RELATIVE RISK SITE EVALUATION

Schenectady Air National Guard Base, New York

Introduction

The Department of Defense (DoD) identified certain per- and polyfluoroalkyl substances (PFAS) as emerging contaminants of concern which affected installations across the Air Force. When the term "Air Force" is used in this fact sheet, it includes Air National Guard (ANG). Specifically, perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), and perfluorobutanesulfonic acid (PFBS) are components of legacy Aqueous Film Forming Foam (AFFF) that the Air Force began using in the 1970s as a firefighting agent to extinguish petroleum fires. The U.S. Environmental Protection Agency (EPA) issued lifetime drinking water Health Advisories (HA) for PFOS and PFOA, and health-based regional screening levels for PFBS.

The Air Force has systematically evaluated potential AFFF releases on all Installations and former Installations. It began with the Preliminary Assessments, or PAs, that identified potential release areas. First responders, fire chiefs, and hangar staff were interviewed to determine where a release or a spill may have occurred on an Installation (for example, aircraft crash site or an accidental hangar AFFF release). Once the information in the PA was collected, we began Site Inspections, or SIs, to take soil and water samples and analyzed the media for PFAS compounds at the potential release areas. The intention of the SI was to determine if a release had occurred and to determine the impacts to soil and/or groundwater. At Schenectady Air National Guard Base (ANGB), an Addendum to the SI was also completed. The next step in the process is called the Relative Risk Site Evaluation, or RRSE, which is a tool used to sequence Sites/Installations to begin a Remedial Investigation, or RI. Air Force Installations are at the beginning of the more detailed investigative stage, the RI, to determine where action is needed and to identify remedial technologies.

The Schenectady Air National Guard Base (ANGB) PFAS PA and SI can be found at the Air Force Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Administrative Record (AR): https://ar.afcec-cloud.af.mil/ Scroll to the bottom of the page and click on “Continue to site”, then select Air National Guard (e.g., Active, ANG, BRAC), scroll down the Installation List and click on Schenectady Airport, NY, then enter the AR Number 472856 in the “AR #” field for the PA. For the SI (Phase II SI Addendum), enter 595251. Then click “Search” at the bottom of the page. Click on the spy glass to view the document.

More information on the Air Force response to PFOS and PFOA can be found at: https://www.afcec.af.mil/WhatWeDo/Environment/Perfluorinated-Compounds/

Acronyms

AFFF - Aqueous Film Forming Foam

ANG - Air National Guard

ANGB - Air National Guard Base

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

CHF – Contaminant Hazard Factor

DoD - Department of Defense

EPA – US Environmental Protection Agency

FTA – Fire Training Area

HA – Health Advisory

MPF – Migration Pathway Factor

PA – Preliminary Assessment

PFAS - Per-and polyfluoroalkyl substances

PFBS – Perfluorobutanesulfonic acid

PFOA - Perfluorooctanoic acid

PFOS - Perfluorooctane sulfonate

PRL - Potential Release Location

RF – Receptor Factor

RI – Remedial Investigation

RRSE – Relative Risk Site Evaluation

SI – Site Inspection

RELATIVE RISK SITE EVALUATION, cont.

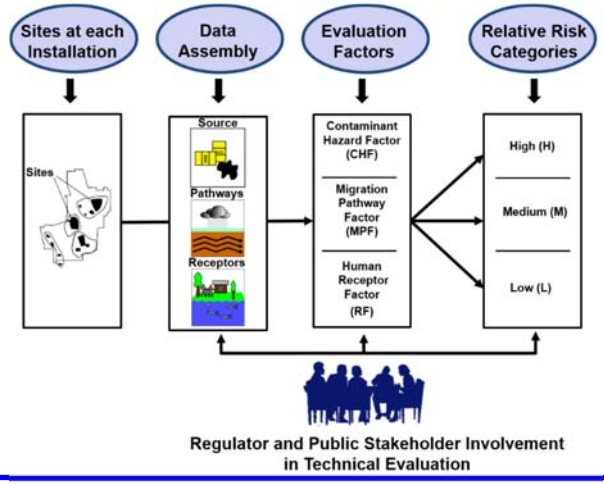
Q. What is the Relative Risk Site Evaluation (RRSE)?

A. RRSE is a methodology to sequence environmental restoration work used by the DoD. The RRSE process is used to evaluate the relative risk posed by an environmental restoration site in relation to other sites. The DoD fundamental premise in site prioritization is "worst first," meaning the DoD Component shall address sites that pose a relatively greater potential risk to public safety, human health, or the environment before sites posing a lesser risk. Relative risk is not the sole factor in determining the sequence of environmental restoration work, but it is an important consideration in the priority setting process. The methodology is described in the DoD, Relative Risk Site Evaluation Primer, Summer 1997 Revised Edition: https://denix.osd.mil/references/dod/policy-guidance/relative-risk-site-evaluation-primer/

Q. What is the RRSE framework?

A. The RRSE framework provides a DoD-wide approach for evaluating the relative risk to human health and the environment posed by contamination present at sites. The **Relative Risk Site Evaluation Concept Summary** (shown in the figure) illustrates the selection of sites, evaluation of the site data using three evaluation factors, and placement into high, medium, and low categories. The relative risk site evaluation framework is based on information fundamental to risk assessment: sources, pathways, and receptors to sequence restoration work. The RRSE is not a baseline risk assessment or health assessment in the CERCLA process. Regulators and public stakeholders in the environmental restoration process are provided the opportunity to participate in the process in accordance with the DoD Defense Environmental Restoration Program.

Relative Risk Site Evaluation Concept Summary

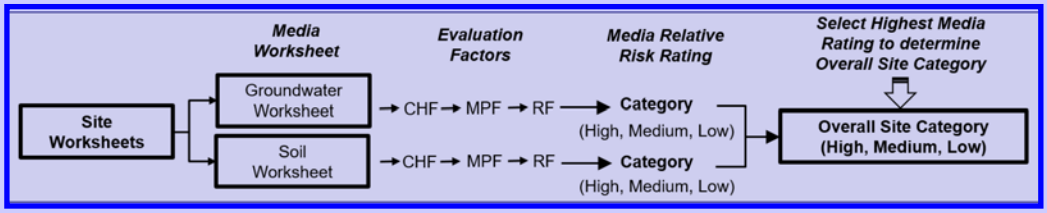


Sites at Each Installation

Q. What restoration sites are required to be evaluated in the RRSE process?

A. Restoration sites in CERCLA phases prior to remedy-in-place are evaluated in the process. Worksheets are developed for environmental media at each site. For consistency across all the Installations, only surface soil (0-1 foot deep) and groundwater media were evaluated in the RRSE.

The figure shows the process for a media to be evaluated using the contaminant hazard factor (CHF), the migration pathway factor (MPF), and the receptor factor (RF). Each media is scored to obtain a relative risk rating of High, Medium, or Low. The highest media rating determines the Overall Site Category.



Q. How is the Contaminant Hazard Factor (CHF) determined?

A. The **CHF** is determined by dividing the maximum level for a contaminant at each site by the approved screening values (i.e., risk-based comparison values). Contaminant concentration ratios are totaled to arrive at a **CHF.** A CHF sum of greater than 100 earns a **Significant (High)** ranking. **Moderate (Medium)** is when the total is 2 to 100. **Minimal (Low)** is when a CHF is less than two.

FOR MORE INFORMATION

Air Force Civil Engineer Center
Environmental Restoration Program
www.afcec.af.mil

AFCEC CERCLA
Administrative Record (AR)
https://ar.afcec-cloud.af.mil/

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Q. How is the Migration Pathway Factor (MPF) determined?

