

# Air Force Installation & Mission Support Center



## AFCEC BRAC Pease AFB RAB Meeting

Chris King – USAF  
Hank Andolsek – WSP  
Grant Austin – WSP  
Madi Dinsmore – WSP  
Amy Quintin – WSP  
24 January 2023



# Agenda



- **Technical Check** – Ona Ferguson (Consensus Building Institute)
- **Technical Presentations** - (Video recording)
  - **Air Force Cleanup Update** – Chris King (AFCEC)
  - **Remedial Investigation Update** – WSP
- **Welcome, Introductions, RAB Business** – Ona Ferguson (Consensus Building Institute)
- **Open Discussion Time**
- **Public Comments**
- **Meeting recap and Next Steps** – Ona Ferguson (Consensus Building Institute)
- **Adjourn**



# Private Well Update



- **Two residents currently on bottled water**
  - **The public comment period on the engineering assessment and cost analysis (EECA) closed on 18 November 2022**
  - **A Non-time Critical Removal Action (NTCRA) memo is now being drafted**
  - **The physical connection to municipal water is planned for spring**
  
- **One resident is currently supplied with a point-of-entry-treatment system (POET) installed by NH Department of Environmental Services (NHDES)**
  - **NHDES transferred ownership to the resident on 6 Jan 2023**
  - **Air Force is drafting a Time Critical Removal Action (TCRA)**
  - **Air Force to assume operations and maintenance of the POET within six months**



# NDAA Update



- **National Defense Authorization Act (NDAA) of 2023 signed on 23 Dec 2022.**
  - **The new law modifies Section 345(a)(2) of the FY22 NDAA to clarify data sharing restrictions.**
  - **Section 345(a)(2) now reads as follows, with the new text shown in *bold italic*:**

“(2) CONSENT BY PRIVATE PROPERTY OWNERS.—The Secretary of Defense may not publicly disclose ***personally identifiable information in connection with*** the results of testing for perfluoroalkyl or polyfluoroalkyl substances conducted on private property without the consent of the property owner.”
  - **Change to statute aligns with DOD interpretation of earlier version of statute, so revised statute does not change what DoD will publicly disclose.**
  - **AF will continue to share sampling results and will continue to protect private property ownership and well location data, unless the property owner authorizes the AF to disclose that information**



# Site 8 IMS Effluent Injection Trenches



- **Site 8 Interim Mitigation System (IMS) effluent injection trenches were replaced in October 2022**
- **Existing Trenches A - D decommissioned**
- **New Trench 1 through Trench 5 constructed; Trench E is tied into Trench 5**
- **Higher capacity and control over effluent system**





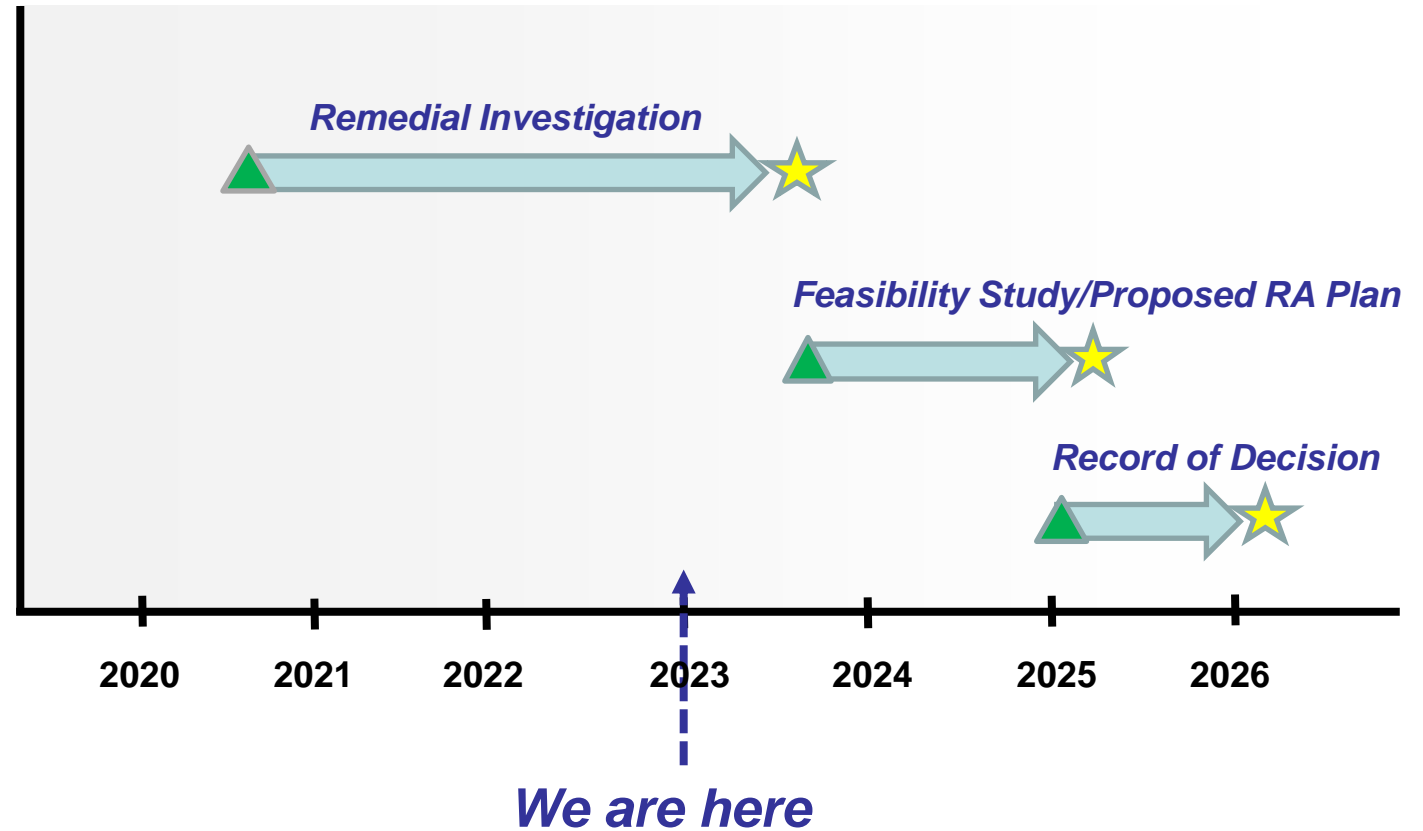


# Remedial Investigation (RI) Status



- Key Milestone Dates

- RI Report Final Fall 2023
- FS Report Final December 2024 (estimate)
- ROD Final December 2025 (estimate)





# ***Remedial Investigation (RI) Update***



- **Field Work nearly completed. Fall 2022 field mobilization included:**
  - **New well installation**
  - **Sampling groundwater, surface water, sediment, soil, pool water, garden produce, and eggs**
- **Validation underway**
- **Report production underway**





