

# Former Fort Devens Army Installation Project Status Update 25 April 2019

Restoration  
Advisory Board  
Meeting





# Agenda

- Per- and Polyfluoroalkyl Substances (PFAS)
  - ▶ DERP Program Overview and CERCLA process
  - ▶ Municipal water supply well sampling update
    - Ayer, Devens
  - ▶ MassDEP Proposed MCP Revisions
  - ▶ Community Involvement Plan (CIP) Status
  - ▶ Remedial Investigation (RI) updates
    - Ongoing field activities
    - Sampling results to date
  - ▶ Time Critical Removal Action (TCRA)





# DERP Program Overview

- Defense Environmental Restoration Program (DERP)
  - ▶ 10 U.S. Code Selections 2700-2711
  - ▶ DOD Manual 4715.20
  - ▶ DOD Instruction 4715.07
  - ▶ DOD Instruction 4715.18 Emerging Contaminants
- Follow CERCLA to address suspected releases\*
  - ▶ First step is to *identify* the source(s) of a release
  - ▶ Then identify if there is an exposure through drinking water
  - ▶ If there is exposure, then the DOD priority is to cut off the drinking water exposure
  - ▶ Site is then prioritized and will follow CERCLA to fully investigate and determine appropriate cleanup actions

\*Deputy Assistant Secretary of Defense (Environment, Safety & Occupational Health), EPA PFAS Summit, May 2018





# CERCLA Process

- Preliminary Assessment (PA) – Completed 2016/2017
- Site Inspection (SI) – Completed 2017/2018
- Remedial Investigation (RI) – Ongoing
- Feasibility Study (FS)
- Proposed Plan (PP)
- Record of Decision (ROD)
- Remedial Design (RD)
- Remedial Action (RA)
  - ▶ Remedial Action Operations (RA-O)/Completion (RA-C)
- Long-Term Management (LTM)





# RI/FS Process

- Remedial Investigation
  - ▶ Site characterization
    - Define source
    - Determine nature and extent
    - Fate and transport
    - Conceptual site model
  - ▶ Baseline risk assessment
- Feasibility Study
  - ▶ Develop remedial action objectives
  - ▶ Identify and screen technologies
  - ▶ Develop remedial action alternatives
  - ▶ Screen remedial action alternatives
  - ▶ Conduct detailed analysis of remedial alternatives





# Ayer & Devens Public Supply Wells Detections of PFAS, February 2019

	Grove Pond Wells (ppt)				Spectacle Pond Wells (ppt)		
	Well 1 (offline)	Well 6	Well 7	Finished Water (wells 6,7)	Well 1A	Well 2A	Finished Water
NEtFOSAA	ND	3.38	ND	ND	ND	ND	ND
PFBS	ND	2.20	2.92	2.51	2.12	ND	2.1
PFHxA	2.36	4.25	41.2	23.6	3.53	27.7	16.4
PFHpA	2.22	2.71	27	15.3	2.52	12.3	7.93
PFHxS	6.54	7.12	11.5	8.61	5.72	3.13	4.76
PFOS	4.2	4.54	16.7	10.5	9.41	8.10	9.31
PFOA	9.46	8.16	19.0	14.0	8.14	10.9	9.76
PFOS+PFOA	13.7	12.7	35.7	24.5	17.6	19.0	19.1
Proposed GW-1	22.4	22.5	74.2	48.4	25.8	34.4	31.8

	PATTON WELL (ppt)	SHABOKEN WELL (ppt)
PFHxA	8.13	2.50
PFHpA	4.78	ND
PFHxS	8.06	19.8
PFOS	4.60	5.80
PFOA	11.3	6.81
PFOS+PFOA	15.9	12.6
Proposed GW-1	28.7	32.4

Results show the detected PFAS out of 14 analytes tested (including the 6 analytes in the proposed GW-1).

Yellow shading shows concentrations below and green shading shows concentrations above the EPA LHA (70 ppt) and/or proposed GW-1 (20 ppt).

ND = non-detect





# MassDEP Update



**APRIL 19, 2019:**

MassDEP Published DRAFT Regulations

Massachusetts Contingency Plan (“MCP”)

310 CMR 40.0000

- Part of a larger package of proposed amendments
- Seeking comment/input from stakeholders through July 19
- Includes a detailed *Note to Reviewers* with questions
- Public hearings in May 2019
- Details/schedule at

<https://www.mass.gov/lists/2019-proposed-mcp-revisions>





# MassDEP Update



Proposal Includes:

- **20 ppt** Reportable Concentration in RCGW-1 Areas
- **20 ppt** Method 1 GW-1 Standard
- RCGW-1 and GW-1 values apply to **SUM of SIX**
  - PFOS, PFOA, PFNA, PFHxS, PFHpA, PFDA
- Other Soil & Groundwater RCs, Standards & Upper Concentration Limits
- A **Reference Dose of 5E-06 mg/kg/day** for use in Method 3 (site-specific) risk assessments





# MassDEP Update



## (Some) Additional MassDEP Activities

- **INITIATING:** Revisions to ORSG & new MCL
  - 1<sup>st</sup> MCL Stakeholder Meeting held April 11<sup>th</sup> ...next in mid-June  
<https://www.mass.gov/lists/development-of-a-pfas-drinking-water-standard-mcl>
  - Invitation sent to Health Effects Advisory Committee to establish date for drinking water guideline revision meeting
  - Process will continue through end of 2019
- **ONGOING:** work with Public Water Suppliers & Sites
  - Preparing for a likely lower guideline/standard
  - Communicating with stakeholders
  - Implementing voluntary & required actions
  - Planning for and implementing permanent treatment





# Community Involvement Plan (CIP) Update for PFAS



STEP	STATUS
List of potential stakeholders Draft interview questions Draft letters of introduction	Provide to EPA and MassDEP for review on 30 April 2019
Receive input from EPA and MassDEP	7 May 2019
Mail letters of introduction	10 May 2019
Make calls to schedule interviews	Target: 15-24 May 2019
Conduct interviews	Target: 4-7 June 2019
Submit draft CIP	Target: July 2019



