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DAG OU Post-Characterization Scoping Summary/Second Work Plan Addendum Meeting

DAG OU Second RFI/RI Work Plan Addendum

SRNS-MS-2025-00564

November 13, 2025

Current DAG OU Status

- DAG OU RFI/RI Scoping Meeting (Nov 30, 2023)
  - Uncertainties were identified associated with potential CM concerns from PFAS contaminated surface and/or vadose zones soils and concrete.
  - Shifted the RFI/RI report out ~2 years from Dec 2024 to Dec 2026 to allow identification of PFAS source area soil contamination, allow time for PFAS regulations (i.e., MCLs) to be set, and to continue operation and evaluation of DAG OU Treatability Study.
  - SRS submitted a Work Plan Addendum capturing the additional soil and concrete sampling in Fiscal Year (FY) 2024.
  - 2024 Soil and concrete sampling was completed.
- Ongoing DAG OU Monitoring Continuing
  - Annual DAG OU Treatability Study data reports in submitted in spring.
  - Annual 488-4D Ash Landfill monitoring report submitted in July.
  - Annual DAG OU data summary report was submitted via email (November 2024; October 2025)

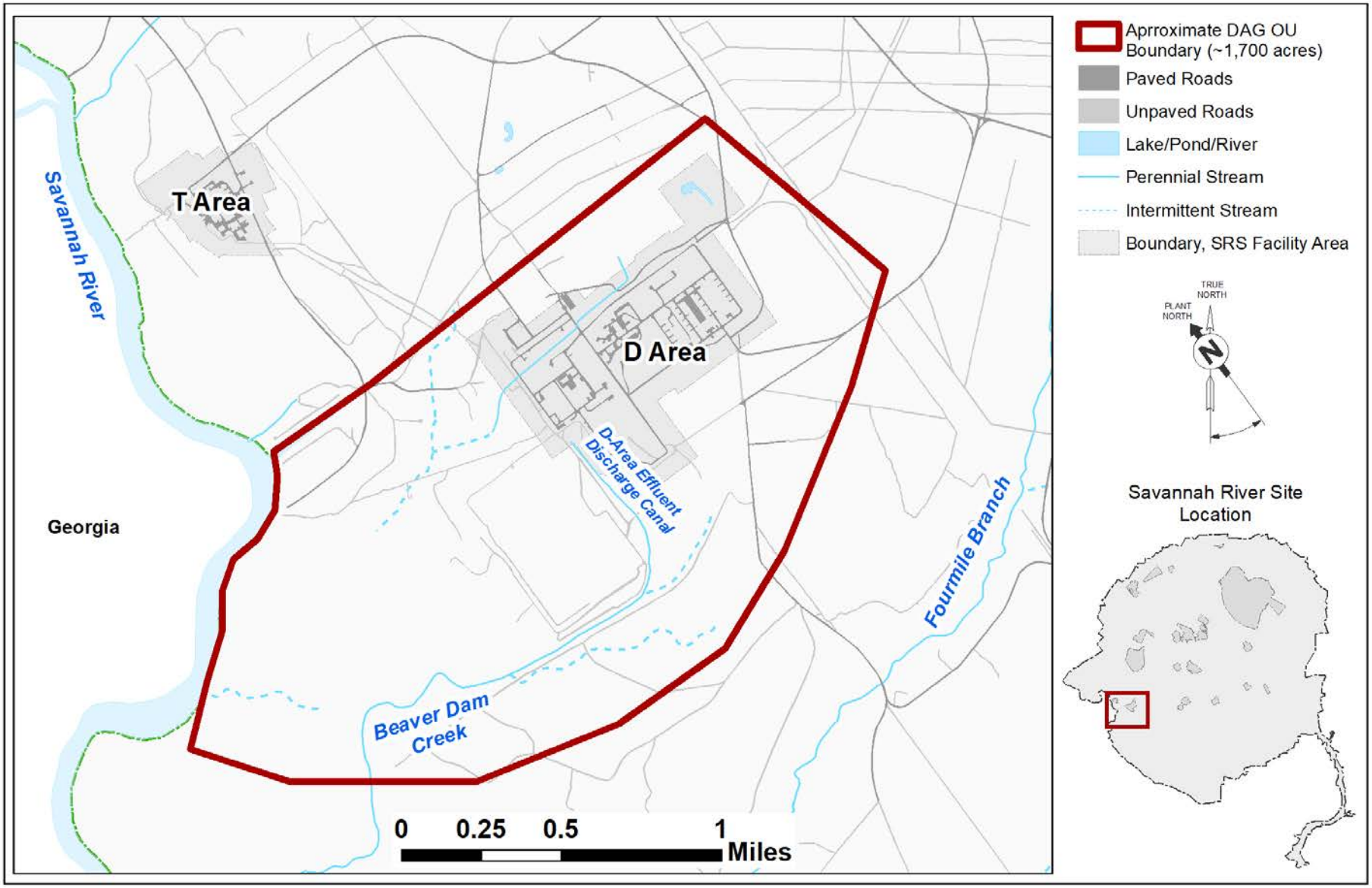
Current DAG OU Status, continued

- Additional Efforts
  - Additional surface water samples were collected in 4Q2024.
    - *D-Area wetlands, Beaver Dam Creek, and Savannah River.*
  - Additional PFAS hotspot characterization was conducted in 2025 for further understanding of PFAS groundwater distribution and for a potential future removal action for PFAS.
  - Additional PFAS source areas were identified.
  - 0-1 ft PFAS soil sampling at additional PFAS source areas in August 2025.