- **Summary of Extent of Groundwater Contamination and Potential Impact on Public Supply Wells (Hank Andolsek, WSP)**
- **Chemistry Update (Madi Dinsmore, WSP)**
- **Backyard Produce and Pool Water Update (Amy Quintin, WSP)**

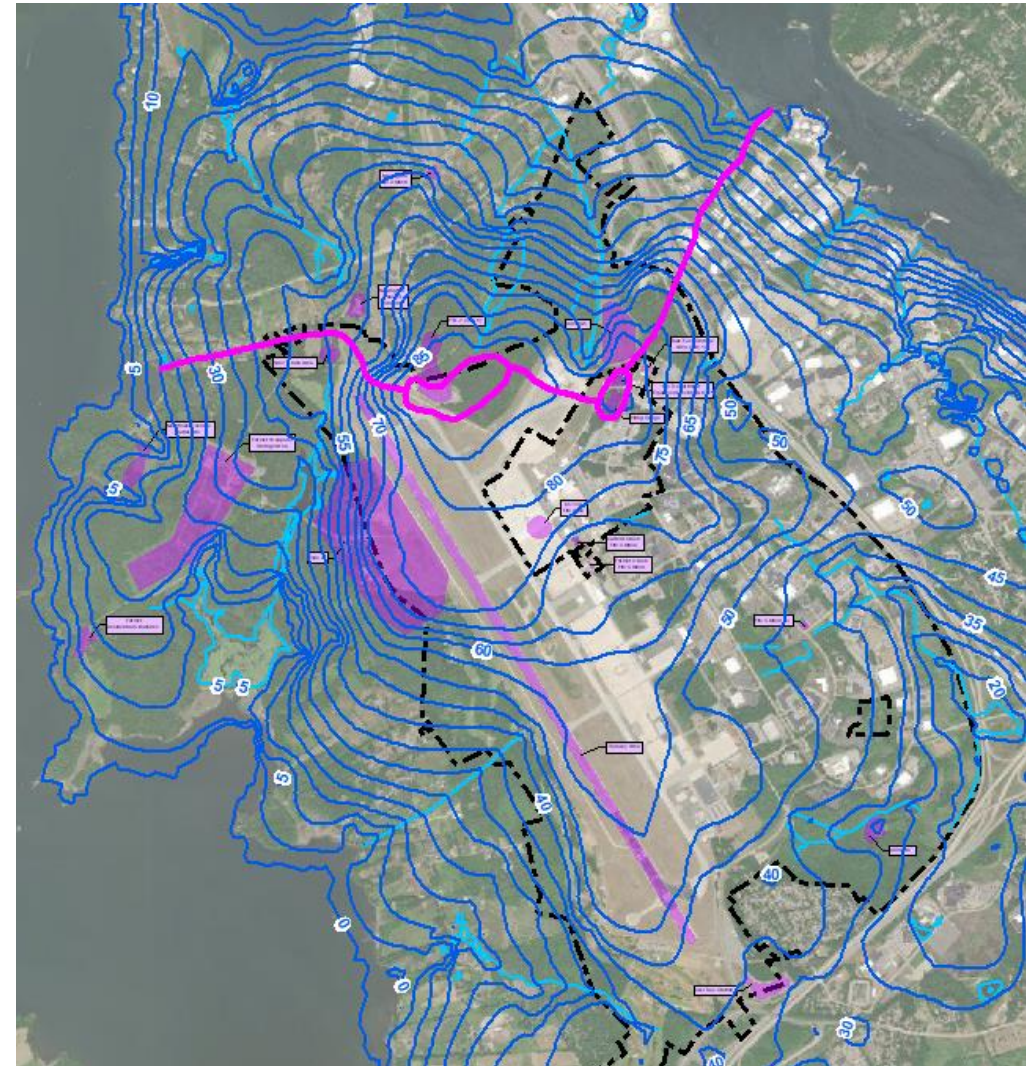




# Known or Potential Source Areas Investigated



1. 1961 crash
2. Site 8/FTA-2
3. Firing Range
4. Fire Department Equipment Testing Area
5. Landfill-5
6. Site 13/Bulk Fuel Storage Area
7. KC-135 Fire
8. Current Crash Fire Station
9. Former Crash Fire Station
10. Runway Area
11. Fire Department #3
12. GBNWR/Munitions Residue Burial Site
13. Newington Transfer Station
14. Newington Fire Department
15. Zone 2
16. Landfill-6
17. C&J Bus Station





