



Welcome to the RAB Meeting!

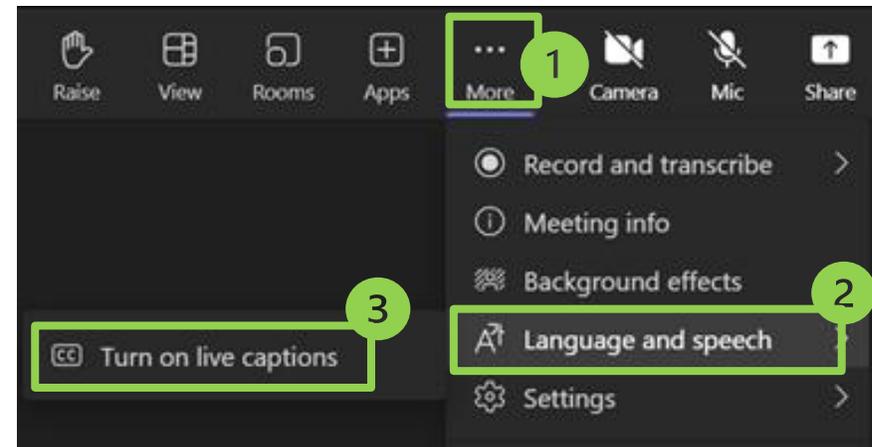
Thank you for joining the

Restoration Advisory Board (RAB) Meeting for Former Naval Air Station Joint Reserve Base (NASJRB) Willow Grove and Biddle Air National Guard Base

The meeting will start at 1:00 p.m.

For captions:

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- Select 'Language and Speech'
- Click 'Turn on live captions'

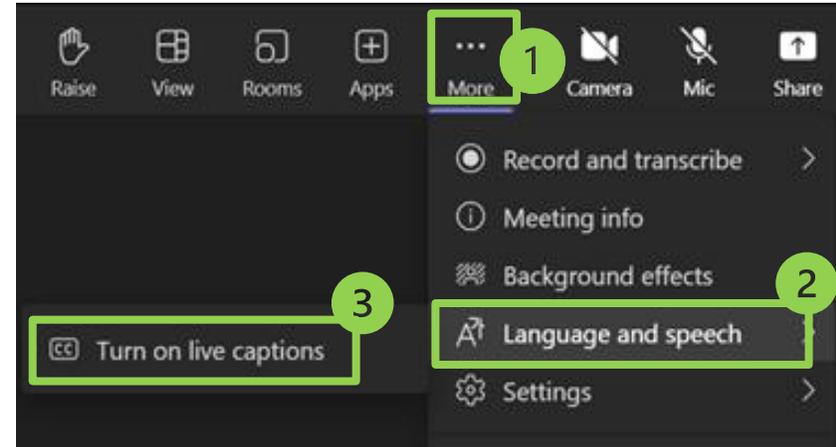




Teams Tools

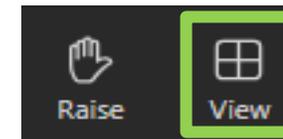
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• Screen Layout

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- Choose the preferred view from available choices. Options include Full Screen, Gallery View, and Focus on Content





NASJRB Willow Grove Restoration Advisory Board Meeting January 15, 2026

Virtual Meeting Information

- The virtual meeting will show the presentations.
- The presenters and in-person attendees will be audio-only.
- The meeting is not being recorded; Minutes will be prepared. Webinar and in-person sign-in names will be used for the minutes.
- Public notices were published on December 31, 2025, and January 8, 2026, posted on the Navy website, and provided to the mailing list.

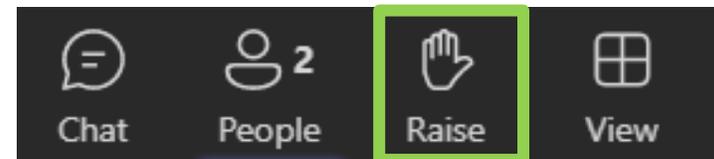
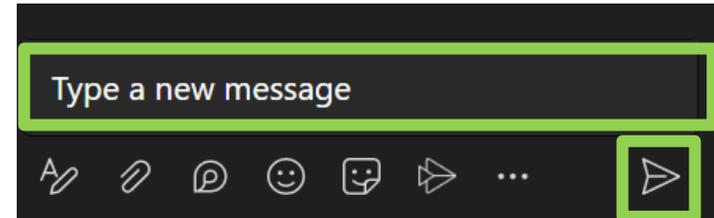
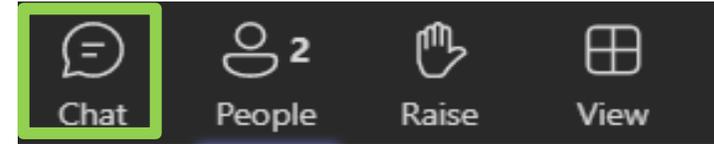
Outline / Agenda

- Welcome and Announcements
- Navy Restoration/Drinking Water Update
- Phase II Remedial Investigation Progress Update
 - RAB Member or Community Comments / Questions
- Air National Guard Environmental Restoration Presentation
 - RAB Member or Community Comments / Questions
- Regulator Comments
 - RAB Member or Community Comments / Questions
- Meeting Conclusion

Virtual Attendee Questions

1) To ask a question, select 'Chat'

Type question in the text box,
and then select Send.



2) Raise your hand to be recognized
and have your microphone unmuted.
Select Raise your hand icon.

3) Phone-only attendees can dial *5 to raise their hand and have the
opportunity to ask a question. Once recognized, dial *6 to unmute the
microphone.

RAB Background Information

- A Restoration Advisory Board (RAB) is a stakeholder group that meets on a regular basis to discuss environmental restoration at a specific property that is either currently, or was formerly, owned by Department of Defense, but where Department of Defense oversees the environmental restoration process.
- RABs enable people interested in the environmental cleanup at a specific installation to exchange information with representatives of regulatory agencies, the installation, and the community. RABs may only address issues associated with environmental restoration activities.
- Mr. Bill Walker, Horsham Township Manager, is the RAB community co-chair.
- Applications for new or continuing RAB members are now being accepted. Hardcopies are available on the back table, or you may apply via website here: [WG RAB MEMBER APPLICATION.PDF](#). Member selections will be made ahead of the next RAB meeting.
- Health-related issues are not addressed by the RAB. Health agency professional contact information will be provided after the Navy and Air National Guard Environmental Restoration presentations.

Source: 10 USC 2705 and DoD Restoration Advisory Board Rule Handbook
<https://denix.osd.mil/rab/home/unassigned/rab-rule-handbook/>

Current RAB Members

RAB Co-Chairs:

- Mr. Jonathan Harris (Navy Co-Chair)
- Colonel Daniel Molina (Air National Guard Co-Chair)
- Mr. Bill Gildea-Walker (Community Co-Chair)

RAB Community Members:

- David Craig
- Hope Grosse
- Alan McPeak
- Alex Meyers
- Rick Newsome
- Mike Pickel
- Danette Richards
- Samantha Slaff
- Joanne Stanton
- Mike Shinton
- Tom Ames

Future Planned RAB Meetings

Future RAB Meeting Target Dates:

- Thursday, April 16, 2026
- Thursday, July 16, 2026

Private Drinking Water Well Sampling for PFAS

- January 14, 2023: PA maximum contaminant levels (MCLs) for PFOA (14 ppt) and PFOS (18 ppt) were published.
- April 10, 2024: EPA established final MCLs for several PFAS in drinking water.
 - MCLs for PFOA and PFOS: 4 ppt
 - MCLs for PFHxS, PFNA, HFPO-DA: 10 ppt
 - Mixtures of two or more of PFHxS, PFNA, HFPO-DA, and PFBS: Hazard Index MCL of 1
- Department of Defense policy released in September 2024.
 - Prioritizes action to address private drinking water wells with PFAS levels at or above 3x MCL
 - Directed addressing drinking water down to the MCLs or background per remedial investigation findings

Private Drinking Water Well Sampling for PFAS (Cont.)

- Fall 2023: Awarded modification to the Cooperative Agreement with Horsham Water and Sewer Authority (HWSA) to address 100 additional properties. Began issuing offer letters for municipal water connections in HWSA service area for locations above PA MCLs.
 - The Navy has provided over \$22 million to HWSA to address PFAS via Cooperative Agreement:
 - Filtration systems at five HWSA municipal wells
 - Over 100 public water connections for private wells
- Fall 2025: HWSA coordinating with property owners for ongoing physical connection to the public water system.

Private Drinking Water Well Sampling for PFAS (Cont.)

If you have a private drinking water well in the Navy's sampling area, please reach out to Resolution Consultants, a U.S. Navy contractor to schedule an appointment.