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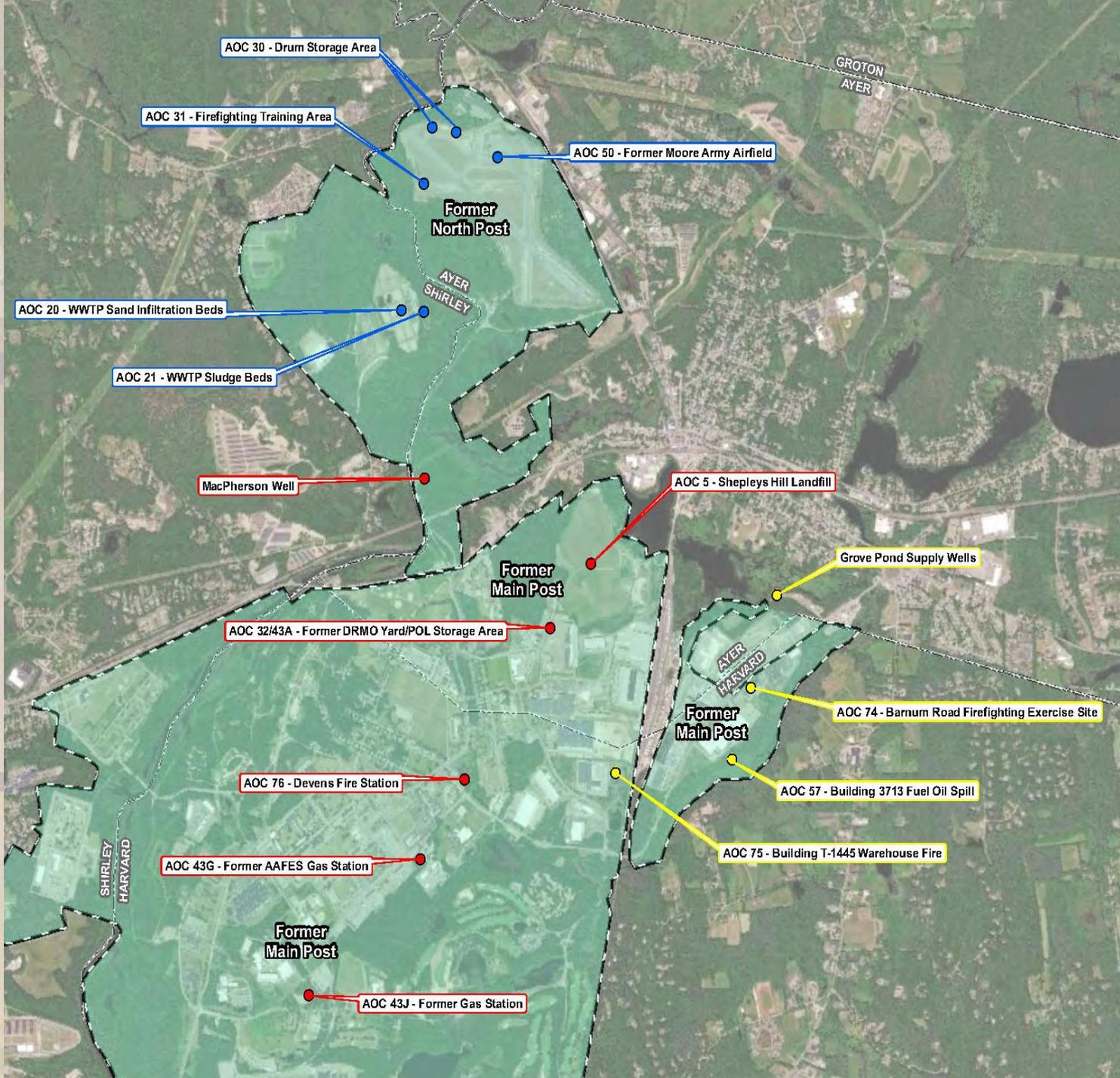


# RI Areas of Investigation

Area 1 = yellow

Area 2 = red

Area 3 = blue



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Legend	
● PFOA+PFOS > 70 ng/l	▲ Vertical Profiling Location
● PFOA+PFOS < 70 ng/l	● Monitoring Well
● Drilled, results pending	⊕ Monitoring Well - Damaged/Unable to Locate
● Yet to be Drilled	○ Water Supply Well
	→ Groundwater Flow Direction
	- - - Former Fort Devens Boundary

Area 1	
Former Fort Devens Army Installation Devens, Massachusetts	
KOMAN Government Solutions, LLC 293 Boston Post Road West, Suite 100, Marlborough, MA 01752	
0 325 650 Feet	Date: 04/12/2019 Figure

