unknown. The firetruck was stored in the Vance Building (Building 441)throughout its duration of storage at Camp Dawson. According to interviews, the firetruck was estimated to be onsite anywhere from 1.5 to 3 years; however, exact dates of storage are unknown. Interviewees confirmed the firetruck was never mobilized because personnel were not trained on how to operate the truck.

Waste AFFF, including waste from the firetruck, was stored in the Fuel Farm Shed and then moved to Stalls 17/16 of Building 403, which is not climate controlled and does not contain floor drains (**Figure 3-1**). Following containerization, the Defense Logistics Agency (DLA) Dispositional Service was contacted to initiate disposal, which occurred in June 2017. However, the exact location of where this transfer took place is unknown. Whether unintended spills or releases occurred during storage or before the transfer of these containers to DLA is also unknown.

According to manifest records received from Camp Dawson personnel, the following containers were located in the stalls inside of Building 403 and disposed of in June 2017 (**Appendix A**):

- One 55-gallon plastic drum
- One 20-gallon plastic drum
- Twenty (20) 5-gallon plastic buckets
- One 55-gallon metal drum within a 95-gallon plastic over pack dissipate

All of the containers listed above held concentrated AFFF in a designated staging area on top of wooden pallets within the stalls inside Building 403. A picture of the containerized AFFF within

these stalls is included in **Appendix C**. The exact concentration of these AFFF containers and which manufacturers produced the foam are unknown. Based on manifest records, the total volume of AFFF disposed of was equal to 1,086 pounds. The AFFF was sent to a disposal facility in Calvert City, Kentucky. It is unknown how long this AFFF was stored in the stalls before disposal. Whether unintentional spills or releases occurred from these containers is unknown.

3.3 Former Manganese Plant

Directly across the Cheat River, approximately 1,000 feet northwest of flightline at Camp Dawson, are the remnants of a former manganese smelting plant that is located in what is now known as the Volkstone Tract of Camp Dawson. The previous smelting plant is located downstream less than 100 yards northeast of the surface water intake at the Cheat River, which supplies drinking water to Camp Dawson and the city of Kingwood. This plant was active from 1960 until 1985 and was responsible for smelting and processing heavy metals, including manganese and copper. An old airstrip from the 1920s previously used by the Army is also located on this property; however, the ARNG did not own or use the plant or airstrip during its operational history. A massive flood in November of 1985 destroyed the plant and permanently ceased all operations. In 1991, the Baltimore Army Corps of Engineers purchased this property, and in 1996, the WVARNG was granted an indefinite license on the property for training purposes as part of an addition to Camp Dawson. The area is abandoned and overgrown with a high degree of habitat fragmentation. This area, referred to as the Volkstone Tract of Camp Dawson, is used for tactical and military medical training.

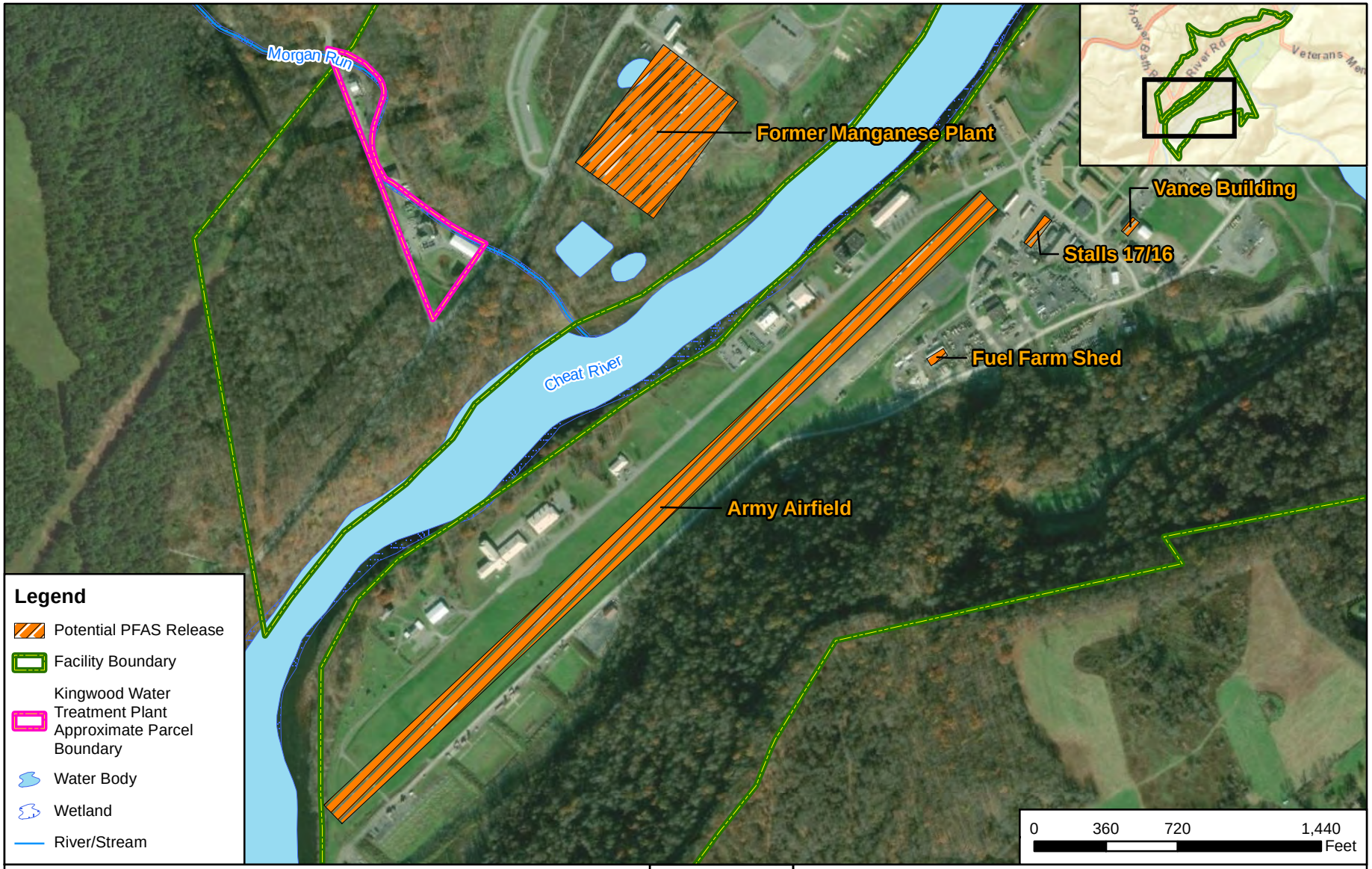
AFFF fire suppression systems or extinguishers are commonly found in smelting and metal plating operations to quickly suppress potential metal fires. However, a visual inspection of the previous manganese plant did not indicate a fire suppression system was present. Whether an AFFF fire suppression system or portable fire extinguishers with AFFF were present at the facility during its operation is unknown.

3.4 Army Airfield

The Army Airfield runs from the far west boundary of the facility and ends adjacent to the Stalls 17/16. The airfield was built sometime in the 1960s and still hosts a variety of DoD entities, including the WVARNG, US Army, Marine Corps, Navy, and other state National Guard units. While interviewee knowledge and visual observation did not indicate the current or past presence of PFAS-containing materials, airfields, runways, air strips, ramp areas, and aircraft parking areas often have portable or mobile AFFF-containing fire extinguishers or tanks throughout the airfield area for emergency response purposes. While limited information was available on the use, history, and ownership of this airfield, it is likely that AFFF or other PFAS-containing chemicals were used or stored throughout the airfield at some point during its operational history.

3.5 Vance Building

As mentioned in **Section 3.2**, a firetruck arrived at Camp Dawson in 2014 from the West Virginia Air National Guard. The firetruck was filled with approximately 50 gallons of AFFF; however, the concentration of AFFF inside the truck upon arrival is unknown. The firetruck was stored inthe Vance Building (also known as the Post-Fire Department Building and Building 441) throughout its duration at Camp Dawson. According to interviews, the firetruck was estimated to be onsite anywhere from 18 months to 3 years; however, exact dates of storage are unknown. Interviewees confirmed the firetruck was never mobilized because personnel were not trained on how to operate the truck. Whether unintended spills or releases occurred from this firetruck during storage is unknown.



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PROJECT	Preliminary Assessment for PFAS at Camp Dawson, WV			
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SCALE	1:8,640	CHK BY	TK	4/13/2020
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	4/13/2020

N

Non-Fire Training Area

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Figure 3-1

Q:\Projects\ENV\GEARS\GEO\MAES 2012 Unrestricted\Fort Meade\E. Data Management\GIS\MXDs\Chisholm_6th\March2017\ Fig_3-1_Camp_Dawson_Non-Fire_Training_Area.mxd

4. Emergency Response Areas

One emergency response area was identified at Camp Dawson during the PA. A description of the emergency response area is presented below and shown on **Figure 4-1**.

4.1 Airplane Fire

According to interviewees, in approximately 1995, an airplane caught fire along the Army Airfield owned by WVARNG; however, only Purple K dry chemical was used for fire suppression during the emergency response incident. No AFFF was used during this emergency response incident. The quantity of Purple K used during this incident is unknown, and Purple K is a non-PFAS-containing material.

CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at Camp Dawson, WV			
REVISED	4/13/2020	GIS BY	MS	4/13/2020
SCALE	1:6,000	CHK BY	TK	4/13/2020
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	4/13/2020

N

Emergency Response Area

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Figure 4-1

Q:\Projects\ENV\GEARS\GEO\MAES 2012 Unrestricted\Fort Meade\E. Data Management\GIS\MXDs\Chisholm_6th\March2017\ Fig_4-1_Camp_Dawson_Emergency_Response_Area.mxd