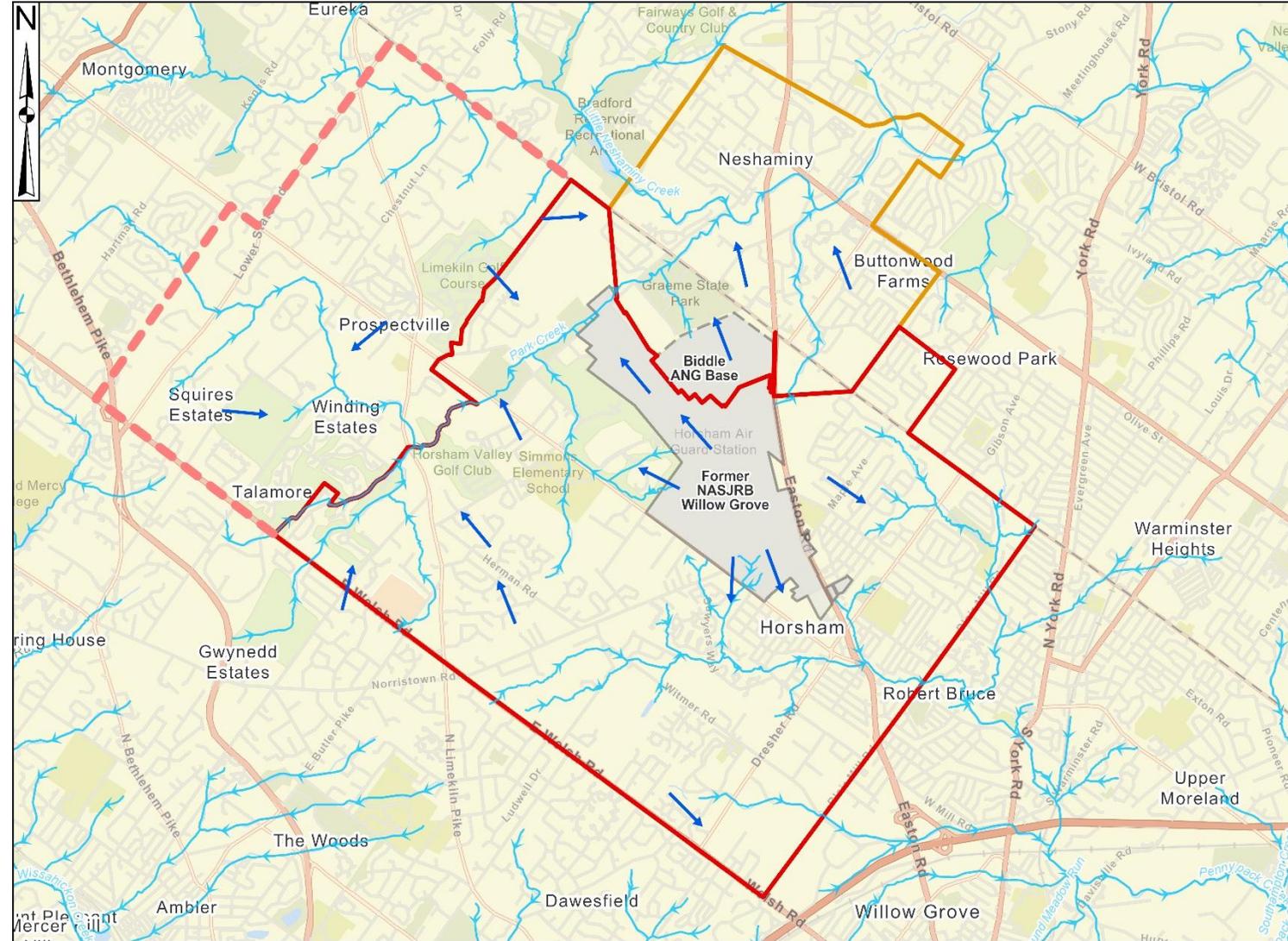
Points of Contact:

Bonnie Mace

Resolution Consultants Deputy CTO Manager

Email: bonnie.mace@aecom.com

Phone: (800) 605-7599



- > 600 wells sampled to date
- > 450 wells have been connected to municipal water under prior actions
- 52 wells to be connected to municipal water due to exceedance of 3x EPA MCLs
- 19 wells with PFAS between the EPA MCL and 3x the EPA MCL

Action Summary Since Previous RAB Meeting

- Submitted the Following Documents to the Navy:
 - Internal Draft Northern Ponding Area UAS Thermal Imagery Tech Memo
 - Internal Draft Water Tower and Barn Area Sampling and Analysis Plan (SAP)

Action Summary Since Previous RAB Meeting

- Submitted the Following Sampling and Analysis Plans (SAPs) to Regulators:
 - Draft Final Site 12 Supplemental Groundwater SAP
 - Draft Final PFAS On-Base Groundwater SAP
 - Final Site 5 In-Situ Bioremediation Long Term Monitoring SAP
 - Final Sites 3 and 12 Long Term Monitoring SAP
 - Final Northern Ponding Area Investigation SAP
 - Final Private Well SAP
- Updated the Surface Water and Sediment SAP for regulatory review (*currently on hold pending DQO Meeting*).

Action Summary Since Previous RAB Meeting

- Submitted the Following Documents to Regulators:
 - Third Five Year Review
 - Draft 2025 Site Management Plan
 - Draft Soil Pore Water Sampling Results Technical Memorandum
 - Final 2024 Site Management Plan
 - Final 2024 Annual Drinking Water Report
 - Final Community Environmental Response Facilitation Act Report
 - Final Surface Water and Sediment Sampling Annual Report
 - Final Finding of Suitability to Transfer 1 Maple Avenue Technical Addendum
 - Final Surface Water and Sediment September 2024 Technical Memorandum
 - Final Interim Findings Memo for Site 5 and Building 1177 Discrete Groundwater Sampling for PFAS Addendum
 - Final Groundwater Extraction and Treatment System (GWETS) Action Memorandum, Design, and Construction Quality Analysis Plan

Action Summary Since Previous RAB Meeting

- Prepared the Following Documents:
 - Phase II On-Base Groundwater PFAS Remedial Investigation SAP
 - Internal Draft GWETS Pumping Test Work Plan
 - Site 12 Technical Memorandum
 - GWETS Discharge Monitoring Reports
 - FOST 2 Report
 - Site 5 Year 9 (2024) Annual Report

Action Summary Since Previous RAB Meeting

- Continued interim actions for private wells off-Base.
- Conducted groundwater sampling at off-Base Horsham Water and Sewer Authority observation wells (Westbay Demonstration to sample at multiple depths).
- Conducted groundwater sampling at NASJRB Willow Grove Site 5 – Former Fire Training Area (OU 2).

Actions/Events Anticipated to be Completed by Next RAB

- DQO meeting to discuss surface water program objectives
- Perform groundwater sampling at the Northern Ponding Area
- Perform quarterly Site 5 bioremediation groundwater monitoring
- Perform Site 3 and 12 supplemental groundwater sampling in Spring 2026

Documents Anticipated to be Submitted by Next RAB

- Submit Final Basewide Surface Water and Sediment SAP
- Submit Draft Water Tower and Barn Area SAP
- Submit Internal Draft Phase II Remedial Investigation SAP
- Submit Internal Draft Risk Assessment Work Plan
- Submit Internal Draft Northern Ponding Area Wetland Survey Report
- Submit Internal Draft Background Study Work Plan

Property Transfer Update

- Approximately 850 acres of Navy-owned surplus property remain at former NASJRB Willow Grove
- Surplus property will be transferred to Horsham Land Redevelopment Authority (HLRA) through an Economic Development Conveyance (EDC)
- An EDC Memorandum of Agreement (MOA) memorializing the planned transfer from Navy to HLRA of 118 acres (of the total 850 acres) was executed and recorded in August 2025
- Initial transfer area consists of two distinct parcels outside the former installation fence line; Maple Avenue, Easton Road, and Horsham Road rights-of-way; and an area within the fence line identified as the south of the runway area



Property Transfer Parcels

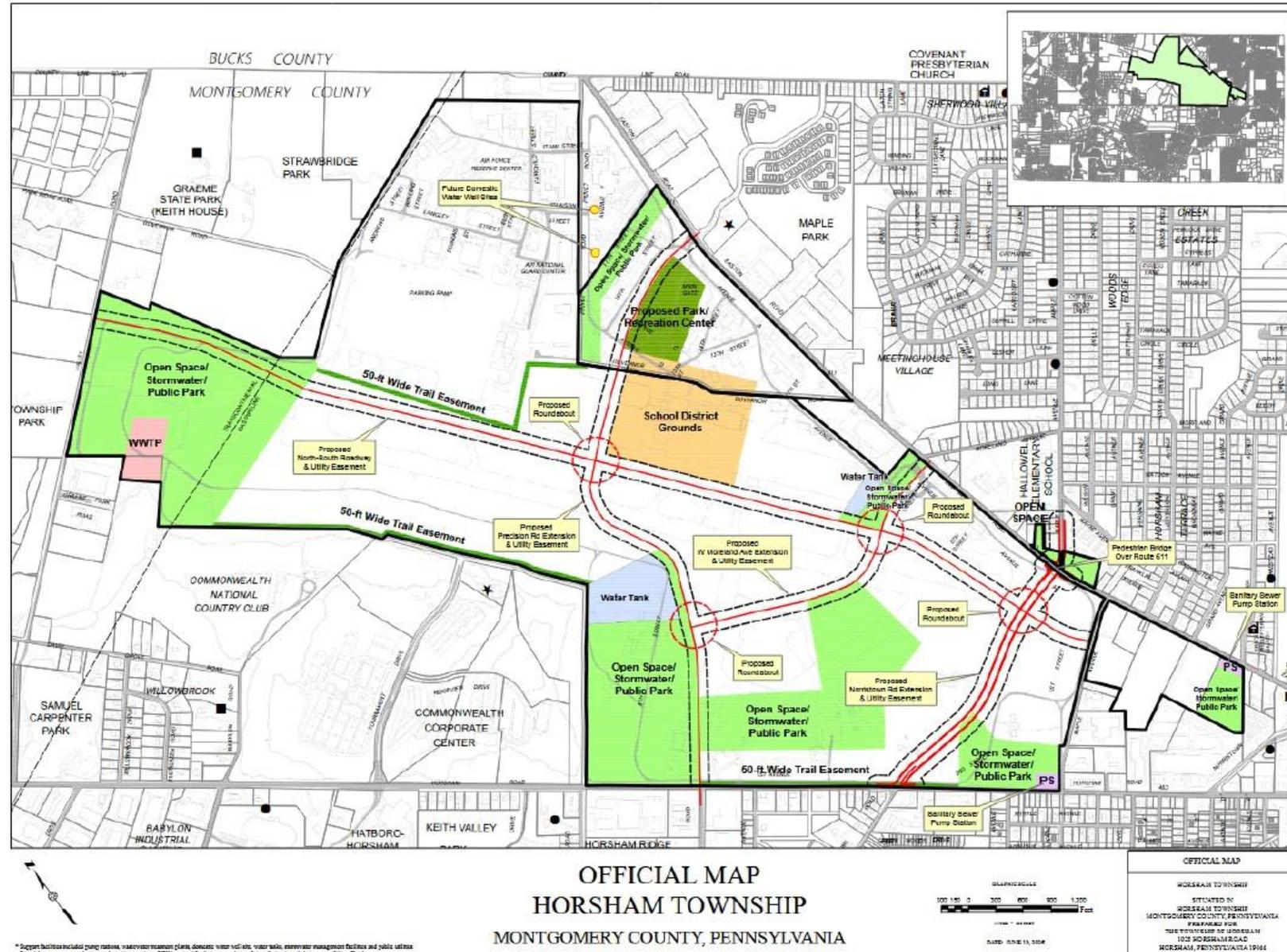


Early Transfer

- Early transfer allows property transfer prior to completing environmental cleanup (i.e. CERCLA process) and requires the deferral of the CERCLA covenant until cleanup is complete. A cleanup schedule is also required including final remedy.
- Finding of Suitability for Early Transfer (FOSET) will be provided to the community prior to transfer including a 30-day public comment period. The FOSET will describe environmental conditions and any proposed land use restrictions.
- Land use restrictions to ensure protection of human health and the environment must in place at the time of property transfer and maintained during active redevelopment.
- Revised deed with CERCLA covenant will be recorded once CERCLA cleanup is complete and will include final use restrictions.

