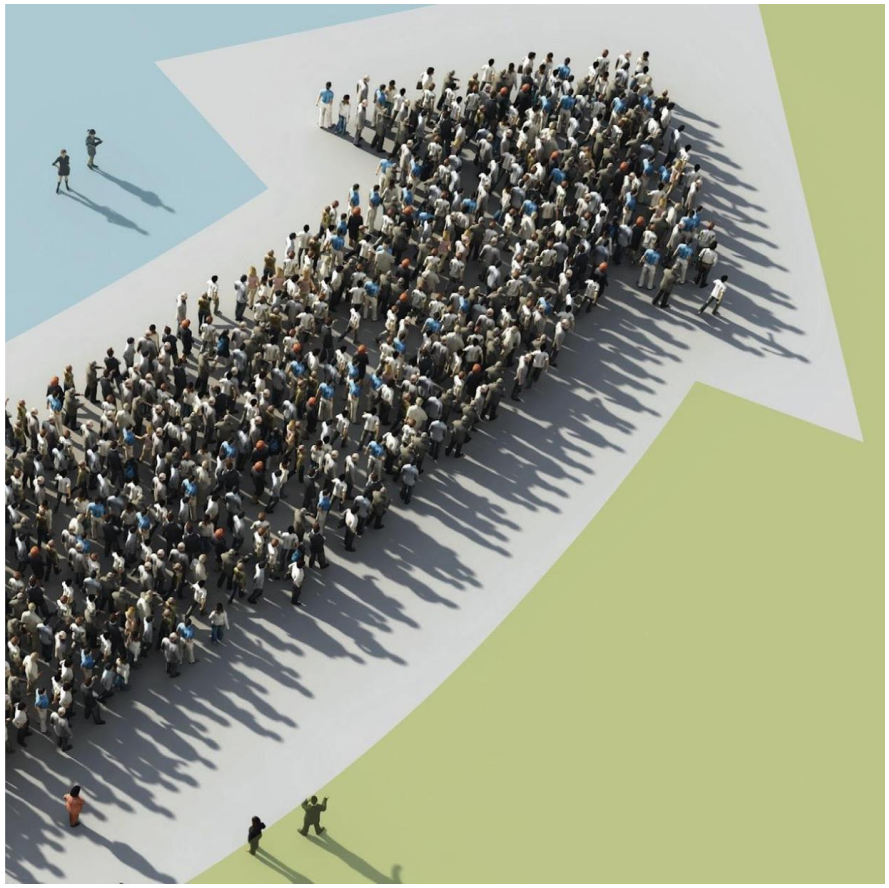


Fort Detrick Superfund Site Situation Assessment High-level Findings

October 14, 2022
RAB Meeting

Presentation by:
Stacie Smith, Managing Director, CBI

CBI
CATALYZING COLLABORATION

Presentation Overview

1. Purpose
2. Interview Methodology
3. Key Themes
   i. Investigation and Remediation
   ii. Public and Stakeholder Engagement
   iii. Restoration Advisory Board
4. Next Steps

CBI
CATALYZING COLLABORATION

Overview of Scope

- Consensus Building Institute (CBI) was engaged by EPA through its Conflict Prevention and Resolution Center to:
  - Conduct community interviews
  - Prepare a situation assessment
    - *Improve the project team's understanding of stakeholder concerns about the site and community engagement, and*
    - *Identify opportunities for improved communication, engagement, and processes*
  - Make recommendations for improvements in community engagement, RAB processes, and internal coordination

CBI
CATALYZING COLLABORATION

Assessment Methodology

- CBI reviewed background materials and engaged with 22 people in August and September, 2022.
  - 7 Community RAB members
  - 5 Community members & meeting attendees
  - 6 Federal and State agency staff and contractors
  - 4 City and County government staff
- Semi-structured interviews in person and on Zoom, plus review of written comments.

CBI
CATALYZING COLLABORATION

Key Themes

Remediation and Clean-up

Strengths:

- Many expressed trust in technical aspects of the clean-up
- A few noted quick responses to concerns raised about their property

Areas of Concerns:

- Vapor intrusion in current and anticipated homes.
- Uncertainty of the extent, content, and location of plume.
- Effects of groundwater contaminants beyond PCE and TCE, e.g., infectious pathogens, pesticides, unknown buried substances, biologic agents.
- Base security
- Previously, proposed extension road through Area B

CBI
CATALYZING COLLABORATION

Key Themes

Public and Stakeholder Engagement

- Broad consensus that the RAB is and should be the primary avenue for stakeholder engagement re: investigation and remediation
  - Some interviewees believe that all interested in the topic attend meetings or learn from those who do
  - Others see an opportunity for additional outreach and engagement to achieve higher RAB participation and public awareness

CBI
CATALYZING COLLABORATION

Key Themes

Public and Stakeholder Engagement

- Additional outreach opportunities to the broader Frederick community:
  - **Information to be shared**: Overview of site and contamination, overview of remediation and monitoring, role and purpose of RAB, how to learn more.
  - **Materials to use**: accessible website, simple factsheets, legible map, mailing list and newsletter, and a short presentation
  - **Where to outreach**: Army's social media, farmers markets and festivals, signs around the watershed, and local newspapers, radio and TV.

CBI
CATALYZING COLLABORATION

Key Themes

Restoration Advisory Board (RAB)

- Broad consensus that the RAB's purpose is to share information and updates with the community about the investigation and clean-up.
  - Some interviewees prioritized two-way communication, i.e., community members should be able to express their concerns.
  - Some interviewees believe community members should have the opportunity to influence agency decision-making.
- Many expressed gratitude for the RAB as a mechanism for information sharing

CBI
CATALYZING COLLABORATION

Key Themes

Restoration Advisory Board (RAB) (continued)

- Areas for improvement:
  - Accessibility of historical materials and information
  - Communication of big picture & signposting how the pieces fit together
  - Clarity of expectations and roles for RAB members & team
  - Timely sharing of RAB materials and summaries
  - Clarity, consistency, and accessibility of technical information
  - Consistency of RAB meeting schedule and protocols
  - Clear and consistent documentation
  - Increased reciprocity, patience,respect, and appreciation on all sides
  - Better risk communication

CBI
CATALYZING COLLABORATION

Next Steps

- CBI to share draft situation assessment summary with interviewees for revisions
- Interviewees to share revisions or additions
- CBI to produce final situation assessment and recommendations, and present at January RAB meeting
- CBI also working on recommendations for interagency collaboration

Thank you to those who spoke with us! *If you haven't yet but would like to, please email Abby at afullem@cbi.org.*

CBI
CATALYZING COLLABORATION

About CBI

CBI is a nonprofit organization with decades of experience helping leaders collaborate to solve complex problems.

Our staff are experts in facilitation, mediation, capacity building, citizen engagement, and organizational strategy and development. We are committed to using our skills to build collaboration on today's most significant social, environmental, and economic challenges. We work within and across organizations, sectors, and stakeholder groups.

FOR MORE INFORMATION: CBI.ORG

2067 Massachusetts Ave. Suite 302
570
Cambridge, MA 02140
Tel (617) 492-1414

CAMBRIDGE, MA

WASHINGTON, DC

NEW YORK, NY

SAN FRANCISCO, CA

DENVER, CO

SANTIAGO, CHILE

MONTRÉAL, CANADA

CBI
CATALYZING COLLABORATION

Area B Off-Post Waverley View Property Groundwater Investigation

Restoration Advisory Board Project Update
12 October 2022

Brianne Witman, P.E.
Project Manager

US Army Corps of Engineers ®

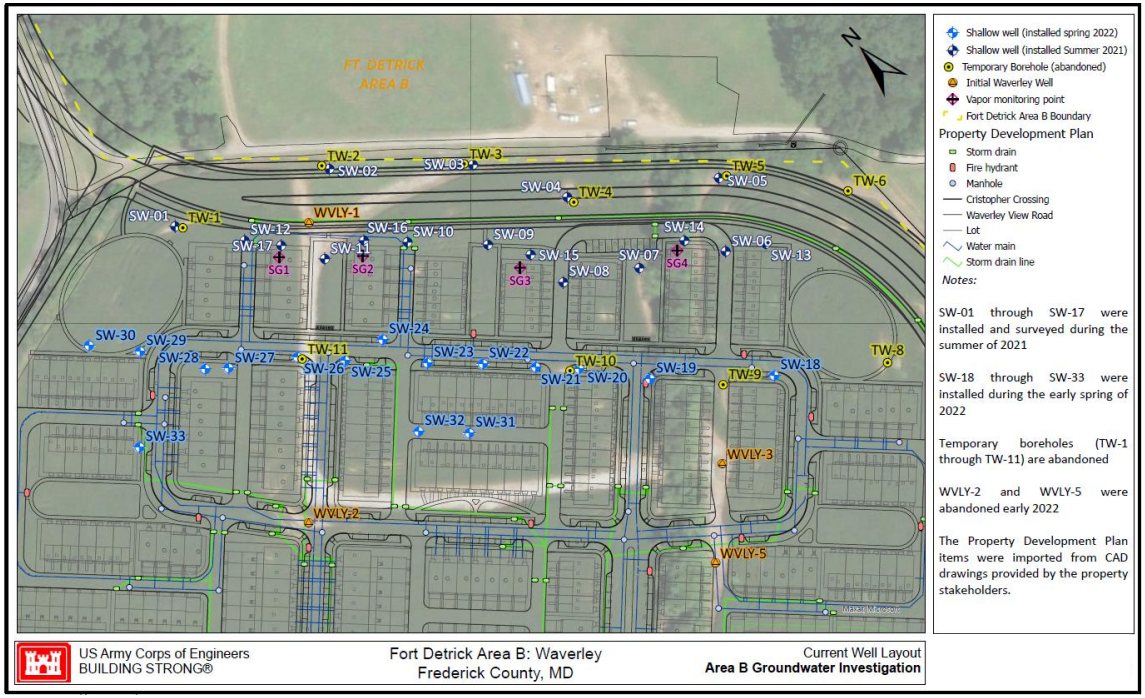
Waverley View Property Groundwater Investigation