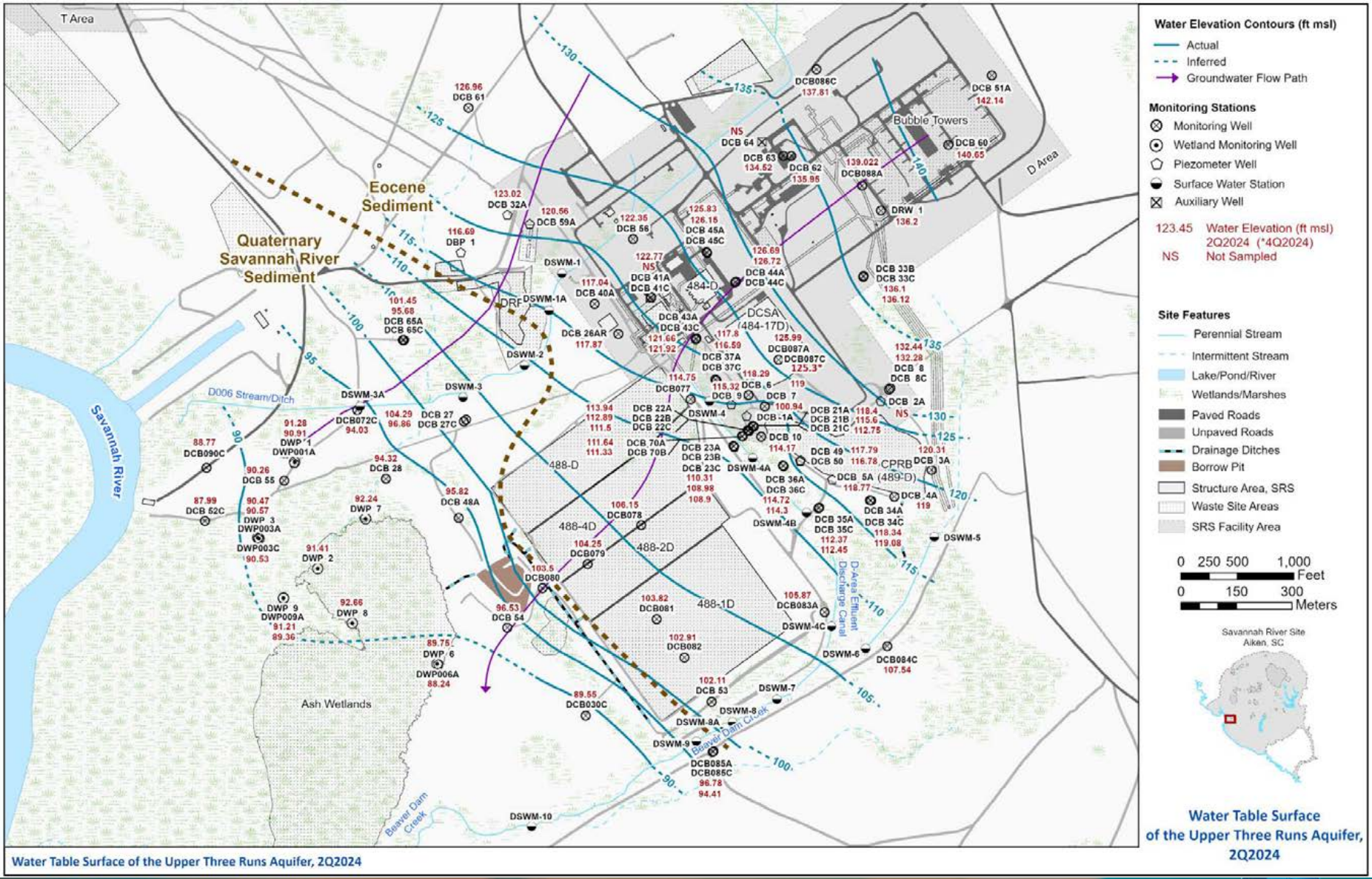
Meeting Agenda

- This meeting presents
  - All the new groundwater, surface water, and soils data;
    - *Additional surface water sampling (D-Area wetlands, Beaver Dam Creek, and Savannah River)*
    - *Results of the 2024 soil and concrete sampling (PFAS)*
    - *0-1 ft soil sample results from August 2025 (PFAS)*
  - Overview of results of the DAG OU Groundwater Model update;
  - Propose an EE/CA removal action for the highest portion of the PFAS groundwater plume;
  - DAG OU SAP Addendum
    - *Information on additional potential PFAS sources;*
    - *Additional proposed soil and concrete sampling at other potential source areas;*
    - *November 2024 DAG OU data summary report comment resolution (PFAS sampling frequency, etc); and*
  - Proposed revised DAG OU schedule.