A. The movement of contamination at a site is evaluated and assigned a **MPF** rating.

Ratings for MPFs are designated as: **evident**, **potential**, or **confined** (for **High, Medium, and Low**). **Evident** exposure means the contamination is at a point where exposure to humans or the environment can occur, such as at a drinking water well. **Potential** ratings are given to sites where exposure may happen. A **confined** rating is given to sites where a low possibility for exposure may occur.

Q. How is the Receptor Factor (RF) determined?

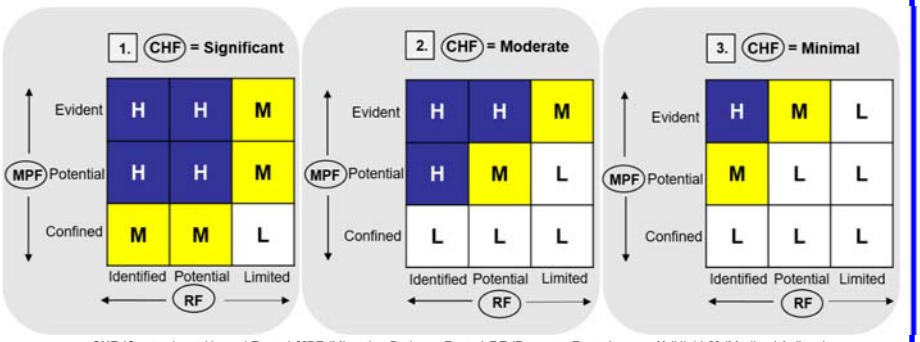
A. The **RF** is determined by a receptor's, such as humans, potential to come into contact with contaminated media. **RFs** are designated as: identified, potential, or limited **(High, Medium, and Low). Identified** rating is given when receptors are in contact or threat of contact with contaminated media. **Potential** is given when receptor may contact contaminated media. **Limited** is given when there is little or no contact with contaminated media.

RELATIVE RISK SITE EVALUTION, cont.

Media Relative Risk Rating

Q. How is the media relative risk rating determined?
A. Use the chart to determine the relative risk rating for each media evaluated. Start by choosing the **CHF** result of the evaluation. If the **CHF** is **Significant**, use **box 1.**; if **Moderate**, use **box 2.**; if **Minimal**, use **box 3.** Then find the **MPF** and **RF** results and move to the square where the results meet. That square indicates the media relative risk rating. For example, if the **CHF** is **Significant (go to box 1.)**, the **MPF** is **Potential** and the **RF** is **Identified**, then the rating is High (**H**).

Relative Risk Site Evaluation Matrix



CHF (Contaminant Hazard Factor) **MPF** (Migration Pathway Factor) **RF** (Receptor Factor) **H** (High) **M** (Medium) **L** (Low)

Overall Site Category

Q. How do I determine the Overall Site Category?
A. The highest relative risk media rating becomes the **Overall Site Category** for the site. For example, if a site has a groundwater relative risk rating of **High**, and soil relative risk rating of **Low**, then the Overall Site Category rating for the site is **High**.

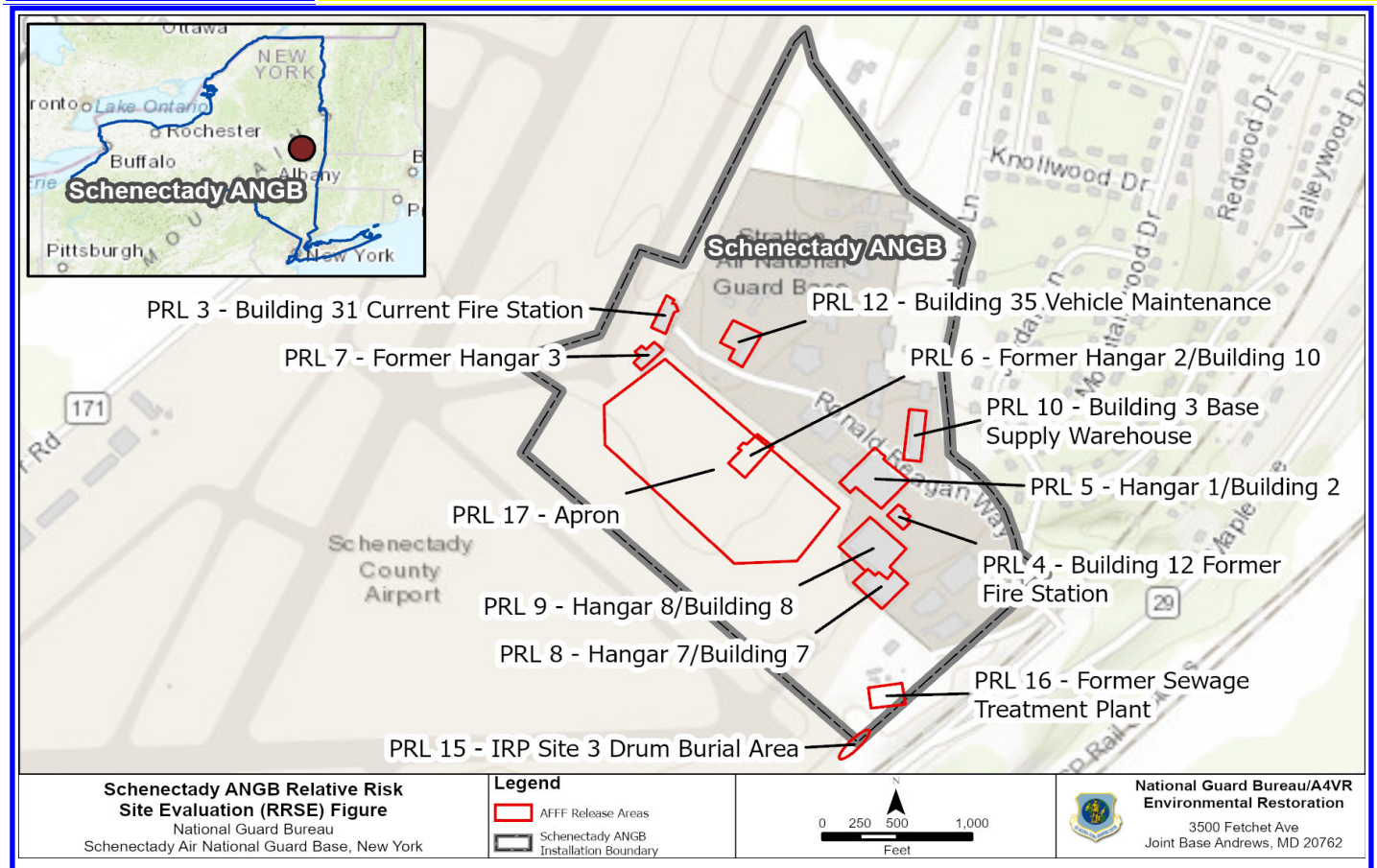
Regulatory and Stakeholder Involvement

Q. **How do I participate as Stakeholder?**

A. To offer opportunity to participate in RRSE, the Air Force announces a public comment period in your local newspaper. There is also opportunity to participate during installation Restoration Advisory Committees where active. Installation Restoration Advisory Committee meetings are also announced in your local newspaper.