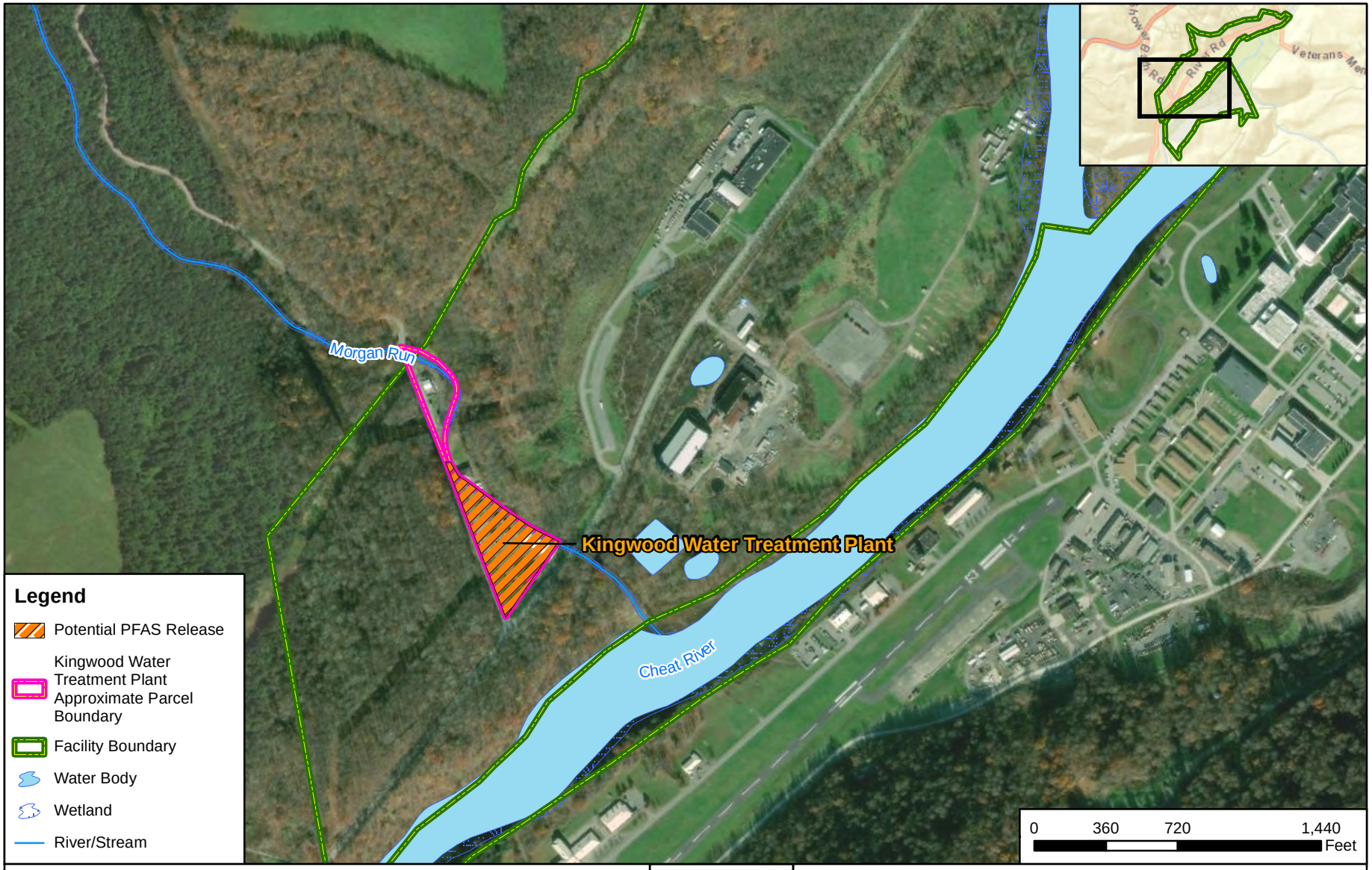
5. Adjacent Off-Facility Sources

One potential off-facility source of PFAS adjacent to Camp Dawson was identified during the PA.A description of the potential adjacent off-facility source area is presented below, and the location of the adjacent source is shown on **Figure 5-1**.

5.1 Kingwood Water Treatment Plant

The Kingwood WTP is located within the southern portion of the Camp Dawson Volkstone Tract on a small parcel of land owned by the city of Kingwood. Because the WTP is owned and operated by the city of Kingwood, it is considered a potential adjacent source of PFAS. The WTP provides drinking water for the city of Kingwood, including Camp Dawson, and also treats the city's wastewater. For drinking water treatment, the WTP has a surface water intake along the Cheat River, upgradient of Morgan Run. Effluent from wastewater treatment is released into Morgan Run, which subsequently discharges into the Cheat River downgradient of the intake.

Wastewater treatment facilities are not usually considered primary potential release areas of PFAS, but sludges and liquids treated at wastewater treatment plants may create a secondary source of contamination if they receive PFAS-impacted waste from other release areas, personal care products, and other household waste. PFAS releases that may have occurred within the city of Kingwood could have resulted in the migration of PFAS in water to the Kingwood WTP. Sludge generated at wastewater treatment facilities is typically removed and disposed of at an off-site location; the location of sludge disposal for the Kingwood WTP is unknown. Due to the potential for PFAS releases to have occurred elsewhere in the city of Kingwood sanitary sewer system, the WTP is considered a potential adjacent, off-facility PFAS release area.



CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at Camp Dawson, WV			
REVISED	4/13/2020	GIS BY	MS	4/13/2020
SCALE	1:8,640	CHK BY	TK	4/13/2020
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	4/13/2020

Adjacent Source

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 5-1

Q:\Projects\ENV\GEARS\GEO\MAES 2012 Unrestricted\Fort Meade\E. Data Management\GIS\MXDs\Chisholm_6th\March2017\ Fig_5-1_Camp_Dawson_Adjacent_Source.mxd

6. Conceptual Site Model

Based on the PA findings, seven AOIs were identified at Camp Dawson: AOI 1 Wash Pad FTA, AOI 2 Stalls 17/16, AOI 3 Former Manganese Plant, AOI 4 Army Airway, AOI 5 Flightline Parking Pad, AOI 6 Fuel Farm Shed, and AOI 7 Vance Building. The locations of these AOIs are shown on **Figure 6-1**. The following sections describe the CSM components and the specific preliminary CSMs developed for these AOIs. 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.

Human exposure via the dermal contact pathway may occur, and current risk practice suggests it is an insignificant pathway compared to ingestion; however, exposure data for dermal pathways is sparse and continues to be the subject of PFAS toxicological study.

6.1 AOI 1 Wash Pad FTA

AOI 1 is the wash pad used as a previous FTA. Interviews confirmed that AFFF was released once between 2002 and 2003 during a fire training exercise involving WVARNG personnel and the Wheeling and Parkersburg 2/104th Aviation Unit. The training exercise lasted approximately four hours and released between 30 and 60 gallons, or one to two full TriMax™ 30 tanks of 3% concentrated AFFF. The exercise involved controlled barrel burns directly on the concrete wash pad, with several grated drains draining to the concrete pit. This concrete pit then transfers residual to an oil water separator, which discharges to an outfall at the nearby Cheat River. The outfall, within Camp Dawson property, is slightly downgradient of the surface water intake, which supplies drinking water to Camp Dawson. It is unknown whether all AFFF used during this exercise was captured within the wash pad, leaving the potential for unintended spills or releases on the surrounding grassy area.

Ground-disturbing activities to surface soil at AOI 1 could result in site worker, construction worker, and trespasser exposure to potential PFAS contamination via ingestion and inhalation. Ground-disturbing activities to subsurface soil could result in construction worker exposure via ingestion. Therefore, the exposure pathway for inhalation of soil particles and ingestion of soil is potentially complete for these receptors.

PFAS are water soluble and can migrate readily from soil to groundwater or surface water via leaching and run-off. Because potential PFAS releases to surrounding surface and subsurface soil have occurred, it is possible that PFAS have migrated from the surface soil at AOI 1 to the nearby Cheat River. Precipitation infiltrating AOI 1 leaves the potential for the migration of PFAS from surface and subsurface soil to groundwater, which is estimated to be approximately 20 feet bgs (USGS, 1973). However, no private drinking water wells are located in the vicinity of Camp Dawson, and groundwater is not used for drinking water. Therefore, the exposure pathway for groundwater to site and construction workers, nearby off-facility residents, and trespassers is considered incomplete.

Drinking water is supplied by the city of Kingwood, which obtains a majority of its drinking water from surface water intakes on the Cheat River, upgradient of AOI 1. While the surface water intake for the city of Kingwood is upgradient of Camp Dawson, recreational use of the Cheat River is high. Therefore, the surface water and sediment exposure pathways via ingestion for site and construction workers, nearby residents, trespassers, and recreational users are considered potentially complete.

The preliminary CSM for AOI 1 at Camp Dawson is shown on **Figure 6-2**.

6.2 AOI 2 Stalls 17/16

AOI 2 is the Stalls 17/16. In 2014, a firetruck filled with AFFF was brought to Camp Dawson. The AFFF tank on the firetruck was emptied, and the contents were placed in 5-gallon buckets and stored in the Stalls 17/16. It could not be confirmed whether the transfer of AFFF from the firetruck to storage containers occurred outside. A designated staging area was created for these buckets within Stalls 17/16; however, it is unknown whether unintended spills or releases occurred from these buckets during transfer from the firetruck to the buckets, during storage, or during the transfer of material to DLA.

Additionally, interviews confirmed that historical storage of approximately 1,086 pounds of concentrated AFFF occurred in these stalls from 2014 to 2017. Information pertaining to the use of this large quantity of AFFF, presence of AFFF at the facility before 2014, and potential spills or releases from any storage container are unknown. The AFFF containers stayed stored in the Stalls 17/16 throughout their duration at Camp Dawson.

While no spills or releases were reported from Stalls 17/16 during this time, the presence of a firetruck, including the manual transfer of AFFF by hand from the firetruck to storage containers, the manual transfer of all AFFF from Camp Dawson to Stalls 17/16, and the long-term storage of large quantities of AFFF in a non-climate-controlled area all leave the potential for unintended spills or releases of AFFF in or around AOI 2. Therefore, the ingestion exposure pathway for surface soil is considered potentially complete for site workers, construction workers, and trespassers. The ingestion exposure pathway for subsurface soil is considered potentially complete to construction workers.

Precipitation infiltrating AOI 2 leaves the potential for the migration of PFAS from surface and subsurface soil to groundwater; however, no private drinking water wells are located in the vicinity of Camp Dawson, and groundwater is not used for drinking water. Therefore, the exposure pathway for groundwater to all receptors considered incomplete.

Drinking water is supplied by the city of Kingwood, which obtains a majority of its drinking water from surface water intakes from the Cheat River, upgradient of AOI 2. While no private drinking water wells are located in the vicinity of Camp Dawson, recreational activities within the Cheat River are high. Therefore, the surface water and sediment exposure pathways via ingestion for site and construction workers, nearby residents, trespassers, and recreational users are considered potentially complete.

The preliminary CSM for AOI 2 at Camp Dawson is shown on **Figure 6-3**.

6.3 AOI 3 Former Manganese Plant

AOI 3 is the Former Manganese Plant. This former smelting plant is located across the Cheat River from the main Camp Dawson facility; however, this area is still under the control of the WVARNG. The former smelting plant was owned and operated by Volkstone Company from 1960 until 1985, when the entire plant was deemed inoperable following a massive flood. The building was abandoned and is now used by the WVARNG for tactical training purposes.

Smelting plants commonly use AFFF for mist suppression during metal plating operations to reduce the risk of sparks and fires. A visual inspection of the plant did not reveal any fire suppression systems or portable AFFF tanks. While potential AFFF use or storage is speculative, it is likely that PFAS-containing fire retardants were used or stored in and around the facility sometime during its operation, given the timeframe of use and previous facility operations.

Given the potential historical use or storage of PFAS-containing chemicals throughout this facility, ground-disturbing activities to surface soil at AOI 3 could result in site worker, construction worker, and trespasser exposure to potential PFAS contamination via ingestion and inhalation. Ground-disturbing activities to subsurface soil could result in construction worker exposure via ingestion. Therefore, the exposure pathway for inhalation of soil particles and ingestion of soil is potentially complete for these receptors.

PFAS are water soluble and can migrate readily from soil to groundwater or surface water via leaching and run-off. Because PFAS releases to surrounding surface and subsurface soil have potentially occurred at this location, it is possible that PFAS migrated from the surface soil at AOI 3 to the adjacent Cheat River. Precipitation infiltrating AOI 3 leaves the potential for the migration of PFAS from surface and subsurface soil to groundwater, which is estimated to be approximately 20 feet bgs (USGS, 1973). However, drinking water is supplied by the city of Kingwood, which uses surface water from the Cheat River for drinking water, and no private drinking water wells are located in the vicinity of Camp Dawson. Therefore, the exposure pathway for groundwater to site and construction workers, nearby off-facility residents, and trespassers is considered incomplete.

Potential PFAS contamination may have migrated from the soil at AOI 3 to the nearby Cheat River. While the surface water intake for the city of Kingwood is upgradient of AOI 3, recreational use of the Cheat River is high. Therefore, the surface water and sediment exposure pathways via ingestion for site and construction workers, residents, trespassers, and recreational users are considered potentially complete.

The preliminary CSM for AOI 3 at Camp Dawson is shown on **Figure 6-4**.

6.4 AOI 4 Army Airfield

AOI 4 is the former Army Airfield. This airfield was built sometime in the 1960s and still hosts a variety of DoD entities, including the WVARNG, US Army, Marine Corps, Navy, and other state National Guard units. Airfields, runways, air strips, ramp areas, and aircraft parking areas often have portable or mobile AFFF-containing fire extinguishers or tanks throughout the airfield area for emergency response purposes. While limited information was available on the use, history, and ownership of this airfield, it is likely that AFFF or other PFAS-containing chemicals were used or stored throughout the airfield at some point during its operational history.