DAG OU Location

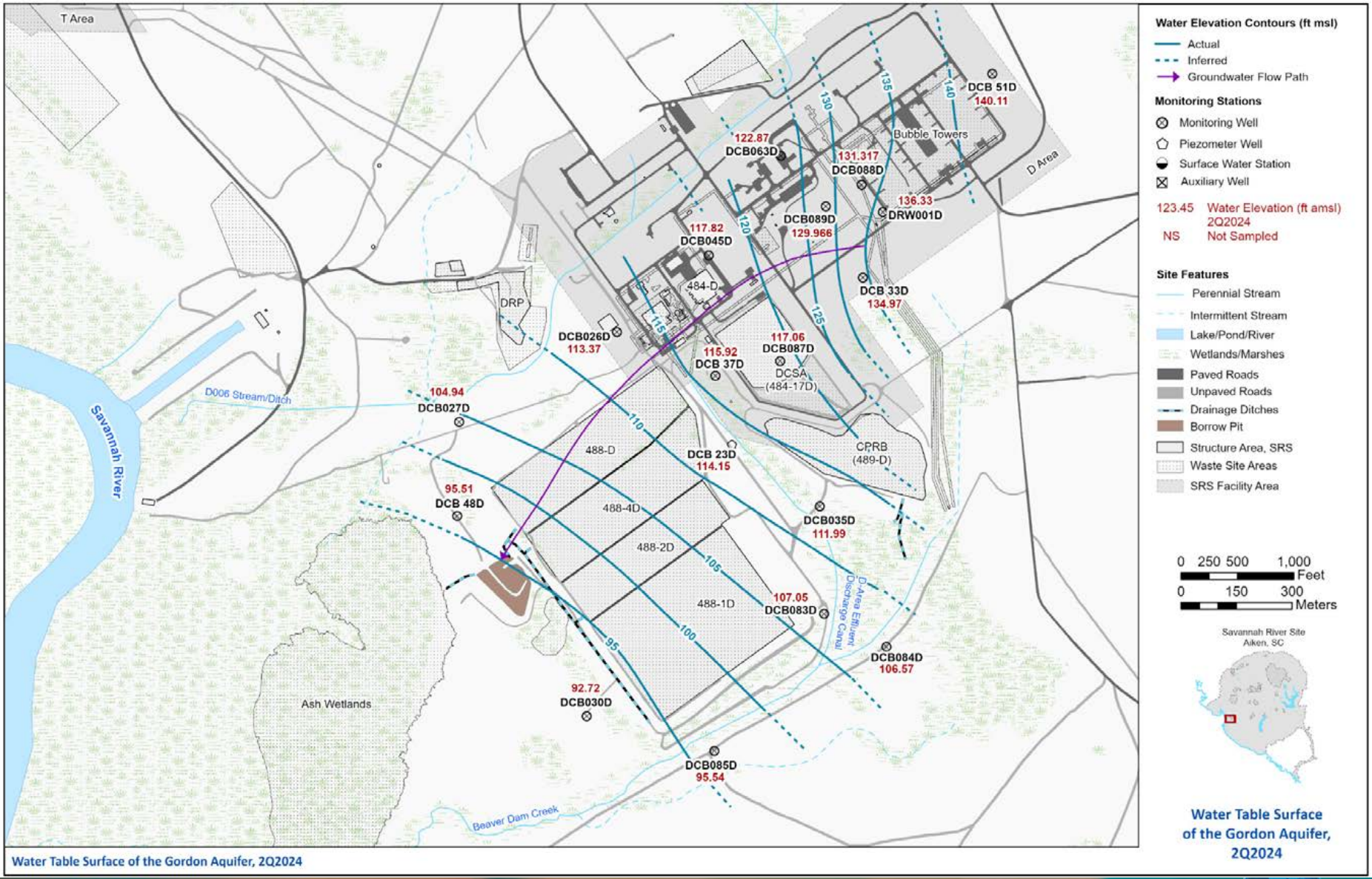


UTRA Groundwater Flow

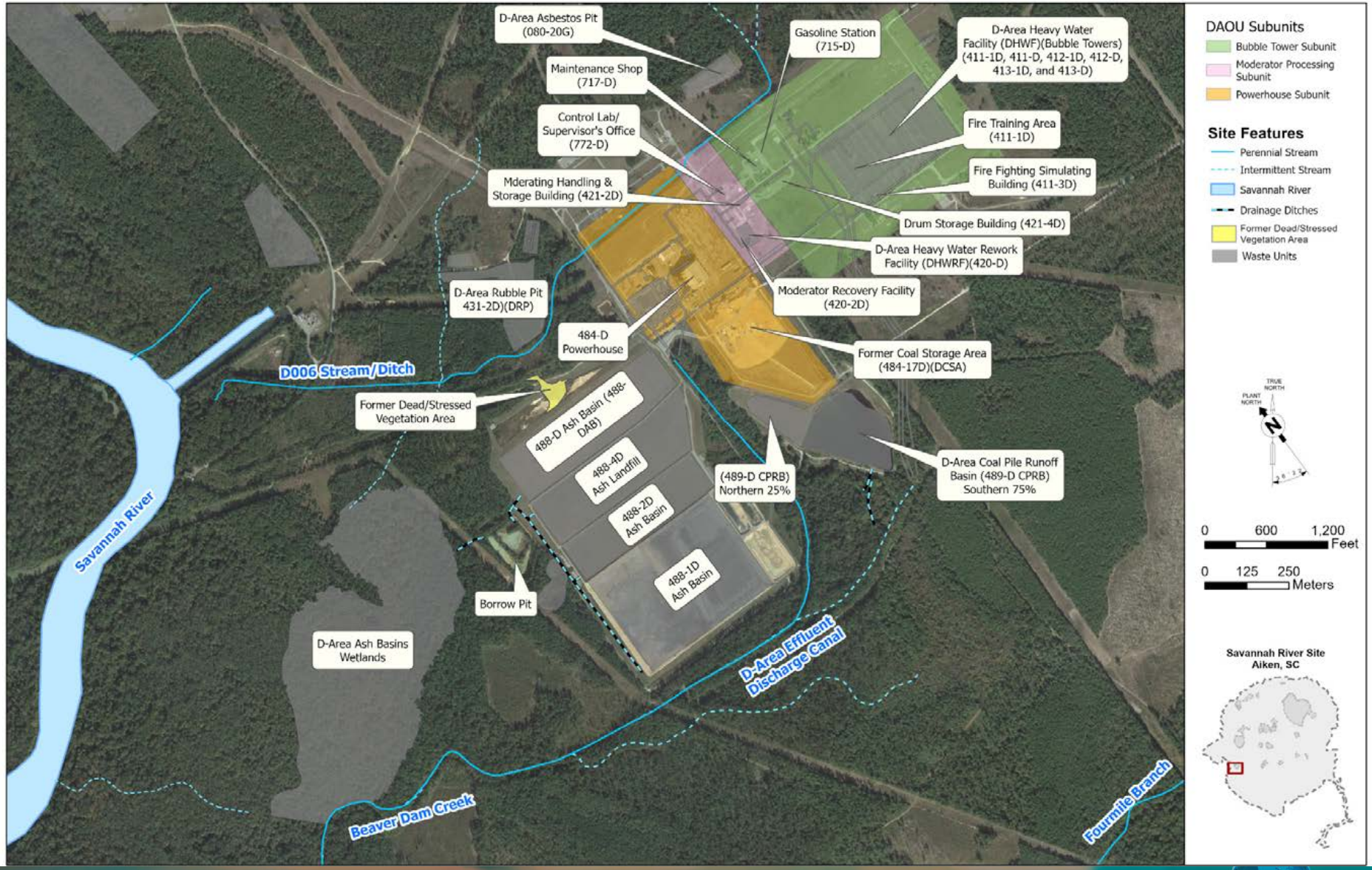


Water Table Surface of the Upper Three Runs Aquifer, 2Q2024