Proposed Roadways

- Reciprocal Easement Agreement (REA) was signed by Navy and HLRA on August 28, 2025
- REA allows HLRA to construct roadways through the former installation prior to property transfer
- Navy, EPA, and PADEP will review HLRA's road construction plans, including management of environmental waste, prior to initiation of roadway construction





PFAS REMEDIAL INVESTIGATION UPDATE

**Former Naval Air Station Joint Reserve Base Willow Grove
Horsham Township, Pennsylvania**

PFAS Remedial Investigation

Presentation Overview

- An update on PFAS Remedial Investigation (RI) activities at former NASJRB Willow Grove:
 - A brief introduction to PFAS and RIs.
 - Phase 1 RI overview and data gaps.
 - Phase 2 RI focused investigations.
 - Closing and questions.



PFAS Remedial Investigation

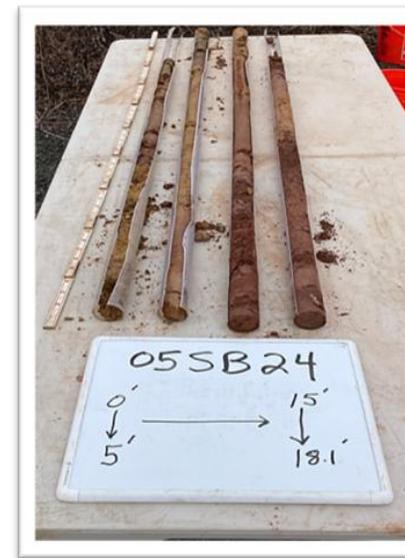
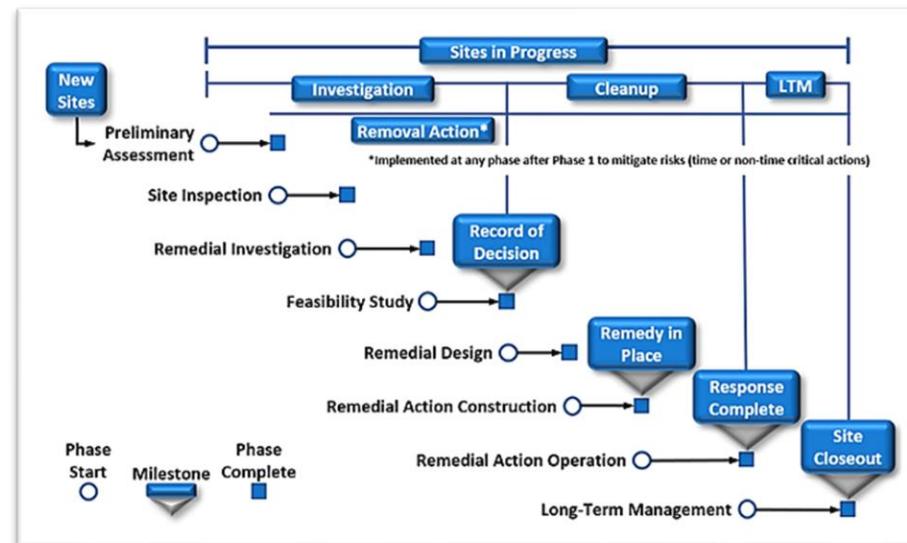
Per- and Polyfluoroalkyl Substances (PFAS):

- PFAS are a large group of chemicals known for water- and grease-resistant properties used since the 1940s in many commercial products. Resistant to degradation and heat, they were also used in AFFF fire fighting foams.
- 2014 – PFAS including PFOA and PFOS were detected in public water wells near the Base under the EPA Unregulated Contaminant Monitoring Rule.
- 2014 – EPA established provisional health advisories of 400 parts per trillion (ppt) for PFOA and 200 ppt for PFOS in drinking water.
- 2016 – EPA established Lifetime Health Advisory of 70 ppt for PFOS & PFOA.
- 2019 – The Navy began to assess PFAS at the Base as screening criteria for other environmental media (e.g., soil, surface water) remained in development.
- 2023 through 2024 – EPA and PADEP established maximum contaminant levels (MCLs) for PFOS, PFOA and several other PFAS for drinking water.

PFAS Remedial Investigation

PFAS Remedial Investigation (RI)

- The Navy initiated onsite PFAS sampling in 2014, with a formal RI commencing in 2017.
- The purpose the RI was to:
 - Characterize the nature and extent of releases to the environment.
 - Assess human health and ecological risks associated with the site conditions.
 - Conduct other tasks such as treatability testing to support decision making.
- The RI was conducted as an initial phase to assess source areas and identify data gaps, then focused studies to address those gaps.



PFAS Remedial Investigation

Phase 1 PFAS RI (2019 – 2021)

- Soil, groundwater, and surface water were collected in March 2020 and identified PFAS in the AFFF storage and use areas on-Base.
- The results were screened against available risk-based screening levels:
 - PFOA, PFOS, and PFBS exceeded EPA human health regional screening levels in soil, surface water and groundwater samples.
 - PFOA and PFOS also exceeded amphibious wildlife and/or invertebrate ecological screening levels in soil, surface water and sediment.
- The results were reported in a Phase 1 RI Report, with the need to address data gaps being identified for a subsequent phase of work.