Relative Risk Site Evaluation Summary Schenectady ANGB, NY

Overall Site Category	Site Name (Sites are shown on the map below and RRSE Worksheets are attached)
HIGH	PRL 3, PRL 5, PRL 8, PRL 15, PRL 16, PRL 17
MEDIUM	PRL 4 , PRL 12
LOW	PRL 6, PRL 7, PRL 9, PRL 10



AFFF Area is another term for Potential Release Location (PRL).

Site Background Information			
Installation:	Schenectady ANGB	**Date:**	10/4/2021
Location (State):	New York	**Media Evaluated:**	Soil
Site Name and ID:	Building 31 (Current Fire Station) - PRL 3	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Bill Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	Building 31 was built in 1998 and is used as the current Fire Station. According to the Preliminary Assessment (PA) Report, aqueous film forming foam (AFFF) is present in the Fire Department (FD) vehicles and the crash trailer, which are stored within Building 31. Some vehicles have had minor AFFF leaks. AFFF is transferred to the vehicles within the Fire Station via hand pouring or pumping, or via the crash trailer from bulk storage containers stored in Building 46, the Hazmat Pharmacy (PRL 13). FD vehicles are washed within the Fire Station when necessary. There are trench drains located in the Fire Station; therefore, any potential AFFF releases are captured by the trench drains, which discharge into the sanitary sewer system through an oil/water separator (OWS).
Brief Description of Pathways:	The Schenectady Aquifer is the sole source of potable water to five municipalities and approximately 90 percent of Schenectady County residents. Pumping wells are approximately 50 ft. deep and located over four miles west of the Base. The aquifer recharge area, which is an area considered sensitive and significant to groundwater recharge, is located at the southern entrance of Schenectady ANGB. The Base is situated near, but not over, the eastern end of the Schenectady Aquifer. Regionally, groundwater flow tends to follow topographic controls flowing to the south and southeast towards the Mohawk River. Depth to groundwater is approximately 2.86 to 6.89 ft. below ground surface (bgs) and flows generally to the southwest in the northern portion of the Base and the south-southeast towards the southern portion of the Base. The groundwater flow at the PRL is to the south/ southwest. Surface waters from Schenectady ANGB are conveyed through a system of drainage pipes, culverts, and ditches before ultimately discharging into the Mohawk River. The PRL is covered by the building, but grassy areas surrounding the building are where the surface soil samples were collected.
Brief Description of Receptors:	The Base and a majority of the surrounding residents are all connected to the Town of Glenville public water system. Private water wells have been identified in the vicinity of the Base; the majority of these wells are either located hydraulically upgradient or cross-gradient from the Base. There is one nearby private well located on Maple Avenue, about halfway between Freeman's Bridge Road and Ronald Reagan Way. This private well is located hydraulically downgradient and could potentially be used for potable purposes. PFAS including PFOA, PFOS, and PFBS have been detected at multiple wells at the Base at varying concentrations. No groundwater samples were collected at this PRL as the wells were dry at the time of sampling. Surface soil receptors would include Base personnel and visitors under commercial/industrial conditions.

Soil Worksheet

Installation Schenectady ANGB

Site ID: PRL 3 **AFFF Release Area #:** AFFF 3

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.35	0.126	2.8
PFOA	0.0036	0.126	0.0
PFBS	0.002	1.9	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**2.8**
CHF > 100	**H (High)**		
100 > CHF > 2	**M (Medium)**	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
2 > CHF	**L (Low)**		
CHF Value		**CHF VALUE**	**M**

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	H
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	H
Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	M
Limited	No potential for receptors to have access to contaminated soil	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Soil Category	**HIGH**

Site Background Information			
Installation:	Schenectady ANGB	**Date:**	10/4/2021
Location (State):	New York	**Media Evaluated:**	Soil
Site Name and ID:	Building 12 (Former Fire Station) - PRL 4	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Bill Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary	
Brief Site Description:	Building 12 currently serves as the Aerospace Ground Equipment (AGE) Maintenance Facility. The first portion of Building 12 was built in 1948 (Bays 1, 2, and 3). Building 12 was used as the Fire Station from 1948 until construction of the Current Fire Station, Building 31 (PRL 3), in 1998. Site personnel reported that the vehicle inventory at Building 12 was similar to the current inventory at Building 31 (PRL 3). There were reports of some minor leaks from vehicles as AFFF was transferred to vehicles within the building via hand pouring or pumping, or via the crash trailer. FD vehicles were washed within the building when necessary. As noted during the December 2015 PA site visit, Building 12 contained trench drains that captured any potential AFFF releases; the trench drains discharged into the sanitary sewer system through an OWS. Discharges from Bays 1, 2, or 3 were routed to an OWS on the south corner of the building (currently paved area). Discharges from Bays 4, 5, or 6 were routed to an OWS on the southeast side of the building (currently a grassy area)
Brief Description of Pathways:	The Schenectady Aquifer is the sole source of potable water to five municipalities and approximately 90 percent of Schenectady County residents. Pumping wells are approximately 50 ft. deep and located over four miles west of the Base. The aquifer recharge area, which is an area considered sensitive and significant to groundwater recharge, is located at the southern entrance of Schenectady ANGB. The Base is situated near, but not over, the eastern end of the Schenectady Aquifer. Regionally, groundwater flow tends to follow topographic controls flowing to the south and southeast towards the Mohawk River. Depth to groundwater is approximately 2.86 to 6.89 ft. bgs and flows generally to the southwest in the northern portion of the Base and the south-southeast towards the southern portion of the Base. The groundwater flow at the PRL is to the south/southwest. Surface waters from Schenectady ANGB are conveyed through a system of drainage pipes, culverts, and ditches before ultimately discharging into the Mohawk River. The PRL is covered by the building, but grassy areas surrounding the building are where the surface soil samples were collected.
Brief Description of Receptors:	The Base and a majority of the surrounding residents are all connected to the Town of Glenville public water system. Private water wells have been identified in the vicinity of the Base; the majority of these wells are either located hydraulically upgradient or cross-gradient from the Base. There is one nearby private well located on Maple Avenue, about halfway between Freeman's Bridge Road and Ronald Reagan Way. This private well is located hydraulically downgradient and could potentially be used for potable purposes. PFAS including PFOA, PFOS, and PFBS have been detected at multiple wells at the Base at varying concentrations. No groundwater samples were collected at this PRL as the wells were dry at the time of sampling. Surface soil receptors would include Base personnel and visitors under commercial/industrial conditions.

Soil Worksheet

Installation Schenectady ANGB

Site ID: PRL 4 **AFFF Release Area #:** AFFF 4

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.19	0.126	1.5
PFOA	0.0056	0.126	0.0
PFBS	0.001	1.9	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**1.6**
CHF > 100	**H (High)**		
100 > CHF > 2	**M (Medium)**	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
2 > CHF	**L (Low)**		
CHF Value		**CHF VALUE**	**L**

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	H
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	H
Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	M
Limited	No potential for receptors to have access to contaminated soil	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Soil Category	**MEDIUM**