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

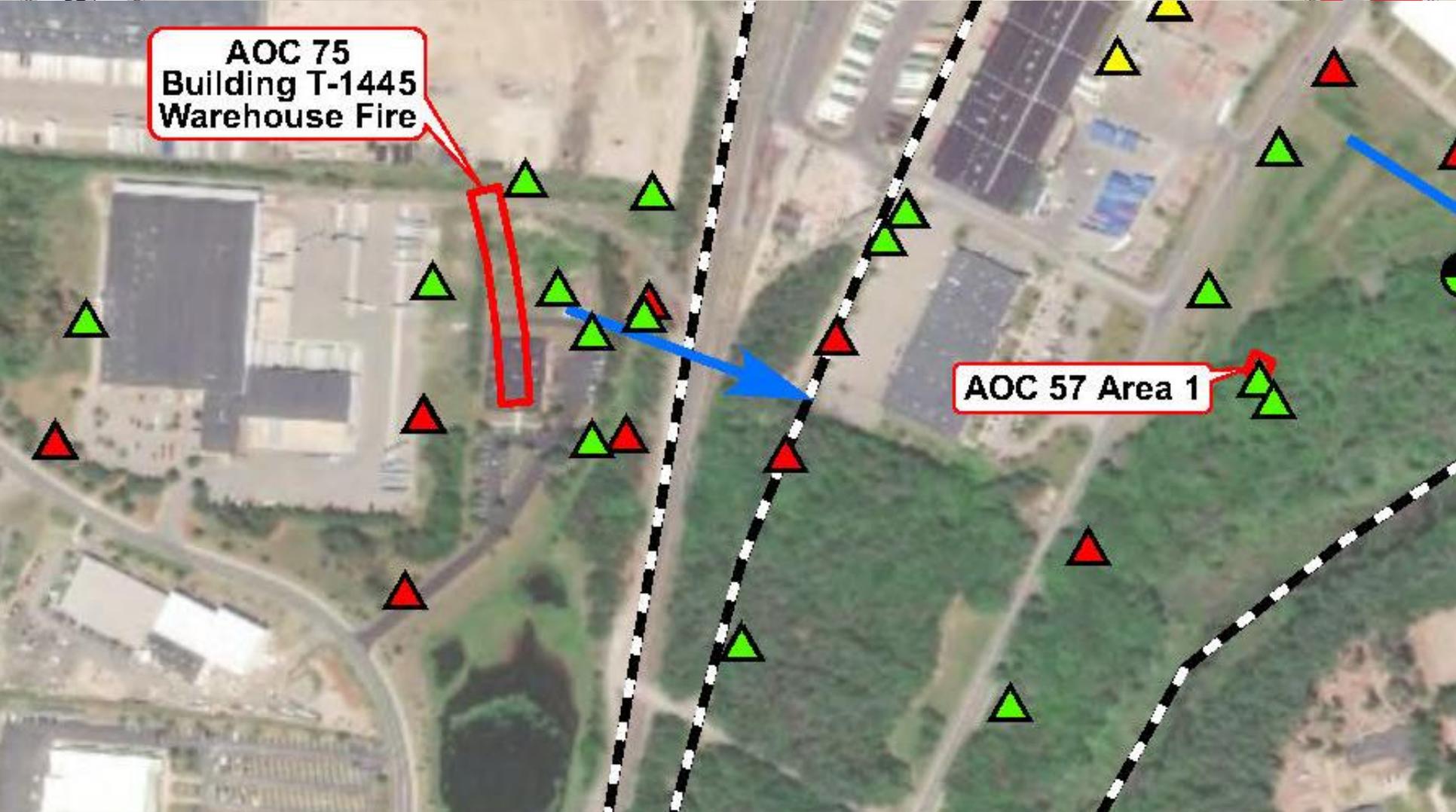


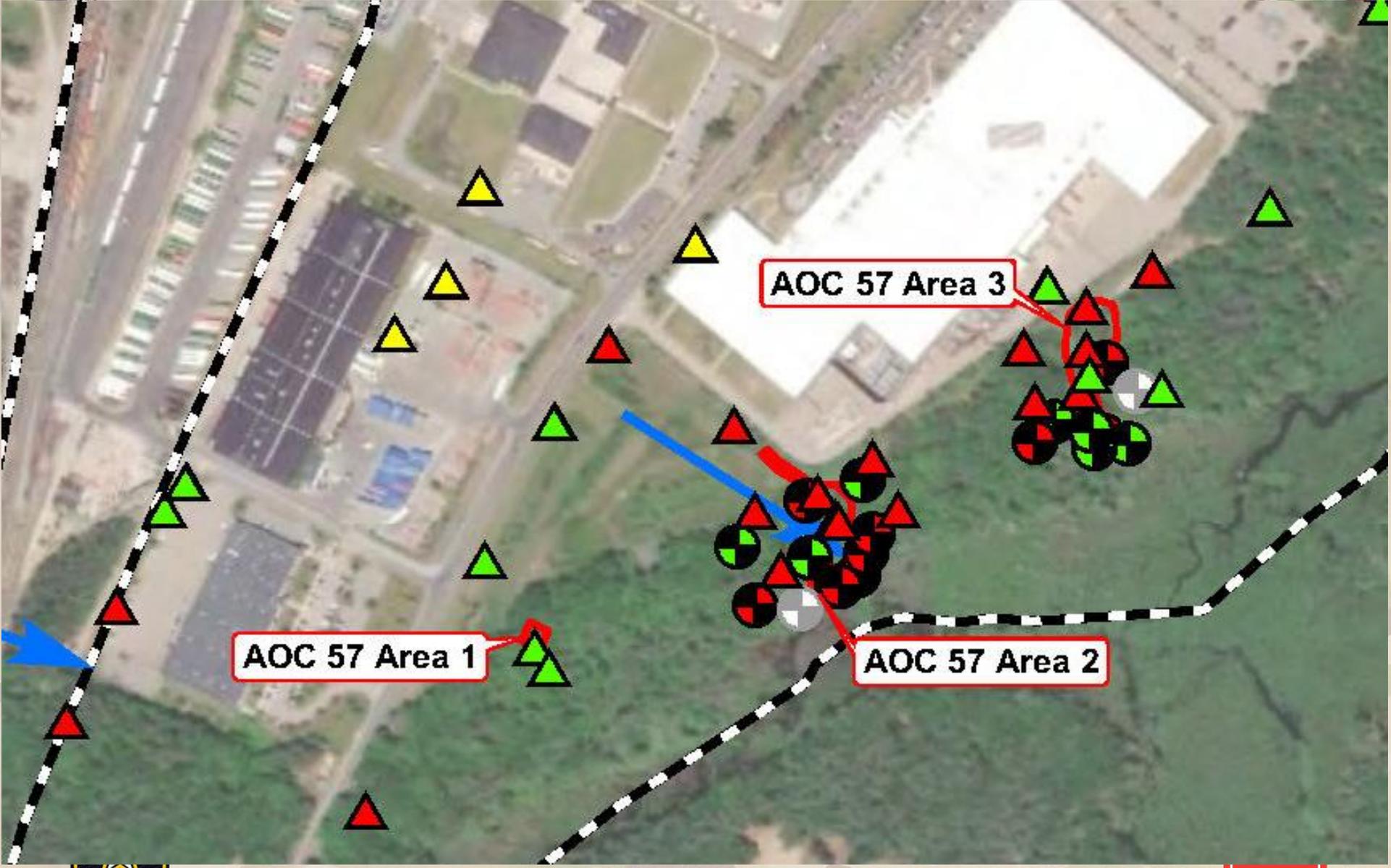
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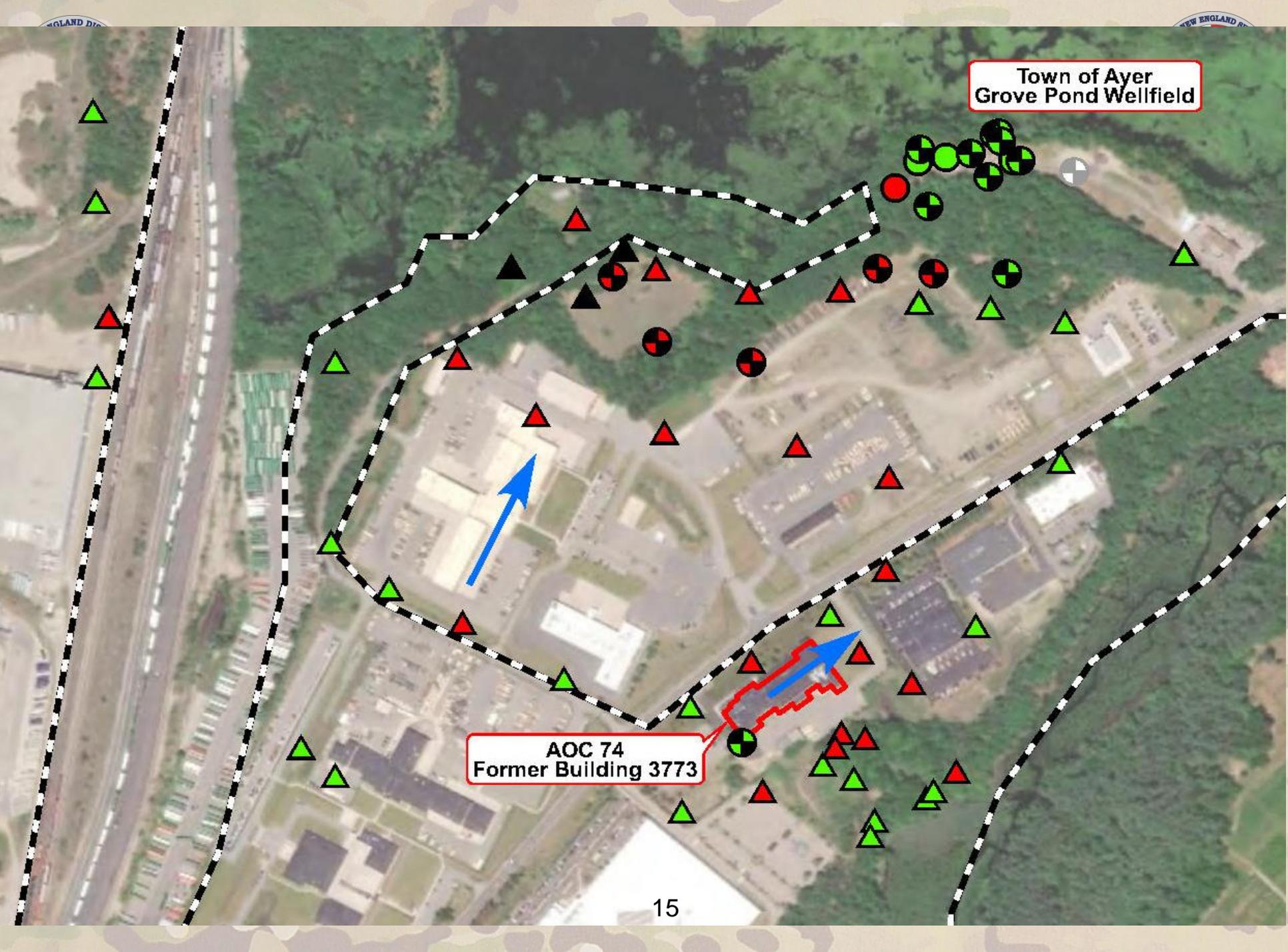