PFAS Remedial Investigation – Phase 1 Sites

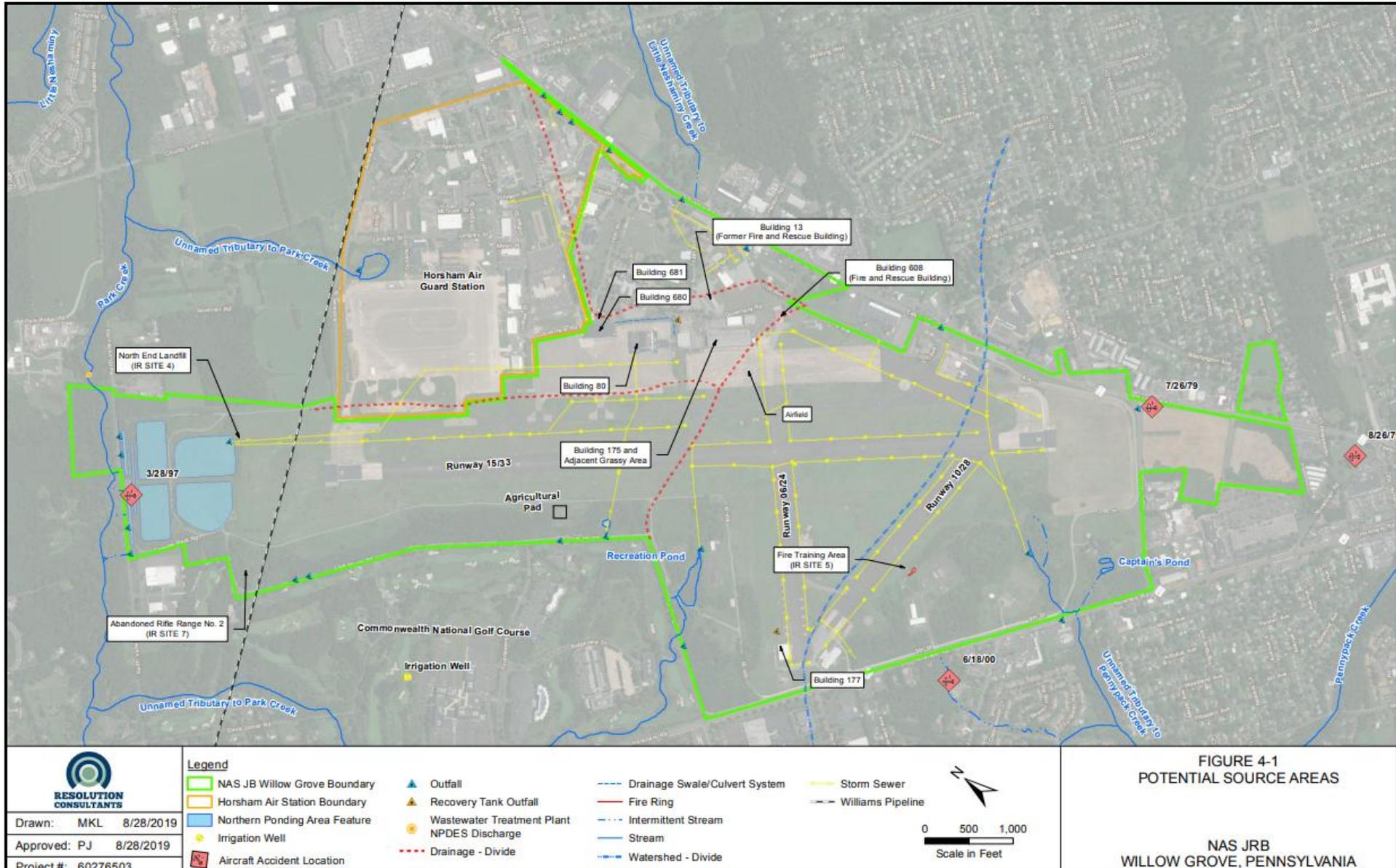


FIGURE 4-1
POTENTIAL SOURCE AREAS

NAS JRB
WILLOW GROVE, PENNSYLVANIA

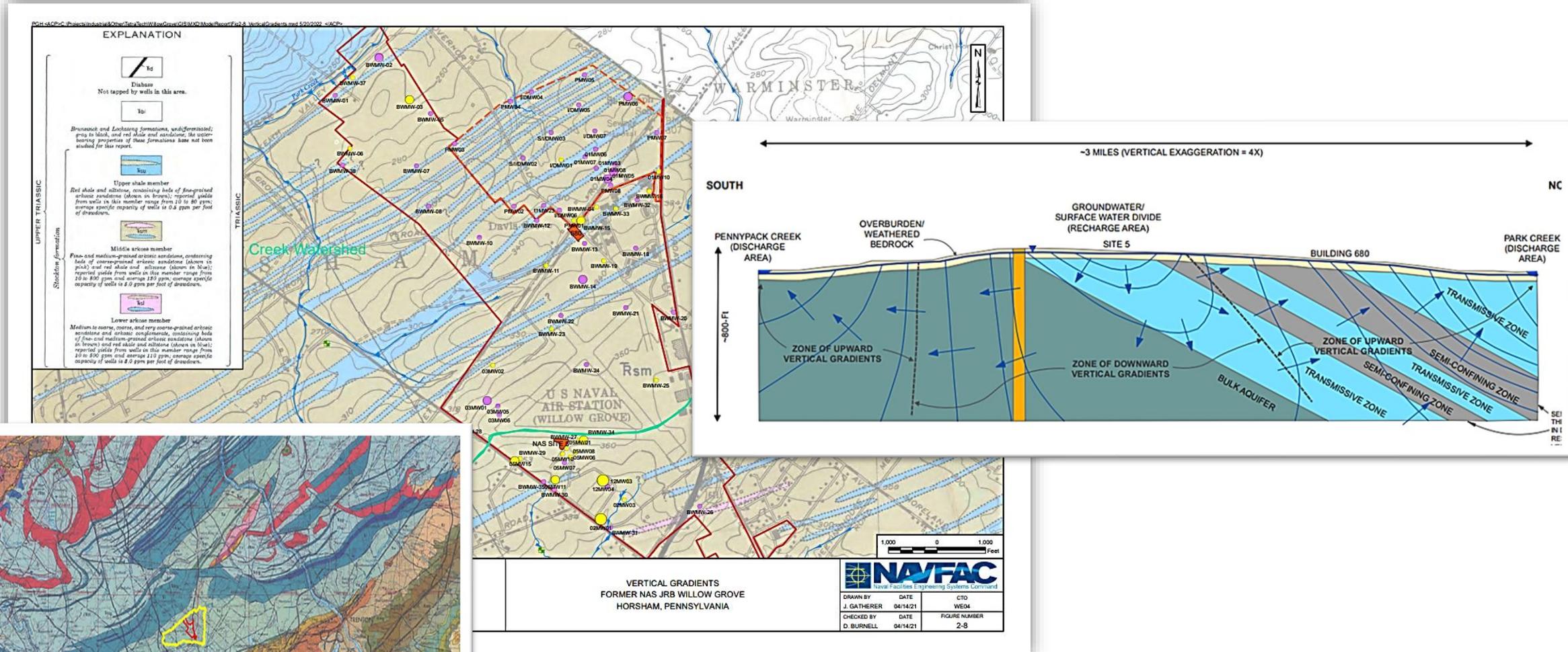
PFAS Remedial Investigation

Phase 1 PFAS RI Data Gaps

- The extent of PFAS in soil had not been fully delineated to PFAS soil screening levels.
- Uncertainty on PFAS migration ability from soil to groundwater remained uncertain.
- The extent of PFAS in groundwater above screening level was not delineated due to limited PFAS groundwater data set.
- Aquifer properties affecting the potential migration of PFAS in the overburden and complex bedrock.
- The potential for on-base stormwater detention basins to serve as a secondary source of PFAS contributing to groundwater and Park Creek.
- Extent of PFAS in surface water above screening levels was not fully delineated and the source of PFAS in some stream reaches remained uncertain.

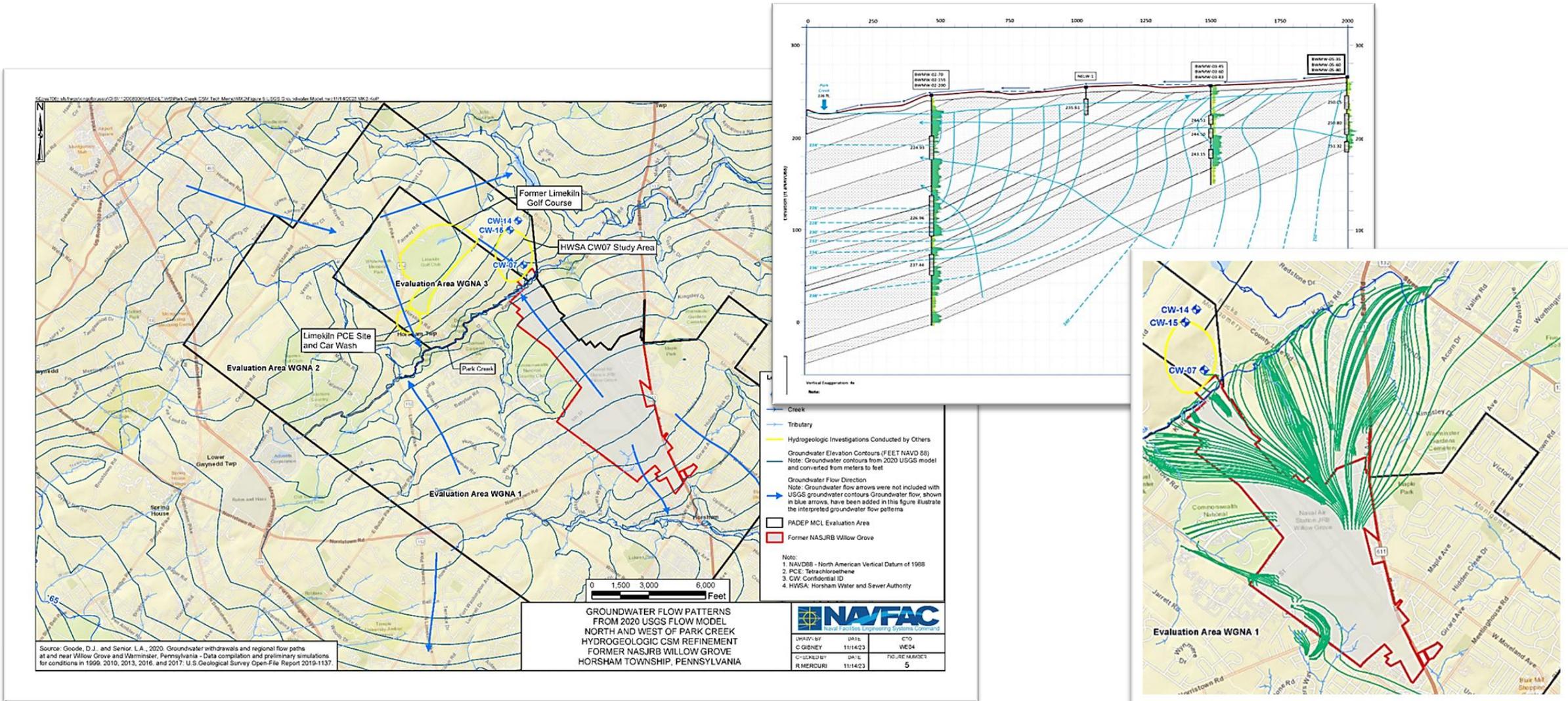
PFAS Remedial Investigation

Conceptual Site Model (CSM) Refinement



PFAS Remedial Investigation

Conceptual Site Model Refinement (Continued)



PFAS Remedial Investigation

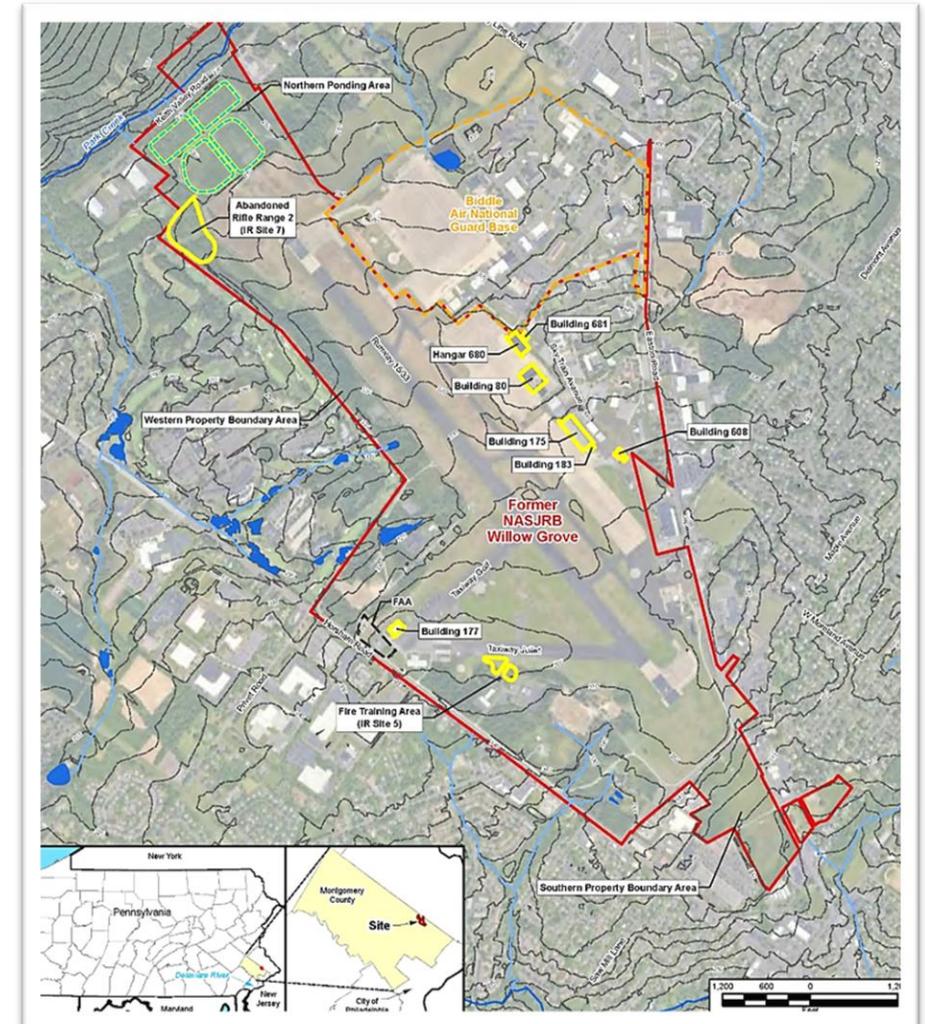
Phase 2 PFAS RI (2022 – Present)