# ***EVS - 3 Dimensional Hydrogeologic Model***





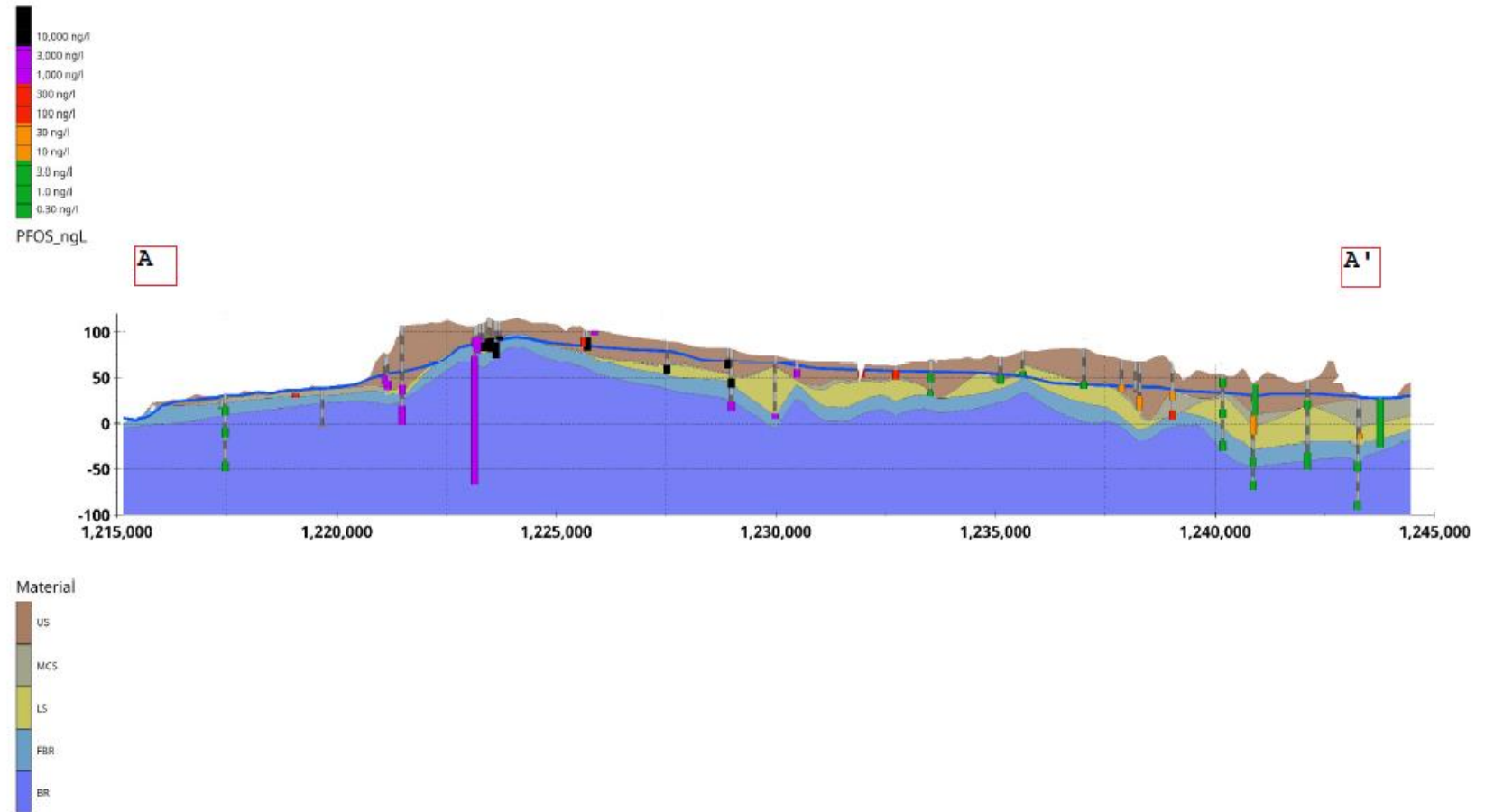


# PFOS Distribution in Cross-Section A-A'



- Green = detected <4ng/L
- Orange = >4ng/L <40ng/L
- Red = >40ng/L <400ng/L
- Purple = >400ng/L <4000ng/L
- Black = >4000 ng/L