Given the likelihood of use or storage of AFFF at this airfield during its operational history, there is the potential for exposure to PFAS. Ground-disturbing activities to surface soil at AOI 4 could result in site worker, construction worker, and trespasser exposure to potential PFAS contamination via ingestion and inhalation. Ground-disturbing activities to subsurface soil could result in construction worker exposure via ingestion. Therefore, the exposure pathway for inhalation of soil particles and ingestion of soil is potentially complete for these receptors.

Because historical PFAS releases to surrounding surface and subsurface soil have potentially occurred, it is possible that PFAS migrated from the surface soil at AOI 4 to the nearby Cheat River. Precipitation infiltrating AOI 4 leaves the potential for the migration of PFAS from surface and subsurface soil to groundwater, which is estimated to be approximately 20 feet bgs (USGS, 1973). However, no private drinking water wells are located in the vicinity of Camp Dawson, and groundwater is not used for drinking water. Therefore, the exposure pathway for groundwater to site and construction workers, nearby off-facility residents, and trespassers is considered incomplete.

Drinking water is supplied by the city of Kingwood, which obtains a majority of its drinking water from surface water intakes on the Cheat River. Additionally, recreational use of the Cheat River is

high. Therefore, the surface water and sediment exposure pathways via ingestion for site and construction workers, residents, trespassers, and recreational users are considered potentially complete.

The preliminary CSM for AOI 4 at Camp Dawson is shown on **Figure 6-5**.

6.5 AOI 5 Flightline Parking Pad

AOI 5 is the Flightline Parking Pad. During follow-up interviews, it was determined that previous fire training activities occurred in and around the Flightline Parking Pad, adjacent to the aircraft parking area, that involved the release of AFFF. These trainings involved barrels of fuel being ignited and then extinguished with AFFF for fire training purposes. Interviewees recall barrel burns at this location being separate from the known barrel burn that occurred at the Wash Pad AOI; however, the timeframe of these fire training activities, how often these trainings occurred, and the quantity of AFFF used during these fire training activities are unknown.

Given the known release of AFFF at this location, there is the potential for exposure to PFAS. Ground-disturbing activities to surface soil at AOI 5 could result in site worker, construction worker, and trespasser exposure to potential PFAS contamination via ingestion and inhalation. Ground-disturbing activities to subsurface soil could result in construction worker exposure via ingestion. Therefore, the exposure pathway for inhalation of soil particles and ingestion of soil is potentially complete for these receptors.

Additionally, due to known releases of PFAS-containing chemicals to surrounding surface and subsurface soil, it is possible that PFAS migrated from the surface soil at AOI 5 to the nearby Cheat River. Precipitation infiltrating AOI 5 leaves the potential for the migration of PFAS from surface and subsurface soil to groundwater, which is estimated to be approximately 20 feet bgs (USGS, 1973). However, no private drinking water wells are located in the vicinity of Camp Dawson, and groundwater is not used for drinking water. Therefore, the exposure pathway for groundwater to site and construction workers, nearby off-facility residents, and trespassers is considered incomplete.

Drinking water is supplied by the city of Kingwood, which obtains a majority of its drinking water from surface water intakes on the Cheat River, upgradient of AOI 5. While the surface water intake for the city of Kingwood is upgradient of Camp Dawson, recreational use of the Cheat River is high. Therefore, the surface water and sediment exposure pathways via ingestion for site and construction workers, residents, trespassers, and recreational users are considered potentially complete.

The preliminary CSM for AOI 5 at Camp Dawson is shown on **Figure 6-6**.

6.6 AOI 6 Fuel Farm Shed

AOI 6 is the Fuel Farm Shed. In 2016, WVARNG personnel discovered four to five full, unopened, 5-gallon buckets of concentrated AFFF located within the Fuel Farm Shed. The concentration of AFFF in these buckets and the duration of their storage in the Fuel Farm Shed are unknown. Whether previous storage or releases of AFFF occurred at this location or whether unintended spills or releases occurred during storage of these buckets is unknown.

While no spills or releases were reported to have occurred from the Fuel Farm Shed, the long-term and undocumented storage of AFFF at this non-climate-controlled location leaves the potential for unintended spills or releases. No floor drains exist within the Fuel Farm Shed; however, the entire wooden shed sits on top of metal support beams that are surrounded by grassy areas. Therefore, the ingestion exposure pathway for surface soil is considered potentially

complete for site workers, construction workers, and trespassers. The ingestion exposure pathway for subsurface soil is considered potentially complete to construction workers.

Precipitation infiltrating AOI 6 and the surrounding grassy areas leaves the potential for the migration of PFAS from surface and subsurface soil to groundwater; however, no private drinking water wells are located in the vicinity of Camp Dawson, and groundwater is not used for drinking water. Therefore, the exposure pathway for groundwater to all receptors considered incomplete.

Drinking water is supplied by the city of Kingwood, which obtains a majority of its drinking water from surface water intakes from the Cheat River, upgradient of AOI 6. While no private drinking water wells are located in the vicinity of Camp Dawson, recreational activities within the Cheat River are high. Therefore, the surface water and sediment exposure pathways via ingestion for site and construction workers, nearby residents, trespassers, and recreational users are considered potentially complete.

The preliminary CSM for AOI 6 at Camp Dawson is shown on **Figure 6-7**.

6.7 AOI 7 Vance Building

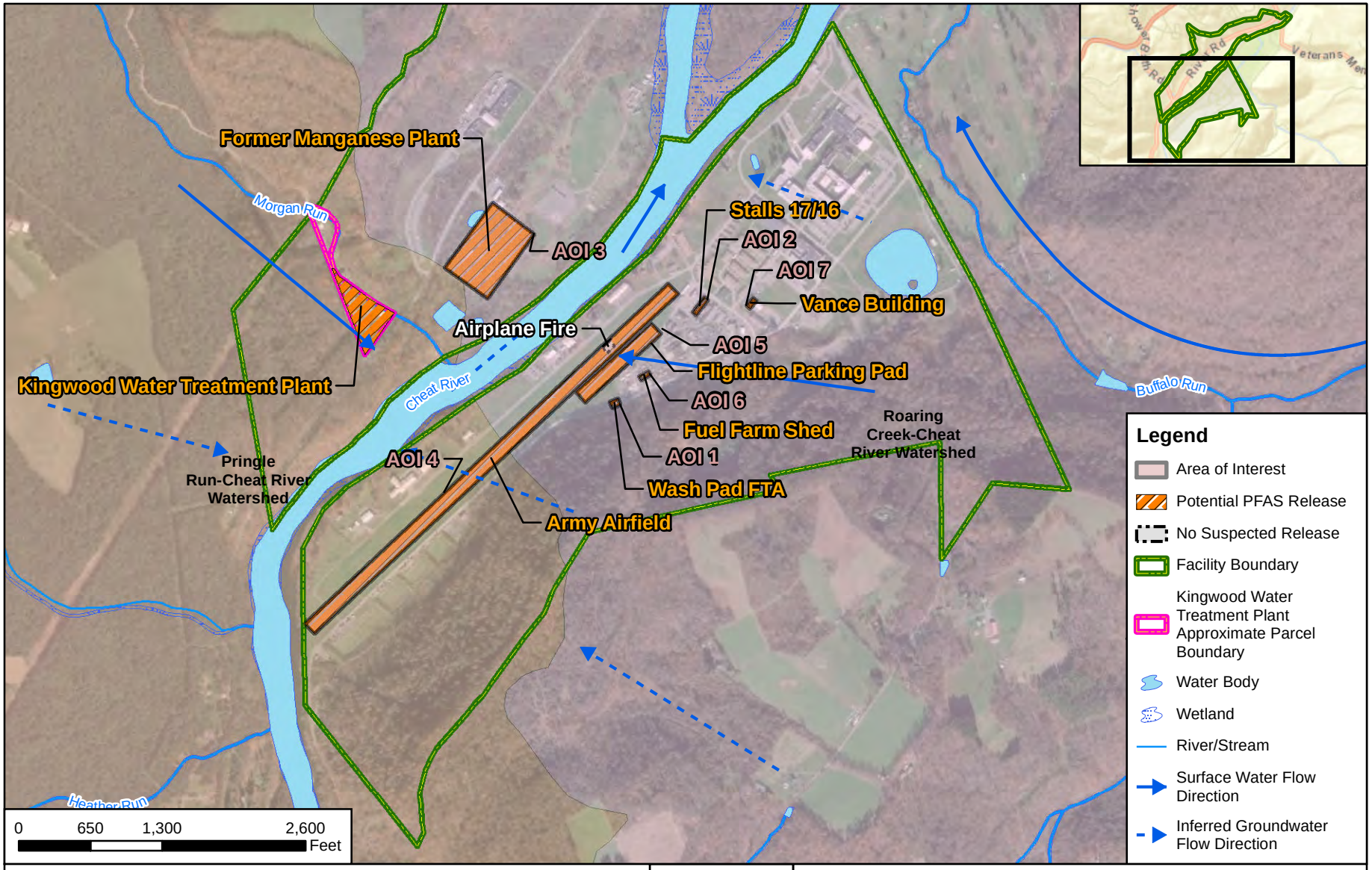
AOI 7 is the Vance Building. In 2014, a firetruck arrived at Camp Dawson from the West Virginia Air National Guard. The firetruck was filled with approximately 50 gallons of AFFF; however, the concentration of AFFF inside the truck upon arrival is unknown. The firetruck was stored in the Vance Building (Building 441) throughout its duration at Camp Dawson. According to interviews, the firetruck was estimated to be onsite anywhere from 18 months to 3 years; however, exact dates of storage are unknown. Interviewees confirmed the firetruck was never mobilized because personnel were not trained on how to operate the truck. However, whether unintended spills or leaks occurred from the firetruck during storage is unknown.

The undocumented storage of AFFF in the firetruck may have resulted in unintended spills or leaks of AFFF within or adjacent to the Vance Building. No floor drains exist within the building; however, parking the firetruck outside the parking bay may have resulted in releases to the surrounding gravel and grassy areas adjacent to the Vance Building. Therefore, the ingestion exposure pathway for surface soil is considered potentially complete for site workers, construction workers, and trespassers. The ingestion exposure pathway for subsurface soil is considered potentially complete to construction workers.

Precipitation infiltrating AOI 7 and the surrounding grassy areas leaves the potential for the migration of PFAS from surface and subsurface soil to groundwater; however, no private drinking water wells are located in the vicinity of Camp Dawson, and groundwater is not used for drinking water. Therefore, the exposure pathway for groundwater to all receptors considered incomplete.

Drinking water is supplied by the city of Kingwood, which obtains its drinking water from surface water intakes along the Cheat River, upgradient of AOI 7. While no private drinking water wells are located in the vicinity of Camp Dawson, recreational activities within the Cheat River are high. Therefore, the surface water and sediment exposure pathways via ingestion for site and construction workers, nearby residents, trespassers, and recreational users are considered potentially complete.

The preliminary CSM for AOI 7 at Camp Dawson is shown on **Figure 6-8**.