Site Background Information			
Installation:	Schenectady ANGB	**Date:**	10/4/2021
Location (State):	New York	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Hangar 1/Building 2 - PRL 5	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Bill Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	Hangar 1/Building 2 was built in 1948. The AFFF fire suppression system (FSS) was installed in 1992 and remained until 2015; the system is currently being retrofitted for use of high expansion foam. The AFFF FSS was tested every two years. According to Base personnel, there were accidental discharges from the FSS. A 300 gal AFFF storage tank and pump was stored in a contained room in the western portion of the building. Trench drains are located in the main portion of the hangar. During typical conditions, trench drain discharges entered the sanitary sewer system through an OWS (located south of Building 12). AFFF discharges were automatically diverted to a holding tank near the south corner of the building. The holding tank was replaced in 2016 due to proximity to the roof drain, which caused water to fill the tank. There were no signs of tank leakage. Holding tank contents were manually pumped to the sanitary sewer system after approval by the Schenectady Publicly Owned Treatment Works (POTW). The trench drains could also be manually diverted to the holding tank for non-FSS spills, if necessary.
Brief Description of Pathways:	The Schenectady Aquifer is the sole source of potable water to five municipalities and approximately 90 percent of Schenectady County residents. Pumping wells are approximately 50 ft. deep and located over four miles west of the Base. The aquifer recharge area, which is an area considered sensitive and significant to groundwater recharge, is located at the southern entrance of Schenectady ANGB. The Base is situated near, but not over, the eastern end of the Schenectady Aquifer. Regionally, groundwater flow tends to follow topographic controls flowing to the south and southeast towards the Mohawk River. Depth to groundwater is approximately 2.86 to 6.89 ft. bgs and flows generally to the southwest in the northern portion of the Base and the south-southeast towards the southern portion of the Base. The groundwater flow at the PRL is to the south/southwest. Surface waters from Schenectady ANGB are conveyed through a system of drainage pipes, culverts, and ditches before ultimately discharging into the Mohawk River. The PRL is covered by the building and surrounded by pavement.
Brief Description of Receptors:	The Base and a majority of the surrounding residents are all connected to the Town of Glenville public water system. Private water wells have been identified in the vicinity of the Base; the majority of these wells are either located hydraulically upgradient or cross-gradient from the Base. There is one nearby private well located on Maple Avenue, about halfway between Freeman's Bridge Road and Ronald Reagan Way. This private well is located hydraulically downgradient and could potentially be used for potable purposes. Surface soil receptors would include Base personnel and visitors under commercial/industrial conditions. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.

Groundwater Worksheet

Installation Schenectady ANGB

Site ID: PRL 5 **AFFF Release Area #:** AFFF 5

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	5.3	0.04	132.5
PFOA	0.31	0.04	7.8
PFBS	0.16	0.602	0.3

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	140.5
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		

$$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$$

CHF Value	CHF VALUE	H

Migratory Pathway Factor

Evident	Analytical data or direct observation indicates that contamination in the groundwater has moved to a point of exposure (e.g., well)	
Potential	Contamination in the groundwater has moved beyond the source or insufficient information available to make a determination of Evident or Confined	M
Confined	Analytical data or direct observation indicates that the potential for contaminant migration from the source via groundwater is limited (possibly due to geological structures or physical controls)	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	H
Potential	Existing downgradient drinking water well beyond 4 miles with no contaminant detection(s) or no known drinking water wells downgradient and groundwater is currently or potentially usable for drinking water (i.e., EPA Class I or II groundwater) or other beneficial use (e.g., agricultural)	
Limited	No known water supply wells downgradient and groundwater is not considered potential drinking water source and is of limited beneficial use (Class III)	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	H
	Groundwater Category	**HIGH**

Soil Worksheet

Installation Schenectady ANGB

Site ID: PRL 5 **AFFF Release Area #:** AFFF 5

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.045	0.126	0.4
PFOA	0.00027	0.126	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.4
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value		CHF VALUE	L

$$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$$

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	L
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	L

Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	
Limited	No potential for receptors to have access to contaminated soil	L
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	L
	Soil Category	**LOW**

Site Background Information			
Installation:	Schenectady ANGB	**Date:**	10/4/2021
Location (State):	New York	**Media Evaluated:**	Soil
Site Name and ID:	Former Hanger 2/Building 10 - PRL 6	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Bill Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: LOW			

Site Summary	
Brief Site Description:	Former Hangar 2/Building 10 was built in 1963 and an AFFF FSS was installed in 1992. The building was demolished in 1999/2000 and only concrete remains. According to the 2016 PA Report, an AFFF concentrate holding tank was located in the main portion of the hangar, which fed two monitors. Trench drains were present in the hangar. During typical conditions, trench drain discharges entered the sanitary sewer system through an OWS. During FSS activations, planned or accidental, AFFF discharges were automatically diverted to two 7,000-gal holding tanks. Holding tank contents were manually pumped to the sanitary sewer system after approval by the Schenectady POTW. The trench drains could also be manually diverted to the holding tank for non-FSS spills if necessary.
Brief Description of Pathways:	The Schenectady Aquifer is the sole source of potable water to five municipalities and approximately 90 percent of Schenectady County residents. Pumping wells are approximately 50 ft. deep and located over four miles west of the Base. The aquifer recharge area, which is an area considered sensitive and significant to groundwater recharge, is located at the southern entrance of Schenectady ANGB. The Base is situated near, but not over, the eastern end of the Schenectady Aquifer. Regionally, groundwater flow tends to follow topographic controls flowing to the south and southeast towards the Mohawk River. Depth to groundwater is approximately 2.86 to 6.89 ft. bgs and flows generally to the southwest in the northern portion of the Base and the south-southeast towards the southern portion of the Base. The groundwater flow at the PRL is to the south/southwest. Surface waters from Schenectady ANGB are conveyed through a system of drainage pipes, culverts, and ditches before ultimately discharging into the Mohawk River. The PRL is covered by pavement, but the soil samples were collected in a grassy area adjacent to the PRL.
Brief Description of Receptors:	The Base and a majority of the surrounding residents are all connected to the Town of Glenville public water system. Private water wells have been identified in the vicinity of the Base; the majority of these wells are either located hydraulically upgradient or cross-gradient from the Base. There is one nearby private well located on Maple Avenue, about halfway between Freeman's Bridge Road and Ronald Reagan Way. This private well is located hydraulically downgradient and could potentially be used for potable purposes. Surface soil receptors would be limited since the PRL is along the flightline in a restricted area. PFAS including PFOA, PFOS, and PFBS have been detected at multiple wells at varying concentrations at nearby PRLs.

Soil Worksheet

Installation Schenectady ANGB

Site ID: PRL 6 **AFFF Release Area #:** AFFF 6

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.021	0.126	0.2
PFOA	0.00026	0.126	0.0
PFBS	0.00029	1.9	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.2
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
2 > CHF	L (Low)		
CHF Value		CHF VALUE	L

Migratory Pathway Factor

Evident	Analytical data or observable evidence that contamination is present at a point of exposure	
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	M
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor

Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	
Limited	No potential for receptors to have access to contaminated soil	L
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	L
	Soil Category	**LOW**

Site Background Information			
Installation:	Schenectady ANGB	**Date:**	10/4/2021
Location (State):	New York	**Media Evaluated:**	Soil
Site Name and ID:	Former Hangar 3/Building 11 - PRL 7	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Bill Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: LOW			