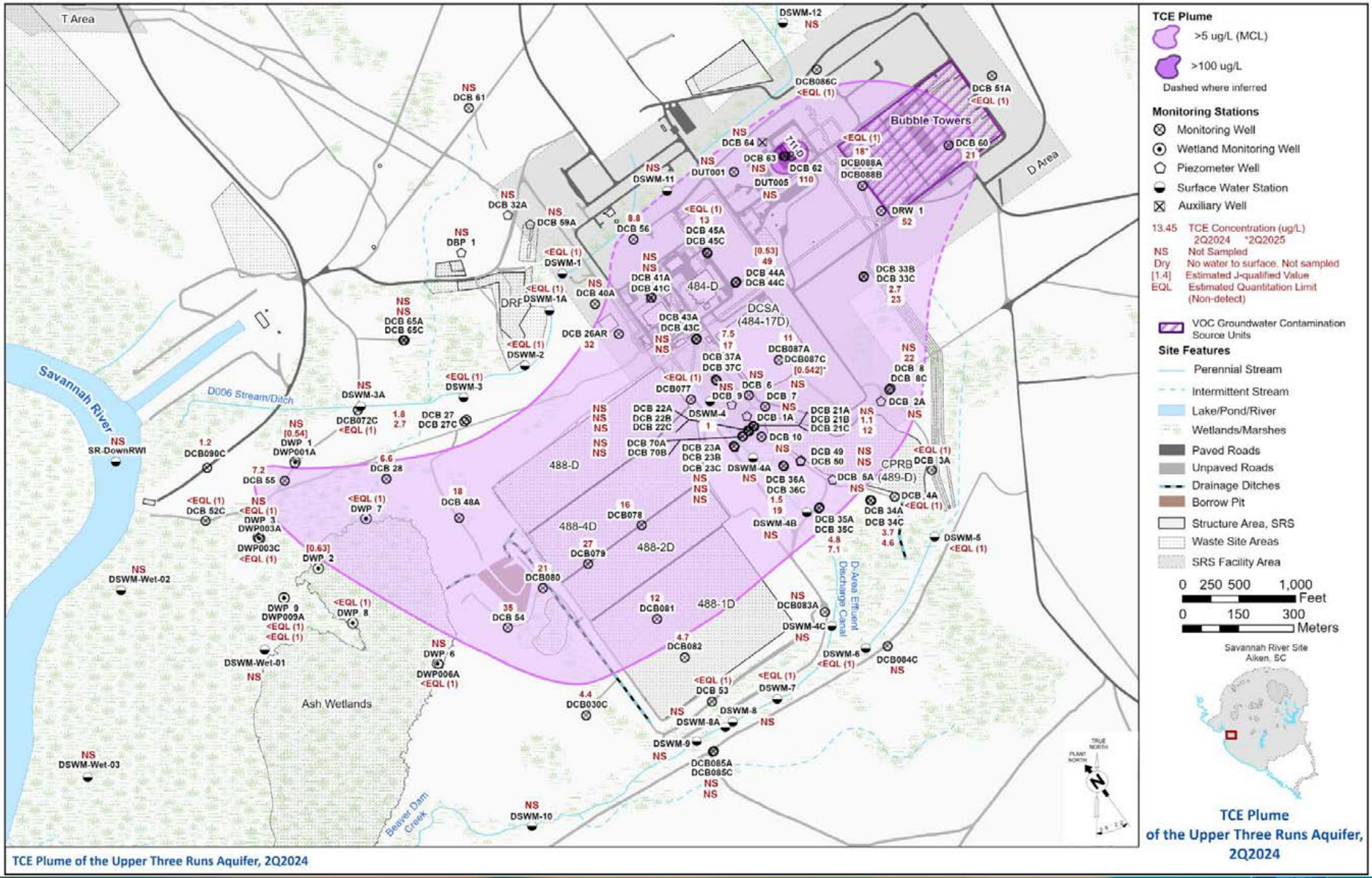
GA Groundwater Flow



Subunits and Facilities

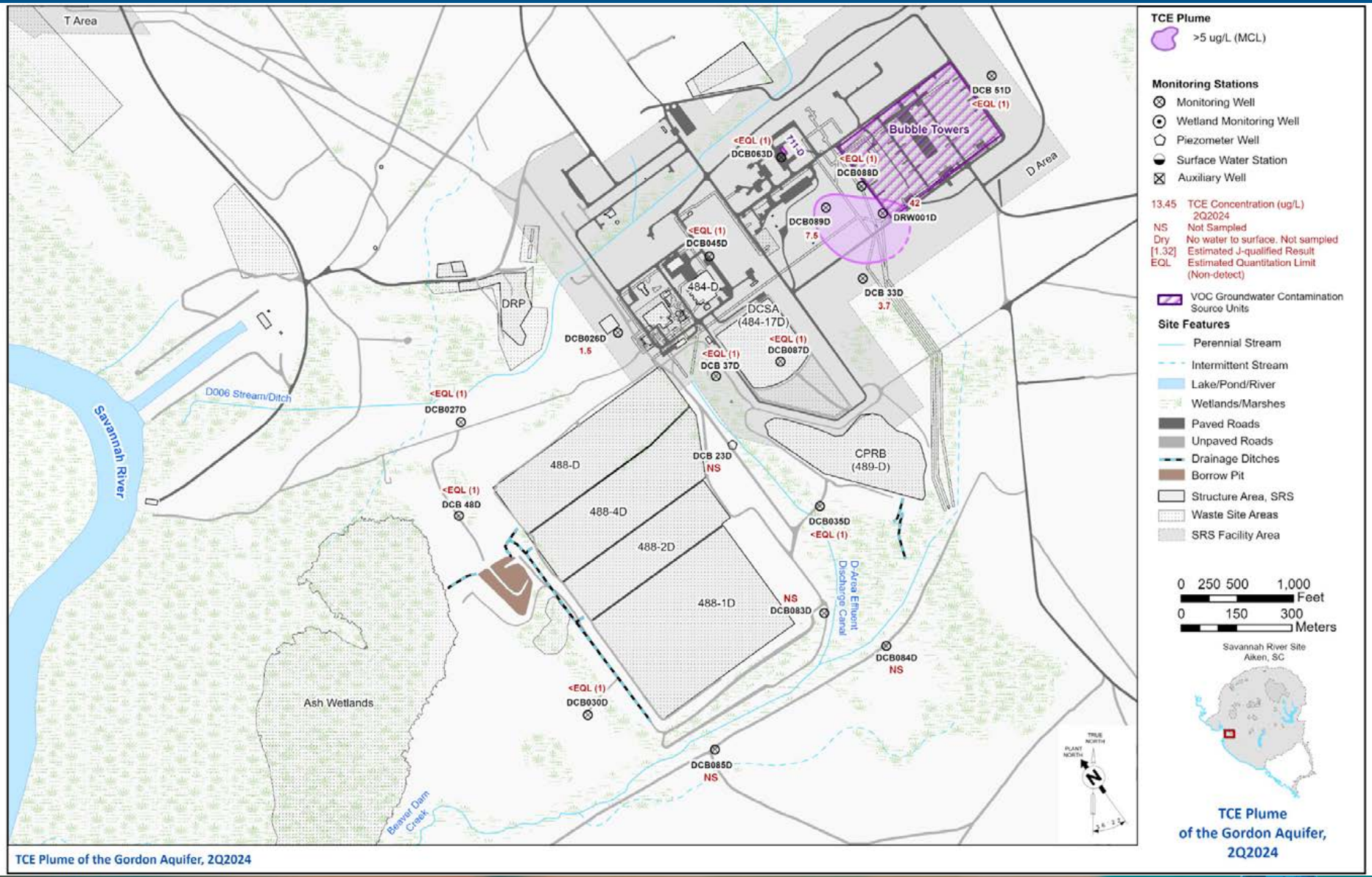


VOC Plume (TCE) - UTRA