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PROJECT	Preliminary Assessment for PFAS at Camp Dawson, WV			
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SCALE	1:15,600	CHK BY	TK	4/13/2020
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	4/13/2020

N

Area of Interest

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-1

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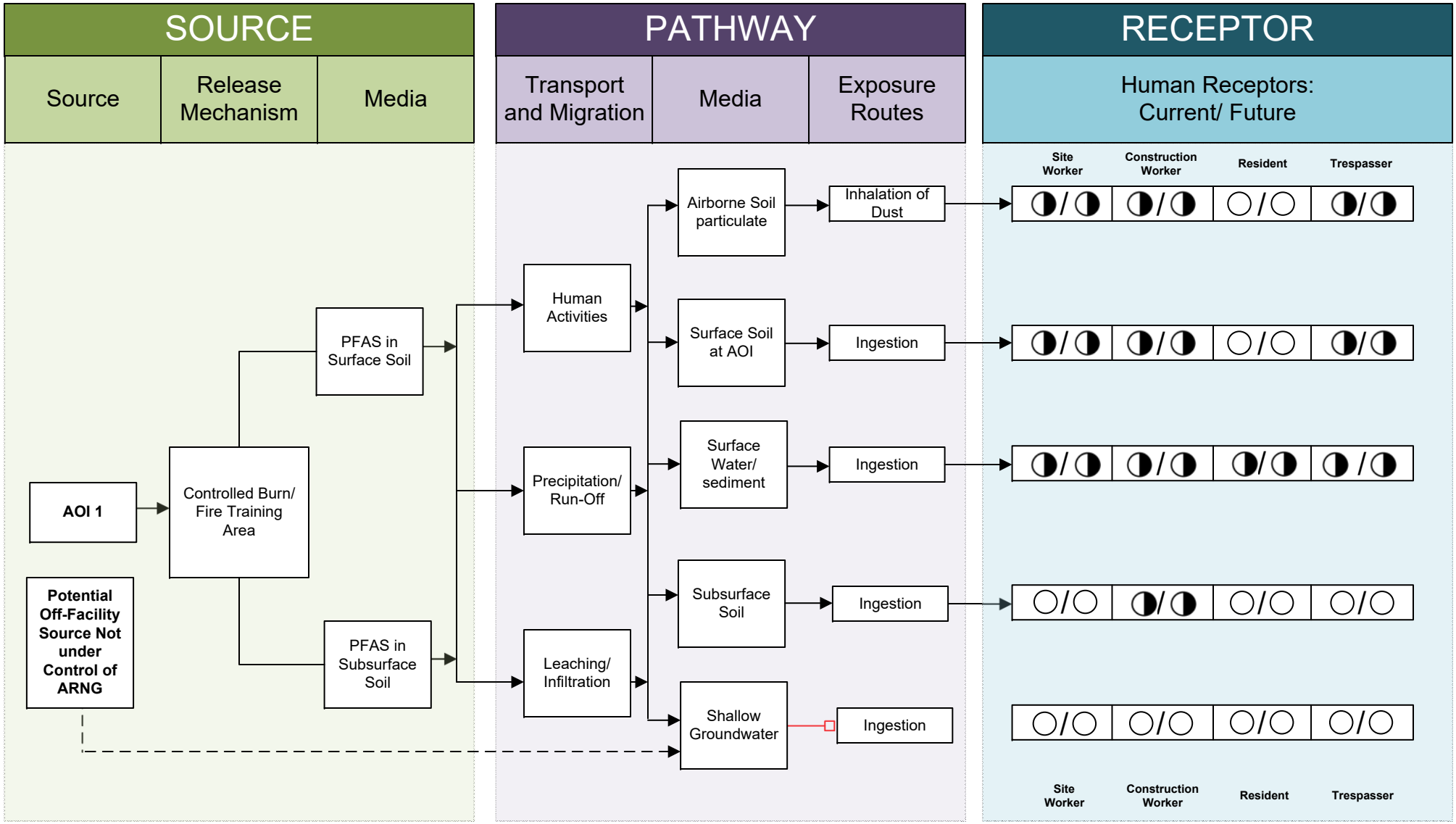


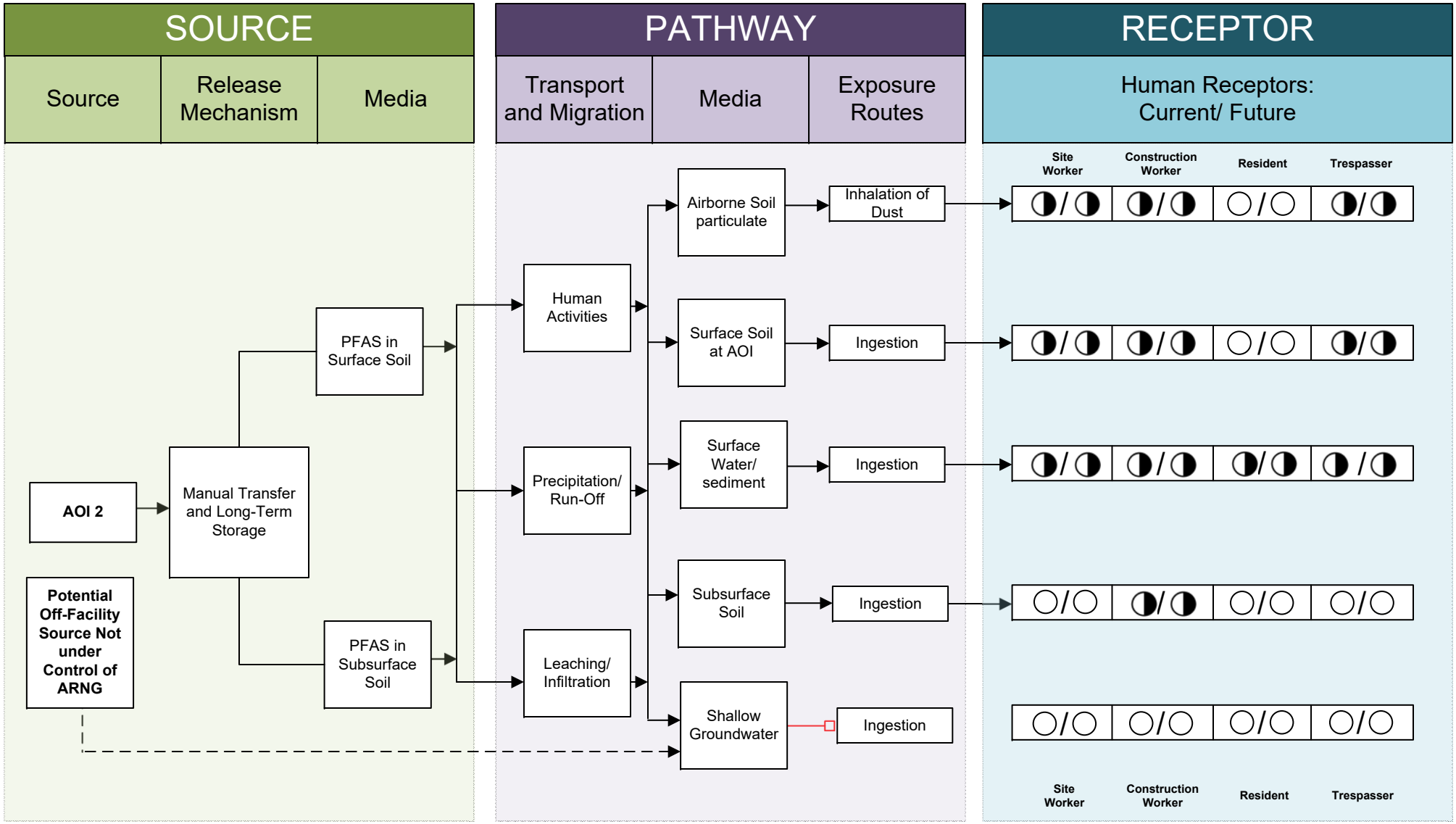
LEGEND

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

Notes:

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

Figure 6-2
Preliminary Conceptual Site Model
AOI 1 Wash Pad FTA
Camp Dawson



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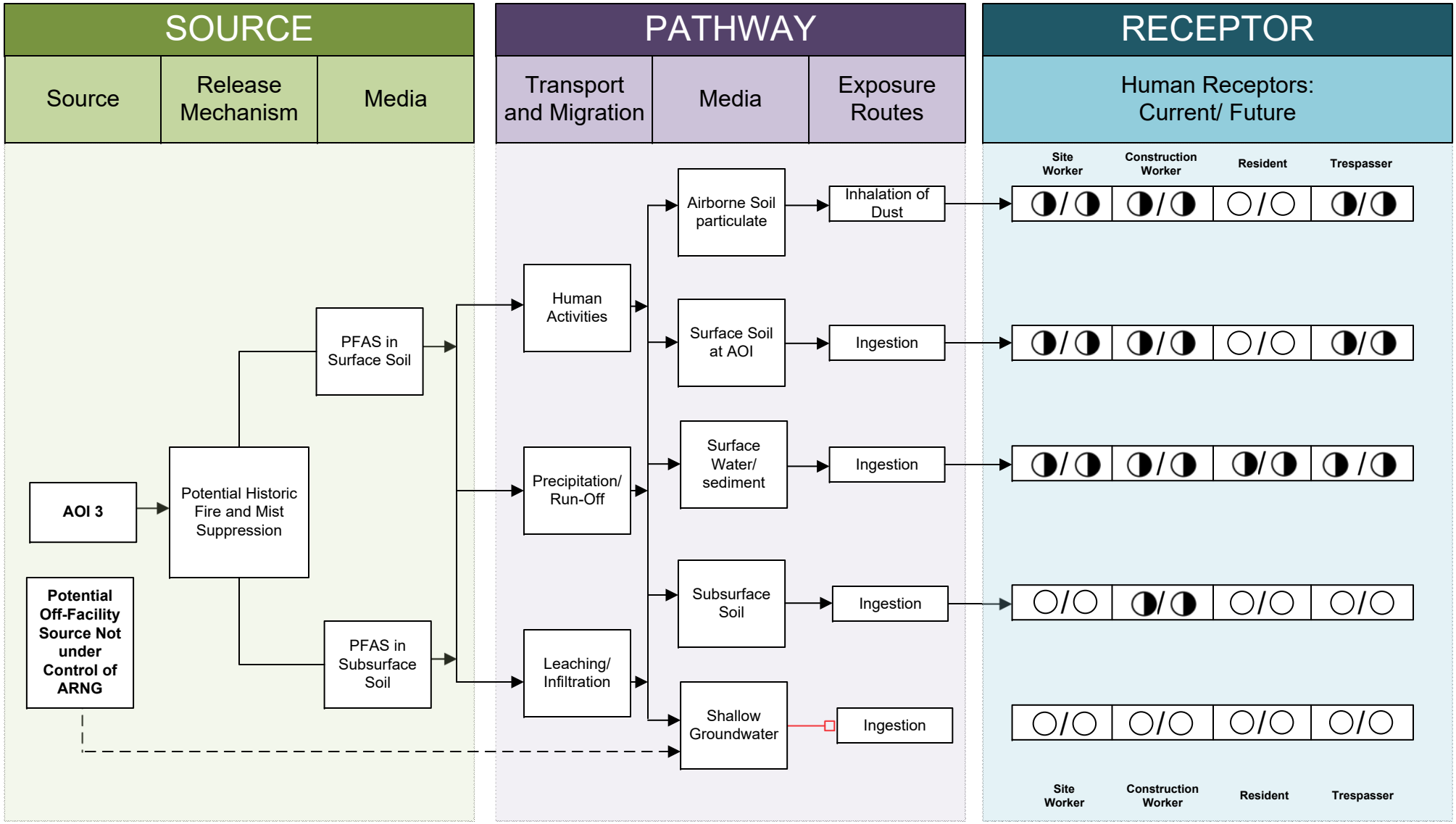
- Flow-Chart Stops
- Flow-Chart Continues
- Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Complete Pathway

Notes:

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

Figure 6-3
Preliminary Conceptual Site Model
AOI 2 Stalls 7/16
Camp Dawson



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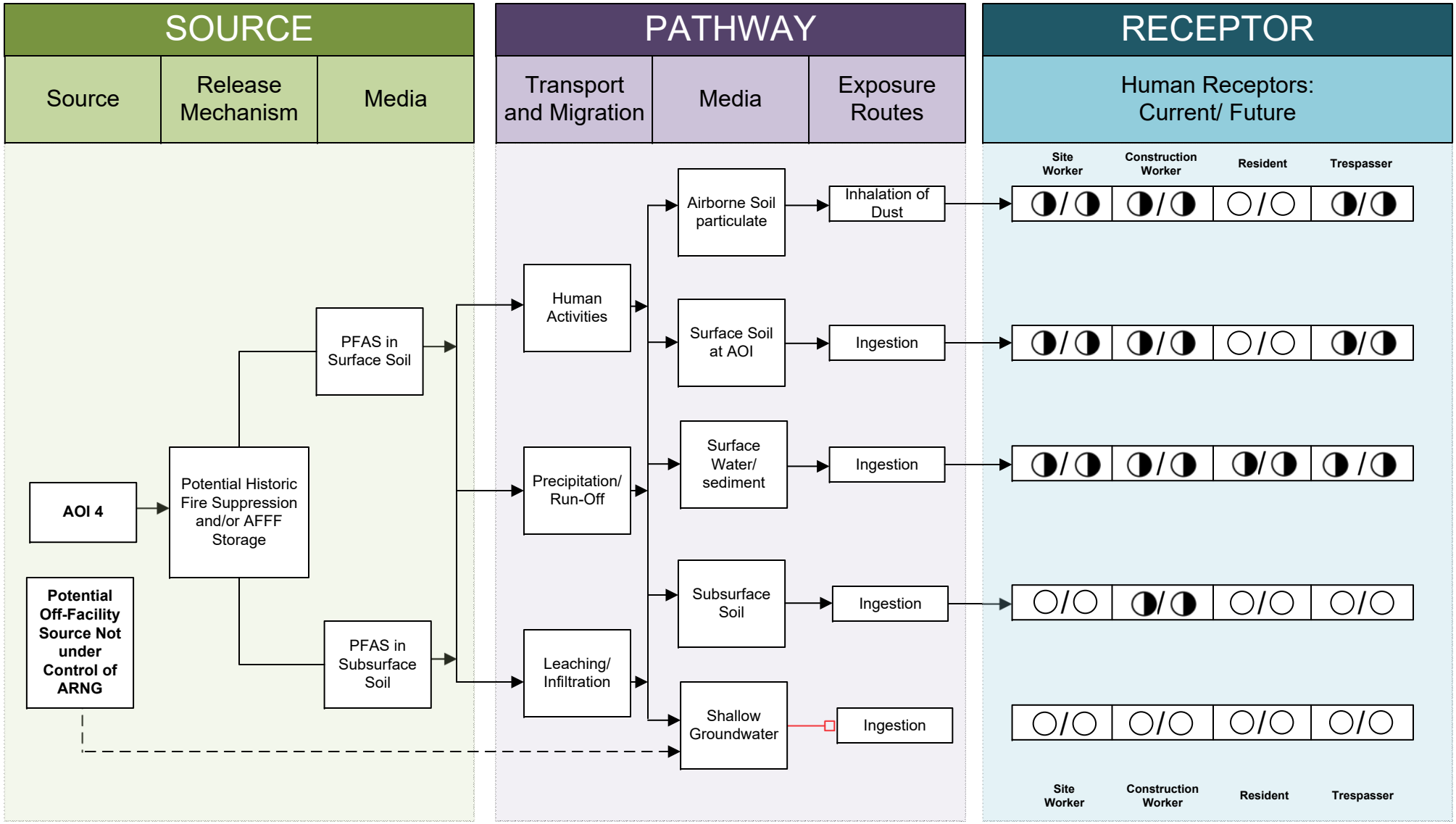
- Flow-Chart Stops
- Flow-Chart Continues
- Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Complete Pathway

Notes:

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

Figure 6-4
Preliminary Conceptual Site Model
AOI 3 Former Manganese Plant
Camp Dawson



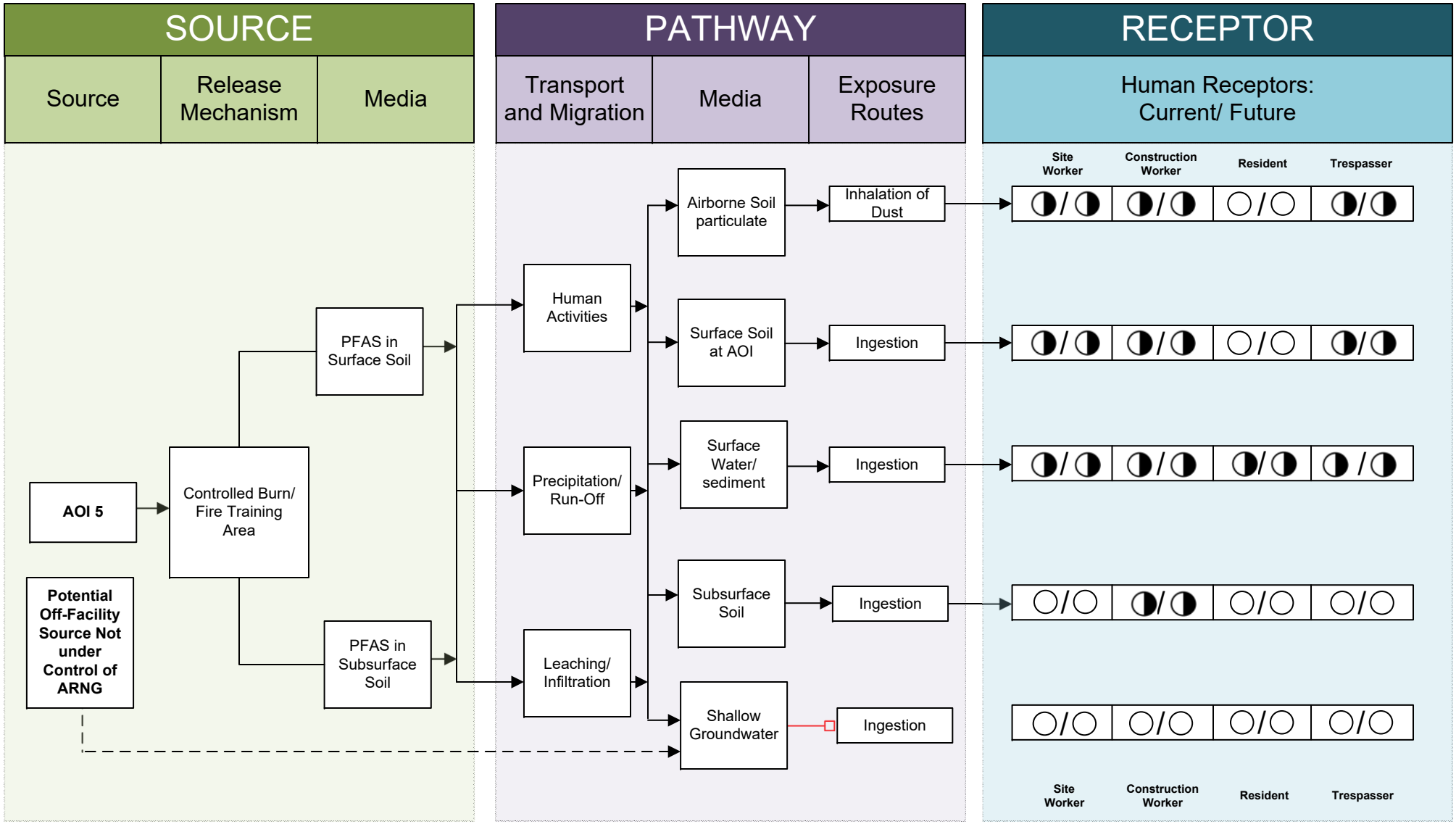
LEGEND

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

Notes:

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

Figure 6-5
Preliminary Conceptual Site Model
AOI 4 Army Airfield
Camp Dawson



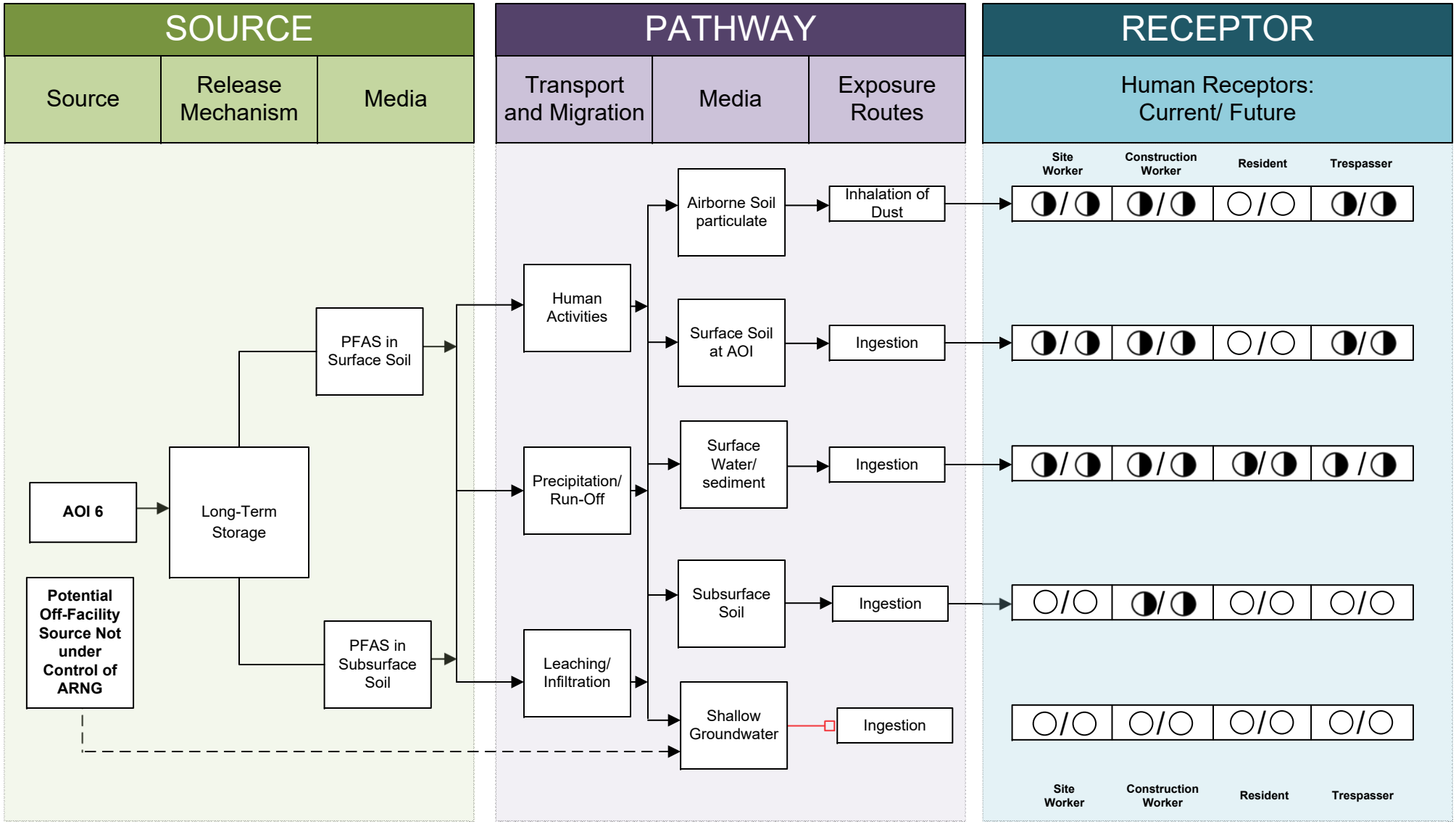
LEGEND

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

Notes:

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

Figure 6-6
Preliminary Conceptual Site Model
AOI 5 Flightline Parking Pad
Camp Dawson