Site Summary	
Brief Site Description:	Former Hangar 3/Building 11 was built in 1963 and the AFFF FSS was installed in 1992. The building was demolished in 2014 and the footprint of the building currently remains. According to the 2016 PA Report, an AFFF concentrate holding tank was located in the main portion of the hangar, which fed two monitors. Trench drains were present in the hangar. During typical conditions, trench drain discharges entered the sanitary sewer system through an OWS. During FSS activations, planned or accidental, AFFF discharges were automatically diverted to two 7,000-gal holding tanks at the northwest side of the building. Holding tank contents were manually pumped to the sanitary sewer system after approval by the Schenectady POTW. The trench drains could also be manually diverted to the holding tank for non-FSS spills if necessary.
Brief Description of Pathways:	The Schenectady Aquifer is the sole source of potable water to five municipalities and approximately 90 percent of Schenectady County residents. Pumping wells are approximately 50 ft. deep and located over four miles west of the Base. The aquifer recharge area, which is an area considered sensitive and significant to groundwater recharge, is located at the southern entrance of Schenectady ANGB. The Base is situated near, but not over, the eastern end of the Schenectady Aquifer. Regionally, groundwater flow tends to follow topographic controls flowing to the south and southeast towards the Mohawk River. Depth to groundwater is approximately 2.86 to 6.89 ft. bgs and flows generally to the southwest in the northern portion of the Base and the south-southeast towards the southern portion of the Base. The groundwater flow at the PRL is to the south/southwest. Surface waters from Schenectady ANGB are conveyed through a system of drainage pipes, culverts, and ditches before ultimately discharging into the Mohawk River. The PRL is covered by the building footprint, but at least one of the soil samples was collected in a grassy area.
Brief Description of Receptors:	The Base and a majority of the surrounding residents are all connected to the Town of Glenville public water system. Private water wells have been identified in the vicinity of the Base; the majority of these wells are either located hydraulically upgradient or cross-gradient from the Base. There is one nearby private well located on Maple Avenue, about halfway between Freeman's Bridge Road and Ronald Reagan Way. This private well is located hydraulically downgradient and could potentially be used for potable purposes. PFAS including PFOA, PFOS, and PFBS have been detected at multiple wells at the Base at varying concentrations. No groundwater samples were collected at this PRL as the wells were dry at the time of sampling. Surface soil receptors would include Base personnel and visitors under commercial/industrial conditions.

Soil Worksheet

Installation Schenectady ANGB

Site ID: PRL 7 **AFFF Release Area #:** AFFF 7

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.061	0.126	0.5
PFOA	0.0014	0.126	0.0
PFBS	0.00041	1.9	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**0.5**
CHF > 100	**H (High)**		
100 > CHF > 2	**M (Medium)**	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
2 > CHF	**L (Low)**		
CHF Value		**CHF VALUE**	**L**

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	M
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	M
Limited	No potential for receptors to have access to contaminated soil	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Soil Category	**LOW**

Site Background Information			
Installation:	Schenectady ANGB	**Date:**	10/4/2021
Location (State):	New York	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Hangar 7/Building 7 - PRL 8	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Bill Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	Hangar 7/Building 7 was built in 1999. The AFFF FSS was installed in 1999 and remained until 2015; the system is currently being retrofitted for use of high-expansion foam (HEF). According to Base personnel, the AFFF FSS was tested every two years. Hangar 7 construction drawings were unavailable, but according to Base personnel, no AFFF was stored in this building. Trench drains are located near the apron door and down the middle of the hangar. During typical conditions, trench drain discharges entered the sanitary sewer system through an OWS. During FSS activations, planned or accidental, AFFF discharges were automatically diverted to a 25,000-gal holding tank located adjacent to the OWS, south of Hangar 7 in a parking lot. Holding tank contents were manually pumped to the sanitary sewer system after approval by the Schenectady POTW. The trench drains could also be manually diverted to the holding tank for non-FSS spills if necessary.
Brief Description of Pathways:	The Schenectady Aquifer is the sole source of potable water to five municipalities and approximately 90 percent of Schenectady County residents. Pumping wells are approximately 50 ft. deep and located over four miles west of the Base. The aquifer recharge area, which is an area considered sensitive and significant to groundwater recharge, is located at the southern entrance of Schenectady ANGB. The Base is situated near, but not over, the eastern end of the Schenectady Aquifer. Regionally, groundwater flow tends to follow topographic controls flowing to the south and southeast towards the Mohawk River. Depth to groundwater is approximately 2.86 to 6.89 ft. bgs and flows generally to the southwest in the northern portion of the Base and the south-southeast towards the southern portion of the Base. The groundwater flow at the PRL is to the south/southwest. Surface waters from Schenectady ANGB are conveyed through a system of drainage pipes, culverts, and ditches before ultimately discharging into the Mohawk River. The PRL is covered by the building and pavement, but at least one of the soil samples was collected within a grassy area.
Brief Description of Receptors:	The Base and a majority of the surrounding residents are all connected to the Town of Glenville public water system. Private water wells have been identified in the vicinity of the Base; the majority of these wells are either located hydraulically upgradient or cross-gradient from the Base. There is one nearby private well located on Maple Avenue, about halfway between Freeman's Bridge Road and Ronald Reagan Way. This private well is located hydraulically downgradient and could potentially be used for potable purposes. Surface soil receptors would only include authorized personnel since it is along the flightline. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.

Groundwater Worksheet

Installation Schenectady ANGB

Site ID: PRL 8 **AFFF Release Area #:** AFFF 8

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	3.3	0.04	82.5
PFOA	0.097	0.04	2.4
PFBS	0.085	0.602	0.1

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	85.1
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
2 > CHF	L (Low)		
CHF Value		CHF VALUE	M

Migratory Pathway Factor

Evident	Analytical data or direct observation indicates that contamination in the groundwater has moved to a point of exposure (e.g., well)	
Potential	Contamination in the groundwater has moved beyond the source or insufficient information available to make a determination of Evident or Confined	M
Confined	Analytical data or direct observation indicates that the potential for contaminant migration from the source via groundwater is limited (possibly due to geological structures or physical controls)	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	H
Potential	Existing downgradient drinking water well beyond 4 miles with no contaminant detection(s) or no known drinking water wells downgradient and groundwater is currently or potentially usable for drinking water (i.e., EPA Class I or II groundwater) or other beneficial use (e.g., agricultural)	
Limited	No known water supply wells downgradient and groundwater is not considered potential drinking water source and is of limited beneficial use (Class III)	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	H
	Groundwater Category	**HIGH**

Soil Worksheet

Installation Schenectady ANGB

Site ID: PRL 8 **AFFF Release Area #:** AFFF 8

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.1	0.126	0.8
PFOA	0.0062	0.126	0.0
PFBS	0.00075	1.9	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.8
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
2 > CHF	L (Low)		
CHF Value		CHF VALUE	L

Migratory Pathway Factor

Evident	Analytical data or observable evidence that contamination is present at a point of exposure	
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	M
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor

Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	
Limited	No potential for receptors to have access to contaminated soil	L
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	L
	Soil Category	**LOW**

Site Background Information			
Installation:	Schenectady ANGB	**Date:**	10/4/2021
Location (State):	New York	**Media Evaluated:**	Soil
Site Name and ID:	Hangar 8/Building 8 - PRL 9	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Bill Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: LOW			