	EPA RSL (ng/L)	NH AGQS (ng/L)
PFBS	601	-
PFHxS	39	18
PFNA	5.9	11
PFOS	4.0	15
PFOA	6.0	12
HFPO-DA	6.0	-

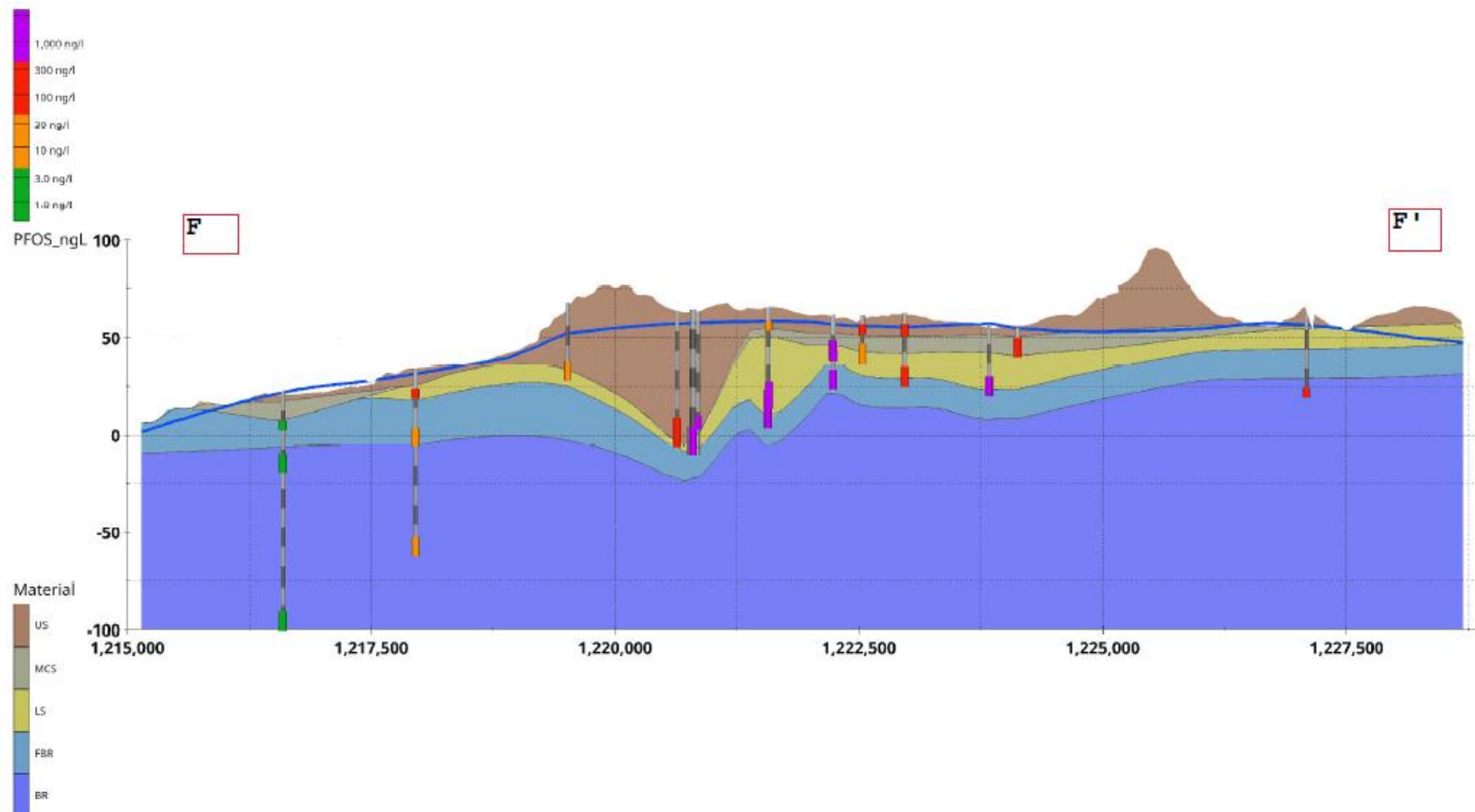




# PFOS Distribution in Cross-Section F-F'



- Dip in the middle is where the Haven Well is located

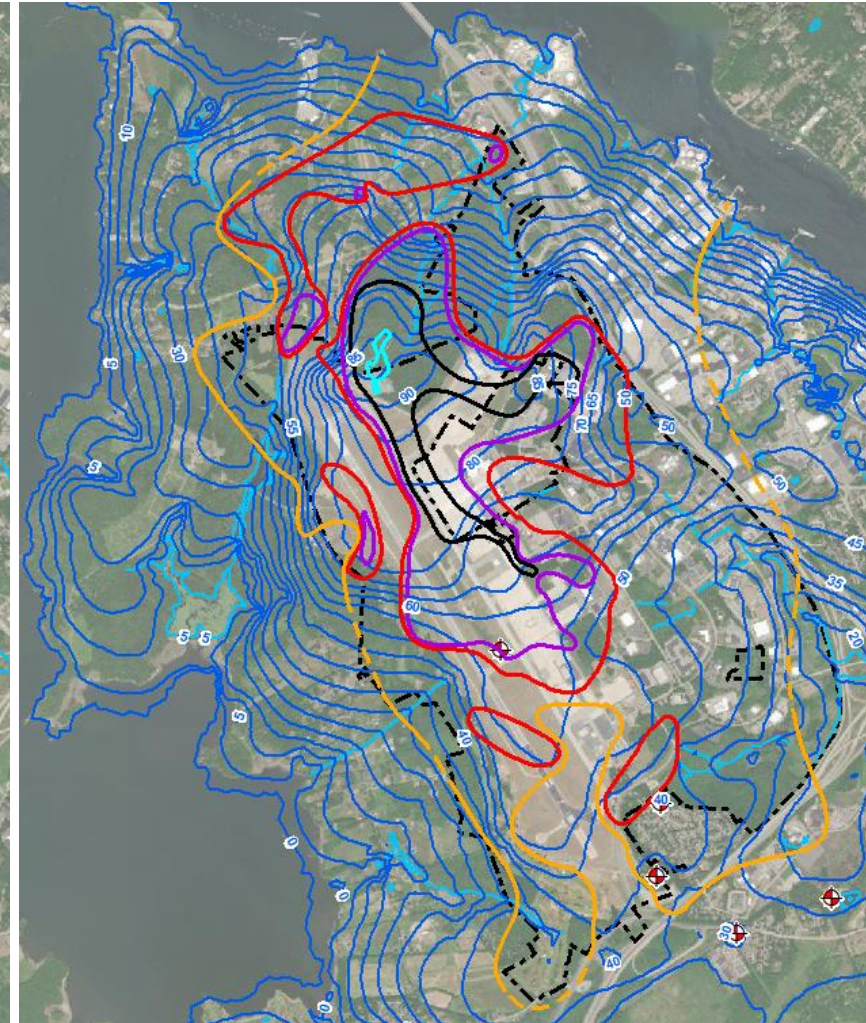
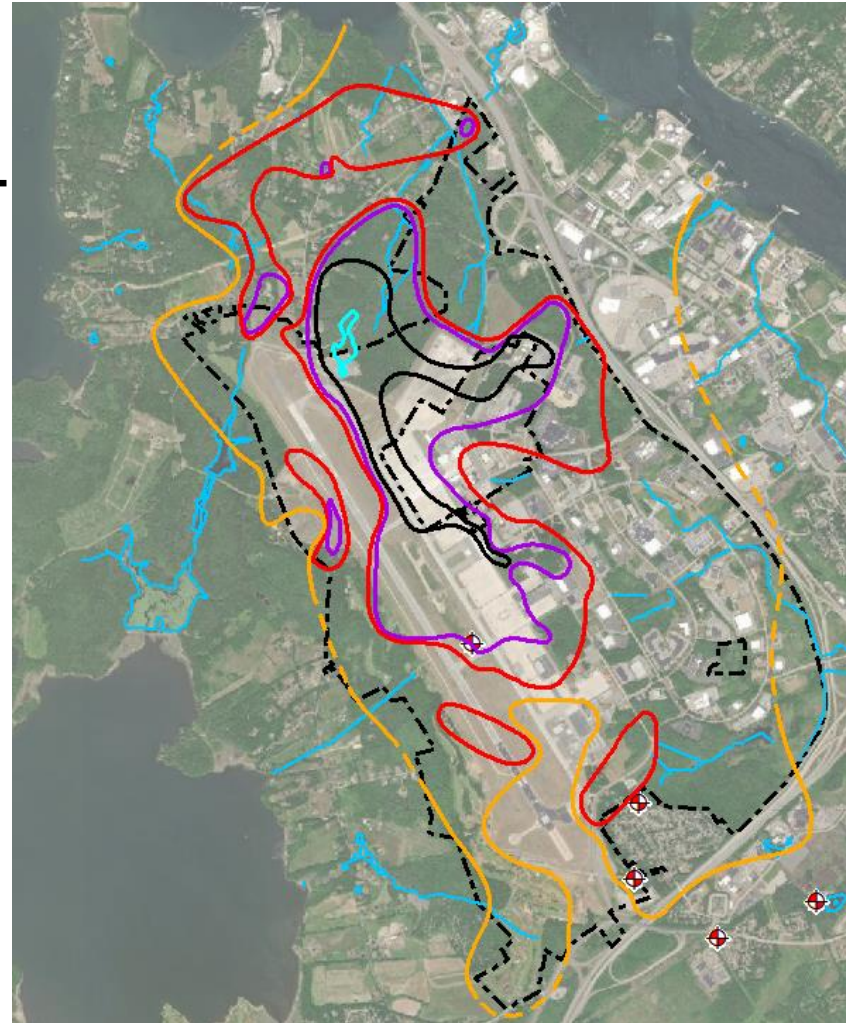