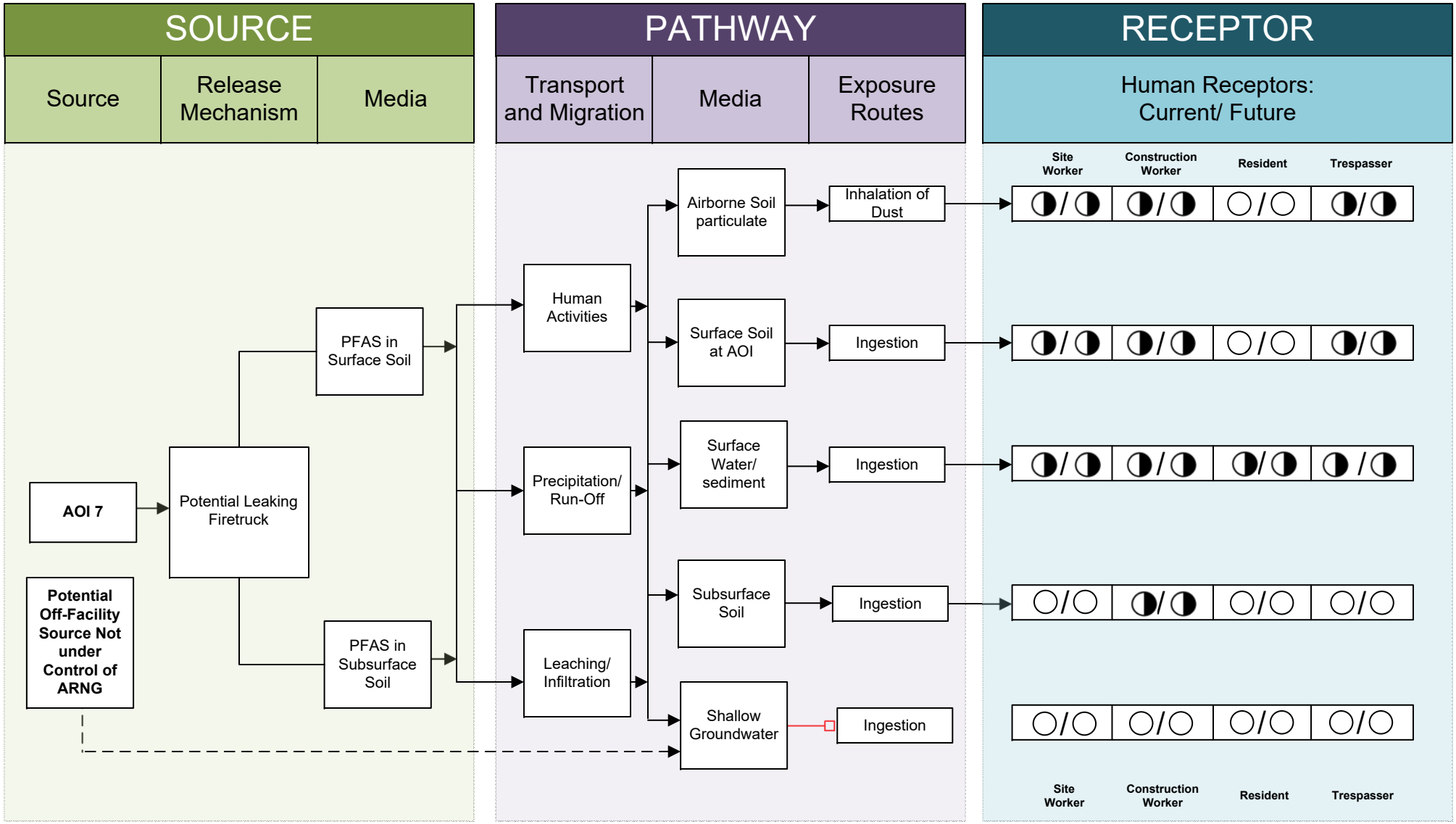
LEGEND

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

Notes:

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

Figure 6-7
Preliminary Conceptual Site Model
AOI 6 Fuel Farm Shed
Camp Dawson



LEGEND

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

Notes:

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

Figure 6-8
Preliminary Conceptual Site Mode
AOI 7 Vance Building
Camp Dawson

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

7.1 Findings

Seven AOIs related to PFAS release were identified at Camp Dawson based on PA data (**Figure 7-1**) and are described in **Table 7-1** below.

Table 7-1 AOIs at Camp Dawson

Area of Interest	Name	Used by	Potential Release Dates
AOI 1	Wash Pad FTA	WVARNG	Approx. 2002 or 2003
AOI 2	Stalls 17/16	WVARNG	No Known Releases
AOI 3	Former Manganese Plant	Volkstone Company	No Known Releases
AOI 4	Army Airfield	US Army, WVARNG	No Known Releases
AOI 5	Flightline Parking Pad	WVARNG	Unknown
AOI 6	Fuel Farm Shed	WVARNG	No Known Releases
AOI 7	Vance Building	WVARNG	No Known Releases

Based on documented and potential PFAS releases at these AOIs, there is potential for exposure to PFAS contamination in media at or near the facility. The preliminary CSMs for the AOIs are shown on **Figure 6-2** through **Figure 6-6**.

The following areas discussed in **Section 2** through **Section 5** and described in **Table 7-2** below were determined to have no suspected release:

Table 7-2 No Suspected Release Areas

No Suspected Release Area	Used by	Rationale for No Suspected Release Determination
Airplane Fire	WVARNG	Interviewees claimed that fire during this incident was suppressed using Purple K Dry chemical. This is the only chemical found in or around the flightline and aircraft parking area.

7.2 Uncertainties

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

The conclusions of this PA are predominantly based on the information provided during interviews with personnel who had direct knowledge of PFAS use at the facility. Sometimes, the provided

information was vague or conflicted with other sources. Gathered information has a degree of uncertainty due to the absence of written documentation, the limited number of personnel with direct knowledge due to staffing changes, the time passed since PFAS were first used (1969 to present), and a reliance on personal recollection. Inaccuracies may arise in potential PFAS release locations, dates of release, volume of releases, and the concentration of AFFF used. There is also a possibility the PA has missed a source of PFAS, as the science of how PFAS may enter the environment continually evolves.

In order to minimize the level of uncertainty, readily available data regarding the use and storage of PFAS were reviewed, retired and current personnel were interviewed, multiple persons were interviewed for the same potential source area, and potential source areas were visually inspected. **Table 7-3** summarizes the uncertainties associated with the PA:

Table 7-3 Sources of Uncertainty

Area of Interest	Source of Uncertainty
AOI 1 – Wash Pad FTA	The exact storage location of the empty TriMax™ 30 tanks used at this FTA prior to disposal is unknown.
AOI 2 – Stalls 17/16	It is unknown how long AFFF was stored at this location prior to disposal in 2017. The firetruck that arrived at Camp Dawson in 2014 was filled with AFFF and emptied near Building 403, with all AFFF residual being containerized and stored in the stalls inside Building 403. However, it is unsure how long the AFFF was stored on the firetruck prior to containerization. Exact use of the approximately 1,000 remaining pounds of concentrated AFFF historically stored within the stalls is unknown.
AOI 3 – Former Manganese Plant	It is unknown whether the former manganese smelting plant, located across the Cheat River, contained an AFFF fire suppression system or any other storage or use of AFFF. Given the previous smelting and heavy metals operations that occurred at the facility and timeframe of use, it is likely that AFFF was located or used at this location during its operational history.
AOI 4 – Army Airfield	Ownership documentation prior to the WVARNG taking over the property in 1985 was unavailable. It is unknown whether any potential AFFF-activity occurred at this location from construction (~1960s) until 1985.
AOI 5 – Flightline Parking Pad	The timeframe of fire training activities, how often fire training occurred at this location, and the quantity of AFFF used during the fire training activities are all unknown. The exact location of these fire training activities unknown, but is estimated based on information provided during interviews.
AOI 6 – Fuel Farm Shed	Four to five full, unopened 5-gallon buckets of concentrated AFFF were discovered in the Fuel Farm Shed. The concentration of AFFF in these buckets and

Area of Interest	Source of Uncertainty
	the duration of their storage are unknown. Whether previous storage or releases of AFFF occurred at this location or whether unintended spills or releases occurred during storage of these buckets is unknown.
AOI 7 – Vance Building	The concentration of AFFF inside the firetruck upon arrival is unknown. The exact duration of the firetruck's storage at the Vance Building is unknown, but is estimated to be anywhere from 18 months to 3 years. Additionally, whether unintended spills or releases occurred from the firetruck during storage is unknown.
Airplane Fire	The exact location of the airplane fire is unknown; only an estimated location was provided during interviews.

7.3 Potential Future Action

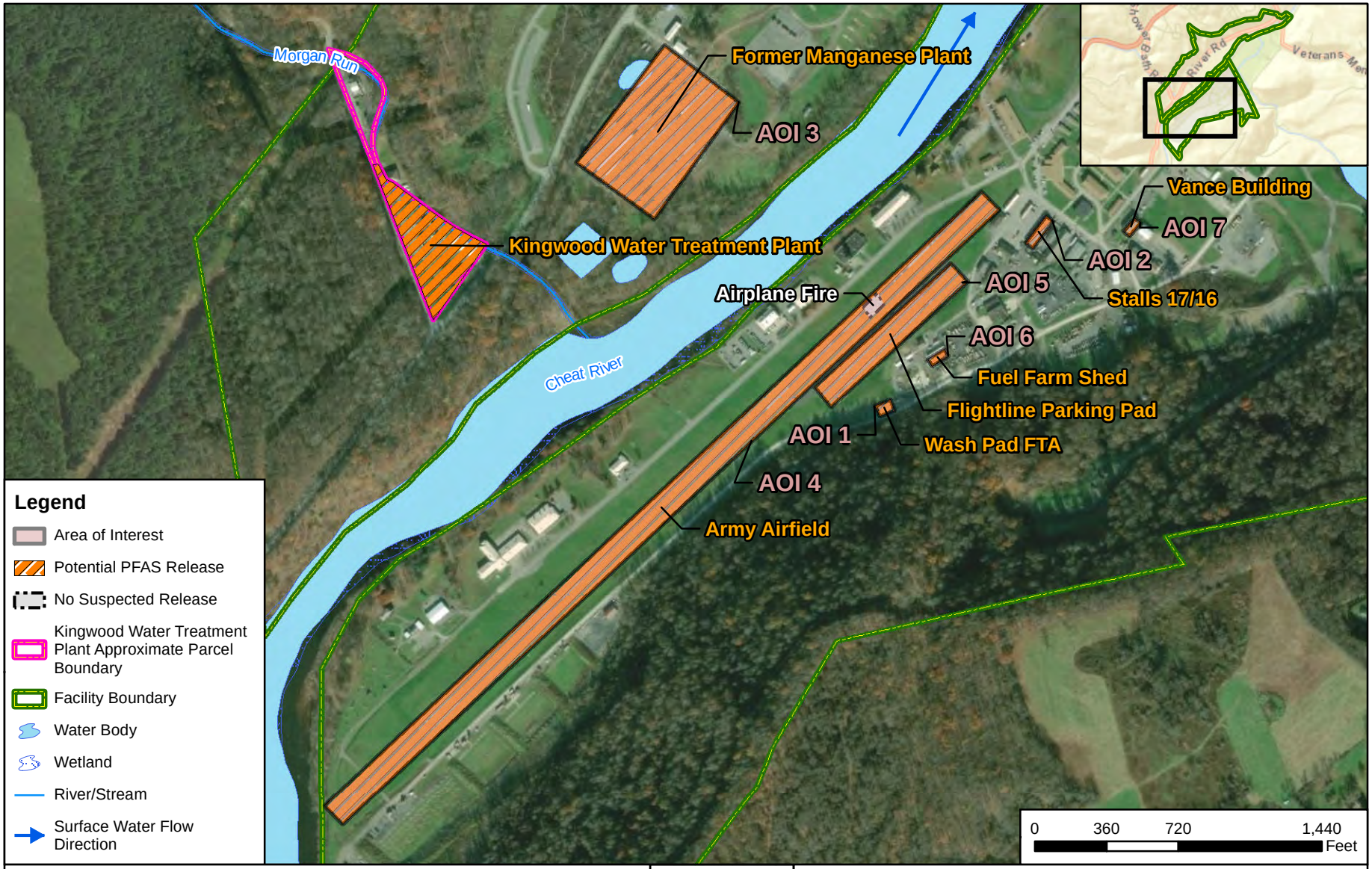
Interviews and records (covering 1973 to present) indicate that current or former ARNG activities may have resulted in potential PFAS releases at the seven AOIs identified during the PA. Based on the preliminary CSMs developed for the AOIs, there is potential for receptors to be exposed to PFAS contamination in surface soil, subsurface soil, surface water, and sediment at these AOIs. The table below summarizes the rationale used to determine if the AOI should be considered for further investigation under the CERCLA process and undergo an SI.