**AOC 75  
Building T-1445  
Warehouse Fire**

**AOC 57 Area 1**

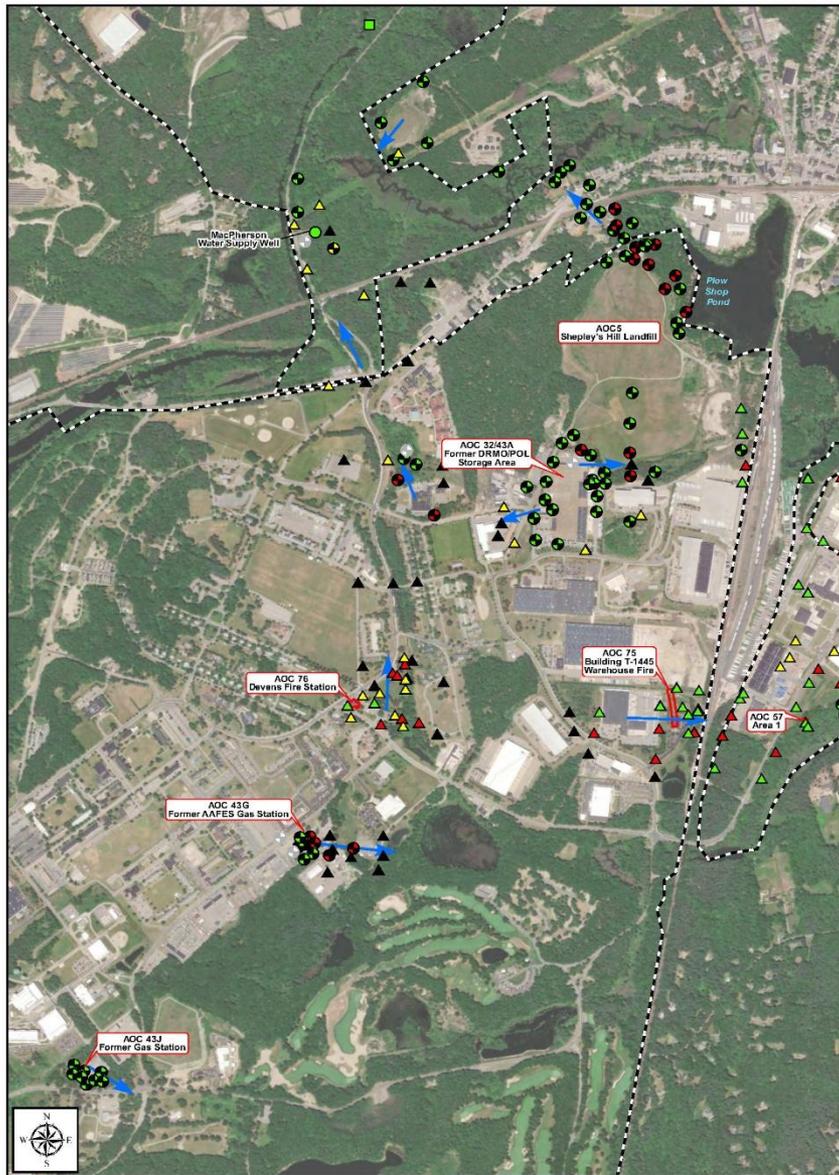






Town of Ayer  
Grove Pond Wellfield

AOC 74  
Former Building 3773



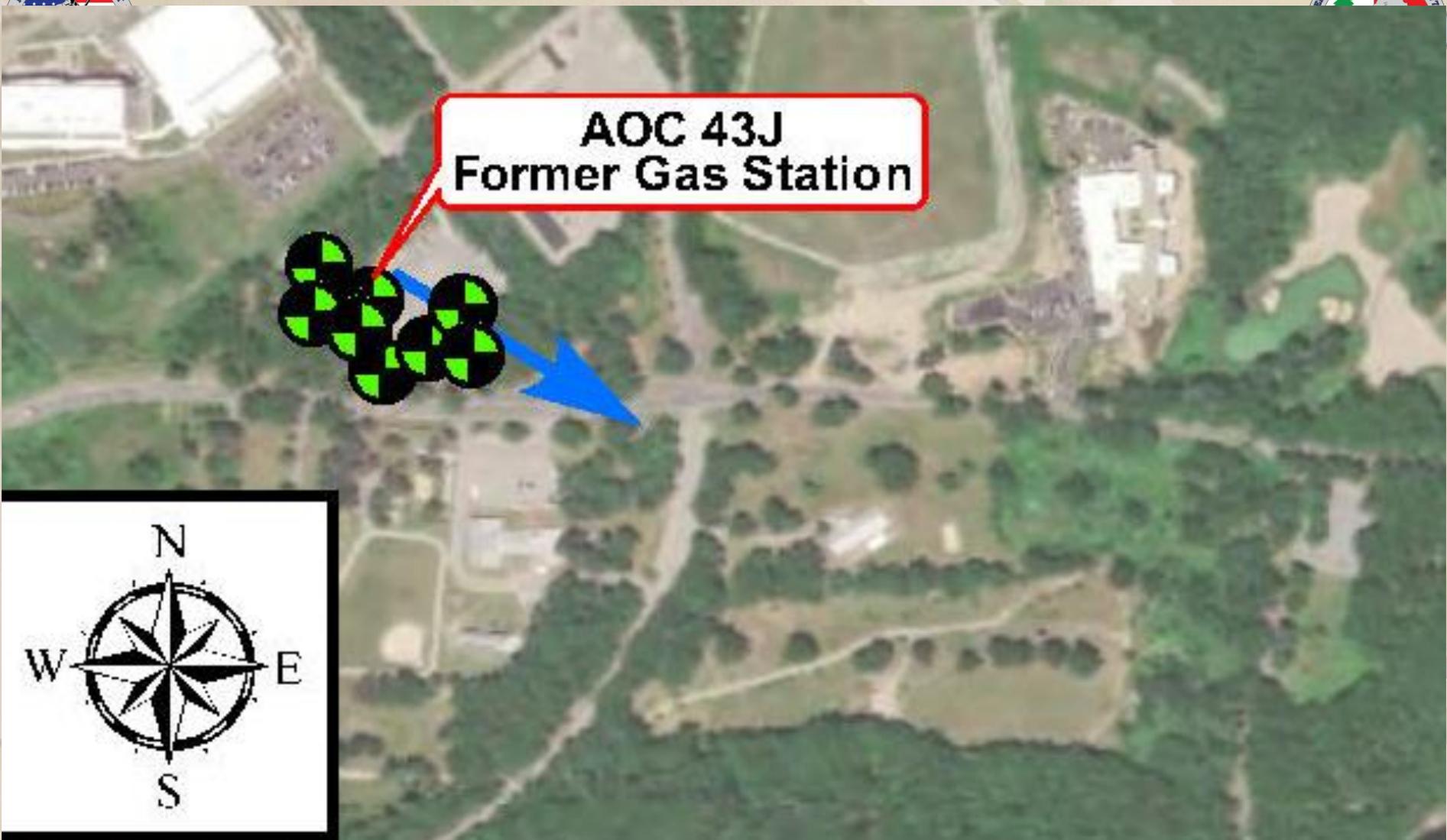
Legend	
● (Red)	PFCA-PFOS > 70 ng/l
● (Green)	PFCA-PFOS < 70 ng/l
● (Yellow)	Drilled, results pending
● (Black)	Yet to be Drilled
△	Vertical Profiling Location
⊙	Monitoring Well
⊙ (with slash)	Monitoring Well - Damaged/Unable to Locate
○	Water Supply Well
□	Town of Ayer waste water treatment plant outfall
→	Groundwater Flow Direction
⋯	Former Fort Devens Boundary