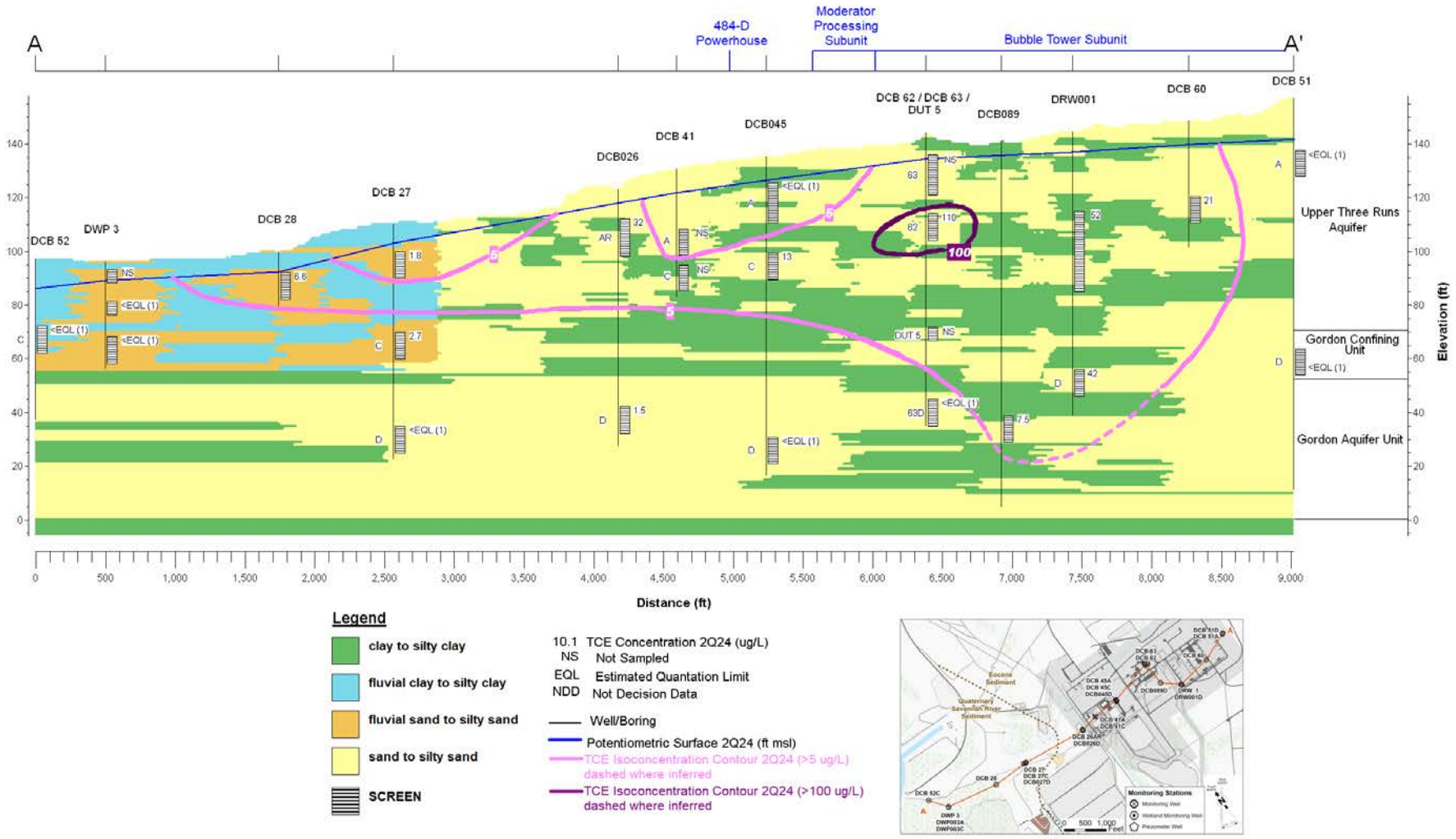


TCE Plume of the Upper Three Runs Aquifer, 2Q2024

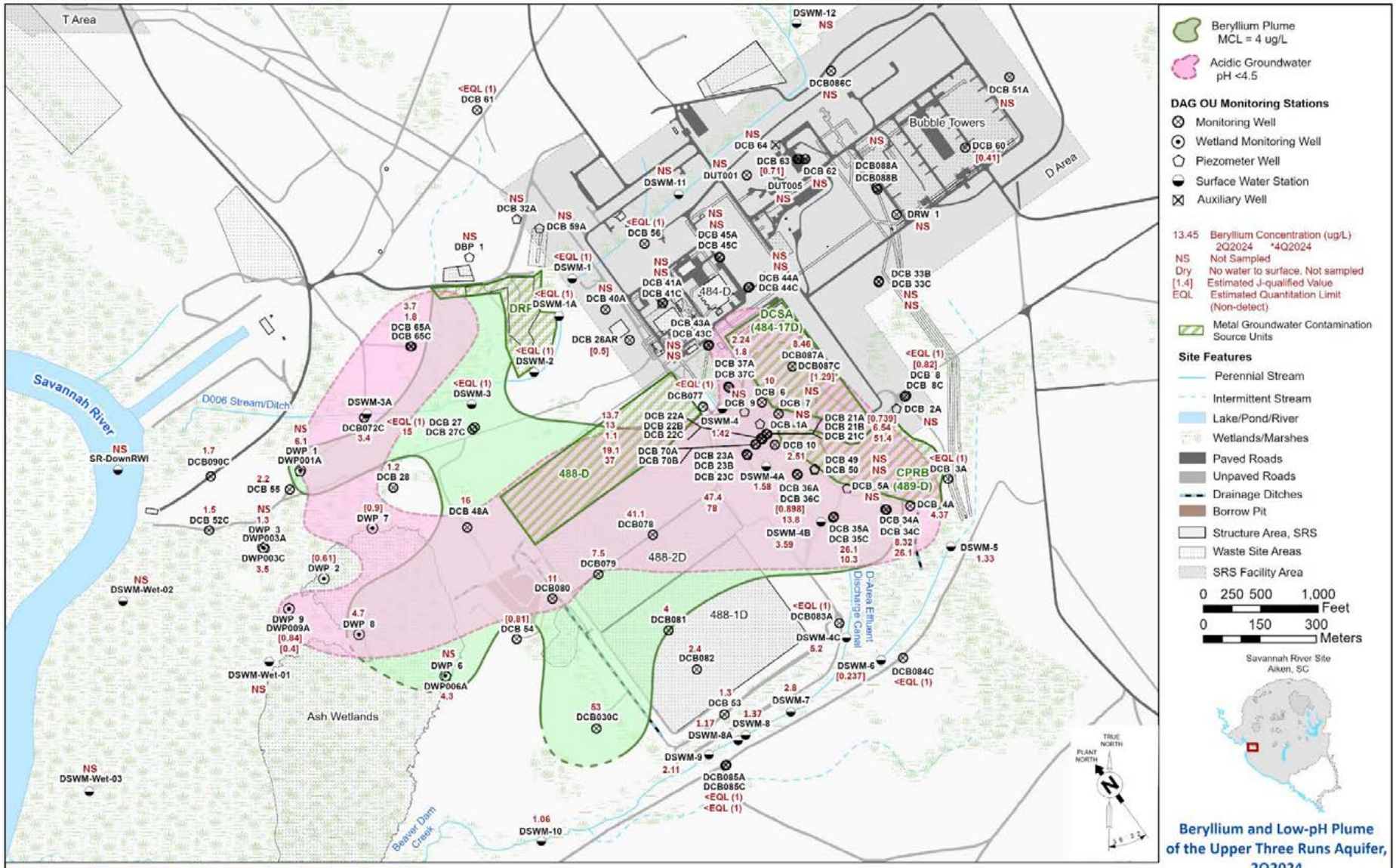
VOC Plume (TCE) - GA



VOC Plume (TCE) – Cross-Section A-A'