ARNG will evaluate the need for an SI at Camp Dawson based on the potential receptors, the potential migration of PFAS contamination off the facility, and the availability of resources. **Table 7-4** below describes the rationale used to determine potential future actions at Camp Dawson.

Table 7-4 Potential Future Actions

Area of Interest	AOI Location	Rationale	Potential Future Action
AOI 1 Wash Pad FTA	39°26'41.36"N; 79°40'17.42"W	Historical burning of barrels using AFFF for fire training activities.	Proceed to an SI, focus on soil, sediment, subsurface soil, and surface water
AOI 2 Stalls 17/16	39°26'41.36"N; 79°40'17.42"W	Known manual transfer of AFFF from firetruck to storage containers and transfer of large quantities of AFFF from various locations throughout the facility. Historical storage of large quantities of AFFF.	Proceed to an SI, focus on soil, sediment, subsurface soil, and surface water
AOI 3 Former Manganese Plant	39°26'50.68"N; 79°40'07.10"W	Historical use as manganese smelting plant, where AFFF use is common for fire and mist suppression.	Proceed to an SI, focus on soil, sediment, subsurface soil, and surface water
AOI 4 Army Airfield	39°26'38.38"N; 79°40'29.51"W	Given timeframe of operation, likely historical, undocumented use and storage of AFFF throughout airfield.	Proceed to an SI, focus on soil, sediment, subsurface soil, and surface water

Area of Interest	AOI Location	Rationale	Potential Future Action
AOI 5 Flightline Parking Pad	39°26'46.44"N; 79°40'13.02"W	Historical burning of barrels using AFFF for fire training activities.	Proceed to an SI, focus on soil, sediment, subsurface soil, and surface water
AOI 6 Fuel Farm Shed	39°26'45.4"N; 79°40'09.5"W	Former storage of 5-gallon buckets of concentrated AFFF.	Proceed to an SI, focus on soil, sediment, subsurface soil, and surface water
AOI 7 Vance Building	39°26'50.0"N 79°40'07.5"W	Former storage location of firetruck filled with AFFF.	Proceed to an SI, focus on soil, sediment, subsurface soil, and surface water



CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at Camp Dawson, WV			
REVISED	4/13/2020	GIS BY	MS	4/13/2020
SCALE	1:8,640	CHK BY	TK	4/13/2020
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	4/13/2020

N

Summary of Findings

AECOM

12420 Milestone Center Drive
Germantown, MD 20876

Figure 7-1

Q:\Projects\ENV\GEARS\GEO\MAES 2012 Unrestricted\Fort Meade\E. Data Management\GIS\MXDs\Chisholm_6th\March2017\ Fig_7-1_Camp_Dawson_Summary.mxd

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Appendix A
Data Resources

Data Resources will be provided separately on CD. Data Resources for Camp Dawson includes:

Camp Dawson Leases, Licenses, and Permits

- 1989 Deed between State of West Virginia and State Armory Board
- 1996 Transmittal of DD Form 1354, Transfer and Acceptance of Military Real Property, Approval for Disposal/Distruction of Structures and Material on the Volkstone Property
- 1996 Department of the Army License for National Guard Purposes
- 2011 WV/NPDES Water Pollution Control Permit. No. WV0111902
- 2016 WV/NPDES Water Pollution Control Permit Extension. No. WV0111902
- 2017 WV/NPDES Water Pollution Control Permit. Permit No. WV0021881

Camp Dawson AFFF Release Documentation

- 2017 Disposal Manifest Copy. No. 016671084JJK
- 2017 Amendment of Solicitation/Modification of Contract by DLA Dispostion Services - EBS

Previous Investigations Completed at Camp Dawson

- 2003 State of West Virginia Source Water Assessment and Protection Program, Source Water Assessment Report. Kingwood Water Board, Preston County, PWSID: WV3303908
- FY15 West Virginia Army National Guard Secretary of Defense Environmental Awards, Natural Resources Conservation – Small Installation
- 2015 Final Perfluorinated Compounds Preliminary Assessment Site Visit Report West Virginia Air National Guard Base Eastern West Virginia Regional Airport Martinsburg, West Virginia
- 2018 Updated Integrated Cultural Resources Management Plan for Installations of the West Virginia Army National Guard

Camp Dawson Installation Maps

- 1943 Camp Dawson Aerial
- 2011 Surface Water Flow Map
- 2016 Proposed Sampling Locations at Camp Dawson (with outfall locations)
- 2018 Camp Dawson Guest Map
- 2018 Camp Dawson Plot (1:200 scale)
- 2018 Camp Dawson Plot (1:400 scale)
- 2018 Camp Dawson Stormwater Infrastructure (1:2,400 scale)
- 2018 Aerial Photos

Camp Dawson Correspondence

- 2018 License for Volkstone Property Correspondence
- 2018 Deed for Camp Dawson Correspondence

Camp Dawson EDR Report

- 2018 Camp Dawson EDR Report

Appendix B
Preliminary Assessment Documentation

Appendix B.1
Interview Records

PFAS - Camp Dawson 6/21 * Action items

Previous MFC removal performed

[redacted] *verbal permission to use name

SW Corner maint shop

Shed assoc w/ fuel point (little wooden shed)

- storing parts * Talk to ~~[illegible]~~ / Claypool

- ~~Not store~~

- About 4 - 5 gal buckets *

Had difficulty figuring out what to do w/ it

Formerly a WTS weekend training site

Early 90s air strip was rehabed, fueling station put in, new structures installed in 90s (late)

Oil/water separator near airstrip

No fire suppression at fueling station - vehicular

Airstrip - crash carts

Airplane fire - crash cart suppression purple-k

Approx 95 - 2010

makeshift firestation

- Sent a firetruck, no instruction no one knew how to use it

- True aircraft fire fighting vehicle

- 2010 - '18 firetruck sat there for a year

- Had a foam tank, filled, never used

City + fire fighters - deal w/ TAG

Civilians ~~[illegible]~~ were working for fire dept

Would get called out for fires off-installation

Firehouse relatively new - ~~[illegible]~~ early 2000s

No firetruck kept on airstrip

Heavy rotary use

Not much airplane

municipal fire ~~would come in for~~ was responsible?

- Training units that came in would bring their own stuff (fire suppression?)
- would fuel up tankers and bring them down (from Morgantown)

Airbirth crash carts w/ dry suppression (purple h)

Air units - Weelly + Parkersburg
marine - Bragg

Old fire truck building might have city fire equip still in there

If there was a fire now they would call 911
city would ~~not~~ respond

Coast Fire - All water
Control burns - extensive permit process
small suppression system (water) on pickup
Burns occur on "hills"
* Howard for details on steel foam

Mandy - AFFF bucket moved to stalls
- Paperwork for when it was turned in (Jun 2017)

Rick Chevy
volun fd pulled truck in for CA w/ AFFF
pulled it out stored it (probably in photo)
P19 sat here ~~Room~~ for 3 years
2014 - 2016 it was in motor pool
overpack in back right of photo

Fire truck in fire bay currently - leaks

- Started here about a year ago
- leaks out of
- There was an AFFF tank on the truck removed and emptied + stored in airpark
- Leaking nozzle bushings might have been corroded by AFFF
  - very corrosive
- * Need to track back to CA outfit

Perry Barber 14½ years here - 31 yrs total @ Kingwood

- Kingwood FD
- In 31 years Kingwood never used AFFF
- No storage on base
- Truck for substation (Rich + Howard)
- Stored in buckets @ Kingwood
- Last time they used it was about 12 mi South
  very expensive not used
  - Fire suppression 24H Sapphire
- No training area on Dawson
- State training facility for training
  Clarksburg live training
- Dawn dish soap used as a simulation at Dawson

2013 huge fire used water

- Class A foam (Foscheck?)
- Patch foam

*Lab list for PFAS sampling

[redacted]

Parachute Rigger
1990- Rigger in 1995
Helicopter Crash right outside Rigger shop 1996
No fire
no training
He has a window looking right out to the air field

Old Airstrip marked on map
Colin has GIS data

[redacted]

Huge flood occurred, wiped out Darsen when?

Bulk-Stone Manganese smelter across the river
60s - 85 (after flood it shut down)

Land purchased 91-92
next to a [redacted] 1920s biplane airstrip

Over 200 capacity on installation

Uncertainty section - smelter
Could have used AFFF to keep sparks down
Drinking water intake is very close upgradient
to Artesian well, so a confining layer somewhere

Old well or base - hasn't been used in at least
10 years
All old wells have been capped + grouted

[redacted] might know someone who worked at the smelter

Municipal fire company never went out to the smelter for training or anything

- ~~MA plant~~ [redacted]
  - Concerned about perception from city of Ridgewood

Smelting Facility

- Intake <100 yrs from stream mouth
- Smelting floor, no sign of old suppression system inside
- Fine dust laying over the building when they moved in
- Vacant sheds around the smelting buildings
- SW conveyance filled in or non-existent

* As built drawings for OW separator
  - SGT Miller has hard copy of plans

Get list of labs
- shoot for local w/ certs NELAP + DoD 5.1

[redacted] - SRP ~~Took over for Howard~~
ST [redacted] Serviced Trimax 305 - offsite
- Records Clarksburg
Did not know POC for unit leader of training

[redacted] Mgr/Asst Mgr 37 yrs
Security 10 yrs
Airfield Cmdr > 1 yr

Walk about
Trucks 50 gal Foam tanks (both trucks)

[redacted] + [redacted]

- No AFFF that they know of
- Wpsville might have used it
- Fire suppression: no
- Confirmed existance of old Airfield Trench

URS

Job _____ Project No. ok w/ using name Page ____ of ____

Description _____ Computed by _____ Date _____

_____ Checked by _____ Date _____

Reference

[redacted]

Chief [redacted] would dispose of non-haz waste

* manifest copy w/

✓ 4-5 5-gallon pails

✓ Early 90's - installed apron; no FSS @ fueling station
No hangar

✓ Along flightline
↳ Purple K was used for fire (~1995-early 2000s)
New complex w/ fueling station in last 1995

130th air wing gave Dawson fire truck
No manual, truck never used
in last 10 years, only stayed 1 year
AFFF on fire truck
Volunteer FD helped out Dawson
everytime they leave post, Volunteer FD doesn't get paid/uses PTO

FD building built w/in 15 years
✓ weekend training site up until 1985
No trucks on site in past; other entities may bring trucks but leave, no trucks stayed on site

✓ Dry chem/Purp K only by flightline

Wheeling + Parkersburgh
✓ Possible that truck is in FS now, unsure
Any fire would be handled by city
only water w/ controlled burns - no AFFF (~250 g)
DNR must be contacted / PSA / long approval process

URS

Page ____ of ____

Job ____ Project No. ____ Sheet ____ of ____

Description ____ Computed by ____ Date ____

____ Checked by ____ Date ____

Reference

FD brought in truck w/ AFFF (~2014-2016)
emptied truck; stored; taken away for disposal

Items turned into DRMO

New fire truck arrived ~ 1½ years from CA
leaks water
Foam removed; placed in drums; never nozzle tested

water intake well hasn't been used in ~10 years

<3K people/residents w/ DW intake

DW is slightly upgradient of potential AOI & old smelter ing plant
Installation can't utilize non-Kingwood H_2O

Maj [redacted] Not under UCMR b/c <10K residents

~~FSS~~ / ask maintenance

Claypool 2004 — Shed
transfer of AFFF
quantity (1-2 5 gallon buckets)
drained thru pipe
DRMO took old Tri Max 30