- Phase 2 RI involves focused studies to address identified data gaps.
- Activities to date have included:
 - Soil investigation in AFFF source and use areas.
 - Soil pore water investigation.
 - Site 5 and Building 177 investigation.
 - Northern Ponding Area (NPA) investigation.
 - Off-Base groundwater investigation (e.g., ‘Westbay Demonstration’).
 - On-Base groundwater investigation planning.
 - Ongoing conceptual site model refinement.

PFAS Remedial Investigation

Phase 2 RI On-Base Soil Investigation (2022)

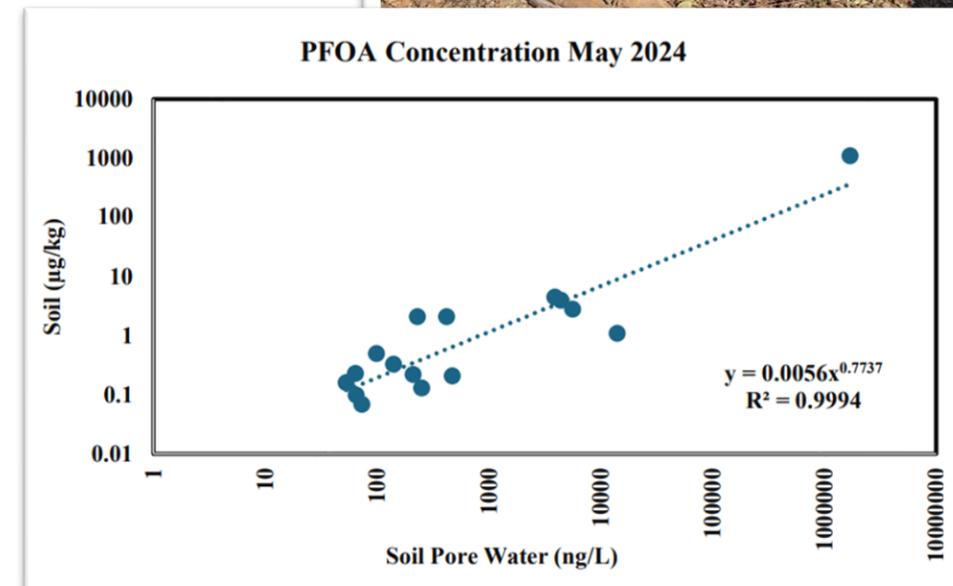
- Performed investigation activities in ten areas to further delineate PFAS in soil.
 - Site 5
 - Building 13
 - Building 177
 - Buildings 175/184
 - Site 7
 - 1979 Aircraft incident area
 - Building 680
 - Runway
 - Building 80
 - Northern Ponding Area
- Completed 164 soil borings and 889 samples to help confirm and delineate PFAS in soil.
- The results helped further understanding of PFAS source areas and were reported in a Technical Memorandum.



PFAS Remedial Investigation

Phase 2 RI On-Base Soil Pore Water Study (2024)

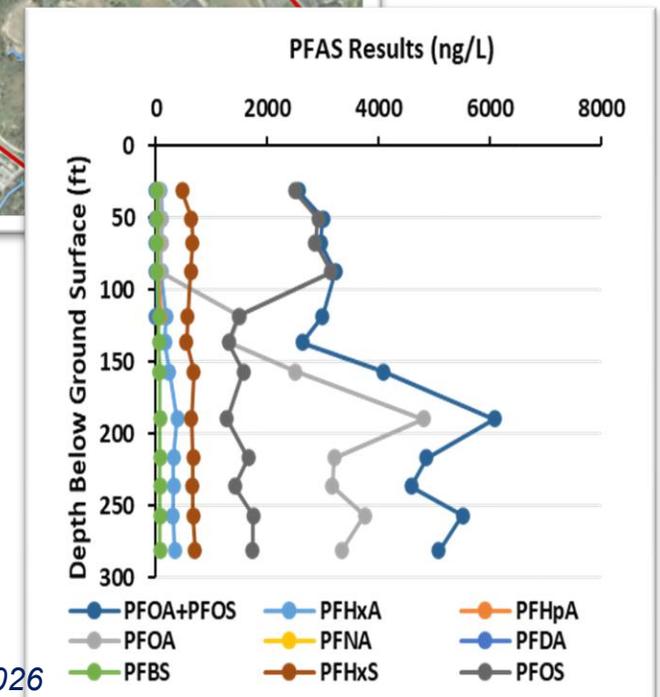
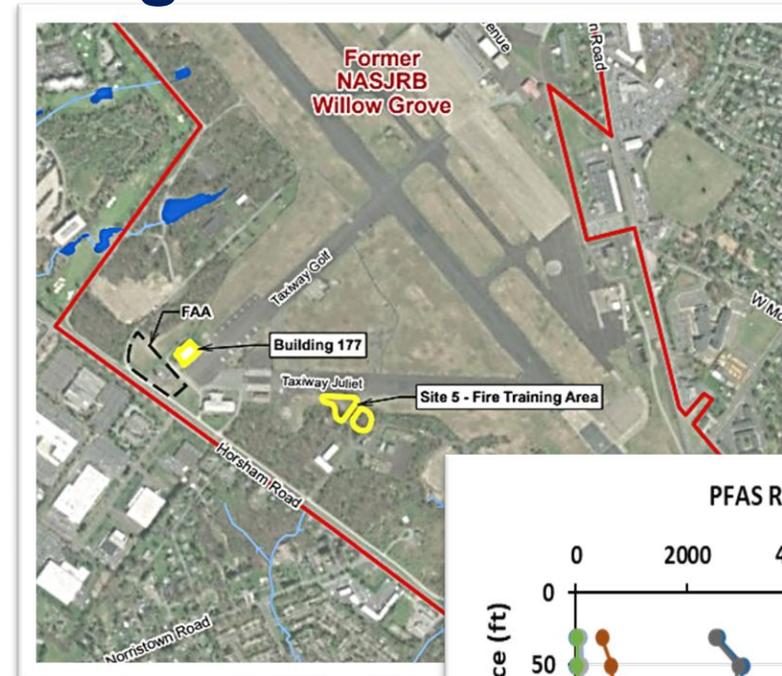
- Evaluated the potential for PFAS in on-base soil to migrate into underlying overburden groundwater.
- Installed 20 lysimeters at Site 5, Buildings 175, 177, and 680, and the Northern Ponding Area.
- Collected collocated soil samples and pore water samples to assess PFAS levels in both.
- Correlated PFAS results in soil and pore water to understand if there is a relationship.
- Results help confirm the conceptual site model for PFAS migration and will be reported in a Technical Memorandum now in review.



PFAS Remedial Investigation

Phase 2 RI Site 5 & Building 177 Investigation

- Investigated PFAS in known AFFF source areas to assess depth of PFAS migration.
- Installed 15 wells and collected 49 soil samples and 69 groundwater samples.
- Performed packer testing to identify depth of bedrock zones yielding groundwater.
- Identified PFAS levels with depth in those subsurface groundwater bearing zones.
- Data were used to support PFAS pilot testing, GWETS design, and further RI planning.
- The results were reported in a Technical Memorandum.