# PFOS Distribution in Overburden Groundwater

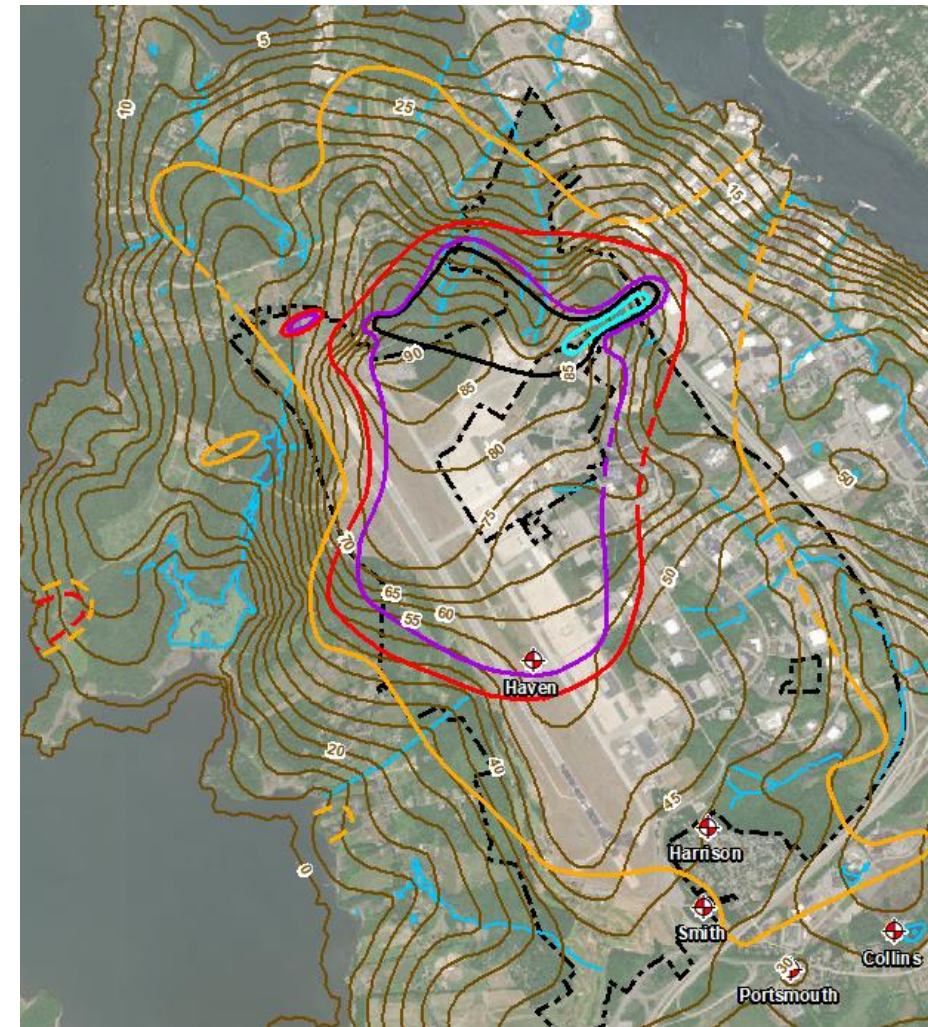


- Orange =  $>4\text{ng/L}$   $<40\text{ng/L}$
  - Red =  $>40\text{ng/L}$   $<400\text{ng/L}$
  - Purple =  $>400\text{ng/L}$   $<4000\text{ng/L}$
  - Black =  $>4000\text{ ng/L}$
- 
- Inside of the orange line represents an exceedance of the PFOS RSL ( $4\text{ng/L}$ ) and/or AGQS
- 
- Exceedances of RSL and/or AGQS for PFOA, PFHxS, PFBS, PFNA fall within orange line



Orange = >4ng/L <40ng/L  
Red = >40ng/L <400ng/L  
Purple = >400ng/L <4000ng/L  
Black = >4000 ng/L

- Inside of the orange line represents an exceedance of the PFOS RSL (4ng/L) and/or AGQS
- Exceedances of RSL and/or AGQS for PFOA, PFHxS, PFBS, PFNA fall within orange line
- Bedrock Potentiometric surface map shown on right



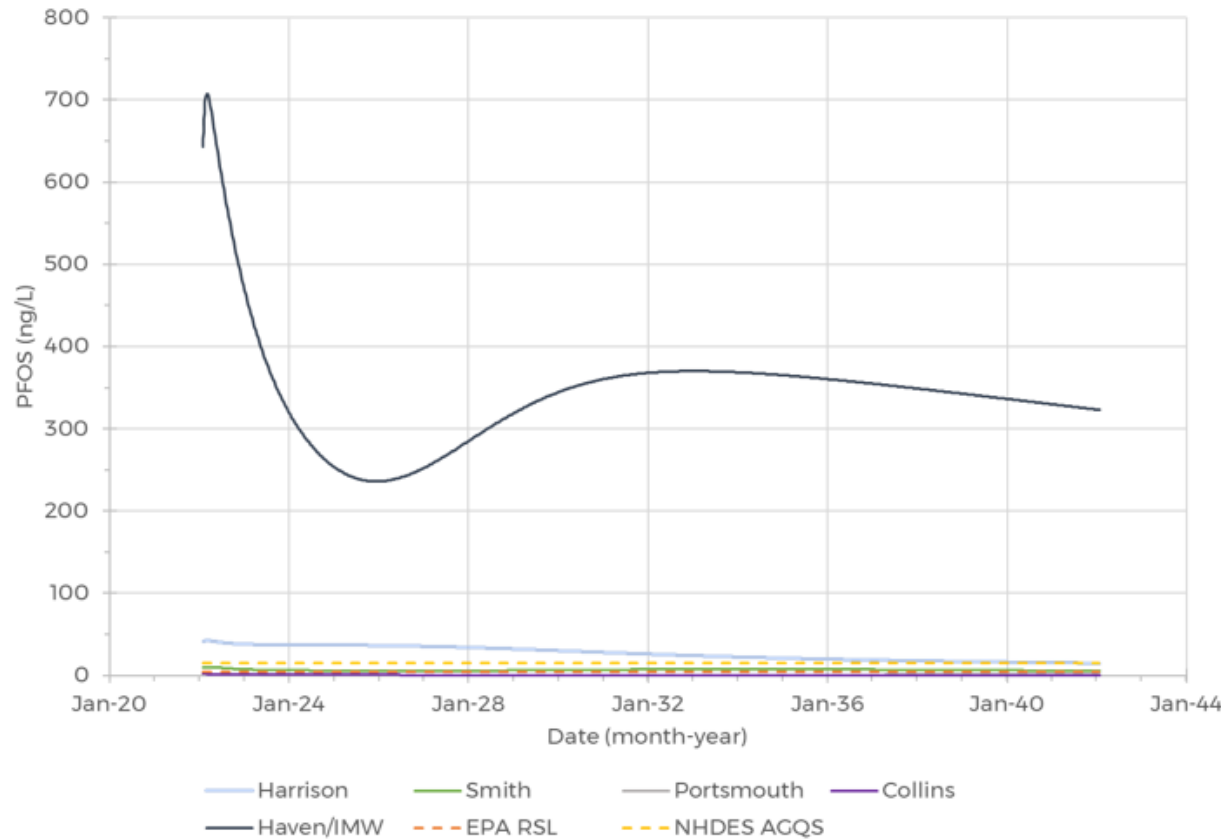




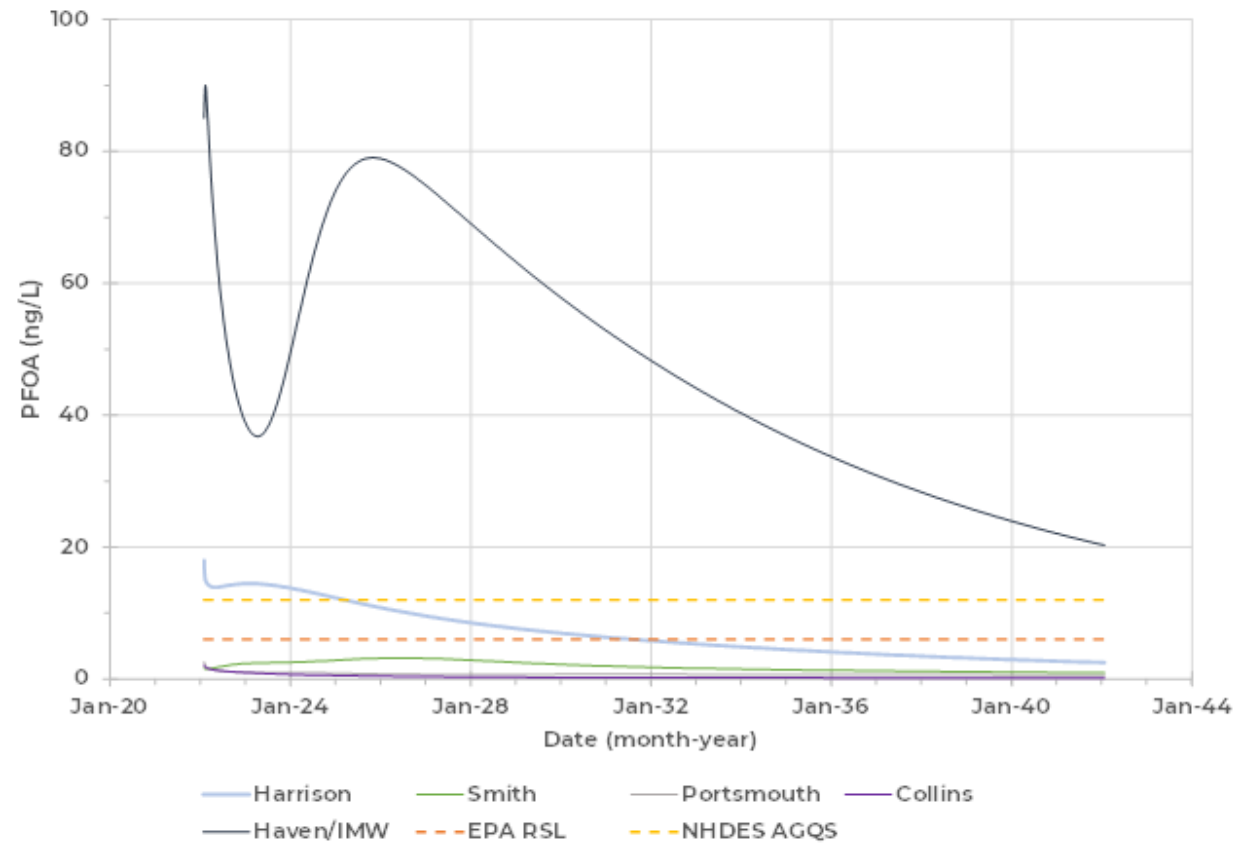
# Predicted Concentrations Over Time in Public Supply Wells