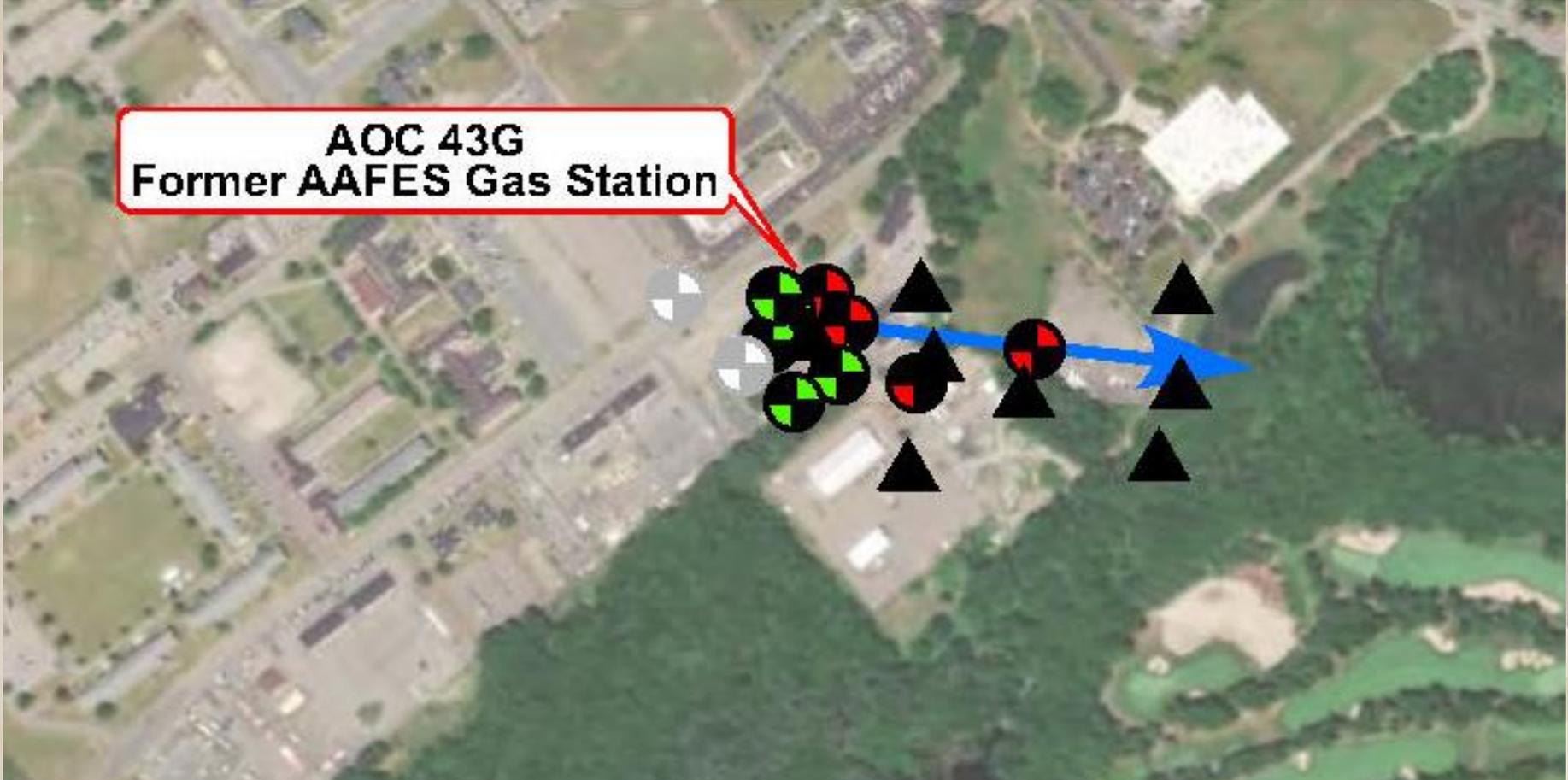
Area 2	
Former Fort Devens Army Installation Devens, Massachusetts	
ROMAN Government Solutions, LLC 293 Boston Post Road West, Suite 100, Marlborough, MA 01752	
	Date: 04/18/2019 Figure

File: 0418\_1903\_MTD\_A2230P\_A1\_Area2.mxd  
 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