Background

Single-family home development planned on Waverley View property, adjacent to Fort Detrick, Area B

Groundwater samples collected from certain monitoring wells installed in 2013 and 2014 at Waverley View had detections of volatile organic compounds (VOCs), both above and below regional screening levels (RSLs)

The Army is completing an investigation to assess potential risk to future human receptors at the Waverley View property from vapor intrusion



US Army Corps of Engineers ®

Unclassified

Waverley View Property Groundwater Investigation

Monitoring Well Installation

Existing wells

- WVLY-01 through WVLY-05 (WVLY-02 and WVLY-05 abandoned)
- Temporary wells TW-01 through TW-11 (abandoned)

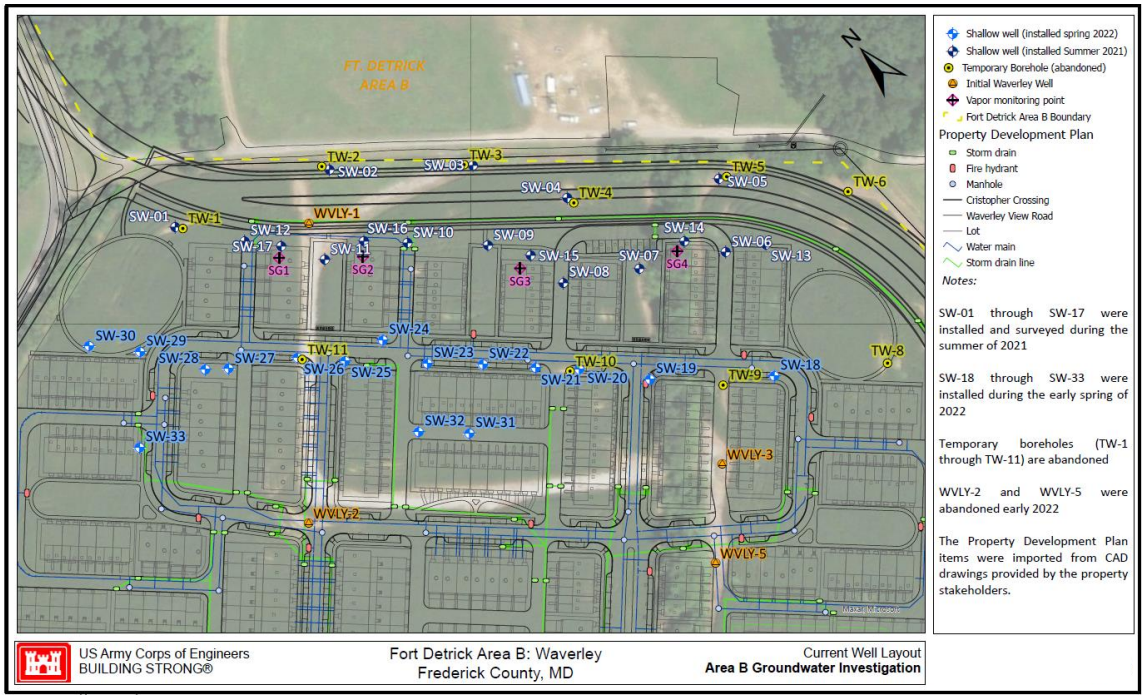
Groundwater monitoring wells installed 2021 – 2022 to determine extent of VOCs

- 17 monitoring wells installed in 2021

  (SW-01 through SW-17)

- 16 monitoring wells installed in 2022

  (SW-18 through SW-33)



US Army Corps of Engineers ®

Unclassified

May/June 2022 Groundwater Sampling Event

		Sample ID	SW-01	SW-02	SW-03	SW-04	SW-05	SW-09	SW-10	SW-11	SW-12	SW-15	SW-16	SW-17	SW-19	SW-24	SW-25	SW-26	SW-27	SW-28	SW-29	SW-31
		Sampling Date	6/2/2022	6/2/2022	5/12/2022	5/10/2022	5/9/2022	5/10/2022	5/12/2022	6/2/2022	6/2/2022	5/10/2022	5/12/2022	6/2/2022	5/10/2022	5/13/2022	5/11/2022	5/11/2022	6/1/2022	6/1/2022	6/3/2022	5/11/2022
COMPOUND	**CAS #**	**Screening Criteria**																				
Dichlorodifluoromethane	75-71-8	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3 J	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	75-69-4	NA	5.5	56	25	11	0.84 J	1.2 J	2.8	8.4	61	4.4	5.9	65	ND	ND	ND	ND	ND	0.24 J	ND	ND
1,1,2-Trichlorotrifluoroethane	76-13-1	39.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	75-35-4	30.8	ND	1.3	4.2	1.8	ND	ND	ND	1	1.2	1.1	1.6	2.6 J	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	67-64-1	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.5 J	ND
Methylene Chloride	75-09-2	773	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2 J
cis-1,2-Dichloroethene	156-59-2	NS	ND	0.56 J	1.1	0.75 J	ND	ND	ND	ND	0.93 J	ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	67-66-3	1.39	**2.7**	**13**	**13**	**6.3**	0.51 J	**1.4**	**1.6**	**6.4**	**9.4**	**4.3**	**5.1**	**24**	**1.7**	**2.6**	**1.8**	**3.6**	**1.7** J	**8.9** J	**2.9**	**13**
Carbon Disulfide	75-15-0	198	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	71-55-6	1,300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	4.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	79-01-6	0.94	**2.3**	**18**	**36**	**20**	**1.5**	**3.2**	**5**	**11**	**13**	**13**	**15**	**54**	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	75-27-4	1.63	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4 J	ND	0.78 J
Toluene	108-88-3	3,710	ND	ND	ND	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	127-18-4	11.5	ND	1.8	0.97 J	0.67 J	ND	ND	ND	ND	2.3	ND	ND	2.8	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

All values reported in ug/L (ppb)

NA = Not applicable, no screening level generated

NS = Not sampled

ND = Not detected

J = estimated value

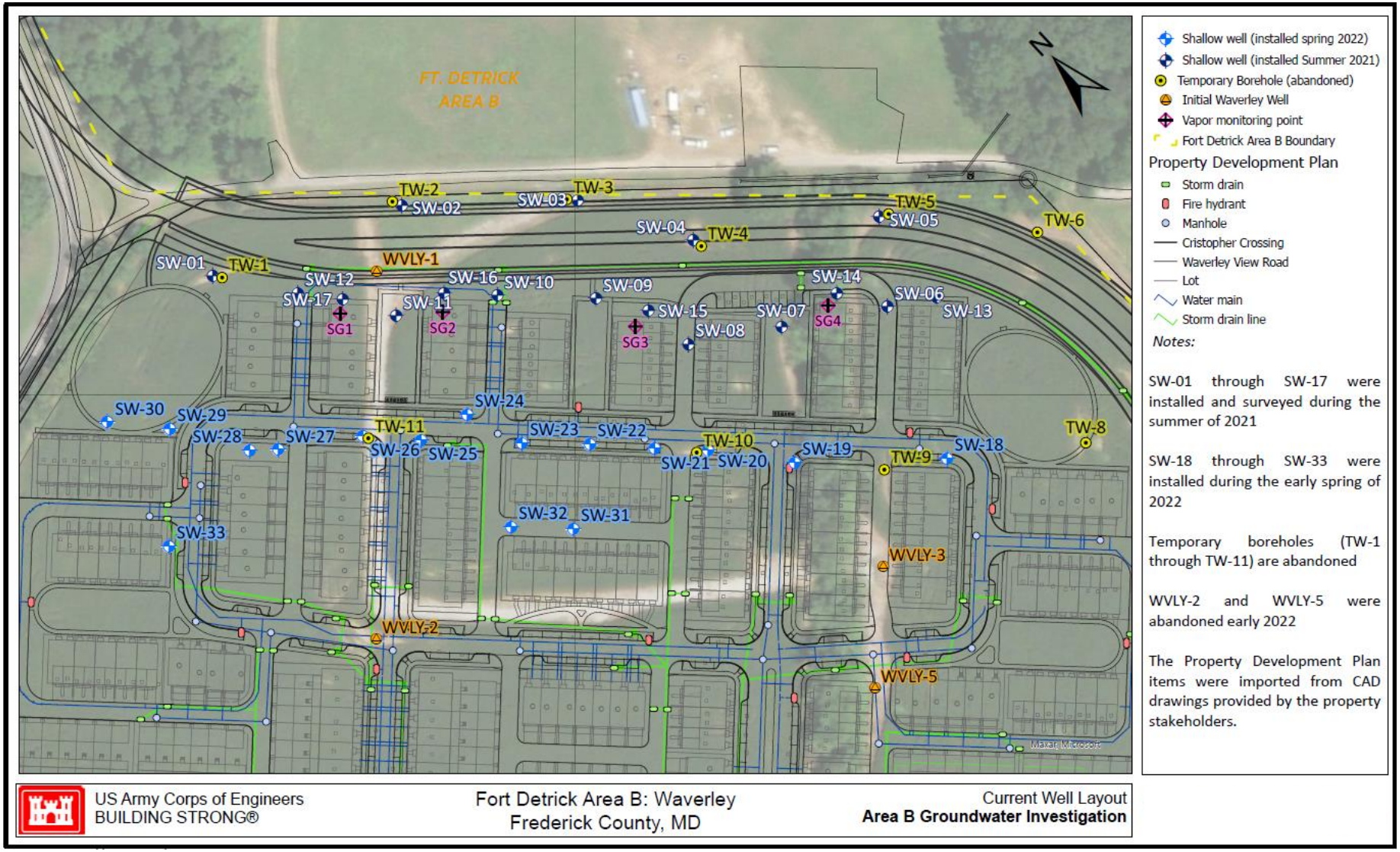
J+ = estimated high (due to detections in equipment blanks and field blanks above the laboratory limit of quantitation)

Shaded and **bolded** cells exceed the screening criteria

Screening Criteria is Resident Vapor Intrusion Screening Level (VISL) at average shallow groundwater temperature of 12 degrees Celsius. Target Groundwater Concentration THQ = 0.1.