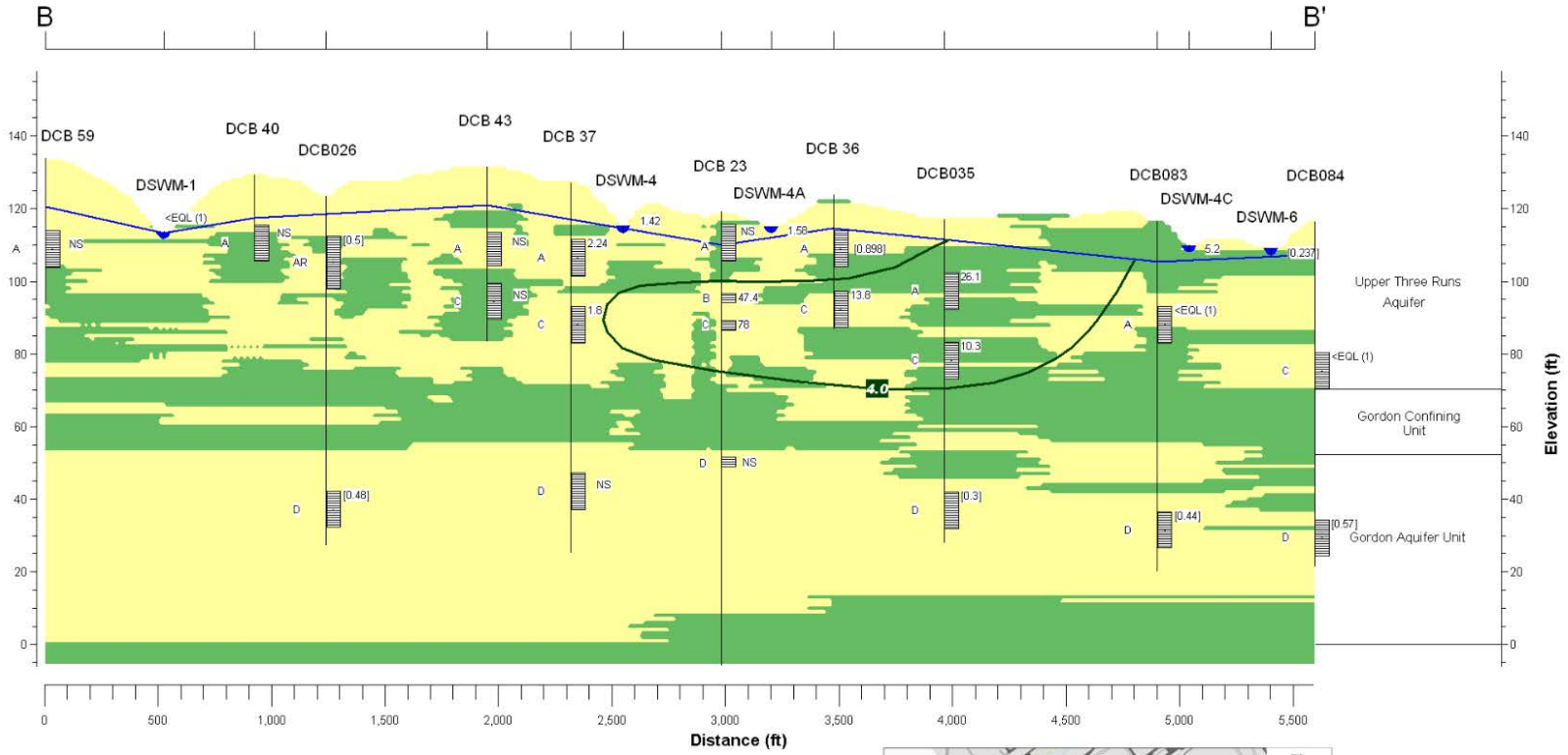


Metals Plume (Beryllium) - UTRA



Beryllium and Low-pH Plume of the Upper Three Runs Aquifer, 2Q2024

Metals Plume (Beryllium) – Cross-Section B-B'

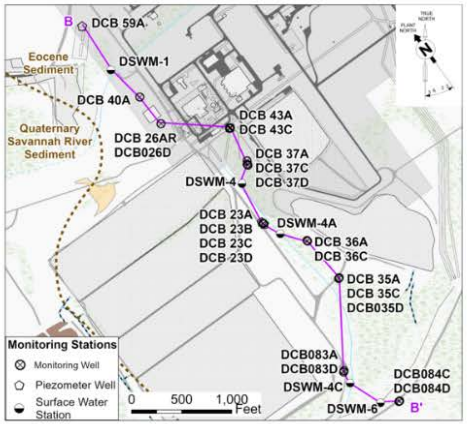


Legend

- clay to silty clay
- fluvial clay to silty clay
- fluvial sand to silty sand
- sand to silty sand
- SCREEN

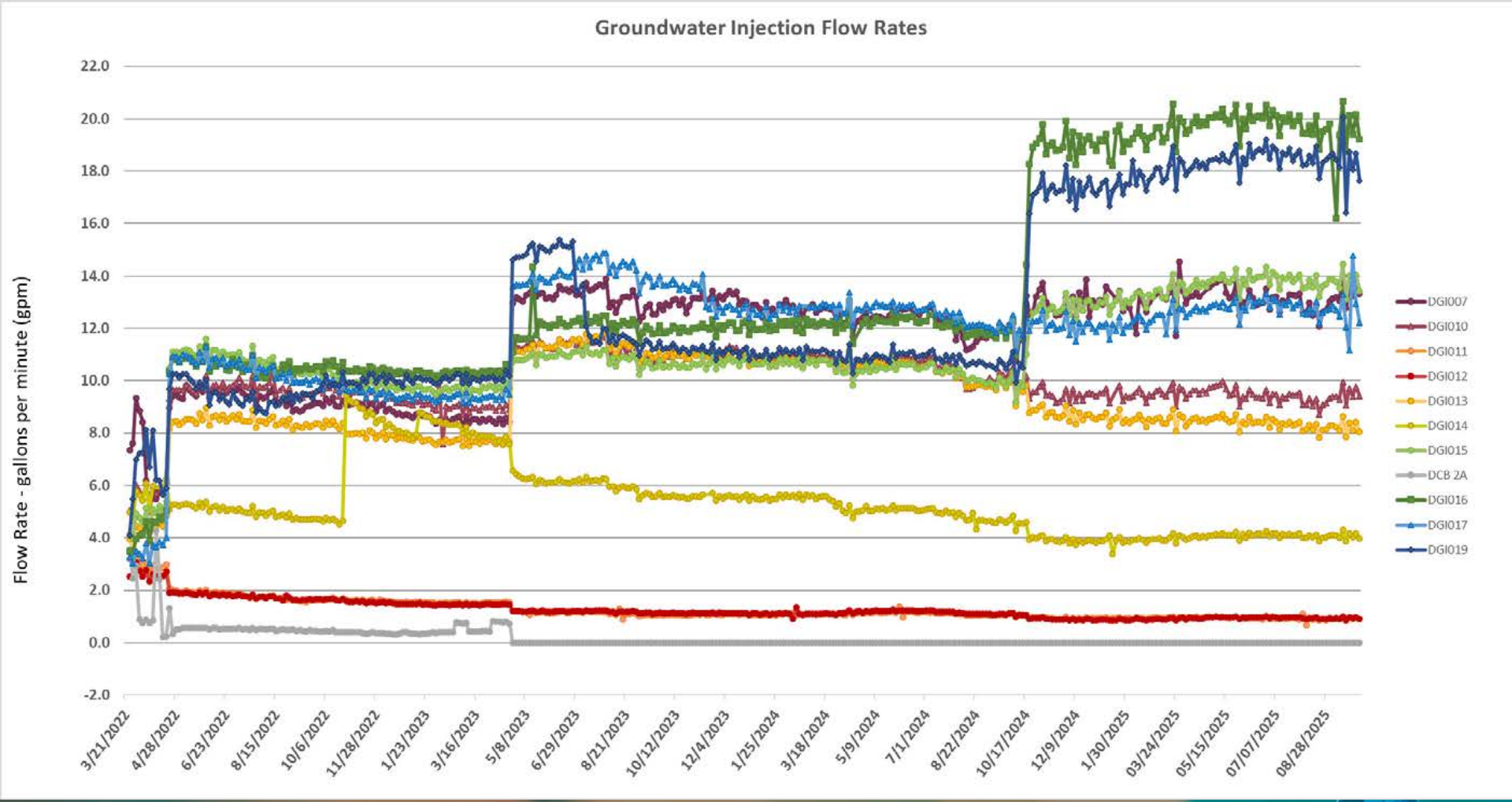
10.1 Beryllium Concentration 2Q24 (ug/L)
NS Not Sampled
EQL Estimated Quantation Limit
NDD Not Decision Data