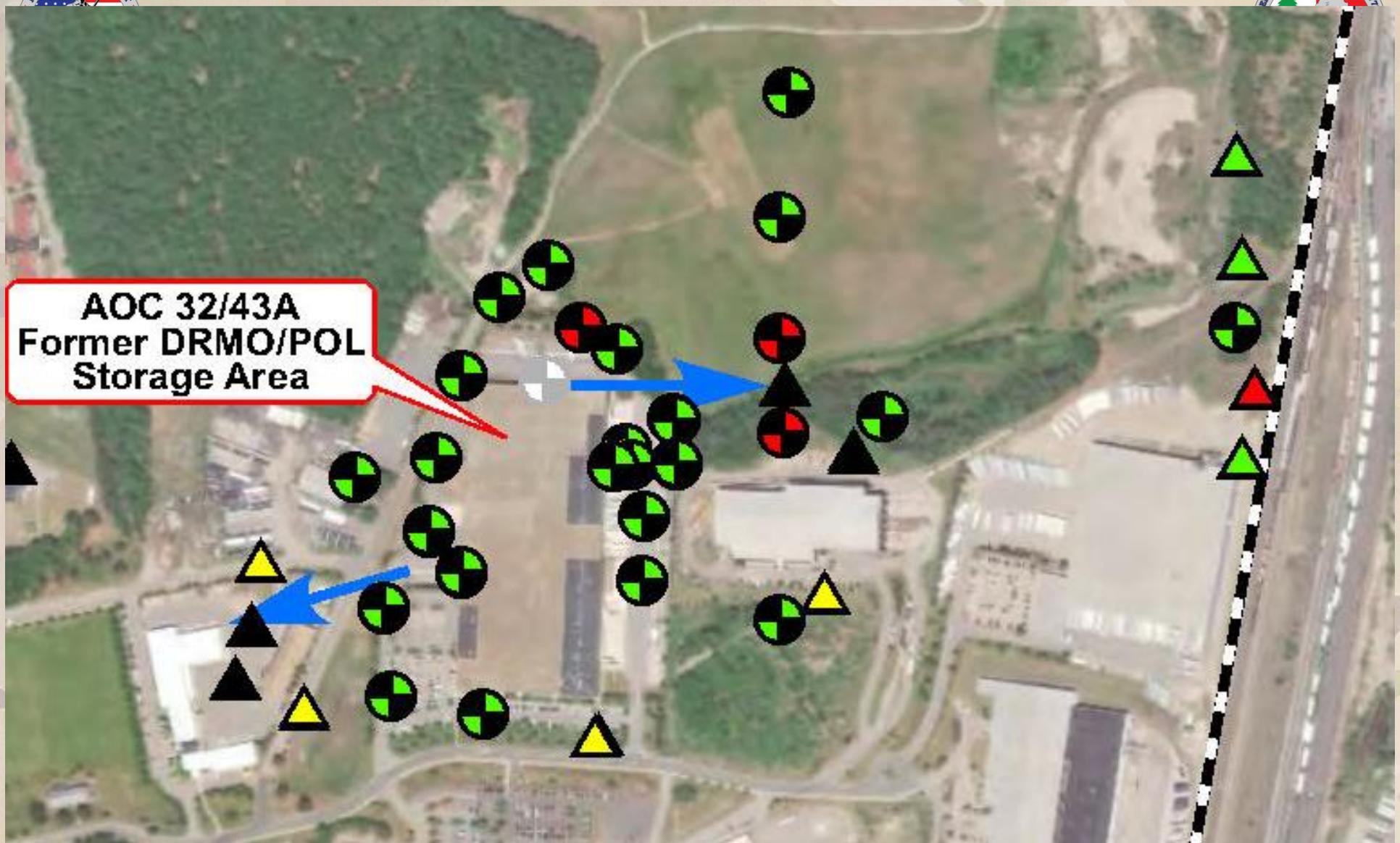


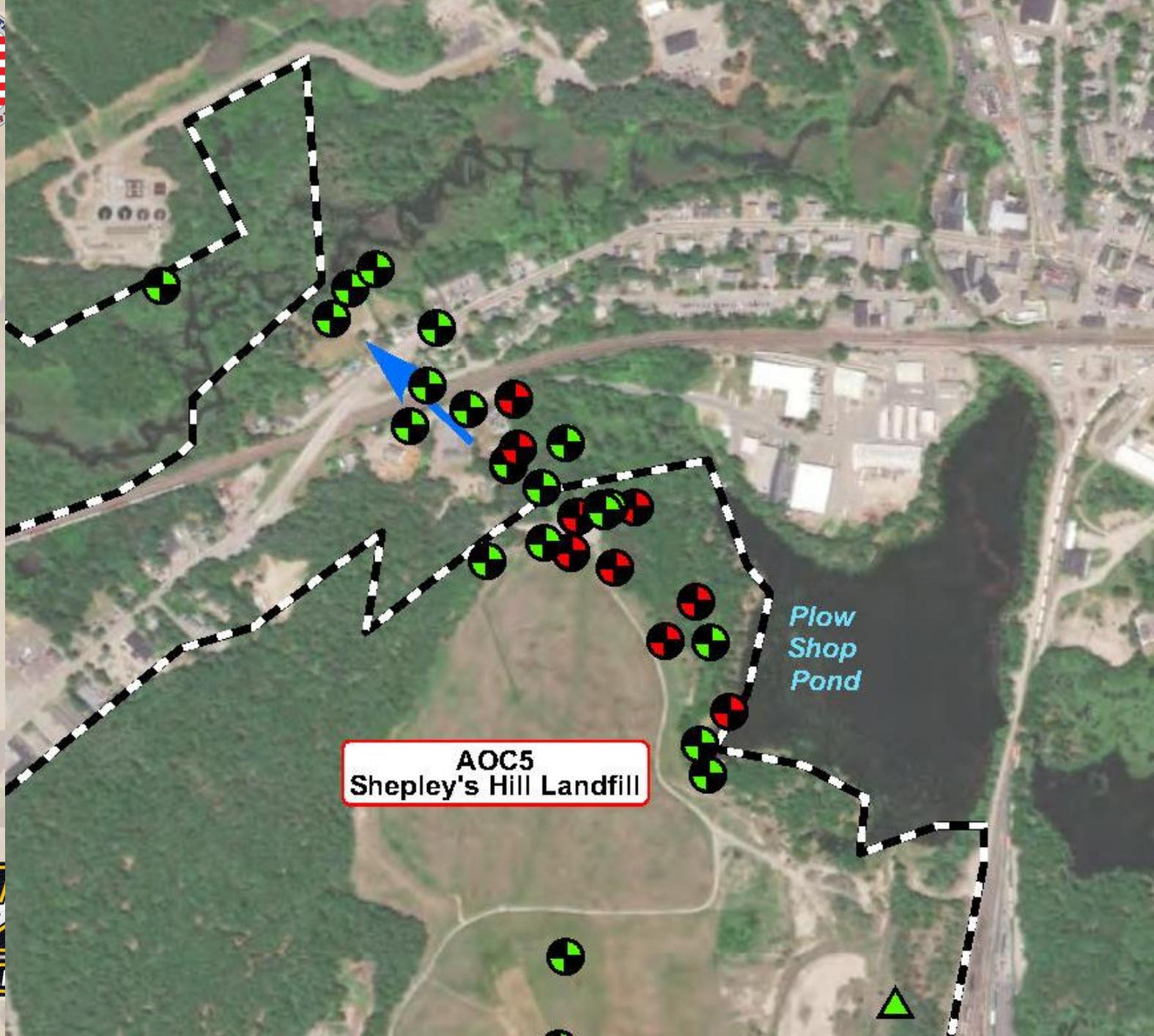
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**AOC 32/43A  
Former DRMO/POL  
Storage Area**