Only monitoring wells with concentrations over screening criteria are shown

- Trichloroethene detected in SW-01, SW-02, SW-03, SW-04, SW-05, SW-09, SW-10, SW-11, SW-12, SW-15, SW-16, and SW-17 above the screening criteria of 0.94 ppb at concentrations of (1.5 to 54 ppb)
- Chloroform detected in SW-01, SW-02, SW-03, SW-04, SW-09, SW-10, SW-11, SW-12, SW-15, SW-16, SW-17, SW-19, SW-24, SW-25, SW-26, SW-27, SW-28, SW-29, and SW-31 above the screening criteria of 1.39 ppb at concentrations of 1.4 to 24 ppb.
- The following monitoring wells without detections above screening criteria are not included in the table: SW-06, SW-07, SW-08, SW-13,SW-14, SW-20, SW-21, SW-22, SW-23, SW-32, and SW-33


FT. DETRICK
AREA B
N
TW-2
SW-02
SW-03
TW-3
TW-5
SW-05
TW-6
SW-04
TW-4
SW-01
TW-1
WVLY-1
SW-12
SW-16
SW-10
SW-09
SW-14
SW-06
SW-17
SW-11
SW-15
SW-07
SW-13
SG1
SG2
SG3
SG4
SW-08
SW-30
SW-29
SW-24
TW-8
SW-28
SW-27
TW-11
SW-23
SW-22
TW-10
SW-19
SW-18
SW-26
SW-25
SW-21
SW-20
TW-9
SW-32
SW-31
SW-33
WVLY-3
WVLY-2
WVLY-5
Maxar, Microsoft
Shallow well (installed spring 2022)
Shallow well (installed Summer 2021)
Temporary Borehole (abandoned)
Initial Waverley Well
Vapor monitoring point
Fort Detrick Area B Boundary
Property Development Plan
Storm drain
Fire hydrant
Manhole
Cristopher Crossing
Waverley View Road
Lot
Water main
Storm drain line
Notes:
SW-01 through SW-17 were installed and surveyed during the summer of 2021
SW-18 through SW-33 were installed during the early spring of 2022
Temporary boreholes (TW-1 through TW-11) are abandoned
WVLY-2 and WVLY-5 were abandoned early 2022
The Property Development Plan items were imported from CAD drawings provided by the property stakeholders.
US Army Corps of Engineers
BUILDING STRONG®
Fort Detrick Area B: Waverley
Frederick County, MD
Current Well Layout
Area B Groundwater Investigation

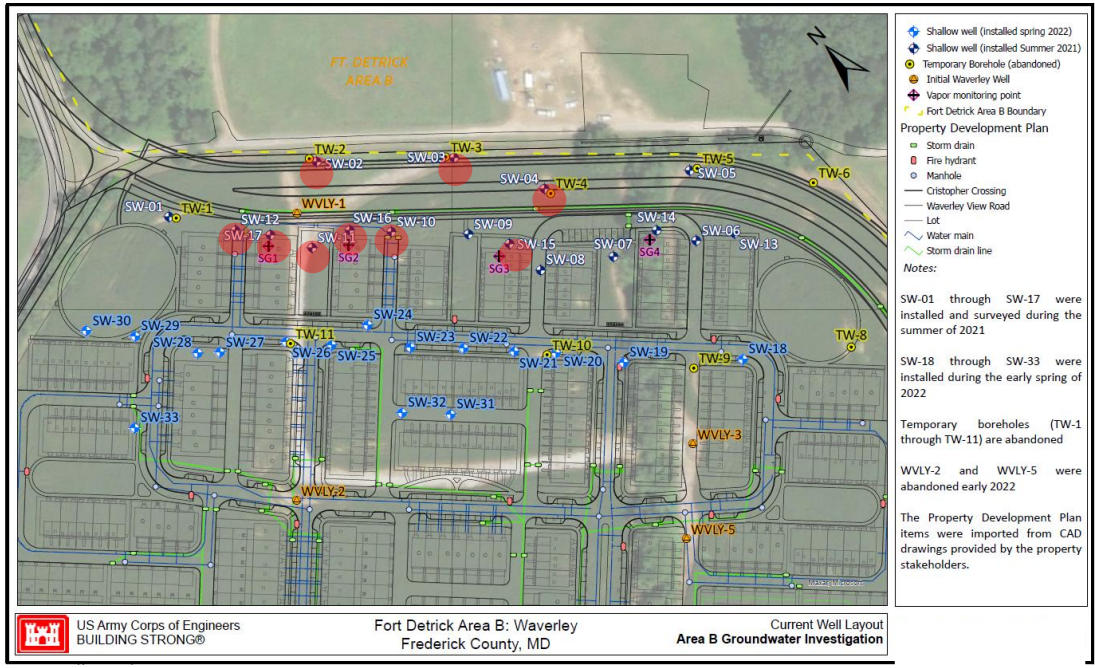
Waverley View Property Groundwater Investigation

Vapor Intrusion Risk Results

USEPA Vapor Intrusion Screening Level (VISL) Calculator Results indicates there are 9 wells where there may be unacceptable risk from vapor intrusion to future residents (without mitigation measures): SW-2, SW-3, SW-4, SW-10, SW-11, SW-12, SW-15, SW-16, and SW-17

Lab data collected in August is pending with results to be shared at the next RAB meeting

The Army will collect two additional rounds of groundwater samples in December 2022 and March 2023, update VISL model projections, and will use to ensure protection of human health as the Waverley View property is developed