## Model Predicted PFOS Concentration vs Time



## Model Predicted PFOA Concentration vs Time

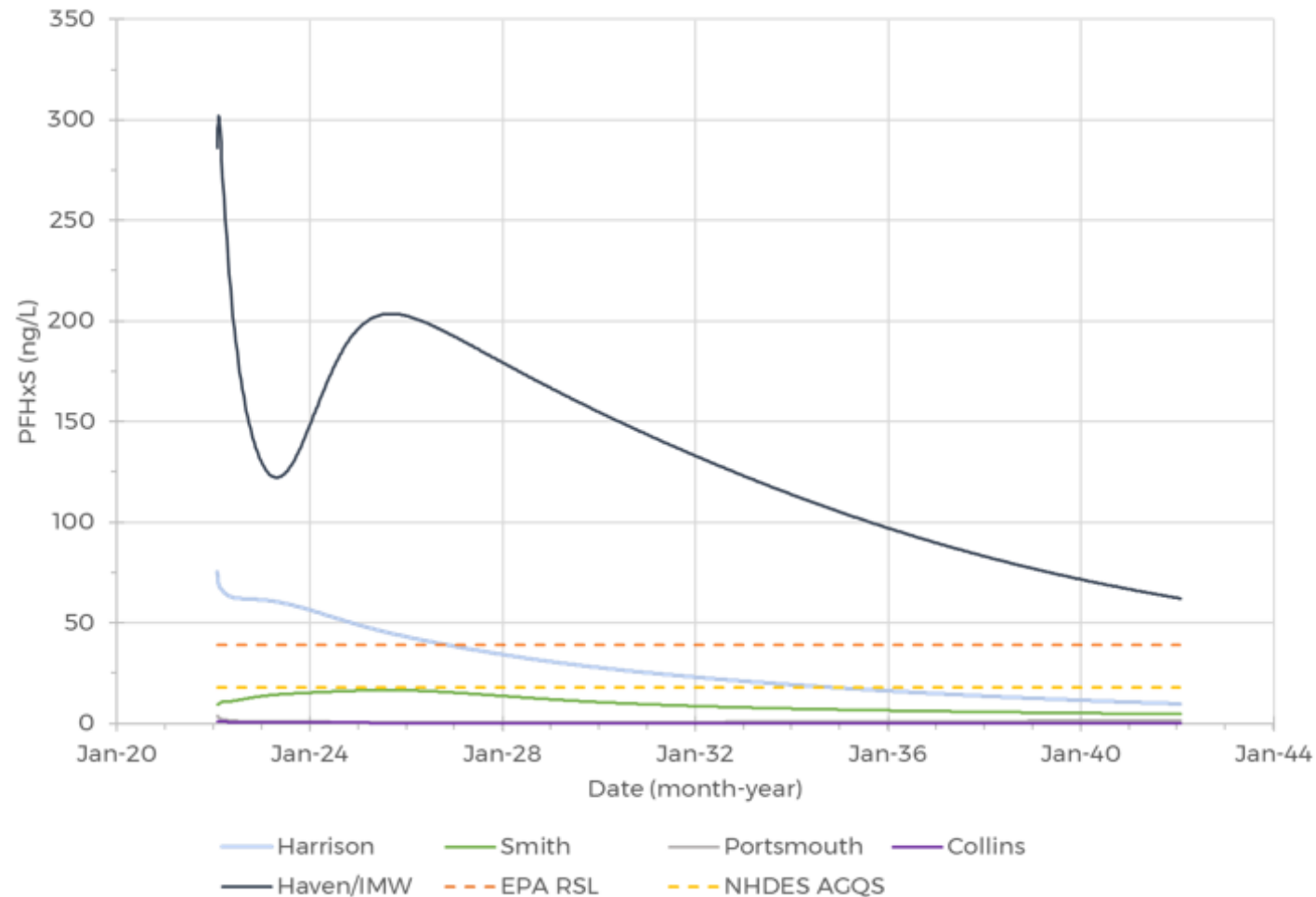




# Predicted Concentrations Over Time in Public Supply Wells...cont.



## Model Predicted PFHxS Concentration vs Time

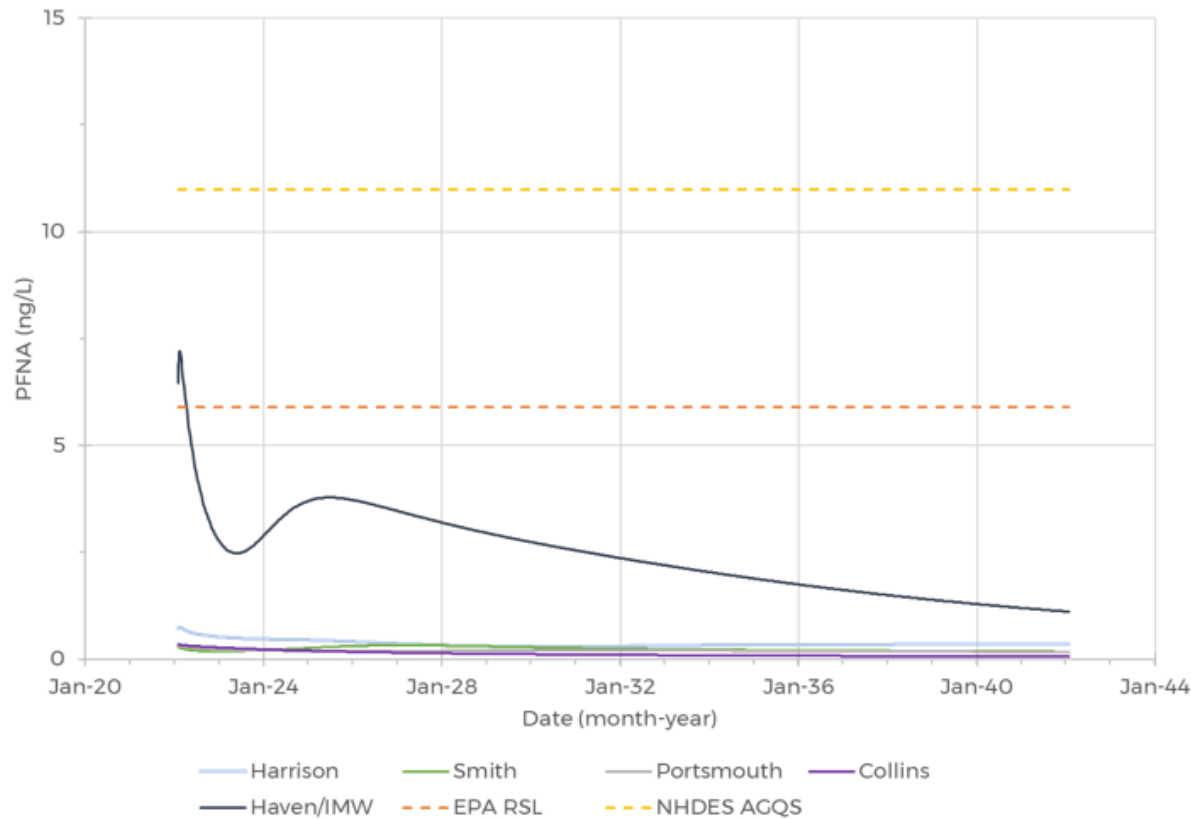




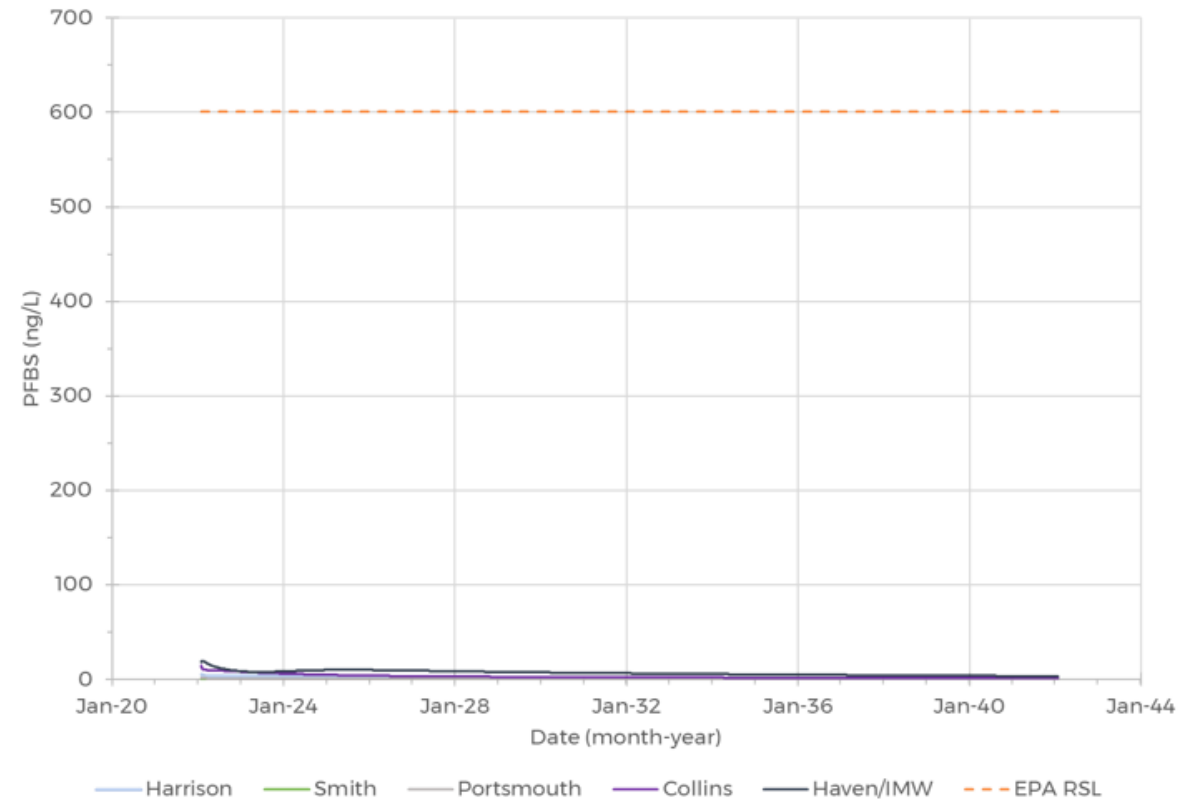
# Predicted Concentrations Over Time in Public Supply Wells...cont.



## Model Predicted PFNA Concentration vs Time



## Model Predicted PFBS Concentration vs Time





# RI Field Work – Pools & Produce



- Potentially complete pathways

Groundwater





# RI Field Work – Pool & Produce



## Big Picture Results



### Pool Water

- PFAS concentrations **below** swimming risk screening levels



### Fruit Veg

- PFOS, PFOA, PFHxS, PFNA, and PFBS **not detected** in 2021 or 2022 – exploratory large extractions trialed



### Eggs

- PFOS detected in 2021 – waiting on 2022 data



# RI Field Work – Pool Water

Could PFAS concentrations in pools increase over time?

Samples collected at three in-ground pools

Location selection = PFAS in private wells & questionnaires

## Comparing pool water to groundwater = no consistent trend

- **Most PFAS were detected in both groundwater and pool water**
  - Some PFAS were lower in pool water, some PFAS were higher
  - Variation was generally less than 10x
- **Some PFAS were detected in either groundwater or pool water, but not both**



- 2g sample
- QC solution
- 5mL methanol



- 1 mL final extract

$$\text{Instrument Result} \times \frac{\text{Extraction volume}}{\text{Sample Weight}} = \text{Reporting Limit}$$



# RI Field Work – Backyard Produce



## ■ 2022 Sampling Event

### Location selection

- PFAS in private wells
- Residential input
- Questionnaires
- Regulatory/RAB Feedback
- Broader Understanding

### Vegetables collected at 14 backyard properties north and west of Pease

- 8 resample locations
- 6 new locations:
  - 2 previously targeted but not sampled in 2021
  - 4 not previously targeted

### Eggs collected at seven properties north and west of Pease

- 2 properties use private well water for chicken drinking water
- 5 additional properties have no known pathway for PFAS migration from Pease