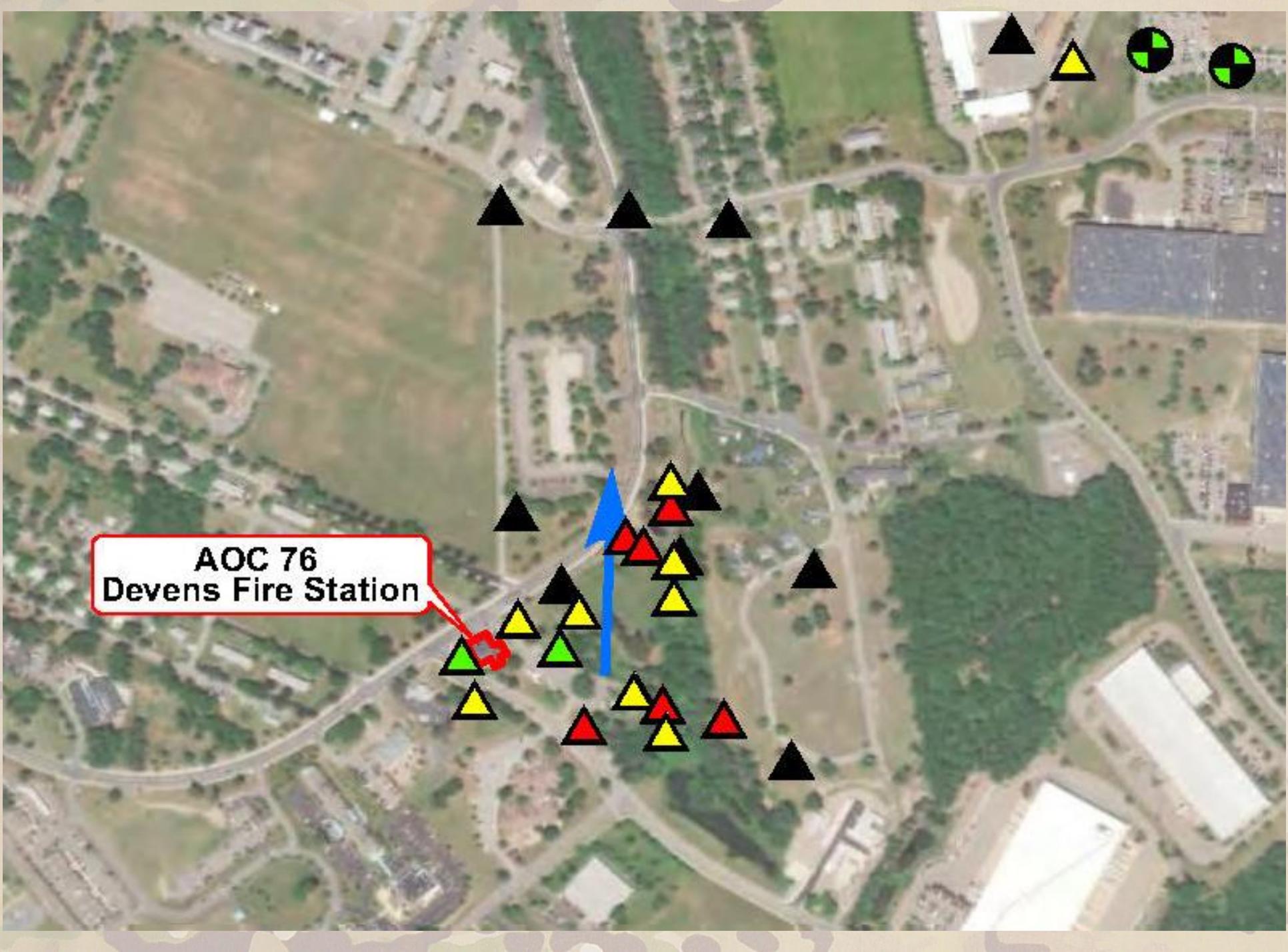


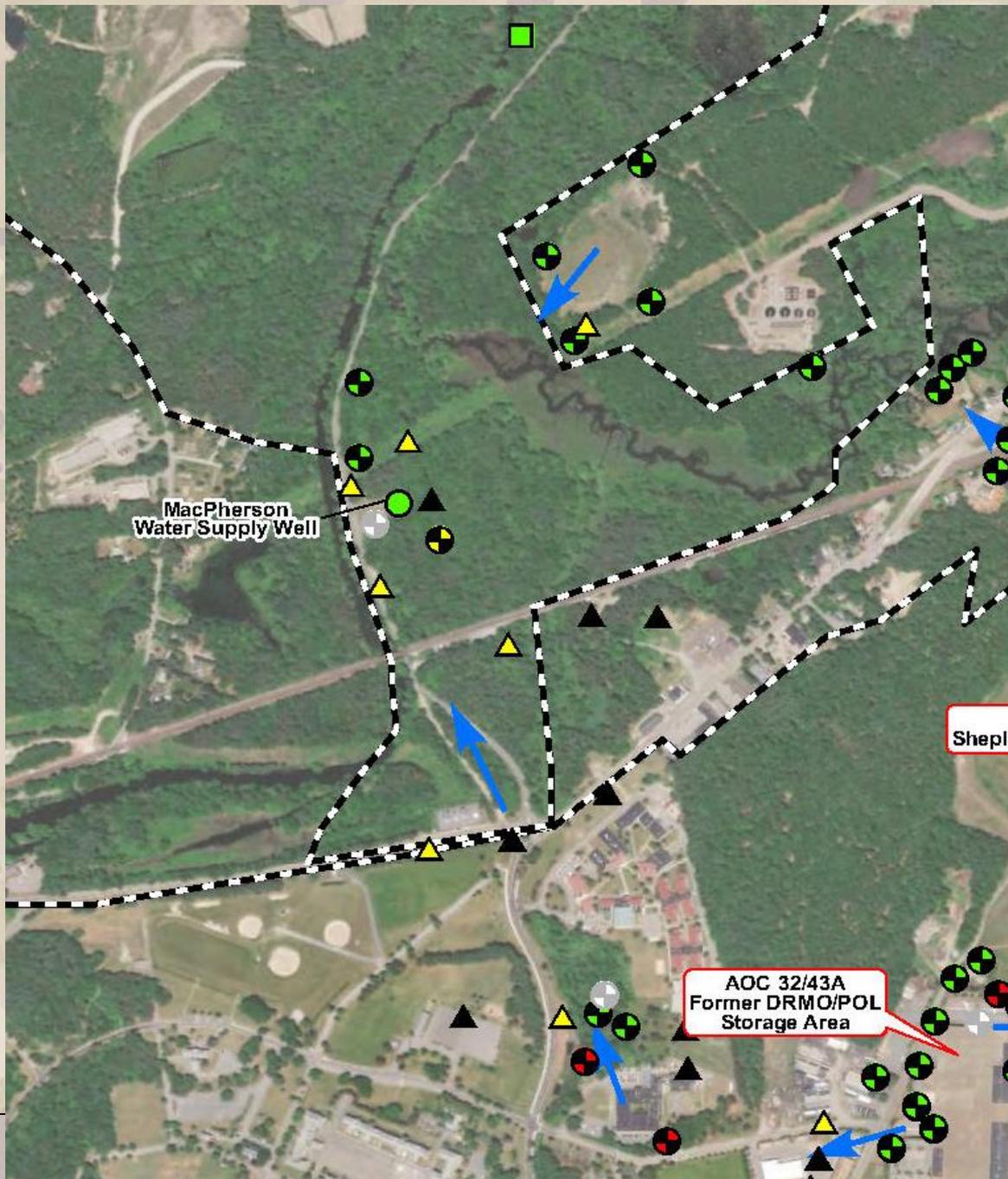
AOC5  
Shepley's Hill Landfill

Plow Shop Pond



**AOC 76  
Devens Fire Station**





MacPherson  
Water Supply Well

Sheple

AOC 32/43A  
Former DRMO/POL  
Storage Area



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# Grove Pond Wellfield

- Investigation
- Decision to treat water
  - ▶ Time Critical Removal Action (TCRA)
- Temporary treatment of Well #8
- Permanent upgrade to Grove Pond Water Treatment Plant (WTP)





# Wellfield Investigation

- Based on results of RI, the Army concluded:
  - ▶ Groundwater contains PFAS compounds from historical Army Operations at former Fort Devens
  - ▶ Groundwater with PFAS migrating toward and impacting the Town's drinking water wells at an unacceptable levels





# Planned Actions

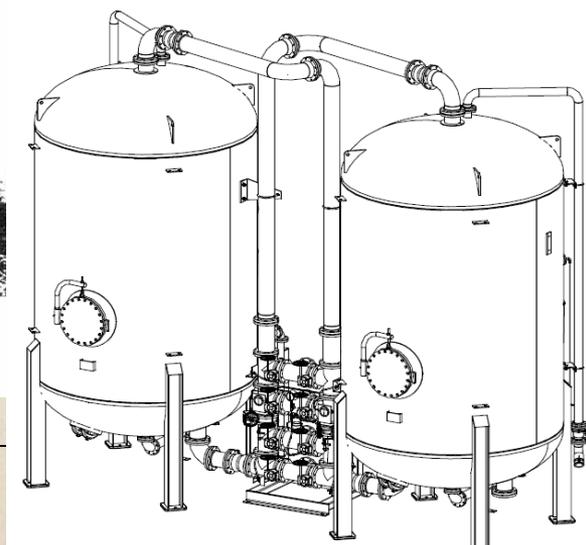
- Army developed an action-oriented document  
→ ***Time Critical Removal Action or TCRA***
- Two-staged action at Grove Pond Wellfield:
  - ▶ Temporarily treat water from Well #8
  - ▶ Permanently upgrade WTP to treat all pumped water
- TCRA Document
  - ▶ Available on the website (**[ftdevens.org](http://ftdevens.org)**) or