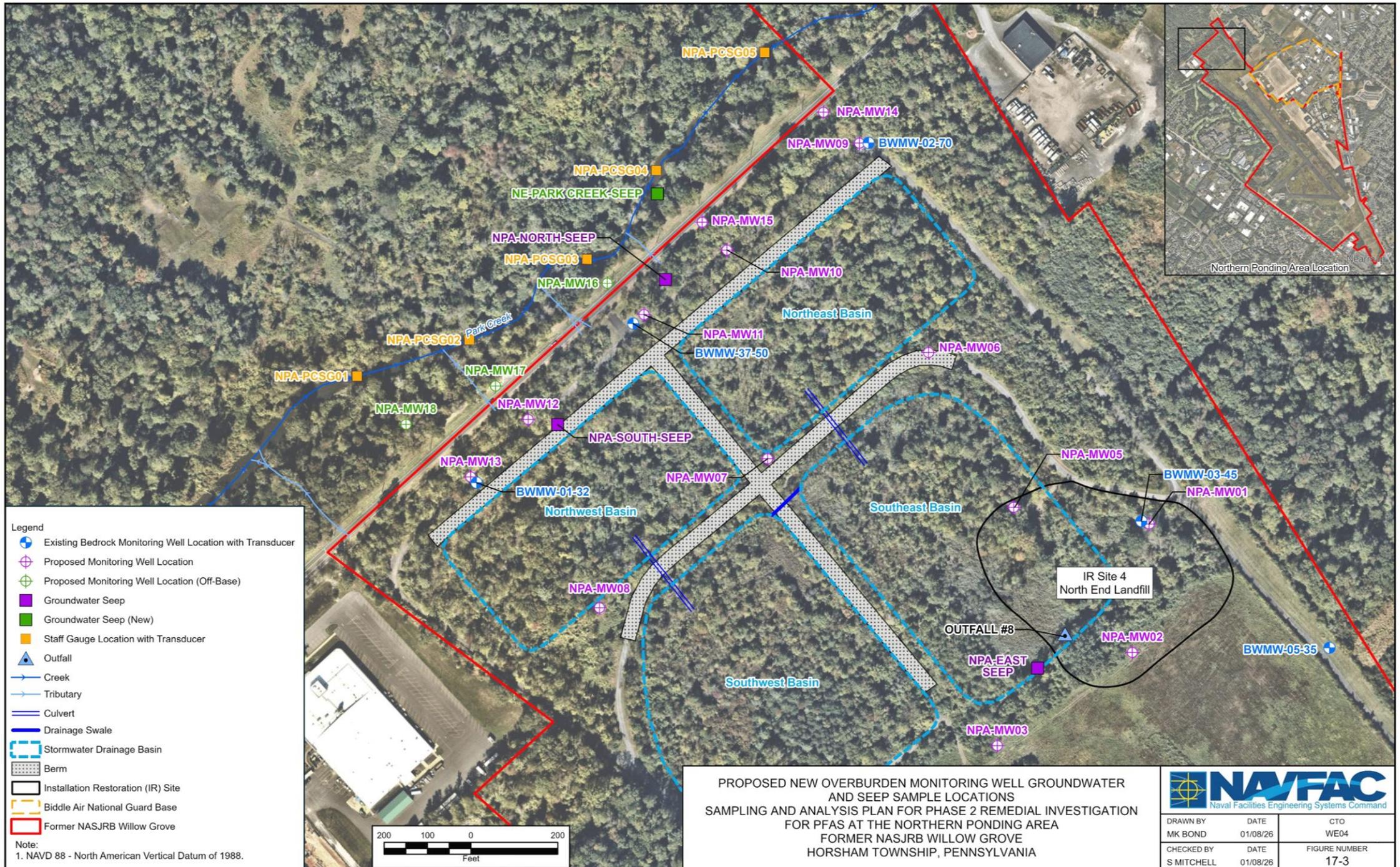


PFAS Remedial Investigation

Phase 2 RI Northern Ponding Area Investigation (2023-2026)

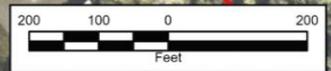
- Assessed stormwater basins as potential secondary source for PFAS releases.
- Soil at the site was sampled at 24 locations during previous RI work (2022).
- The current investigation (2025-2026) includes a focus on groundwater:
 - Groundwater elevation monitoring over time to help understand seasonal changes in flow.
 - Testing of shallow groundwater-bearing zone hydraulic conductivity (i.e., ability of yield water).
 - Groundwater sampling for PFAS at 38 wells.
 - Passive flux meter use at 18 wells to monitor PFAS migration in the shallow groundwater.





- Legend**
- Existing Bedrock Monitoring Well Location with Transducer
 - Proposed Monitoring Well Location
 - Proposed Monitoring Well Location (Off-Base)
 - Groundwater Seep
 - Groundwater Seep (New)
 - Staff Gauge Location with Transducer
 - Outfall
 - Creek
 - Tributary
 - Culvert
 - Drainage Swale
 - Stormwater Drainage Basin
 - Berm
 - Installation Restoration (IR) Site
 - Biddle Air National Guard Base
 - Former NASJRB Willow Grove

Note:
1. NAVD 88 - North American Vertical Datum of 1988.



PROPOSED NEW OVERBURDEN MONITORING WELL GROUNDWATER AND SEEP SAMPLE LOCATIONS
SAMPLING AND ANALYSIS PLAN FOR PHASE 2 REMEDIAL INVESTIGATION FOR PFAS AT THE NORTHERN PONDING AREA
FORMER NASJRB WILLOW GROVE
HORSHAM TOWNSHIP, PENNSYLVANIA

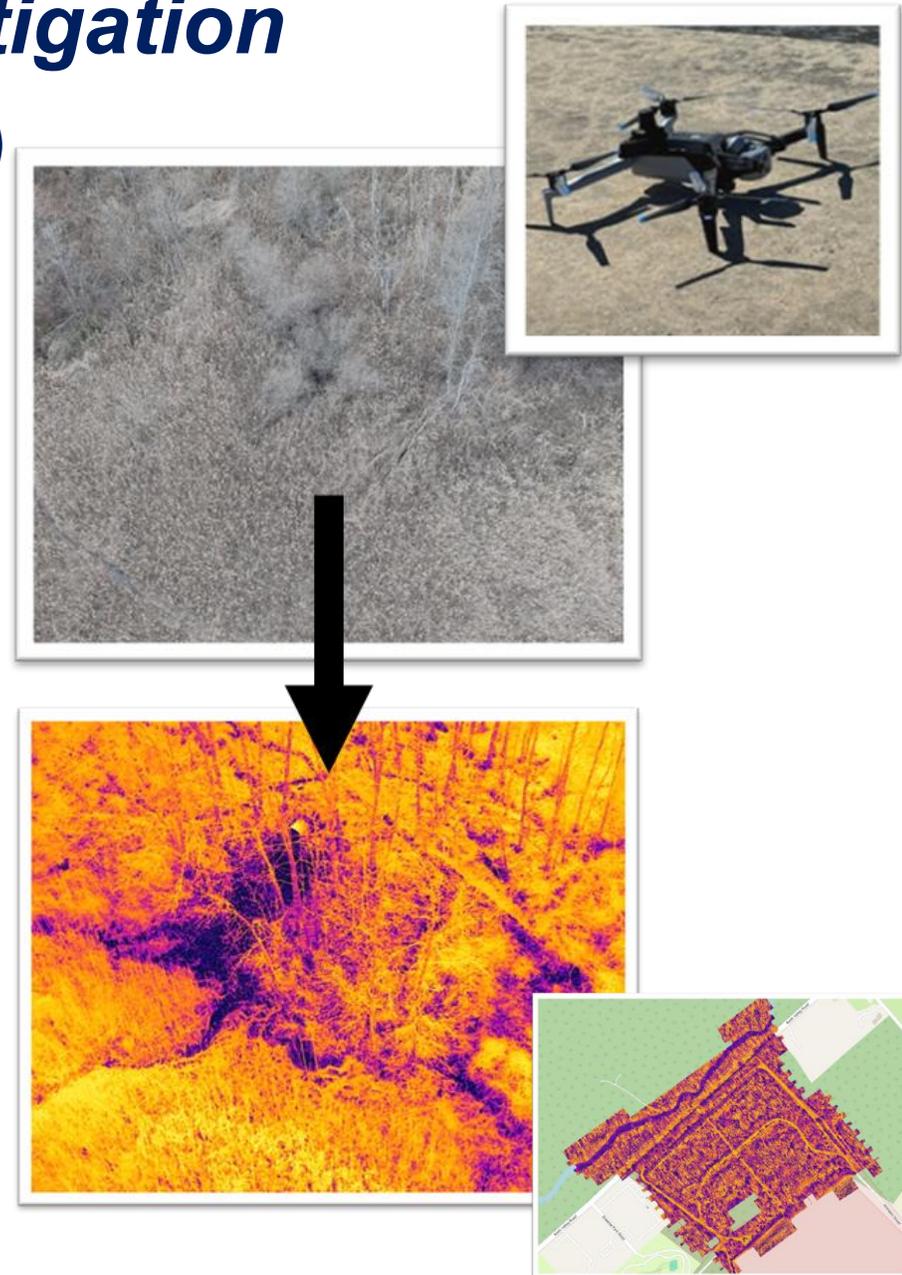


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PFAS Remedial Investigation

Phase 2 RI NPA Investigation (continued)

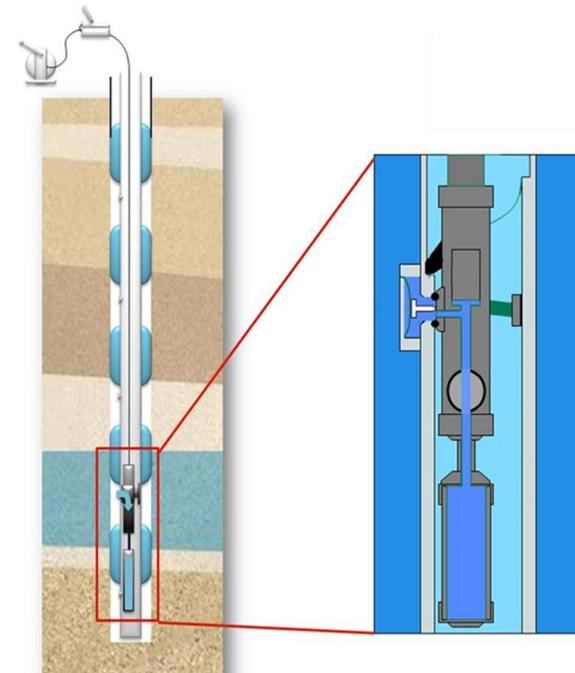
- Potential overland PFAS migration from the basins to Park Creek is also being assessed.
- Evaluating PFAS from stormwater discharge pipes, overland flow, seeps, and surface water.
 - Performed unmanned aerial survey for infrared (i.e., thermal) imagery to locate seeps and flow.
 - Collecting samples over two seasons:
 - Stormwater flow at NPA Outfall 8.
 - Overland runoff at six locations.
 - Groundwater seeps at four locations.
 - Surface water & sediment at five locations.
- Results will be reported in a technical memorandum after investigation completion.