- Well/Boring
- Potentiometric Surface 2Q24 (ft msl)
- Beryllium Isoconcentration Contour 2Q24 (> 4.0 ug/L) dashed where inferred



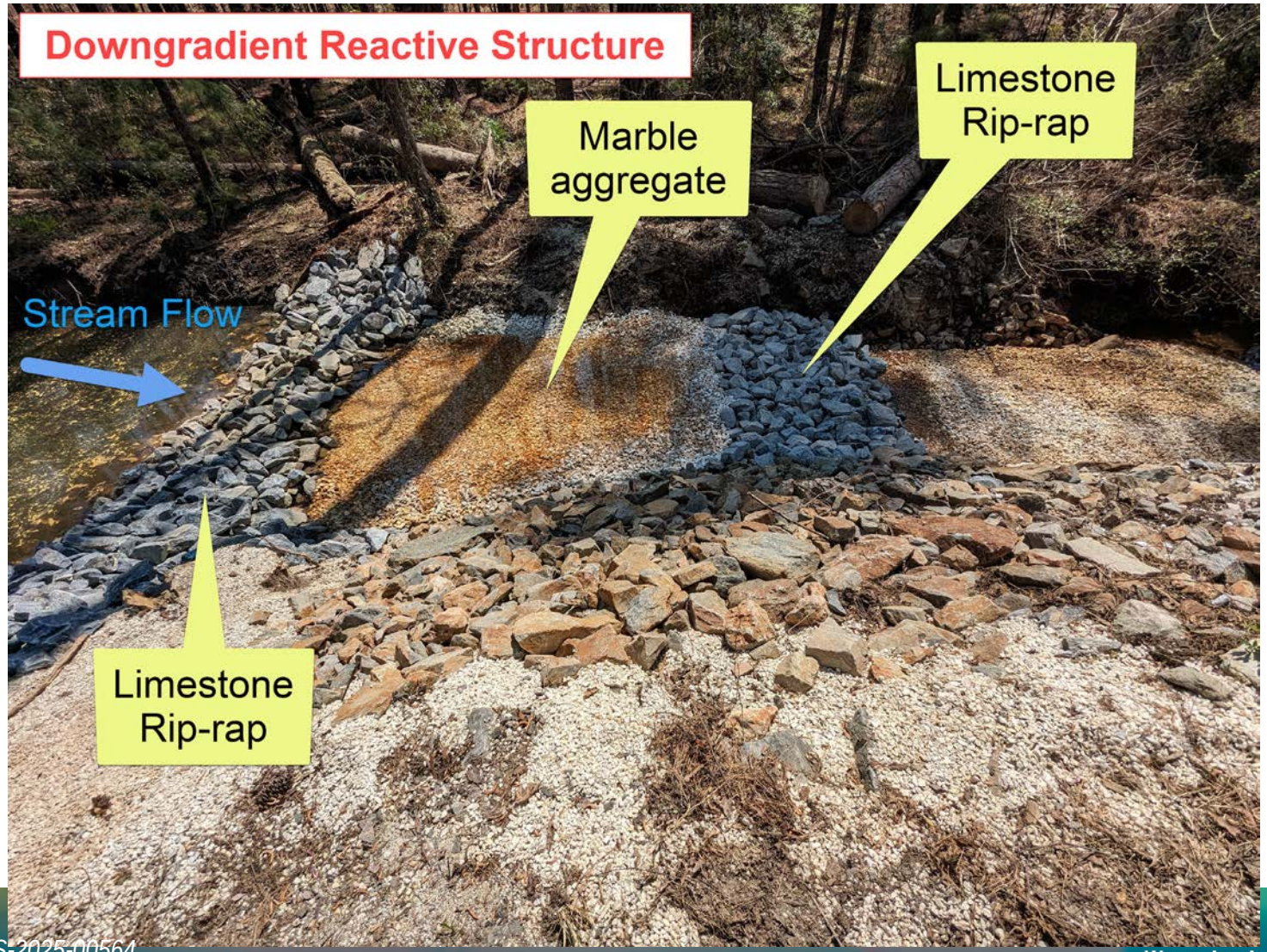
DAG OU Treatability Study Groundwater Injections

- Continual injections since March 21, 2022.
  - >165 Million gallons injected.