US Army Corps of Engineers ®

Unclassified

Quarterly Groundwater Monitoring at Area B
Fort Detrick, MD

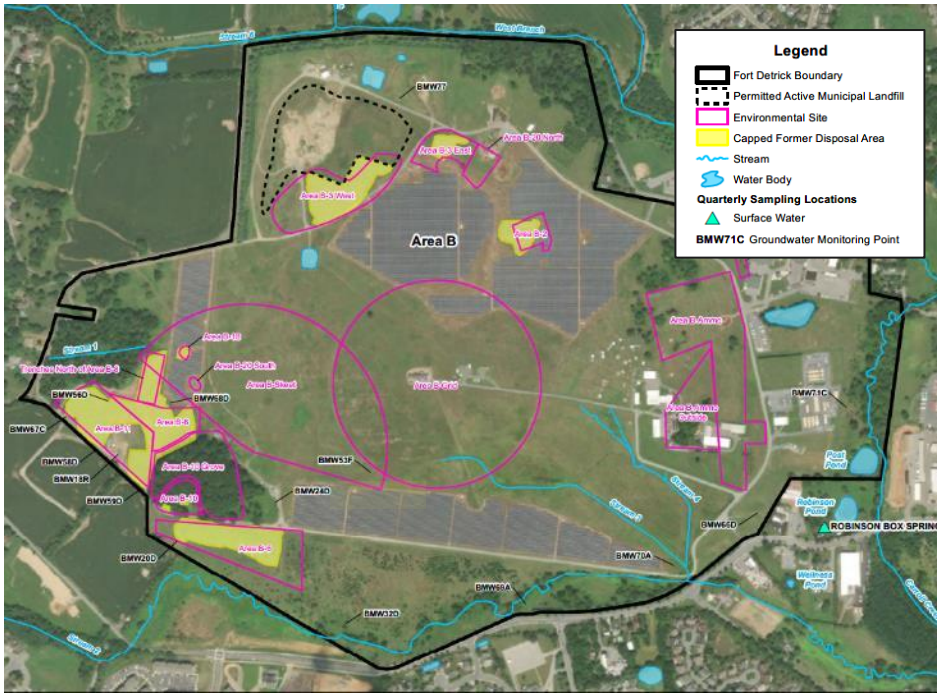
12 October 2022

John Cherry

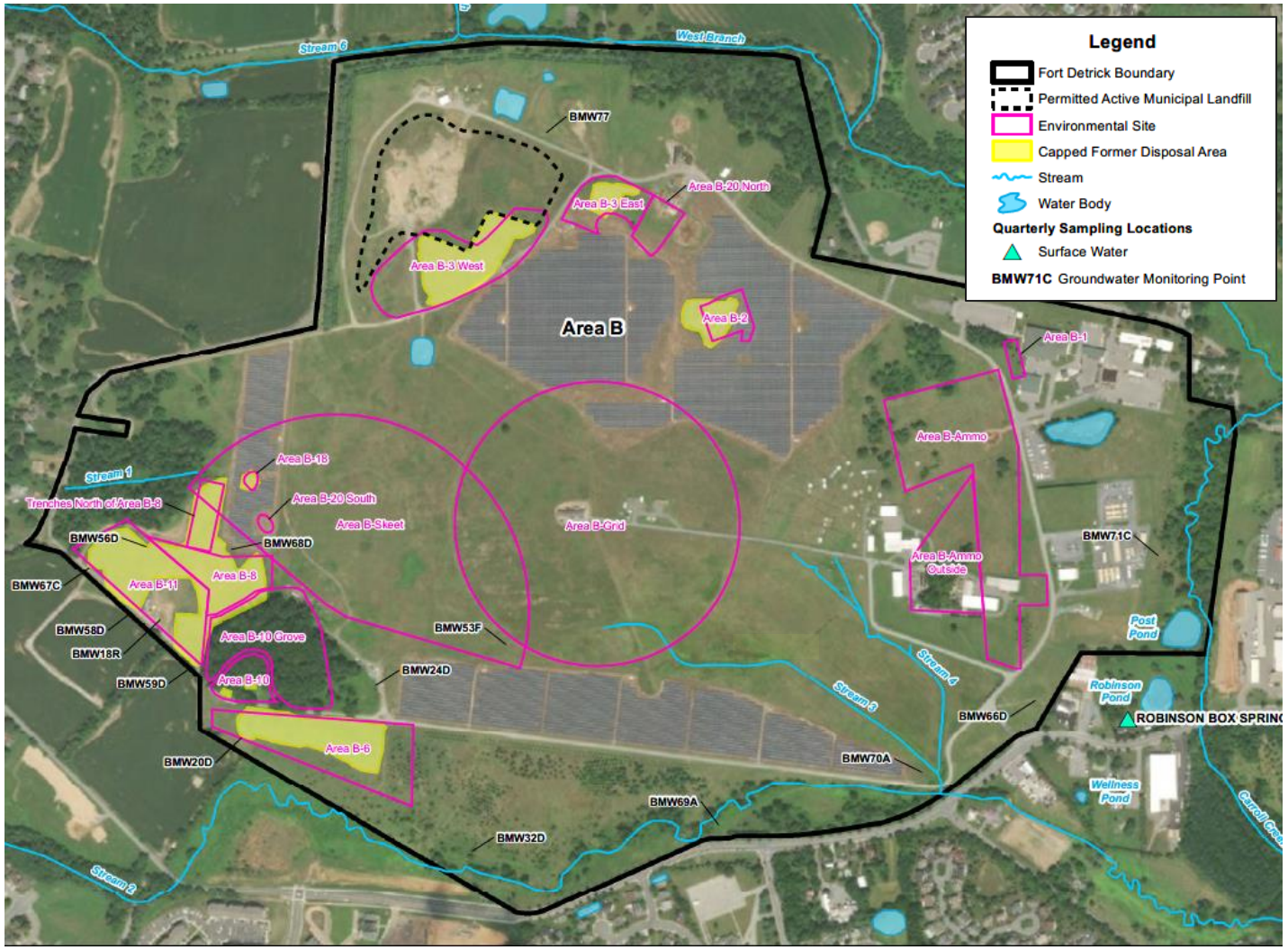
SERES-ARCADIS Joint Venture

Area B Quarterly Groundwater Monitoring
(VOC Plume Monitoring)

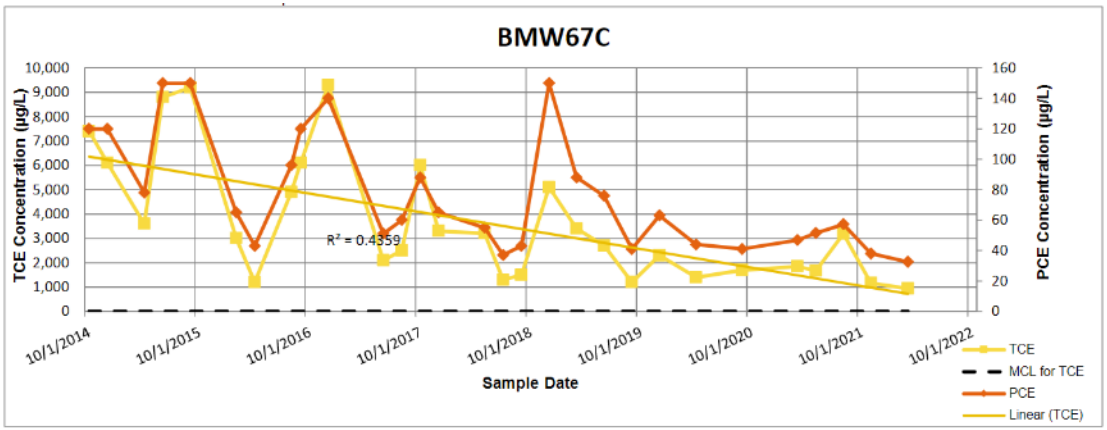
- Frequency: Quarterly groundwater gauging and sampling
- Scope: 15 groundwater sample locations and 1 downgradient spring sample (Robinson Pond Box Spring).
- Analyses: VOCs
- This quarterly sampling program has been in place for many years to track concentration trends over time.
- Seres-Arcadis JV under contract to sample through September 2025.



Quarterly Sampling Program


Legend
Fort Detrick Boundary
Permitted Active Municipal Landfill
Environmental Site
Capped Former Disposal Area
Stream
Water Body
Quarterly Sampling Locations
Surface Water
BMW71C Groundwater Monitoring Point
Area B
Area B-1
Area B-2
Area B-3 East
Area B-3 West
Area B-8
Area B-10
Area B-10 Grove
Area B-11
Area B-18
Area B-20 North
Area B-20 South
Area B-6
Area B-Ammo
Area B-Ammo Outside
Area B-Grid
Area B-Skeet
Trenches North of Area B-8
BMW77
BMW56D
BMW68D
BMW67C
BMW58D
BMW18R
BMW59D
BMW20D
BMW53F
BMW24D
BMW69A
BMW32D
BMW70A
BMW66D
BMW7.1C
Stream 1
Stream 2
Stream 3
Stream 4
Stream 6
West Branch
Post Pond
Robinson Pond
Wellness Pond
ROBINSON BOX SPRING

Trends – BMW 67C



Analyte	RSL	MCL	4/16/2020	6/1/2020	9/22/2020	6/1/2020	3/4/2021	5/28/2021	8/26/2021	11/9/2021	3/15/2022	6/6/2022
PCE	4.1	5	**44**	NA	**41**	NA	**46.8**	**51.4**	**57.2**	**38.0**	**32.5**	**29.6**
TCE	0.28	5	**1400**	NA	**1700**	NA	**1850**	**1670**	**3,190**	**1160**	**939**	**742**

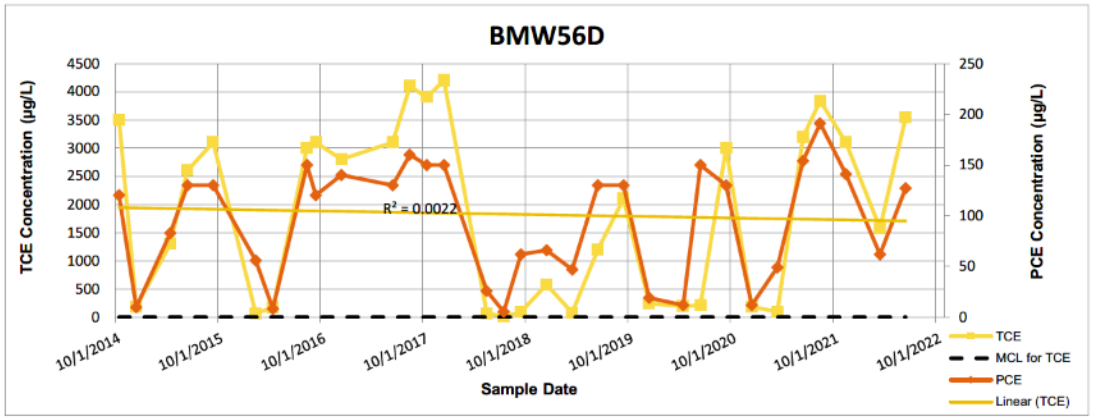
Source area point near Western Disposal Area

Well Screen Depth:

143-158 ft bgs

- TCE concentrations have fluctuated over the last 10 years at this well, with a high of 9,300 µg/L in December 2016 and detections generally remaining above 1,000 µg/L since 2014. The highest historical concentration was 15,000 in April 2012, after installation.
- During the last six sampling events (March 2021 through June 2022), TCE concentrations ranged from 742 µg/L - 3,190 µg/L.
- Recent sampling since March 2022 have been below 1,000 µg/L The March and June 2022 detections were 939 µg/L and 742 µg/L, respectively.
- PCE concentrations have fluctuated between 29.6 µg/L and 150 µg/L since 2014, with the lowest concentration detected during the most recent event (29.6 µg/L). TCE and PCE concentrations remain above the respective MCLs and RSLs at this location.

Trends – BMW56D



Analyte	RSL	MCL	4/16/2020	6/2/2020	9/22/2020	12/1/2020	3/4/2021	6/4/2021	8/26/2021	11/9/2021	3/15/2022	6/8/2022
PCE	4.1	5	**12**	**150**	**130**	**12**	**49.2**	**154**	**191**	**141**	**61.8**	**127**
TCE	0.28	5	**200**	**210**	**3000**	**190**	**97**	**3190**	**3840**	**3100**	**1580**	**3540**

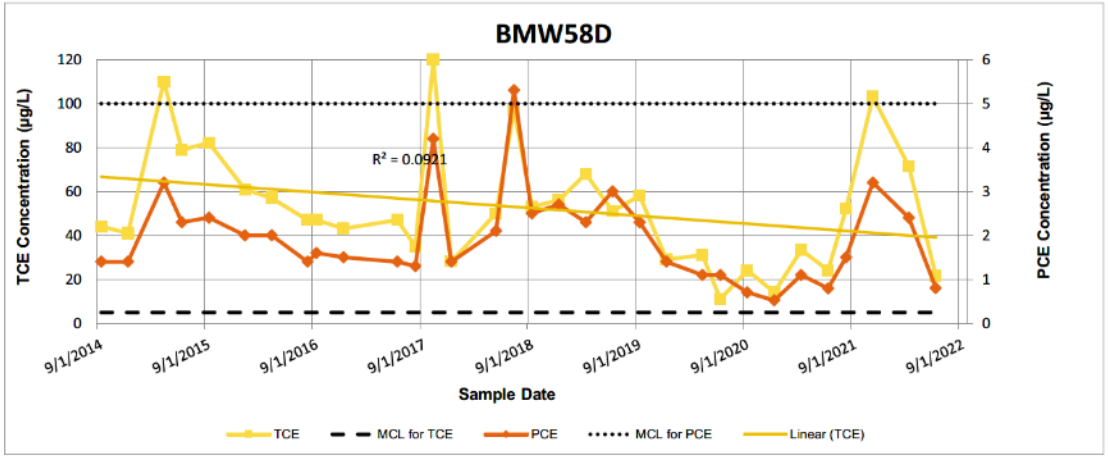
Source area point near Western Disposal Area

Well Screen Depth:

79-98 ft bgs

- TCE concentrations fluctuate at BMW56D. Since 2017, concentrations have ranged from 15 µg/L in July 2018 to 4,200 µg/L in December 2017. PCE concentrations have fluctuated between 5.5 µg/L and 191 µg/L since 2014.
- TCE and PCE concentrations remain above the respective MCLs and RSLs at this location. Concentration fluctuations may be attributed to a combination of seasonal and short-duration precipitation events and their timing relative to sample collection.