FT (Martinsburg, WV) 2015 — No leaks
Floor drains - yes
fuel shed near flightline

2002-2003: Aviation w/ Martinsburg
Burn barrells (~4 hours) ~30 pilots
Tri Max 30 fire extinguisher utilized for barrell burn
w wash point w OWS
Concrete pad
quantity: ~30 gallons or (expiring) up to 60 g
Never discharged on flight line

2014-2015: New Purple K brought in
(Grilly

URS

Page ____ of ____

Job ____ Project No. ____ Sheet ____ of ____

Description ____ Computed by ____ Date ____

____ Checked by ____ Date ____

Reference

[redacted] Tri Max 30 (4-5 years ago)
only Purple K release

Dry chem ; no controlled burns

[redacted] 80's-2010 : only water

[redacted] STRC sewer metal pipe

Metaphil Landfill (2-3 counties away)
Bridgeport, WV

concrete wash pad → concrete pit → OWS → outfall 12

plastic piping - corrugated

[redacted]

(1973-2010) Not aware

~1995-1996 - crash

Previous armory late 1970's - early 1980s
Outside; took away - never returned
No fire on installation; no AFFF on fire truck
only fire after 85 - where post maintenance building is
Moved rigger shop to there; cut metal → caught fire

URS

Page ____ of ____

Job ____ Project No. ____ Sheet ____ of ____

Description ____ Computed by ____ Date ____

____ Checked by ____ Date ____

Reference

[redacted] - serviced Tri Max tanks
Clarksburg, WV

[redacted] [redacted]
Elect. Analyst
1981 2008

[redacted]
Air Field Commander
→ 1 year
No AFFF only Purple K
No Fire trucks on post

[redacted] - Before Howard [redacted]
(pre-Howard)
(2 weeks from today)

URS

= Done/In report

Job Kingwood Findings

Project No.

Page ____ of ____

Sheet ____ of ____

Description

Computed by

Date

DRMO = Defense Reutilization + Marketing Office

Checked by

Date

Reference

* Approx. 1-2 5-gallon buckets drained thru pipe @ Shed (~~location?~~)
  ↳ fuel shed near flightline in ~2015; unsure if before or after switch to Purple K from AFFF

* 2002-2003: Aviation team w/ Martinsburg did controlled barrell burn w/ ~30 pilots over ~4 hours
  TriMax30 utilized for ~~D~~ F.S.
  Occurred @ wash point near OWS (see map)
  Around 30-60 gallons located @ concrete pad.
  Replaced w/ Purple K ~ 2014-2015 (concentrated, 3%)

  concrete wash pad → concrete pit → OWS → outfall 12 (plastic corrugated piping)

  (4-5 buckets)

* Plastic 5-gallon buckets in small wooden shed near flightline; noticed 2-3 years ago; no reported spills; removed

* Airplane fire (~1995-early 2000s), along flightline
  Used crash cart suppression w/ Purple K

* Firetruck parked ~~2010-2016~~ ~2014-2016 for 1 year (from Air Force)
  Truck was filled w/ AFFF (unsure if filled on site) but never used, emptied + taken away for disposal to DRMO

- Only Purple K dry chem on flightline
- Old TriMax30 taken by DRMO ~2014

Appendix B.2
Visual Site Inspection Checklists

Visual Site Inspection Checklist

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

Recorded by: [redacted]

ARNG Contact: [redacted]

Date and Time: 6/21/18

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

Source/Release Information

Site Name / Area Name / Unique ID: Camp Dawson

Site / Area Acreage: Wash Pad Area / FTA

Historic Site Use (Brief Description): wash vehicles, on property / used once for fire training

Current Site Use (Brief Description): wash vehicles on property

Physical barriers or access restrictions: Gated access around entire facility

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

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):
controlled barrel burn (one time fire training activity) w/ AFFF

2. Has usage been documented? Y (N)

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

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

3a. Indicate what businesses are located near the site
Previous manganese smelting plant across river (now owned by ARNG)

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

4a. If yes, provide a description of the airport/flightline tenants:
~~used~~ used by WVARNG, US Army, Marine Corps, Navy, National Guard units, + Reserves
(Private use; need permission to use)

Visual Survey Inspection Log

Other Significant Site Features:

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

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

N/A

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

N/A

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

N/A

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

N/A

Transport / Pathway Information

Migration Potential:

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

1a. If so, note observation and location:

surface water/runoff flows towards grated drains throughout facility → flow North towards Cheat River

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

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

All flow channelized towards grates/storm drains → outfall @ Cheat River

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

3a. If so, please note the location:

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

4a. If so, please note the location:

SW intake ~100 yards upgradient of Dawson, near Volkstone property on opposite side of Cheat River

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

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

Dawson Army Airfield

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

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

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

Visual Survey Inspection Log

Significant Topographical Features:

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

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

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

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

wash pad is concrete, but surrounded by grassy areas + dense forest directly south/SE of wash pad

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

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

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

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

Receptor Information

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

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

Gated/restricted access

2. Who can access the site? (Site Workers / Construction Workers) / Trespassers / Residential / Recreational Users / Ecological

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

3. Are residential areas located near the site? Y (N)

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

4. Are any schools/day care centers located near the site? Y (N)

4a. If so, please note the location/distance/type:

5. Are any wetlands located near the site? Y (N)

5a. If so, please note the location/distance/type:

Visual Survey Inspection Log

Additional Notes

Photographic Log

Photo ID/Name	Date & Location	Photograph Description
#1	6/21/18 @ wash pad	wash pad w/ grated drains (dense forest can be seen directly behind wash pad) Facir W
#2	6/21/18 @ wash pad	wash pad w/ grated drain; concave slope is noted; facing NW towards Cheat River

Appendix B.3
Conceptual Site Model Information

Preliminary Assessment – Conceptual Site Model Information

Site Name: Camp Dawson (WV)

Why has this location been identified as a site?

Previous fire training activities have occurred at this site. Additionally, AFFF was released in a designated area one time historically and storage in at least one other area on site.

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

No.

Training Events

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

If so, how often? One training activity with AFFF in 2002 or 2003

How much material was used? Is it documented? Approximately 30-60 gallons on 3% concentrated AFFF was used during this event. This training event was undocumented.

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? Generally west/northwest, towards the Cheat River

Average rainfall? Around 43 inches per year

Any flooding during rainy season? Yes, some flooding

Direct or indirect pathway to ditches? No.

Direct or indirect pathway to larger bodies of water? Direct pathway to underground drains and direct pathways into Cheat River

Does surface water pond any place on site? No.

Any impoundment areas or retention ponds? No.

Any NPDES location points near the site? Yes, Outfall 12, which discharges directly into the Cheat River. Copies of active NPDES permits are provided.

How does surface water drain on and around the flight line? Surface water collects in a series of underground drainage areas, which channel water underground and discharge to Outfall 12, directly into the Cheat River.

Preliminary Assessment – Conceptual Site Model Information

Groundwater:

Groundwater flow direction? West, towards Cheat River

Depth to groundwater? 20 feet bgs

Uses (agricultural, drinking water, irrigation)? Agricultural and industrial

Any groundwater treatment systems? No

Any groundwater monitoring well locations near the site? Yes, several groundwater monitoring wells onsite

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? No

Waste Water Treatment Plant:

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

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

Do we understand the fate of sludge waste? Sludge waste from the oil water separator is collected and shipped off as hazardous waste when the holding tank is near capacity. Wastewater from the facility is routed to the Kingwood sewer plant, directly across the Cheat River.

Is surface water from potential contaminated sites treated? No. Surface water is collected in underground drains which then discharg directly into the Cheat River.

Equipment Rinse Water

1. Is firefighting equipment washed? Where does the rinse water go? No firefighting equipment is located at Camp Dawson, with the exception of Purple K fire extinguishers. One firetruck was previously stored at Camp Dawson; however, personnel were not properly trained on how to operate the firetruck, so it was never used or mobilized.

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? N/A

3. Other?

Preliminary Assessment – Conceptual Site Model Information

Identify Potential Receptors:

Site Worker: Yes

Construction Worker: Yes

Recreational User: Yes, recreational users of the Cheat River and surrounding tributaries

Residential: No

Child: No

Ecological: Yes

Note what is located near by the site (e.g. daycare, schools, hospitals, churches, agricultural, livestock)?
No areas of significant interest are located within the direct vicinity of Camp Dawson

Documentation

Ask for Engineering drawings (if applicable): Done

Has there been a reconstruction or changes to the drainage system? When did that occur? No

Appendix C
Photographic Log

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Dawson	Kingwood, West Virginia

Photograph No. 1

Description:

Looking west. Wash pad located on southern border of facility. Residual from the wash pad collects in the drains which lead to an oil water separator, and eventually discharges into the nearby Cheat River.

21 June 2018

Photograph No. 2

Description:

Looking northwest. Wash pad located on southern border of facility. Residual from the wash pad flows northwest, filters through an oil water separator, and discharges to the Cheat River.

21 June 2018

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Dawson	Kingwood, West Virginia

Photograph No. 3

Description:

Looking southeast. The Vance Building (Building 441), also known as the Post-Fire Department Building, served as the former storage location of an AFFF-filled firetruck for approximately 18 months to three years starting in 2014.

21 June 2018

Photograph No. 4

Description:

Looking northeast. Just east of the aircraft parking area and north of the wash pad FTA. Portable sodium bicarbonate extinguishers, portable and handheld Purple K fire extinguishers, can be found along the perimeter of the aircraft parking area.

21 June 2018

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Dawson	Kingwood, West Virginia

Photograph No. 5

Description:

Facing east. Aircraft maintenance and wash pad area. A drain can be seen on the left side of the picture that leads to the 4,000-gallon OW.

21 June 2018

Photograph No. 6

Description:

Facing southeast. Portable potassium bicarbonate fire extinguishers; which non-PFAS containing.

21 June 2018

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Dawson	Kingwood, West Virginia

Photograph No. 7

Description:

Facing northwest. Handheld Purple K fire extinguishers located around perimeter of the aircraft parking area.

21 June 2018

Photograph No. 8

Description:

Facing northwest. Aircraft parking area, airplane fire occurred adjacent to this location.

21 June 2018

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Dawson	Kingwood, West Virginia

Photograph No. 9

Description:

Looking east. Concrete pad with circular manholes is the oil water separator that connects to the wash pad FTA. This oil water separator connects to Outfall 012 which discharges to the Cheat River.

21 June 2018

Photograph No. 10

Description:

Looking south. The main sewer grate that connects all stormwater and waste from the oil water separator before being discharged to the Cheat River.

21 June 2018

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Dawson	Kingwood, West Virginia

Photograph No. 11

Description:

Facing south. Old fuel shed that used to store unused and unwanted AFFF.

21 June 2018

Photograph No. 12

Description:

Looking inside the Fuel Farm Shed that shows absence of floor drains.

21 June 2018

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Dawson	Kingwood, WV

Photograph No. 13

Description:

Looking southeast. General vicinity of the Cheat River surface water intake in relation to Camp Dawson, which can be seen across the river.

21 June 2018

Photograph No. 14

Description:

Inside one of the remaining buildings from the former manganese smelting plant, located across the Cheat River.

21 June 2018

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Dawson	Kingwood, West Virginia

Photograph No. 15

Description:

Looking North. Remnants of the remaining buildings from the former manganese smelting plant, now leased to Camp Dawson for training purposes.

21 June 2018

Photograph No. 16

Description:

Former AFFF storage area inside of Building 403, Stalls 17/16. The AFFF stored here was previously stored in the Fuel Farm Shed as well as containerized AFFF from the former firetruck stored in the Vance Building.

21 June 2018

APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp Dawson	Kingwood, WV

Photograph No. 17

Description:

Outside of Building 403, Stall 17/16. This stall was the former storage location for the AFFF on site at Camp Dawson until 2017.

21 June 2018