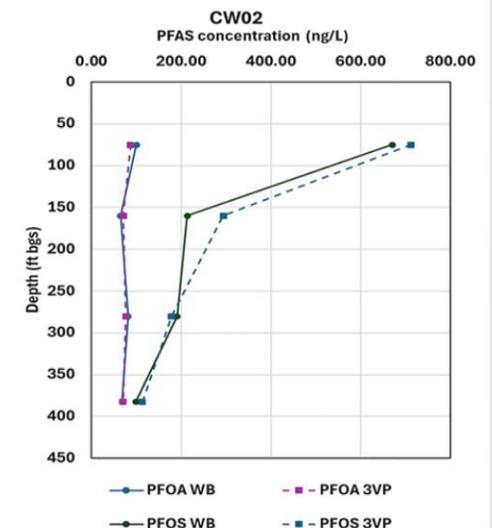
PFAS Remedial Investigation

Phase 2 RI Off-Base Groundwater Investigation (2023 to Present)

- Assessed PFAS in groundwater zones identified at depth in four HWSA wells.
- Installed Westbay[®] systems to sample groundwater in those depth intervals.
- Collected groundwater using Westbay[®] and volume average sampling methods.
- Compared PFAS results obtained to demonstrate use of Westbay[®] system.
- Characterized groundwater at different depths to support further RI planning.
- The results will be reported in a Technical Memorandum.



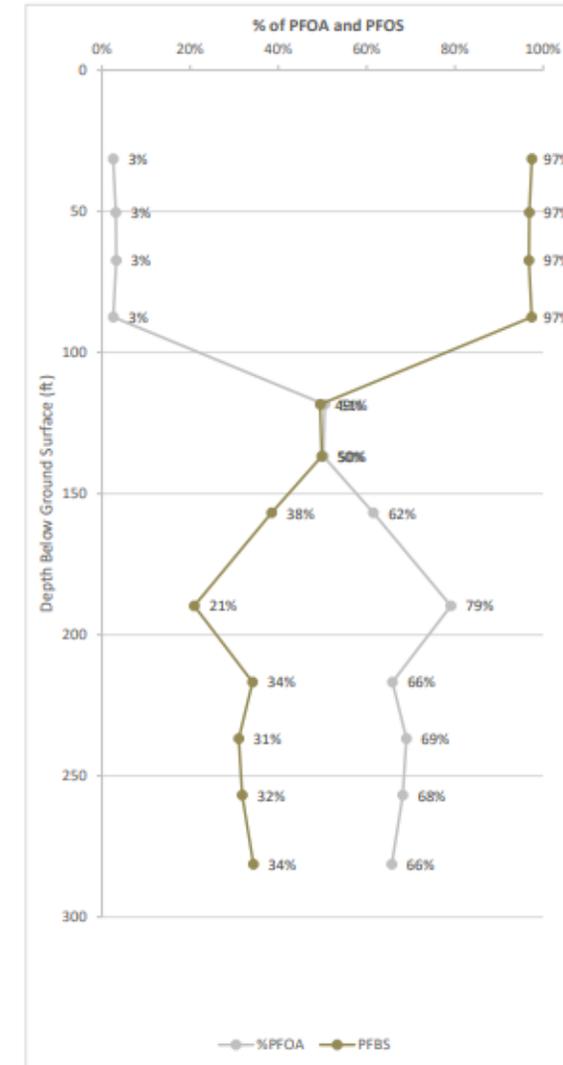
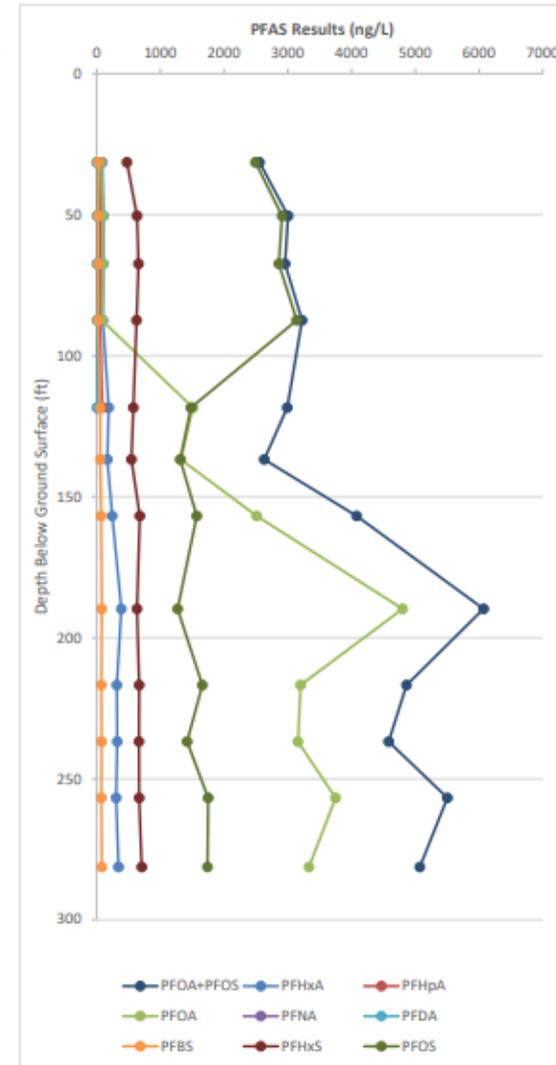
Westbay[®] Image Credit: Beaton, Stevenson, King-Sharp, Stamps, Nunn and Stewart, *Frontiers in Biology Journal*, 2016.



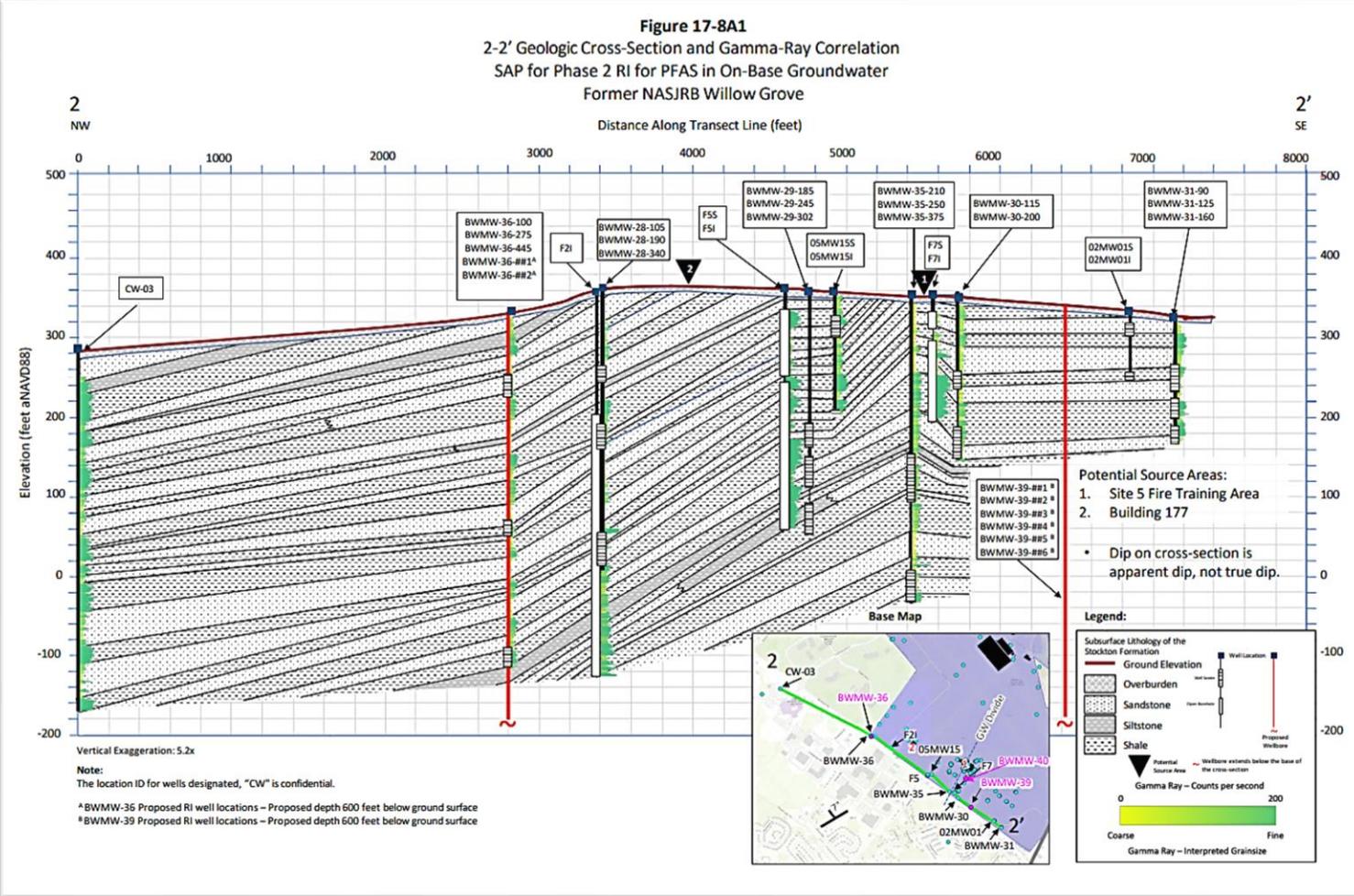
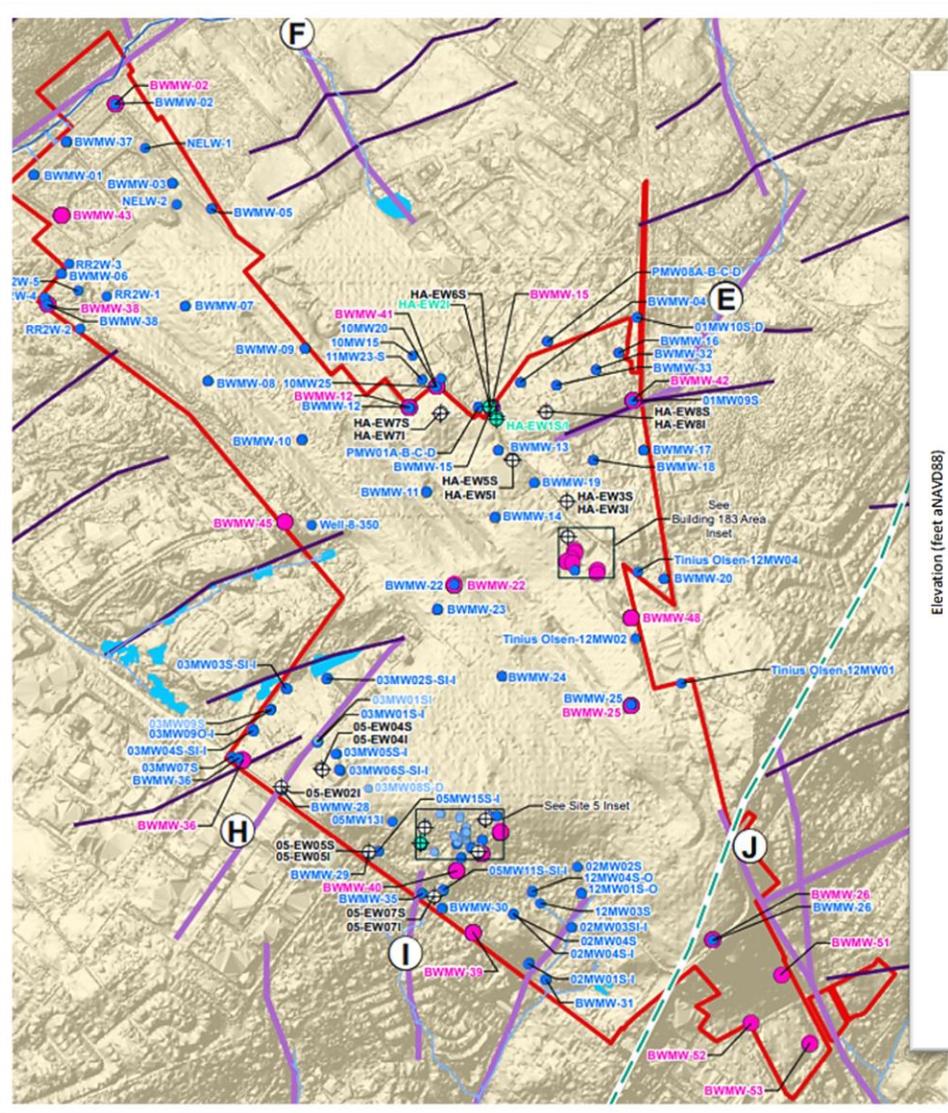
PFAS Remedial Investigation