Trends – BMW58D



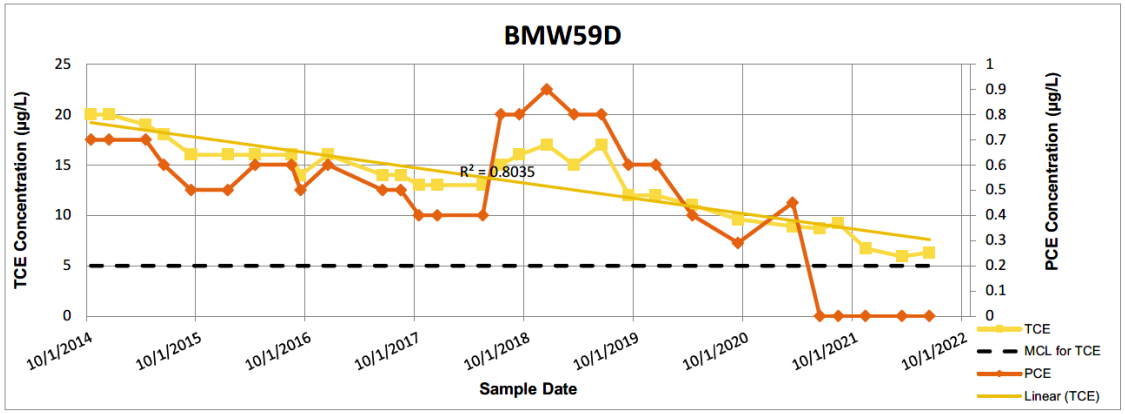
Source area point near Western Disposal Area

Well Screen Depth: 110-130 ft bgs

Analyte	RSL	MCL	4/16/2020	6/3/2020	9/22/2020	12/3/2020	3/4/2021	6/3/2021	8/24/2021	11/10/2021	3/15/2022	6/7/2022
PCE	4.1	5	1.1	1.1	0.7	0.52	1.1	0.79 J	1.5	3.2	2.4	0.8 J
TCE	0.28	5	**31**	**11**	**24**	**14**	**33.4**	**24**	**52.1**	**103**	**71.5**	**21.6**

- TCE concentrations have fluctuated, with a slight but overall decreasing trend over the last several years. During the last 16 quarterly sampling events, concentrations have been below 100 µg/L, with one exception in November 2021 (103 µg/L). The TCE concentration remains above the MCL (5 µg/L) at this location.
- PCE concentrations have remained stable and consistently below the MCL (5 µg/L), with detections between 0.7 µg/L and 4.2 µg/L, except for the sample collected in July 2018 (5.3 µg/L).

Trends – BMW 59D



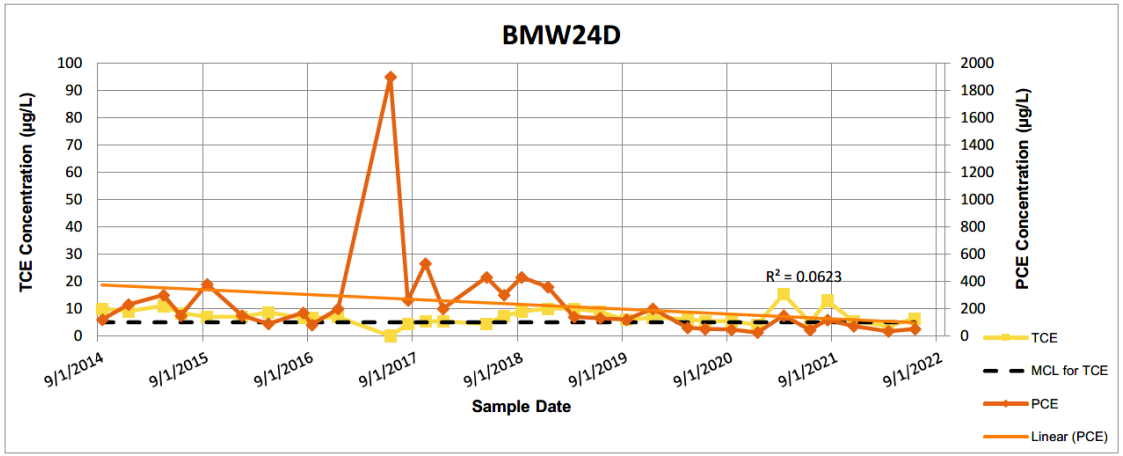
Source area point near Western Disposal Area

Well Screen Depth: 166-186 ft bgs

Analyte	RSL	MCL	4/16/2020	6/1/2020	9/21/2020	6/1/2020	3/4/2021	6/1/2021	8/24/2021	11/8/2021	3/14/2022	6/7/2022
PCE	4.1	5	0.4	NA	0.29	NA	0.45 J	ND	ND	ND	ND	ND
TCE	0.28	5	**11**	NA	**9.6**	NA	**8.9**	**8.7**	**9.2**	**6.7**	**5.9**	**6.3**

- TCE concentrations continue to exhibit a decreasing trend, with the highest concentration of 20 µg/L detected in 2014 and the lowest concentration of 5.9 µg/L detected in March 2022. The TCE concentration remains above the MCL and RSL at this location.
- PCE concentrations have remained consistently below the MCL (5 µg/L) since 2014, with the highest concentration detected in December 2018 (0.9 µg/L). The five most recent concentration were non-detect (less than 0.75 µg/L).

Trends – BMW24D



Downgradient point near source area

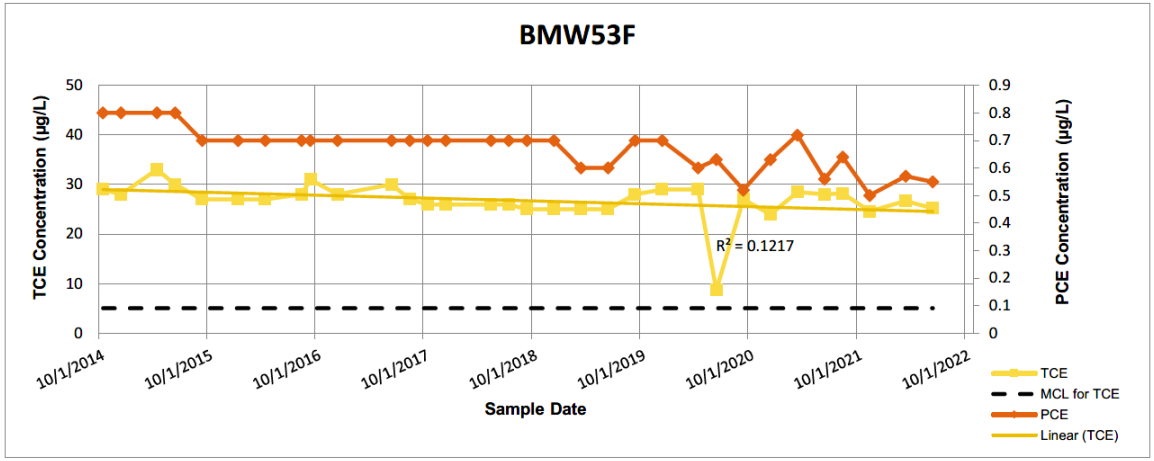
Well Screen Depth:

168-178 ft bgs

Analyte	RSL	MCL	4/16/2020	6/3/2020	9/21/2020	12/3/2020	3/4/2021	6/3/2021	8/26/2021	11/12/2021	3/15/2022	6/8/2022
PCE	4.1	5	**60**	**51**	**47**	**25**	**150**	**44.5**	**118**	**72.1**	**34.1**	**50.9**
TCE	0.28	5	**6.1**	**5.4**	**5.5**	**4.1**	**15.4**	**5.0**	**12.9**	**5.4**	**3.6**	**6.4**

- TCE concentrations have generally remained stable, fluctuating between 3.6 and 15.4 µg/L since 2014.
- PCE concentrations from 2014 through 2022 have fluctuated up and down, ranging from 25 µg/L in December 2020 to 530 µg/L in October 2017.
- There was an unusually elevated PCE concentration in June 2017 (1,900 µg/L); in a confirmatory sample collected in August 2017, the PCE concentration was 260 µg/L.

Trends – BMW53F



Point downgradient of the source area.