Site Summary	
Brief Site Description:	The construction of Hangar 8/Building 8 occurred in 1998. The AFFF FSS was installed in 1998 and remained until 2015; the system is currently being retrofitted for use of HEF. The AFFF FSS was tested every two years, according to Base personnel. A 500-gal AFFF storage tank was located in the boiler room of Hangar 8 (located in bermed area). According to the December 2015 PA site visit, trench drains were located near the apron door of the main hangar. During typical conditions, trench drain discharges entered the sanitary sewer system through an OWS. During FSS activations, planned or accidental, AFFF discharges were automatically diverted to a 25,000-gal holding tank located adjacent to the OWS, south of Hangar 7 (PRL 8) in a parking lot. Holding tank contents were manually pumped to the sanitary sewer system after approval by the Schenectady POTW. The trench drains could also be manually diverted to the holding tank for non-FSS spills if necessary.
Brief Description of Pathways:	The Schenectady Aquifer is the sole source of potable water to five municipalities and approximately 90 percent of Schenectady County residents. Pumping wells are approximately 50 ft. deep and located over four miles west of the Base. The aquifer recharge area, which is an area considered sensitive and significant to groundwater recharge, is located at the southern entrance of Schenectady ANGB. The Base is situated near, but not over, the eastern end of the Schenectady Aquifer. Regionally, groundwater flow tends to follow topographic controls flowing to the south and southeast towards the Mohawk River. Depth to groundwater is approximately 2.86 to 6.89 ft. bgs and flows generally to the southwest in the northern portion of the Base and the south-southeast towards the southern portion of the Base. The groundwater flow at the PRL is to the south/southwest. Surface waters from Schenectady ANGB are conveyed through a system of drainage pipes, culverts, and ditches before ultimately discharging into the Mohawk River. The PRL is covered by the building and pavement.
Brief Description of Receptors:	The Base and a majority of the surrounding residents are all connected to the Town of Glenville public water system. Private water wells have been identified in the vicinity of the Base; the majority of these wells are either located hydraulically upgradient or cross-gradient from the Base. There is one nearby private well located on Maple Avenue, about halfway between Freeman's Bridge Road and Ronald Reagan Way. This private well is located hydraulically downgradient and could potentially be used for potable purposes. Surface soil receptors would only include authorized personnel since it is along the flightline. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-Base wells at varying concentrations.

Soil Worksheet

Installation Schenectady ANGB

Site ID: PRL 9 **AFFF Release Area #:** AFFF 9

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.014	0.126	0.1
PFOA	0.00055	0.126	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.1
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value		CHF VALUE	L

$$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$$

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	L
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	L

Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	
Limited	No potential for receptors to have access to contaminated soil	L
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	L
	Soil Category	**LOW**

Site Background Information			
Installation:	Schenectady ANGB	**Date:**	10/4/2021
Location (State):	New York	**Media Evaluated:**	Soil
Site Name and ID:	Building 3 (Base Supply Warehouse) - PRL 10	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Bill Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: LOW			

Site Summary	
Brief Site Description:	Building 3 (Base Supply Warehouse) was built in 1948 and was a former bulk AFFF storage area until the Hazmat Pharmacy (PRL 13) was built. According to the 2016 PA Report, AFFF 55-gal drums and 5-gal pails were stored with secondary containment. There were no nearby floor drains or overhead doors to facilitate an outside release of AFFF. However, AFFF was occasionally temporarily stored outside for a few days in the cage on the west side of Building 3 until it could be moved inside. The caged area does not have secondary containment. There are no records or Base personnel knowledge of any AFFF spills within or around Building 3.
Brief Description of Pathways:	The Schenectady Aquifer is the sole source of potable water to five municipalities and approximately 90 percent of Schenectady County residents. Pumping wells are approximately 50 ft. deep and located over four miles west of the Base. The aquifer recharge area, which is an area considered sensitive and significant to groundwater recharge, is located at the southern entrance of Schenectady ANGB. The Base is situated near, but not over, the eastern end of the Schenectady Aquifer. Regionally, groundwater flow tends to follow topographic controls flowing to the south and southeast towards the Mohawk River. Depth to groundwater is approximately 2.86 to 6.89 ft. bgs and flows generally to the southwest in the northern portion of the Base and the south-southeast towards the southern portion of the Base. The groundwater flow at the PRL is to the south/southwest. Surface waters from Schenectady ANGB are conveyed through a system of drainage pipes, culverts, and ditches before ultimately discharging into the Mohawk River. The PRL is covered by the building, but grassy areas surrounding the building are where the surface soil samples were collected.
Brief Description of Receptors:	The Base and a majority of the surrounding residents are all connected to the Town of Glenville public water system. Private water wells have been identified in the vicinity of the Base; the majority of these wells are either located hydraulically upgradient or cross-gradient from the Base. There is one nearby private well located on Maple Avenue, about halfway between Freeman's Bridge Road and Ronald Reagan Way. This private well is located hydraulically downgradient and could potentially be used for potable purposes. Surface soil receptors would include Base personnel and visitors under commercial/industrial conditions. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-Base wells at varying concentrations though no groundwater samples were collected at this PRL.

Soil Worksheet

Installation Schenectady ANGB

Site ID: PRL 10 **AFFF Release Area #:** AFFF 10

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.03	0.126	0.2
PFOA	0.0076	0.126	0.1
PFBS	0.00052	1.9	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.3
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
2 > CHF	L (Low)		
CHF Value		CHF VALUE	L

Migratory Pathway Factor

Evident	Analytical data or observable evidence that contamination is present at a point of exposure	
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	M
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor

Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	M
Limited	No potential for receptors to have access to contaminated soil	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Soil Category	**LOW**

Site Background Information			
Installation:	Schenectady ANGB	**Date:**	10/4/2021
Location (State):	New York	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Building 35 (Vehicle Maintenance) - PRL 12	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Bill Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: MEDIUM			

Site Summary	
Brief Site Description:	Building 35 (Vehicle Maintenance) was built in 1991. FD vehicles have been stationed for repair at Building 35 on occasion. If necessary, AFFF is transferred from the vehicles during repair to a storage tank inside the building, which was observed during the December 2015 PA site visit. Discharges inside the building were collected in a holding tank and thereafter routed to the sanitary sewer via an OWS. In warmer weather, FD vehicles have been stored outside on the ready line. There was one known AFFF release (unknown quantity) from a FD vehicle on the concrete west of Building 35. AFFF entered the nearby catch basin and was contained at Outfall 002 (PRL 20) via valve control. Thereafter, it was pumped to holding tanks and manually pumped to the sanitary sewer system following approval by the Schenectady POTW.
Brief Description of Pathways:	The Schenectady Aquifer is the sole source of potable water to five municipalities and approximately 90 percent of Schenectady County residents. Pumping wells are approximately 50 ft. deep and located over four miles west of the Base. The aquifer recharge area, which is an area considered sensitive and significant to groundwater recharge, is located at the southern entrance of Schenectady ANGB. The Base is situated near, but not over, the eastern end of the Schenectady Aquifer. Regionally, groundwater flow tends to follow topographic controls flowing to the south and southeast towards the Mohawk River. Depth to groundwater is approximately 2.86 to 6.89 ft. bgs and flows generally to the southwest in the northern portion of the Base and the south-southeast towards the southern portion of the Base. The groundwater flow at the PRL is to the south/southwest. Surface waters from Schenectady ANGB are conveyed through a system of drainage pipes, culverts, and ditches before ultimately discharging into the Mohawk River. The PRL is covered by the building and surrounded by pavement.
Brief Description of Receptors:	The Base and a majority of the surrounding residents are all connected to the Town of Glenville public water system. Private water wells have been identified in the vicinity of the Base; the majority of these wells are either located hydraulically upgradient or cross-gradient from the Base. There is one nearby private well located on Maple Avenue, about halfway between Freeman's Bridge Road and Ronald Reagan Way. This private well is located hydraulically downgradient and could potentially be used for potable purposes. Surface soil receptors would include Base personnel and visitors under commercial/industrial conditions. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.