  - ▶ Administrative Record Repository at Devens (contact **[robert.j.simeone.civ@mail.mil](mailto:robert.j.simeone.civ@mail.mil)**)
  - ▶ Comments due May 14, 2019





# Well #8 Treatment

- Temporarily install two large activated carbon vessels -- 20,000 lbs carbon each
- Treat water before enters WTP
- Selected carbon based on bench-scale test
- Install May 2019
- Operate until WTP upgrade is on-line





# Permanent Upgrade to Grove Pond WTP

- New Ion Exchange (IX) system to remove PFAS from extracted water
- IX removes PFAS more efficiently than activated carbon
  - ▶ Smaller vessels;
  - ▶ Last longer before breakthrough

*Evoqua IX Resin*





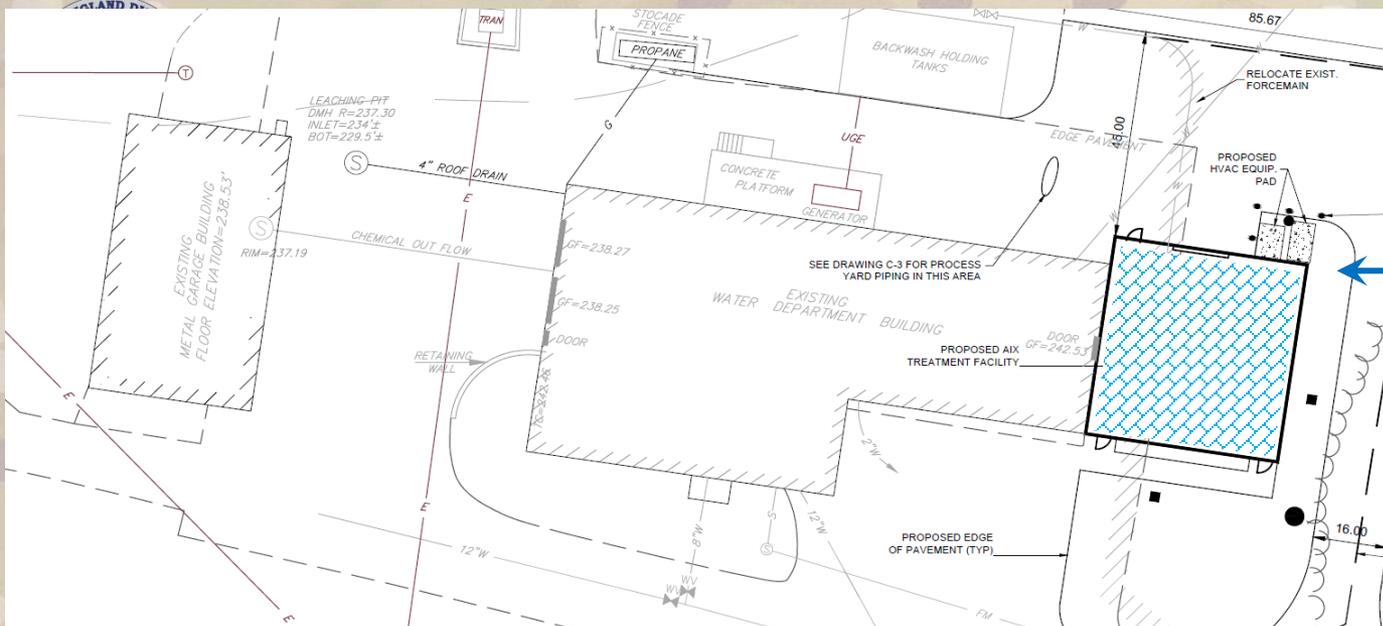
# WTP Upgrade

*New Ion Exchange System/Addition*

- **New addition for IX system**
- **Construction to Start Summer 2019**
- **On-line expected ~ February 2020**



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# Next Steps

- Continue RI sampling efforts in Areas 1 and 2
  - ▶ Area 1
  - ▶ Area 2
  - ▶ Area 3
- 2019-Q2 Town Water Supply Well Sampling (May)
- Community Interviews (spring) and Draft CIP (summer)
- Implement TCRA





# Former Fort Devens Army Installation Project Status Updates

Questions?