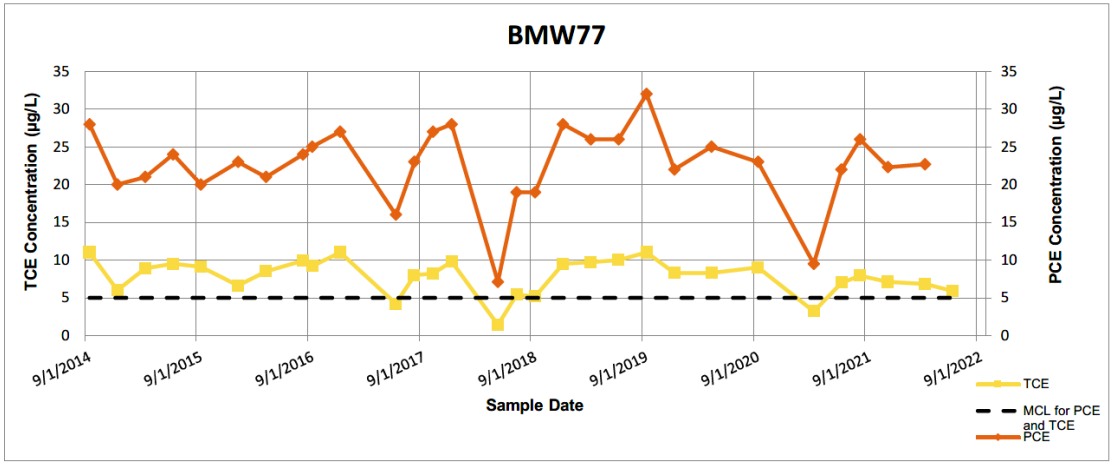
Well Screen Depth:

297.5 - 307.5 ft bgs

Analyte	RSL	MCL	4/16/2020	6/2/2020	9/21/2020	12/3/2020	3/4/2021	6/8/2021	8/25/2021	11/10/2021	3/17/2022	6/8/2022
PCE	4.1	5	0.6	0.63	0.52	0.63	0.72 J	0.56 J	0.64 J	0.50 J	0.57 J	0.55 J
TCE	0.28	5	**29**	**8.7**	**27**	**24**	**28.5**	**28**	**28.2**	**24.6**	**26.7**	**25.2**

- TCE concentrations have remained in the range of 24 to 33 µg/L since 2014, with only one exception in June 2020 (8.7 µg/L). The TCE concentration in this well remains above the MCL and RSL.
- PCE concentrations have remained stable at less than 1 µg/L, below the MCL (5 µg/L) and the RSL (4.1 µg/L).

Trends – BMW77



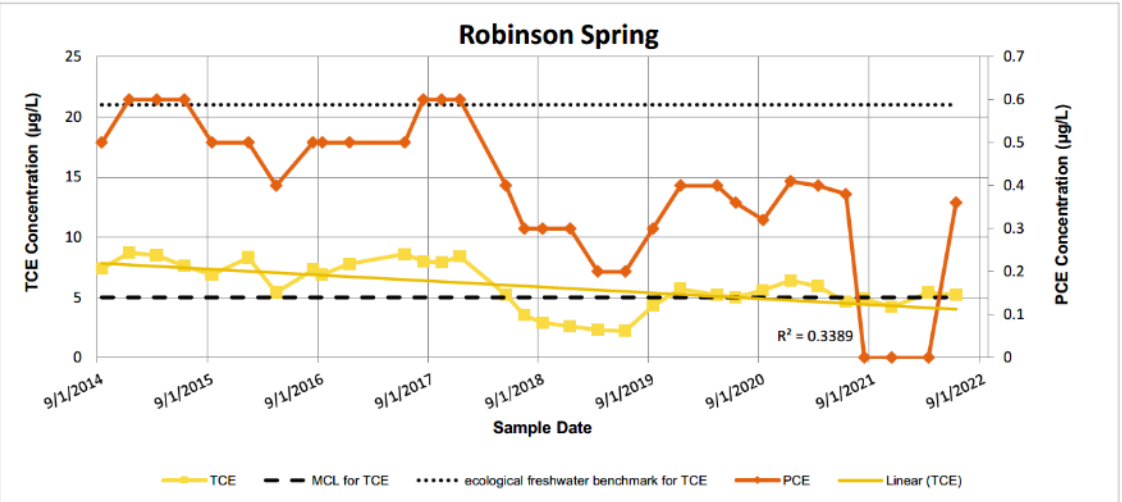
Monitoring point in the northern portion of Area B near active sanitary landfill

Well Screen Depth: 59-74 ft bgs

Analyte	RSL	MCL	4/16/2020	6/1/2020	9/22/2020	12/1/2020	3/4/2021	6/2/2021	8/23/2021	11/8/2021	3/16/2022	6/7/2022
PCE	4.1	5	**25**	NA	**23**	NA	**9.5**	**22.0**	**26.0**	**22.3**	**22.7**	**18.2**
TCE	0.28	5	**8.3**	NA	**9**	NA	**3.2**	**7**	**7.9**	**7.1**	**6.8**	**5.9**

- TCE concentrations have fluctuated between 3.2 µg/L and 11 µg/L. 5.9 µg/L exceeds the MCL (5 µg/L) and RSL (0.28 µg/L).
- PCE concentrations have fluctuated between 9.5 µg/L and 32 µg/L and remain above the MCL and RSL. It is noted that PCE concentrations at BMW77 have been detected between 16 µg/L and 32 µg/L in all sampling rounds since September 2014, with two exceptions (7.1 µg/L in May 2018 and 9.5 µg/L in March 2021).

Trends – Robinson Spring



Off-post spring location

Analyte	RSL	MCL	4/16/2020	6/3/2020	9/22/2020	12/4/2020	3/2/2021	6/3/2021	8/26/2021	11/11/2021	3/18/2022	6/7/2022
PCE	4.1	5	0.4	0.36	0.32	0.41	0.4	0.38 J	ND	ND	ND	0.36 J
TCE	0.28	5	**5.2**	**5**	**5.6**	**6.4**	**5.9**	**4.6**	**4.9**	**4.2**	**5.4**	**5.2**

- TCE concentrations have fluctuated between 2.2 µg/L and 8.7 µg/L and exhibit an overall decreasing trend. TCE concentrations have fluctuated above and below the MCL and RSL but have remained below the ecological freshwater benchmark (21 µg/L).
- PCE concentrations have remained in the range of non-detect to 0.6 µg/L, below the MCL (5 µg/L), RSL (11 ug/L), and ecological freshwater benchmark (111 µg/L).

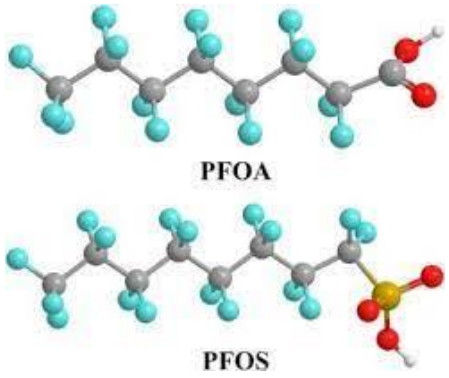
PFAS Introduction

Fort Detrick RAB Meeting

October 12, 2022

What are PFAS?

- Per- and Polyfluoroalkyl Substances
  - Two of the main ones are perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS)
- Chemicals of Emerging Concern
- Environmentally Persistent and Bioaccumulate



Where do PFAS come from?

- Found widely in the environment
  - AFFF (Aqueous Film-Forming Foam)
  - Nonstick Cookware
  - Cleaning Products
  - Cosmetics
  - Paints and Varnishes
  - Water Resistant Clothing

PFAS Strategic Road Map

EPA United States Environmental Protection Agency

PFAS Strategic Roadmap: EPA's Commitments to Action 2021–2024

- Available on our website
- Outlines the agency approach to addressing PFAS
- Has 3 Central Directives
  - Research
  - Restrict
  - Remediate – our focus here

Key Actions for the Office of Land and Emergency Management

- Propose to designate PFOS and PFOA as CERCLA hazardous substances
  - Proposed rule announced August 2022
  - Public comment period ends November 2022
  - Final rule expected in 2022
- Issue advance notice of proposed rulemaking to potentially designate other PFAS as hazardous substances (expected fall 2022)
- Issue updated guidance on destroying and disposing PFAS ***(expected fall 2023)***

Key Actions for the Office of Research and Development

- Develop and validate methods to detect and measure PFAS in the environment ***(ongoing)***
- Advance the science to assess human health and environmental risks from PFAS by developing human health toxicity assessments under EPA's Integrated Risk Information System program ***(ongoing)***
- Evaluate and develop technologies for reducing PFAS in the environment ***(ongoing)***

Excerpt of Key Actions for the Office of Water

- Undertake nationwide monitoring for PFAS in drinking water under the fifth Unregulated Contaminant Monitoring Rule. ***(final rule published December 2021)***

- Establish a national primary drinking water regulation for PFOA and PFOS that would set enforceable limits and require monitoring of public water supplies, while evaluating additional PFAS and groups of PFAS. ***(Science Advisory Board consultation ongoing; proposed rule fall 2022, final rule fall 2023)***

- Additional actions will focus on updated toxicity assessments, health advisories, effluent limitations, NPDES permitting, water quality criteria, analytical methods, etc.

Key Action Across EPA – We want to hear from you

- Engage directly with affected communities to hear how PFAS contamination impacts their lives and livelihoods, building on a recommendation from EPA's National Environmental Justice Advisory Council

What's to come?

- Fort Detrick has met its requirements under the National Defense Authorization Act to take an initial look for PFAS and there haven't been any direct exposures to the PFAS that was found in groundwater on-site
- Additional data will be collected at Fort Detrick Area B to characterize the nature and extent of PFAS contamination when appropriate analytical methods and regulations are in place

Links to additional resources

- https://mde.maryland.gov/PublicHealth/Pages/PFAS-Landing-Page.aspx
- https://www.epa.gov/pfas
- https://www.atsdr.cdc.gov/pfas/index.html

Questions?

Jenna O'Brien

EPA Remedial Project Manager

Obrien.jenna@epa.gov

215-814-3396

Angela Ithier

EPA Community Involvement Coordinator

Ithier.angela@epa.gov

215-814-5248

FORT DETRICK PFAS SITE INSPECTION CONCLUSIONS AND REMEDIAL INVESTIGATION NEXT STEPS

October 12, 2022

John Cherry

Arcadis

OVERVIEW

Army PFAS Program Overview

Fort Detrick PFAS Overview

Upcoming Work

Army PFAS Program Scope

CERCLA Based Nationwide Preliminary Assessments (PAs) and Site Inspections (SIs) for Army Installations

- 108 Installations nationwide
- Focus is to assess the inventory of potential releases while being protective of drinking water receptors
- Army has voluntarily implemented this program

Based on PA/SI results, Detrick and other Army Installations are proceeding with additional Remedial Investigation (RI) activities to further evaluate potential PFAS impacts.