Groundwater Worksheet

Installation Schenectady ANGB

Site ID: PRL 12 **AFFF Release Area #:** AFFF 12

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.032	0.04	0.8
PFBS	0.034	0.602	0.1

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.9
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		

$$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$$

CHF Value	CHF VALUE	L

Migratory Pathway Factor

Evident	Analytical data or direct observation indicates that contamination in the groundwater has moved to a point of exposure (e.g., well)	
Potential	Contamination in the groundwater has moved beyond the source or insufficient information available to make a determination of Evident or Confined	M
Confined	Analytical data or direct observation indicates that the potential for contaminant migration from the source via groundwater is limited (possibly due to geological structures or physical controls)	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	H
Potential	Existing downgradient drinking water well beyond 4 miles with no contaminant detection(s) or no known drinking water wells downgradient and groundwater is currently or potentially usable for drinking water (i.e., EPA Class I or II groundwater) or other beneficial use (e.g., agricultural)	
Limited	No known water supply wells downgradient and groundwater is not considered potential drinking water source and is of limited beneficial use (Class III)	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	H
	Groundwater Category	**MEDIUM**

Soil Worksheet

Installation Schenectady ANGB

Site ID: PRL 12 **AFFF Release Area #:** AFFF 12

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.0058	0.126	0.0
PFOA	0.0002	0.126	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**0.0**
CHF > 100	**H (High)**		
100 > CHF > 2	**M (Medium)**		
2 > CHF	**L (Low)**		
CHF Value		**CHF VALUE**	**L**

$$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$$

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	L
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	L

Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	
Limited	No potential for receptors to have access to contaminated soil	L
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	L
	Soil Category	**LOW**

Site Background Information			
Installation:	Schenectady ANGB	**Date:**	10/4/2021
Location (State):	New York	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	IRP Site 3 (Drum Burial Area) - PRL 15	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Bill Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	IRP Site 3 (Drum Burial Area) is located near the former sewage treatment plant and sand filter. This area was identified when buried drums were discovered during construction activities. IRP Site 3 covers an area of approximately 0.68 acres and is bounded to the south by a chain link fence, to the west by a chain link fence and extending approximately 250 ft. to the northeast from the chain link fence, along the drainage ditch which bounds the north of IRP Site 3. Five interim removal or remedial actions were completed to excavate contaminated soils. An additional soil excavation was completed to remove soil contaminated with xylene along the drainage ditch. Groundwater contamination was not identified at IRP Site 3. IRP Site 3 received No Further Action (NFA) concurrence in 2015 from New York State Department of Environmental Conservation (NYSDEC). The IRP investigation did not include sampling for the presence of PFAS. There are no records or Base personnel knowledge of any AFFF releases; however, Base personnel stated AFFF could have been disposed of here.
Brief Description of Pathways:	The Schenectady Aquifer is the sole source of potable water to five municipalities and approximately 90 percent of Schenectady County residents. Pumping wells are approximately 50 ft. deep and located over four miles west of the Base. The aquifer recharge area, which is an area considered sensitive and significant to groundwater recharge, is located at the southern entrance of Schenectady ANGB. The Base is situated near, but not over, the eastern end of the Schenectady Aquifer. Regionally, groundwater flow tends to follow topographic controls flowing to the south and southeast towards the Mohawk River. Depth to groundwater is approximately 2.86 to 6.89 ft. bgs and flows generally to the southwest in the northern portion of the Base and the south-southeast towards the southern portion of the Base. The groundwater flow at the PRL is to the south/southwest. Surface waters from Schenectady ANGB are conveyed through a system of drainage pipes, culverts, and ditches before ultimately discharging into the Mohawk River. The PRL is covered by vegetation and is near a drainage ditch in the southern portion of the Base.
Brief Description of Receptors:	The Base and a majority of the surrounding residents are all connected to the Town of Glenville public water system. Private water wells have been identified in the vicinity of the Base; the majority of these wells are either located hydraulically upgradient or cross-gradient from the Base. There is one nearby private well located on Maple Avenue, about halfway between Freeman's Bridge Road and Ronald Reagan Way. This private well is located hydraulically downgradient and could potentially be used for potable purposes. Surface soil receptors would only include authorized personnel since it appears the PRL is within the fenced area near the flightline. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.

Groundwater Worksheet

Installation Schenectady ANGB

Site ID: PRL 15 **AFFF Release Area #:** AFFF 15

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.97	0.04	24.3
PFOA	0.1	0.04	2.5
PFBS	0.056	0.602	0.1

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	26.8
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		

$$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$$

CHF Value	CHF VALUE	M

Migratory Pathway Factor

Evident	Analytical data or direct observation indicates that contamination in the groundwater has moved to a point of exposure (e.g., well)	
Potential	Contamination in the groundwater has moved beyond the source or insufficient information available to make a determination of Evident or Confined	M
Confined	Analytical data or direct observation indicates that the potential for contaminant migration from the source via groundwater is limited (possibly due to geological structures or physical controls)	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	H
Potential	Existing downgradient drinking water well beyond 4 miles with no contaminant detection(s) or no known drinking water wells downgradient and groundwater is currently or potentially usable for drinking water (i.e., EPA Class I or II groundwater) or other beneficial use (e.g., agricultural)	
Limited	No known water supply wells downgradient and groundwater is not considered potential drinking water source and is of limited beneficial use (Class III)	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	H
	Groundwater Category	**HIGH**

Soil Worksheet

Installation Schenectady ANGB

Site ID: PRL 15 **AFFF Release Area #:** AFFF 15

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.00057	0.126	0.0
CHF Scale	**CHF Value**	**Contamination Hazard Factor (CHF)**	**0.0**
CHF > 100	**H (High)**	$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$	
100 > CHF > 2	**M (Medium)**		
2 > CHF	**L (Low)**		
CHF Value		**CHF VALUE**	**L**

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	L
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	L

Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	
Limited	No potential for receptors to have access to contaminated soil	L
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	L
	Soil Category	**LOW**

Site Background Information			
Installation:	Schenectady ANGB	**Date:**	10/4/2021
Location (State):	New York	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Former Sewage Treatment Plant - PRL 16	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Bill Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	The Former Sewage Treatment Plant operated from approximately 1972/73 to 2000 and consisted of a lagoon system. Any AFFF discharged to the Former Sewage Treatment Plant would have been from an accidental discharge to sanitary drains within Base buildings. The former Sewage Treatment Plant Supervisor recalled two AFFF releases, although the specifics of each release are unknown. The lagoons discharged to the stream (unnamed tributary of the Mohawk River) on the south side of the Base, and ultimately the drainage ditch. According to the 2016 PA Report, when Sewage Treatment Plant operations were ceased in 2000, the lagoons were drained and a contractor removed the contents. The lagoon liner was cut, folded over, and the area was backfilled. The sand and stone from the sand filter beds were reportedly removed and the area backfilled. Base personnel indicated that AFFF was likely disposed of through the Former Sewage Treatment Plant; however, no records were identified during the PA.
Brief Description of Pathways:	The Schenectady Aquifer is the sole source of potable water to five municipalities and approximately 90 percent of Schenectady County residents. Pumping wells are approximately 50 ft. deep and located over four miles west of the Base. The aquifer recharge area, which is an area considered sensitive and significant to groundwater recharge, is located at the southern entrance of Schenectady ANGB. The Base is situated near, but not over, the eastern end of the Schenectady Aquifer. Regionally, groundwater flow tends to follow topographic controls flowing to the south and southeast towards the Mohawk River. Depth to groundwater is approximately 2.86 to 6.89 ft. bgs and flows generally to the southwest in the northern portion of the Base and the south-southeast towards the southern portion of the Base. The groundwater flow at the PRL is to the south/southwest. Surface waters from Schenectady ANGB are conveyed through a system of drainage pipes, culverts, and ditches before ultimately discharging into the Mohawk River. The PRL appears to be covered by grass and other vegetation.
Brief Description of Receptors:	The Base and a majority of the surrounding residents are all connected to the Town of Glenville public water system. Private water wells have been identified in the vicinity of the Base; the majority of these wells are either located hydraulically upgradient or cross-gradient from the Base. There is one nearby private well located on Maple Avenue, about halfway between Freeman's Bridge Road and Ronald Reagan Way. This private well is located hydraulically downgradient and could potentially be used for potable purposes. Surface soil receptors would include Base personnel and visitors under commercial/industrial conditions. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.