Phase 2 On-Base Groundwater RI

- Further investigation of PFAS in multiple groundwater zones at depth is planned.
- Preparing a Phase 2 RI On-Base Groundwater Sampling & Analysis Plan.
- Anticipated RI activities includes:
 - Installation of 20 deep wells with Westbay systems and 7 shallow wells.
 - Collection of 500 groundwater samples from multiple depths in fractured rock.
 - Evaluation of PFAS in multiple subsurface water-bearing zones.
- Results will inform RI next steps and be reported in a Technical Memo & RI Report.



PFAS Remedial Investigation On-Base Groundwater RI Planning (2024 – Present)



PFAS Remedial Investigation

Closing

- PFAS RI activities at NASJRB Willow Grove continue to progress.
- Data gaps are being addressed in the Phase 2 RI:
 - Soil investigation at multiple sites.
 - Soil pore water investigation
 - Site 5 and Building 177 soil and groundwater investigation
 - Northern Ponding Area investigation
 - Off-Base groundwater investigation and Westbay system demonstration
 - On-Base groundwater investigation planning
 - Continued refinement of the conceptual site model.
- The Technical Memorandum for each RI activity will be available in the library as they are finalized and will be integrated into a future RI Report.
- Additional updates will be covered in future RAB meetings.

Additional Information and Resources - Website



[BRAC BASES](#) [PROPERTY DISPOSAL](#) [LIBRARY](#) [CONTACT US](#)



[BRAC Bases](#) > [Northeast](#) > [Former Naval Air Station Joint Reserve Base Willow Grove](#) >

Meeting Material

- Former Naval Air Station Joint Reserve Base Willow Grove
 - Meeting Material
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Proposed Remedial Action Plan (PRAP) Meeting

[23 Sep 2020 PRAP Meeting Presentation for Sites 3 and 12](#)

Open House Meetings

[23 & 24 May 2016 Open House Meeting Posters](#)

[24 & 25 February 2015 Open House Handouts](#)

[7 October 2014 Open House Meeting Posters](#)

Meeting Information

All Restoration Advisory Board (RAB) Meetings are held quarterly at the Horsham Township Library.

[RAB Member Application](#)

[RAB Meeting Topic Survey Form](#)



[2025 RAB Meeting Material](#)

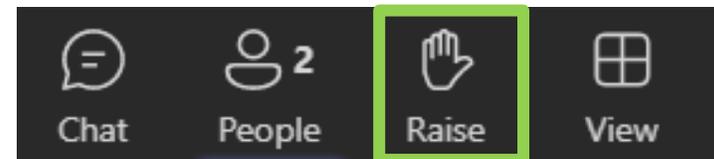
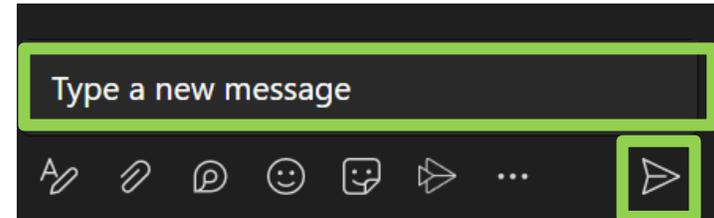
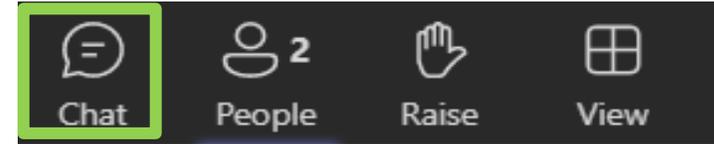
[2024 RAB Meeting Material](#)

[2023 RAB Meeting Material](#)

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Select Raise your hand icon.

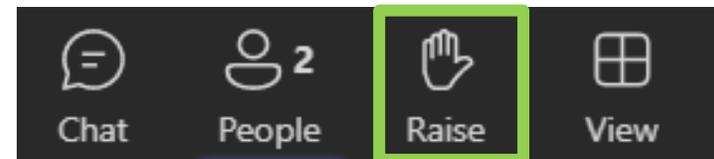
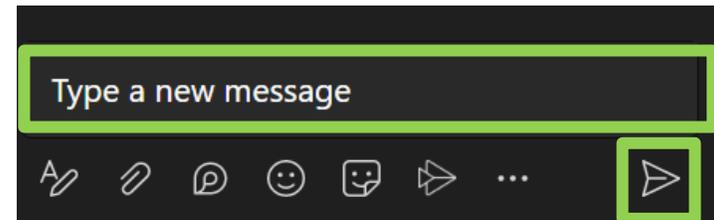
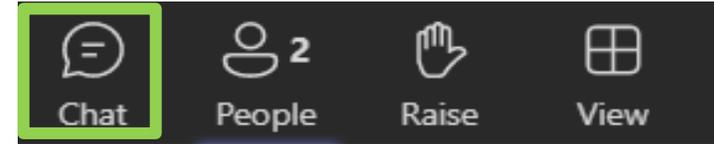
3) Phone-only attendees can dial *5 to raise their hand and have the
opportunity to ask a question. Once recognized, dial *6 to unmute the
microphone.

Environmental Protection Agency and Pennsylvania Department of Environmental Protection Comments

Virtual Attendee Questions

1) To ask a question, select 'Chat'

Type question in the text box,
and then select Send.



2) Raise your hand to be recognized
and have your microphone unmuted.
Select Raise your hand icon.

3) Phone-only attendees can dial *5 to raise their hand and have the
opportunity to ask a question. Once recognized, dial *6 to unmute the
microphone.

Next RAB Meeting

Next RAB meeting targeted for:
Thursday, April 16, 2026

Environmental Restoration discussions have concluded.

Health Professional Contact Information

Dr. Linda Brown

RTI International

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(301) 816-4626*

**Thank you for joining the RAB meeting for the
former NASJRB Willow Grove and
Biddle Air National Guard Base.**

The meeting has concluded.

PFAS Information and Resources

Department of the Navy (DON) Per- and Polyfluoroalkyl Substances (PFAS) Website

<https://www.acq.osd.mil/eie/eer/ecc/pfas/>

Naval Facilities Engineering Systems Command Base Realignment and Closure Program Management Office (BRAC PMO) Websites (includes links to environmental information and the administrative record):

<https://www.bracpmo.navy.mil/BRAC-Bases/Northeast/Former-Naval-Air-Station-Joint-Reserve-Base-Willow-Grove/Documents/>

<https://www.bracpmo.navy.mil/BRAC-Bases/Northeast/Former-Naval-Air-Warfare-Center-Warminster/Documents/>

A subscription service is available on the BRAC PMO websites to receive e-mail notification of new information.

PFAS Information and Resources (Cont.)

Environmental Protection Agency

<https://www.epa.gov/pfas>

Agency for Toxic Substances and Disease Registry

<https://atsdr.cdc.gov/pfas/index.html>

Pennsylvania Department of Environmental Protection

https://www.dep.pa.gov/Citizens/My-Water/drinking_water/Pages/default.aspx

https://www.dep.pa.gov/Citizens/My-Water/drinking_water/PFAS/Pages/default.aspx

Horsham Township

<https://horsham.org/>

Warminster Township

<https://warminstertownship.org/>

PFAS Information and Resources (Cont.)

Horsham Water and Sewer Authority

<https://www.horshamwater-sewer.com>

Warminster Township Municipal Authority

<https://www.warminsterauthority.com/>

Warwick Township Water and Sewer Authority

<https://wtwsa.org/>

Pennsylvania Department of Health

<https://www.health.pa.gov/topics/envirohealth/Pages/PFAS.aspx>