Fort Detrick PFAS Sampling Overview

Preliminary Assessment Summary

- Records search completed in 2018.
- Interviews conducted during the site visit.

Data were reviewed and evaluated to determine which of the areas meet the criteria for categorization as Areas of Potential Concern (AOPIs).

As a result of this evaluation, **4 AOPIs** were identified at Fort Detrick.

AOPIs were evaluated to identify PFAS presence or absence based on past use and potential or documented release to the environment.

Areas of Potential Interest Identified

- **Area B**: 2 AFFF Release Areas
  - Two areas where a single release of National Universal Gold 1-3% AFFF was identified as part of a unit certification exercise conducted some time between 2008 and 2015. Less than 1-gallon total of diluted (0.1%) AFFF was sprayed at each area.
- **Area A**: 2 Fire Stations
  - All fire stations are programmatically tested if AFFF was stored at the location.

AFFF = Aqueous Film Forming Foam (fire suppressant used to extinguish flammable liquid fires)

Planned SI Activities - Area B AFFF Release Sites

ARCADIS Design & Consultancy for natural and built assets

Locations

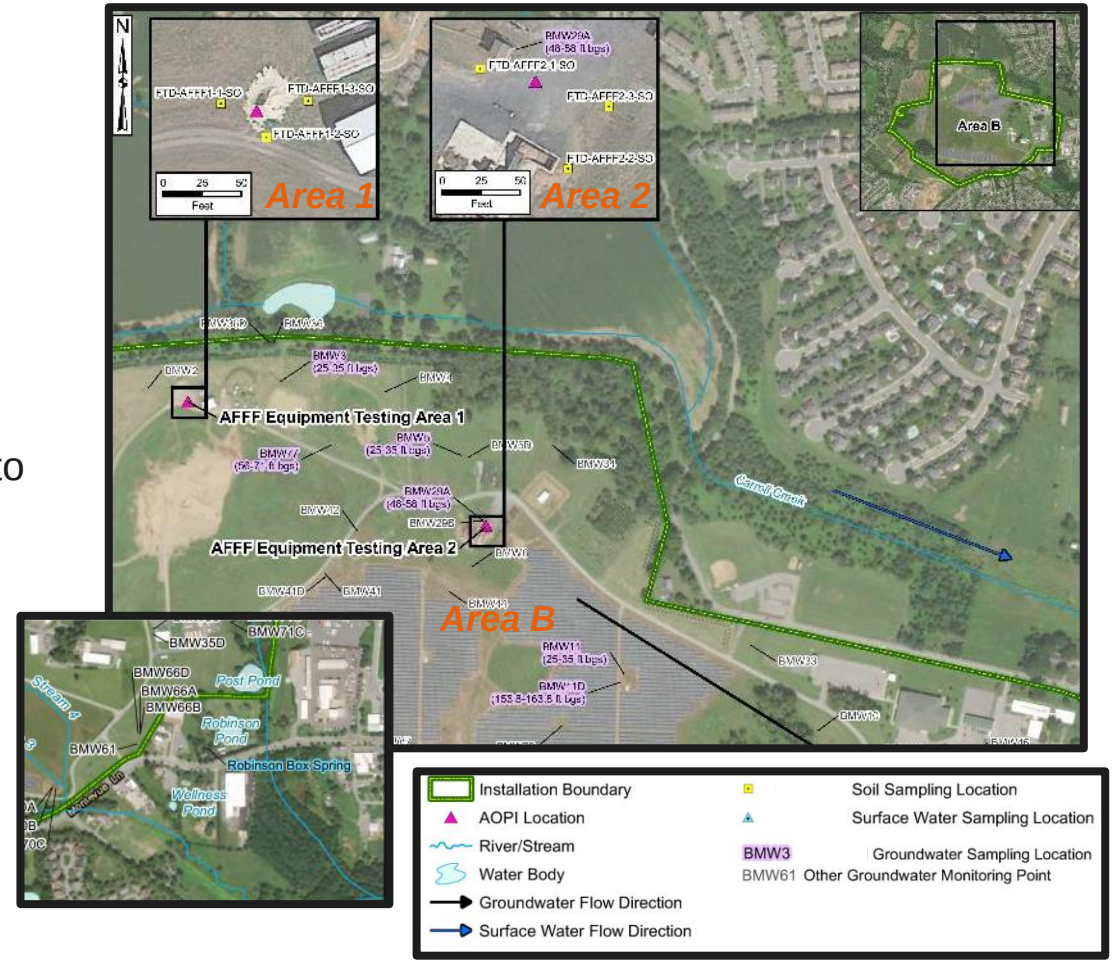
- AFFF Release Area 1
- AFFF Release Area 2

Sampling Design and Rationale

- Evaluate potential of release of AFFF to soil

Sampling Scope Summary

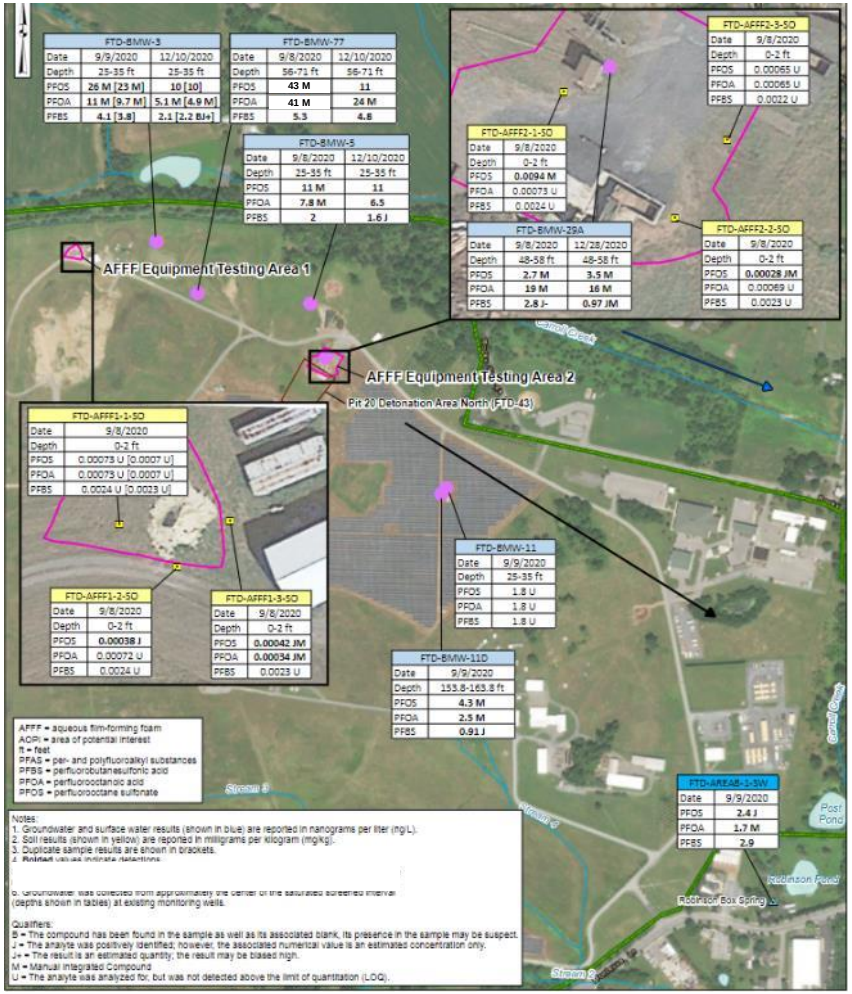
- Groundwater – 6 samples (3 shallow points, 3 deep points)
- Surface soil – 6 samples (3 at each location)
- Surface Water – 1 off-post sample (Robinson Box Spring)