Groundwater Worksheet

Installation Schenectady ANGB

Site ID: PRL 16 **AFFF Release Area #:** AFFF 16

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.79	0.04	19.8
PFOA	0.095	0.04	2.4
PFBS	0.09	0.602	0.1

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	22.3
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		

$$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$$

CHF Value	CHF VALUE	M

Migratory Pathway Factor

Evident	Analytical data or direct observation indicates that contamination in the groundwater has moved to a point of exposure (e.g., well)	
Potential	Contamination in the groundwater has moved beyond the source or insufficient information available to make a determination of Evident or Confined	M
Confined	Analytical data or direct observation indicates that the potential for contaminant migration from the source via groundwater is limited (possibly due to geological structures or physical controls)	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	H
Potential	Existing downgradient drinking water well beyond 4 miles with no contaminant detection(s) or no known drinking water wells downgradient and groundwater is currently or potentially usable for drinking water (i.e., EPA Class I or II groundwater) or other beneficial use (e.g., agricultural)	
Limited	No known water supply wells downgradient and groundwater is not considered potential drinking water source and is of limited beneficial use (Class III)	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	H
	Groundwater Category	**HIGH**

Soil Worksheet

Installation Schenectady ANGB

Site ID: PRL 16 **AFFF Release Area #:** AFFF 16

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.1	0.126	0.8
PFOA	0.0027	0.126	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.8
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value		CHF VALUE	L

$$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$$

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	M
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	M
Limited	No potential for receptors to have access to contaminated soil	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M
	Soil Category	**LOW**

Site Background Information			
Installation:	Schenectady ANGB	**Date:**	10/4/2021
Location (State):	New York	**Media Evaluated:**	Groundwater, Soil
Site Name and ID:	Apron - PRL 17	**Phase of Execution (e.g., RI, Record of Decision (ROD)):**	N/A
RPM's Name:	Bill Myer	**Agreement Status (e.g., Federal Facility Agreement date signed):**	N/A
OVERALL SITE CATEGORY: HIGH			

Site Summary	
Brief Site Description:	The Apron is used for parking, fueling, deicing, and minor maintenance of aircraft. The Apron is surfaced with asphalt and/or concrete fringe for vehicle traffic. The Apron infrastructure includes a concrete apron surface and storm water controls (storm water inlets and drainage piping). A portion of the Apron is designated as an aircraft deicing area and is equipped with a 4,000-gal storage tank and associated diversion valves/piping to capture and contain much of the runoff that is generated during aircraft deicing activities. Contents from the 4,000-gal holding tank are evaluated and disposed of off-site if necessary, or directed to Outfall 003. According to the 2016 PA Report, storm water drainage from the apron is discharged through Outfalls 003, 004, and 005 into an unnamed creek that flows in an easterly direction south of the Apron. Storm water runoff from the designated aircraft parking spots for deicing is directed through Outfall 003. There are no records or Base personnel knowledge of any AFFF spills on the apron.
Brief Description of Pathways:	The Schenectady Aquifer is the sole source of potable water to five municipalities and approximately 90 percent of Schenectady County residents. Pumping wells are approximately 50 ft. deep and located over four miles west of the Base. The aquifer recharge area, which is an area considered sensitive and significant to groundwater recharge, is located at the southern entrance of Schenectady ANGB. The Base is situated near, but not over, the eastern end of the Schenectady Aquifer. Regionally, groundwater flow tends to follow topographic controls flowing to the south and southeast towards the Mohawk River. Depth to groundwater is approximately 2.86 to 6.89 ft. bgs and flows generally to the southwest in the northern portion of the Base and the south-southeast towards the southern portion of the Base. The groundwater flow at the PRL is to the south/southwest. Surface waters from Schenectady ANGB are conveyed through a system of drainage pipes, culverts, and ditches before ultimately discharging into the Mohawk River. The PRL is covered by pavement, but grassy areas surrounding the pavement are where the surface soil samples were collected.
Brief Description of Receptors:	The Base and a majority of the surrounding residents are all connected to the Town of Glenville public water system. Private water wells have been identified in the vicinity of the Base; the majority of these wells are either located hydraulically upgradient or cross-gradient from the Base. There is one nearby private well located on Maple Avenue, about halfway between Freeman's Bridge Road and Ronald Reagan Way. This private well is located hydraulically downgradient and could potentially be used for potable purposes. Surface soil receptors would only include authorized personnel since the PRL is along the flightline. PFAS including PFOA, PFOS, and PFBS have been detected at multiple on-site wells at varying concentrations.

Groundwater Worksheet

Installation Schenectady ANGB

Site ID: PRL 17 **AFFF Release Area #:** AFFF 17

Contaminant	Maximum Concentration (ug/L)	Comparison Value (ug/L)	Ratios
PFOS	0.074	0.04	1.9
PFOA	0.095	0.04	2.4
PFBS	0.014	0.602	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	4.2
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		

$$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$$

CHF Value	CHF VALUE	M

Migratory Pathway Factor

Evident	Analytical data or direct observation indicates that contamination in the groundwater has moved to a point of exposure (e.g., well)	
Potential	Contamination in the groundwater has moved beyond the source or insufficient information available to make a determination of Evident or Confined	M
Confined	Analytical data or direct observation indicates that the potential for contaminant migration from the source via groundwater is limited (possibly due to geological structures or physical controls)	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor

Identified	Impacted drinking water well with detected contaminants or existing downgradient water supply well within 4 miles and groundwater is current source of drinking water (EPA Class I or IIA groundwater)	H
Potential	Existing downgradient drinking water well beyond 4 miles with no contaminant detection(s) or no known drinking water wells downgradient and groundwater is currently or potentially usable for drinking water (i.e., EPA Class I or II groundwater) or other beneficial use (e.g., agricultural)	
Limited	No known water supply wells downgradient and groundwater is not considered potential drinking water source and is of limited beneficial use (Class III)	
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	H
	Groundwater Category	**HIGH**

Soil Worksheet

Installation Schenectady ANGB

Site ID: PRL 17 **AFFF Release Area #:** AFFF 17

Contaminant	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
PFOS	0.014	0.126	0.1
PFOA	0.0015	0.126	0.0

CHF Scale	CHF Value	Contamination Hazard Factor (CHF)	0.1
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		
CHF Value		CHF VALUE	L

$$CHF = \sum \frac{\text{[Maximum Concentration of Contaminant]}}{\text{[Comparison Value for Contaminant]}}$$

Migratory Pathway Factor		
Evident	Analytical data or observable evidence that contamination is present at a point of exposure	
Potential	Contamination has moved beyond the source, could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined	M
Confined	Low possibility for contamination to be present at or migrate to a point of exposure	
Migratory Pathway Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	M

Receptor Factor		
Identified	Receptors identified that have access to contaminated soil	
Potential	Potential for receptors to have access to contaminated soil	
Limited	No potential for receptors to have access to contaminated soil	L
Receptor Factor	DIRECTIONS: Record the single highest value from above in the box to the right (maximum value = H).	L
	Soil Category	**LOW**