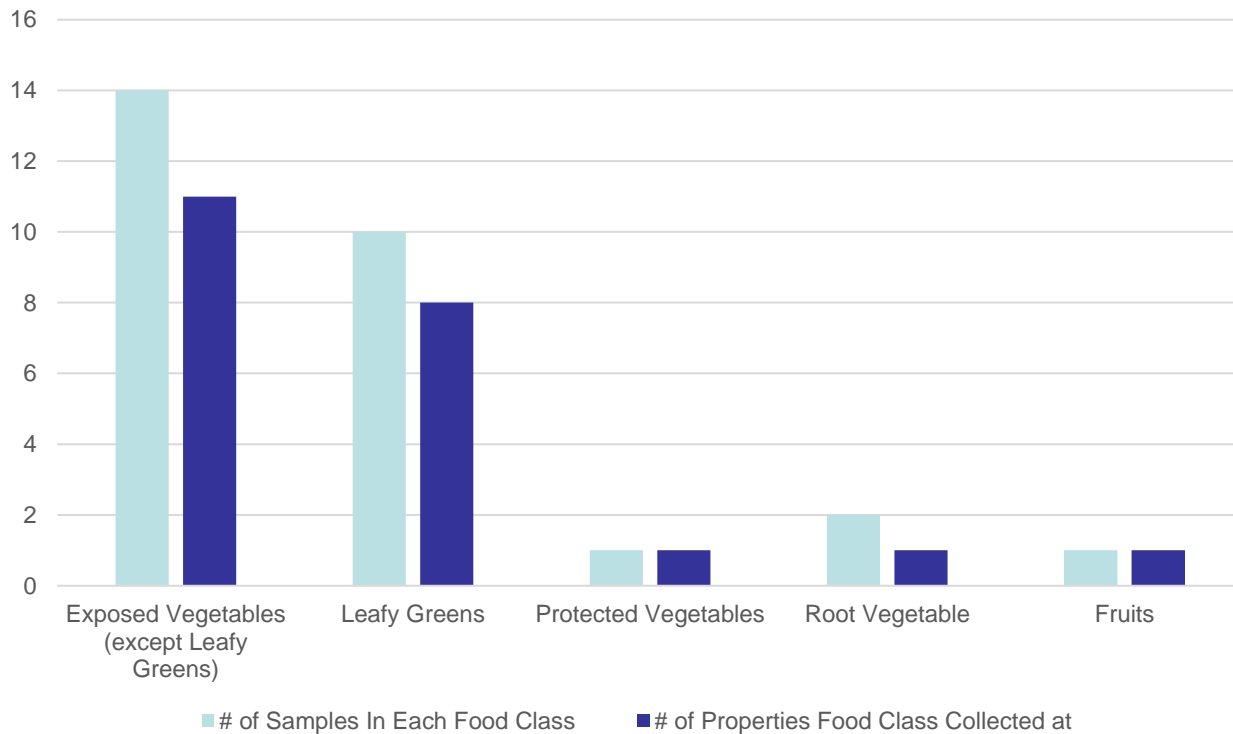




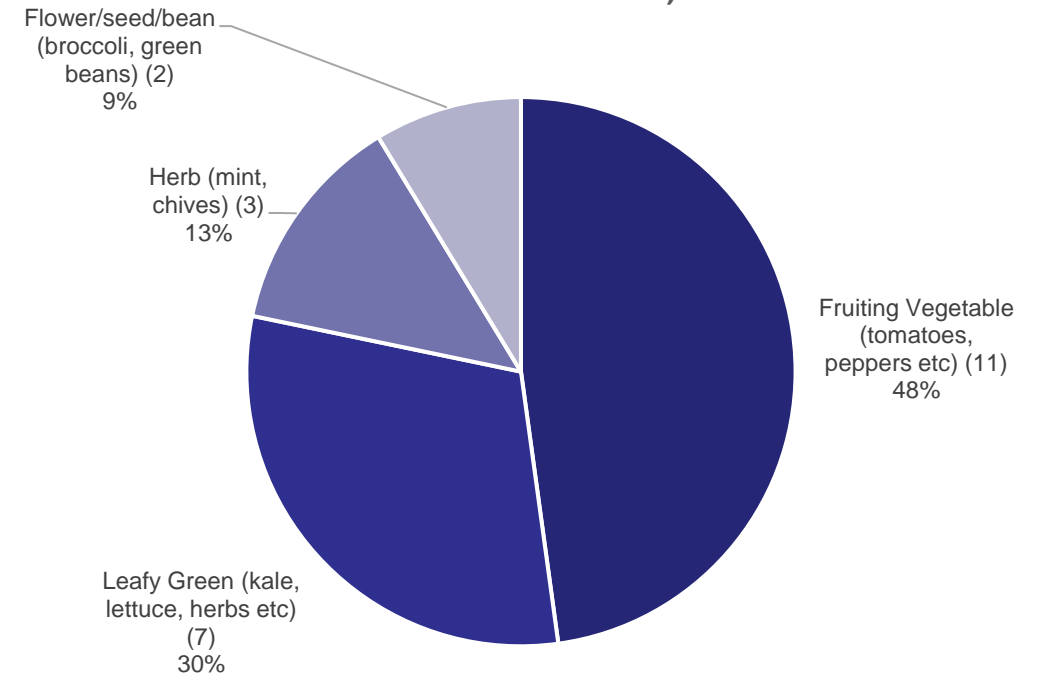
# RI Field Work – 2022 Backyard Produce



**Graph A**  
Produce Sampling Summary - 27 Samples at 14 Properties



**Graph B**  
Exposed Vegetables (All 23 EV Samples Incl Leafy Greens)



- Eight additional “large extractions” also run parallel to the standard analysis



# RI Field Work – Backyard Produce



**2021 Results – No detected concentrations of PFAS in Fruits or Vegetables**

**2022 Results – Three detected concentrations of short-chain PFAS:**

- **Eggplant** – PFPeA (also detected in soil and water)
- **Lettuce** – 6:2 FTS (not detected in soil or water)
- **Green Bean** – PFBA (not detected in soil or water)

**2022 Large Extraction Results – PFBA detected in three additional samples:**

- **Cabbage, Tomato, Mint - PFBA**



- **Eggs collected from 7 properties**
  - 2 resample properties - private well water with PFAS detected in water
- **Samples collected - yolk vs white**
  - PFOS in yolks

- **Also sampled:**
  - Soil
  - Groundwater
  - Chicken Feed



# RI Field Work – Pool, Produce Summary



- No PFAS above swimming screening levels.
- No clear concentration trend identified.



- No PFOS, PFOA, PFHxS, PFNA, or PFBS detected in 2021 or 2022.
- Three short-chain PFAS detected in 2022.



- PFOS detected in 2021.
- Sampling expanded in 2022 - data not yet received.



# Remedial Investigation Timeline



- **Upcoming Field Work:**
  - **Completing the deep bedrock investigation**
  - **Maple sap sampling**
- **Final Remedial Investigation Report, with Baseline Human Health and Ecological Risk Assessments, estimated in Fall 2023**





***Your Success is Our Mission!***