Area B SI Results

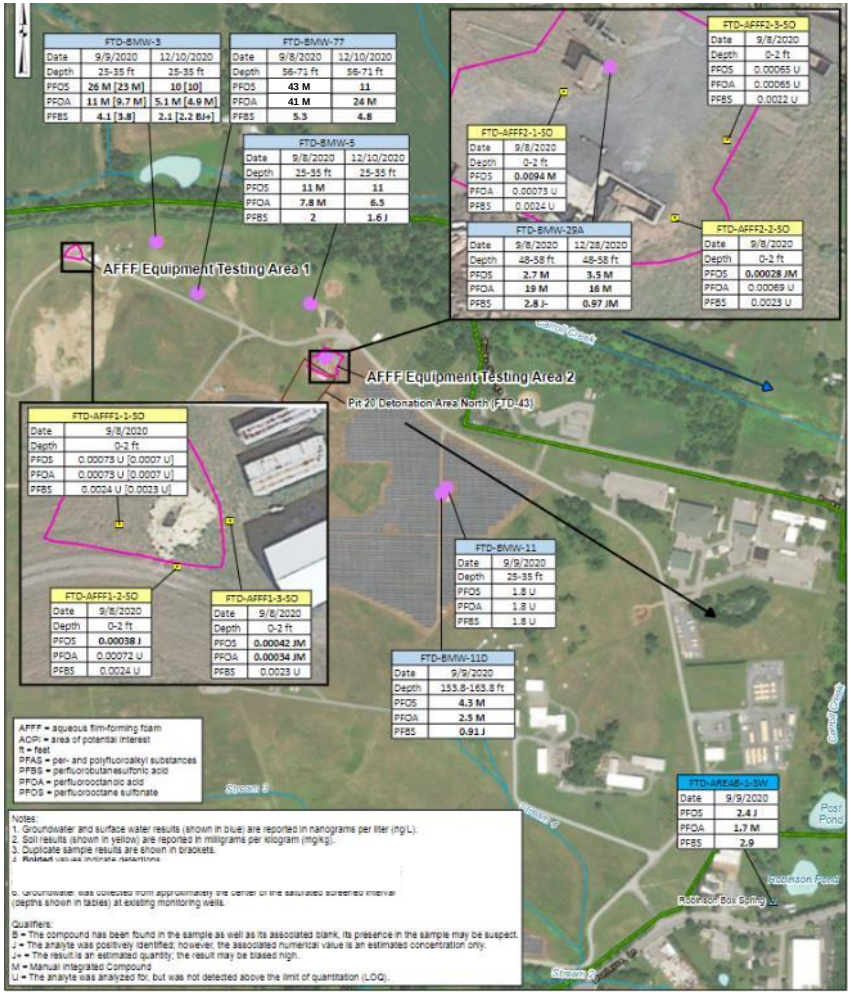
- Groundwater
  - Based on the updated USEPA May 2022 RSLs, five wells exceed RSLs for PFOS (RSL = 4 ppt) and/or PFOA (RSL = 6 ppt)
    - BMW-3:
      - Sept 2020: PFOS 26 ppt; PFOA 11 ppt
      - December 2020: PFOS 10 ppt; PFOA 5.1 ppt
    - BMW-5:
      - Sept 2020: PFOS 11 ppt; PFOA 7.8 ppt
      - December 2020: PFOS 11 ppt; PFOA 6.5 ppt
    - BMW-11D: Sept 2020: PFOS: 4.3 ppt
    - BMW-29A: Sept 2020:
      - Sept 2020: PFOA 19 ppt
      - December 2020: PFOA 16 ppt
    - BMW-77:
      - Sept 2020: PFOS 43 ppt; PFOA 41 ppt

RSL = USEPA Regional Screening Level
ppt = parts per trillion (also nanograms per liter (ng/L))



Area B SI Results

- Groundwater
  - BMW-11 and Robinson Box Spring (off-post) did not exceed RSLs
- Soil
  - No soil exceedances
- Both sites (AFFF Release Area 1 and AFFF Release Area 2) will move forward for further investigation.



RSL = USEPA Regional Screening Level
ppt = parts per trillion (also nanograms per liter (ng/L))

Planned SI Activities - Area A Fire Stations

Locations

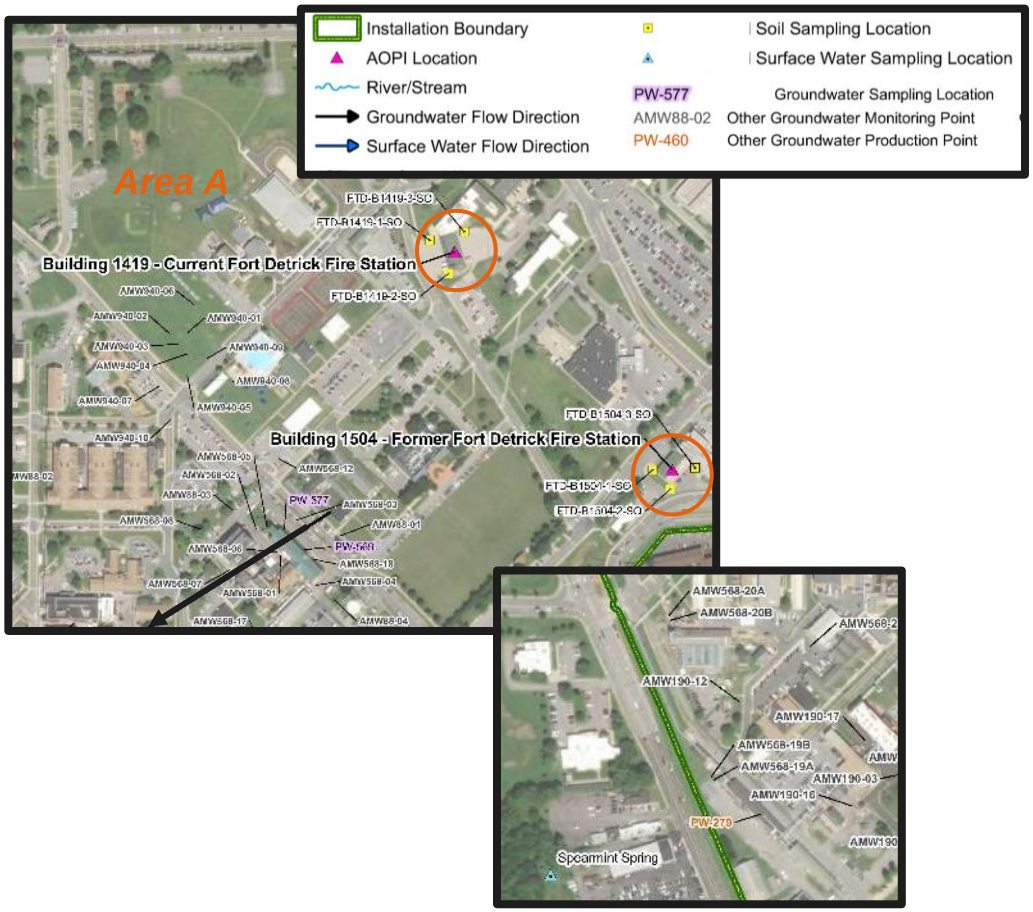
- Building 1419 – Current Fire Station
- Building 1504 – Former Fire Station

Sampling Design and Rationale

- Evaluate potential release of AFFF from handling at fire stations

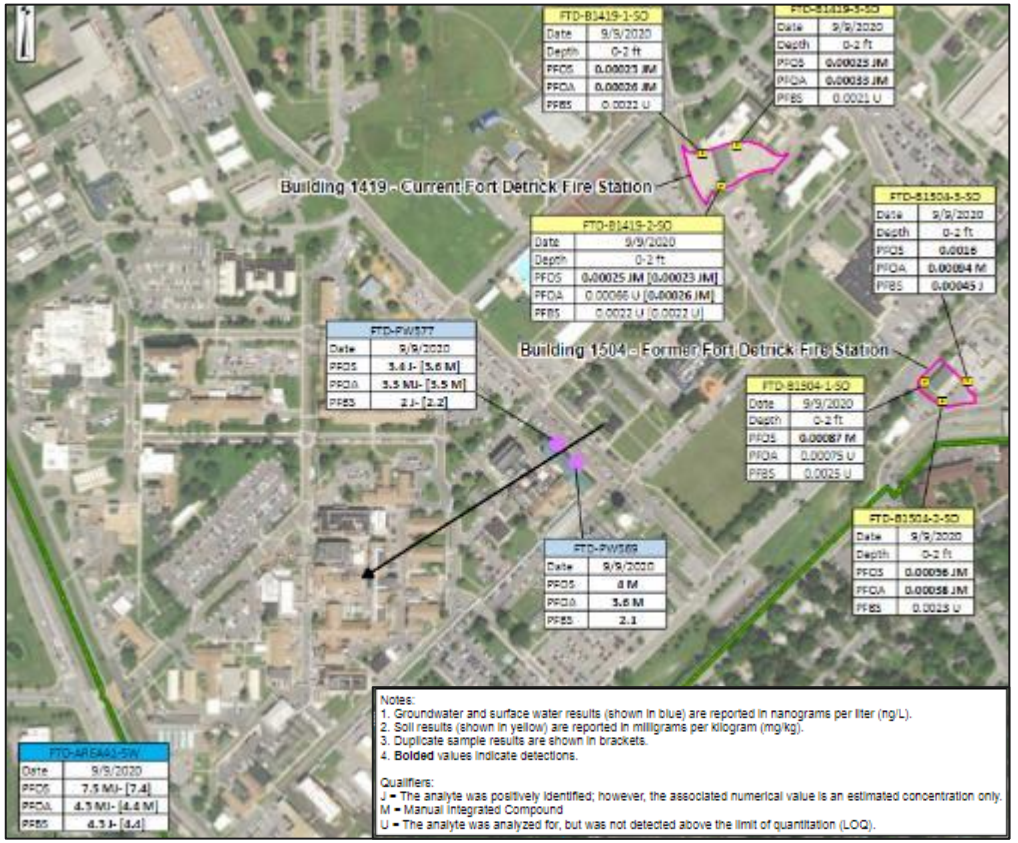
Sampling Scope Summary

- Groundwater – 2 samples (at Building 568 pumping points)
- Surface soil – 6 samples (3 at each location)
- Surface Water – 1 off-post sample (Spearmint Spring)



Area A SI Results

- Groundwater
  - Based on the updated USEPA May 2022 RSLs, one point and the spring exceed for PFOS (RSL = 4 ppt)
    - PW569: PFOS 4 ppt
    - Spring: PFOS 7.5 ppt
- Soil
  - No soil exceedances
- Both fire station sites will move forward for further investigation



RSL = USEPA Regional Screening Level
ppt = parts per trillion (also nanograms per liter (ng/L))

Upcoming Work

Upcoming Activities – RI Activities

- Based on the results of the PA/SI work summarized above, additional RI sampling activities will be conducted at the AOPIs identified in Area A and Area B. The scope of the additional sampling activities is under development, and is anticipated to include:
  - Soil Sampling
  - Groundwater Monitoring Point Installation (new locations)
  - Groundwater Sampling of New and Existing Points
  - Spring Sampling

Upcoming Activities – Baseline GW Sampling

- Due to uncertainty around the presence of PFAS in herbicides that were disposed of in the Area B landfills, baseline groundwater sampling for PFAS is planned in these areas.
- Appropriate monitoring points around the capped former landfills will be selected and sampled for PFAS during a future routine landfill monitoring program event.
- Additional SI level sampling may be conducted near herbicide sites on Areas A and B.
- A Work Plan is under development for these baseline activities.