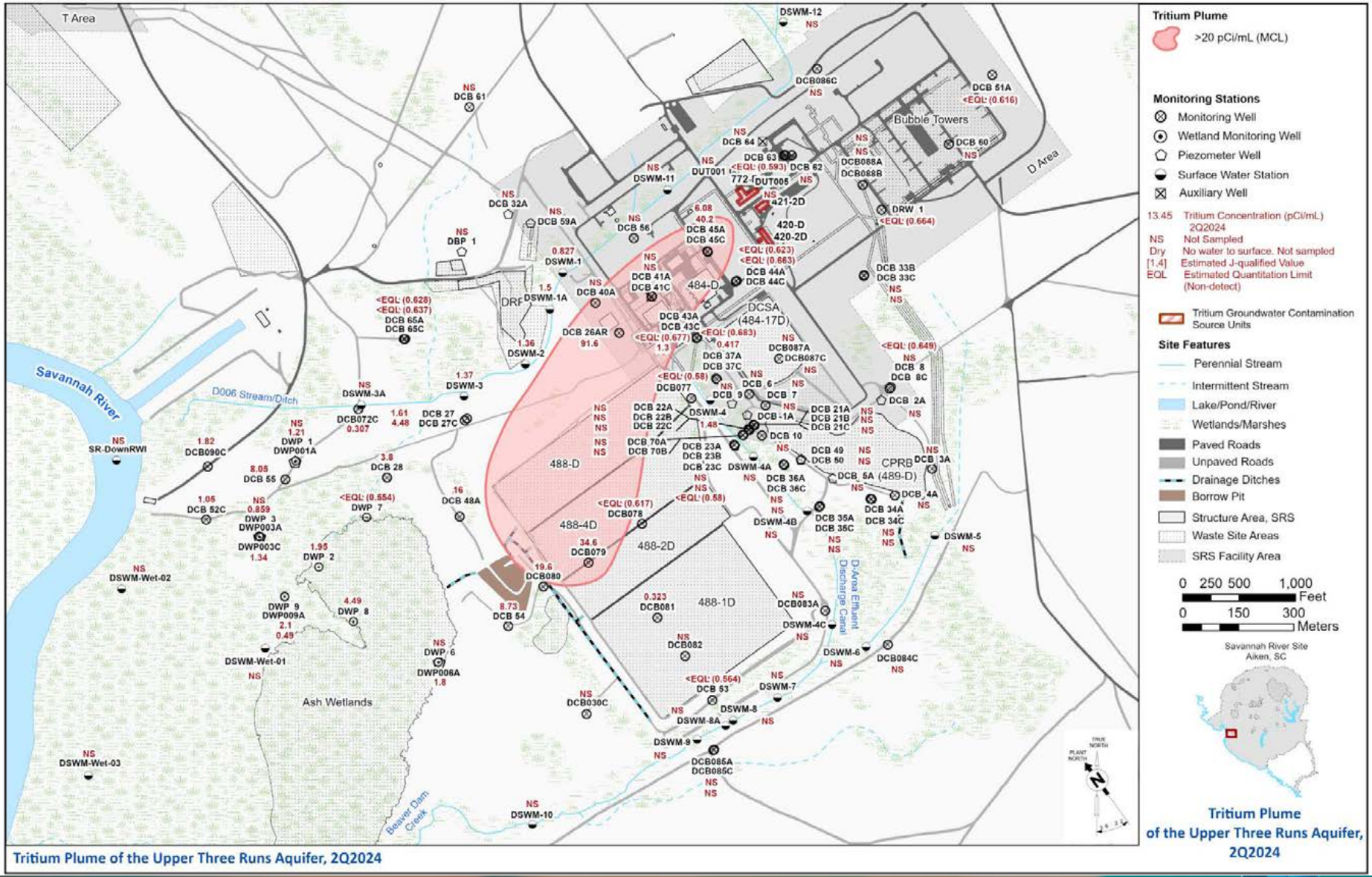
DAG OU Treatability Study Reactive Structures Rework

- Shifted locations and reworked with larger marble chips and limestone rip-rap.



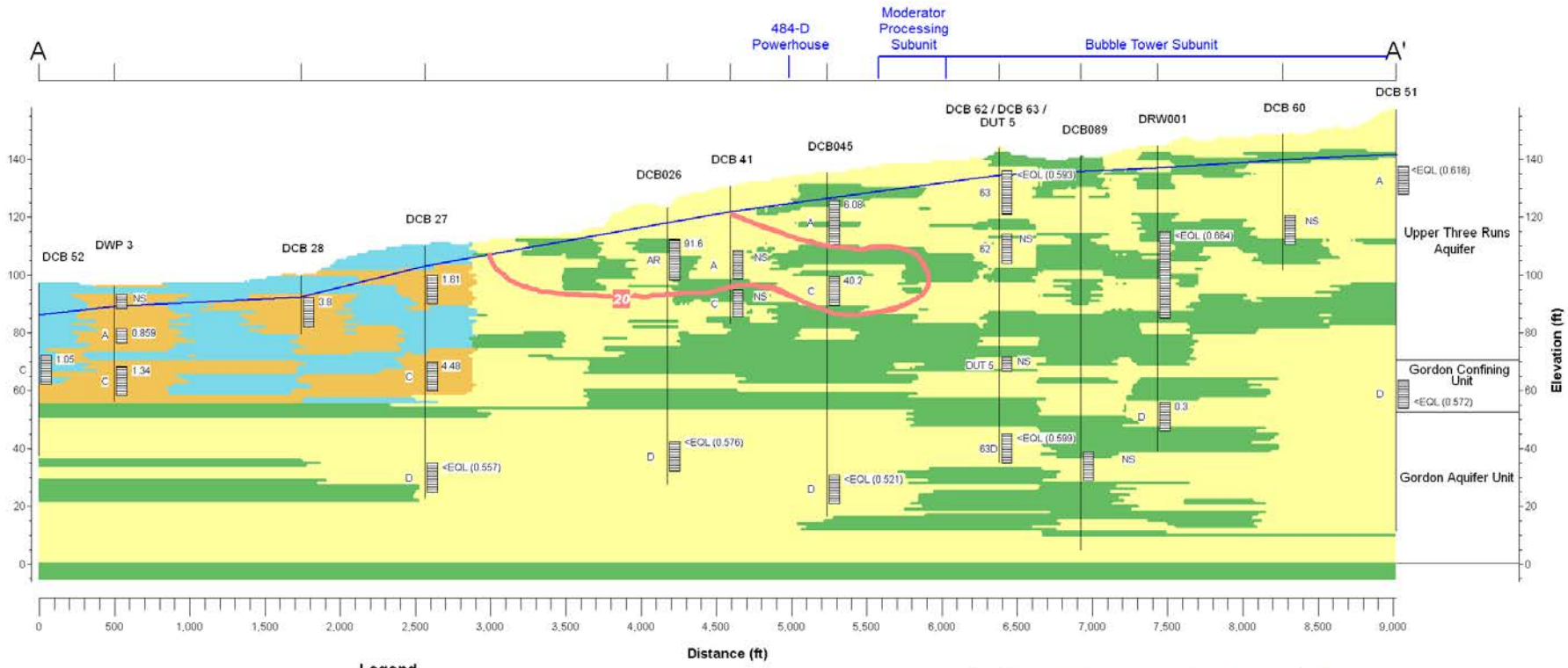
Soil Neutralization at the 484-17D DCSA

Tritium Plume - UTRA



Tritium Plume of the Upper Three Runs Aquifer, 2Q2024

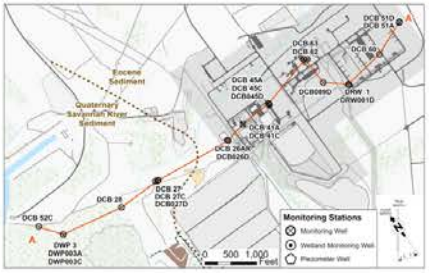
Tritium Plume – Cross-Section A-A'



Legend

- clay to silty clay
- fluvial clay to silty clay
- fluvial sand to silty sand
- sand to silty sand
- SCREEN

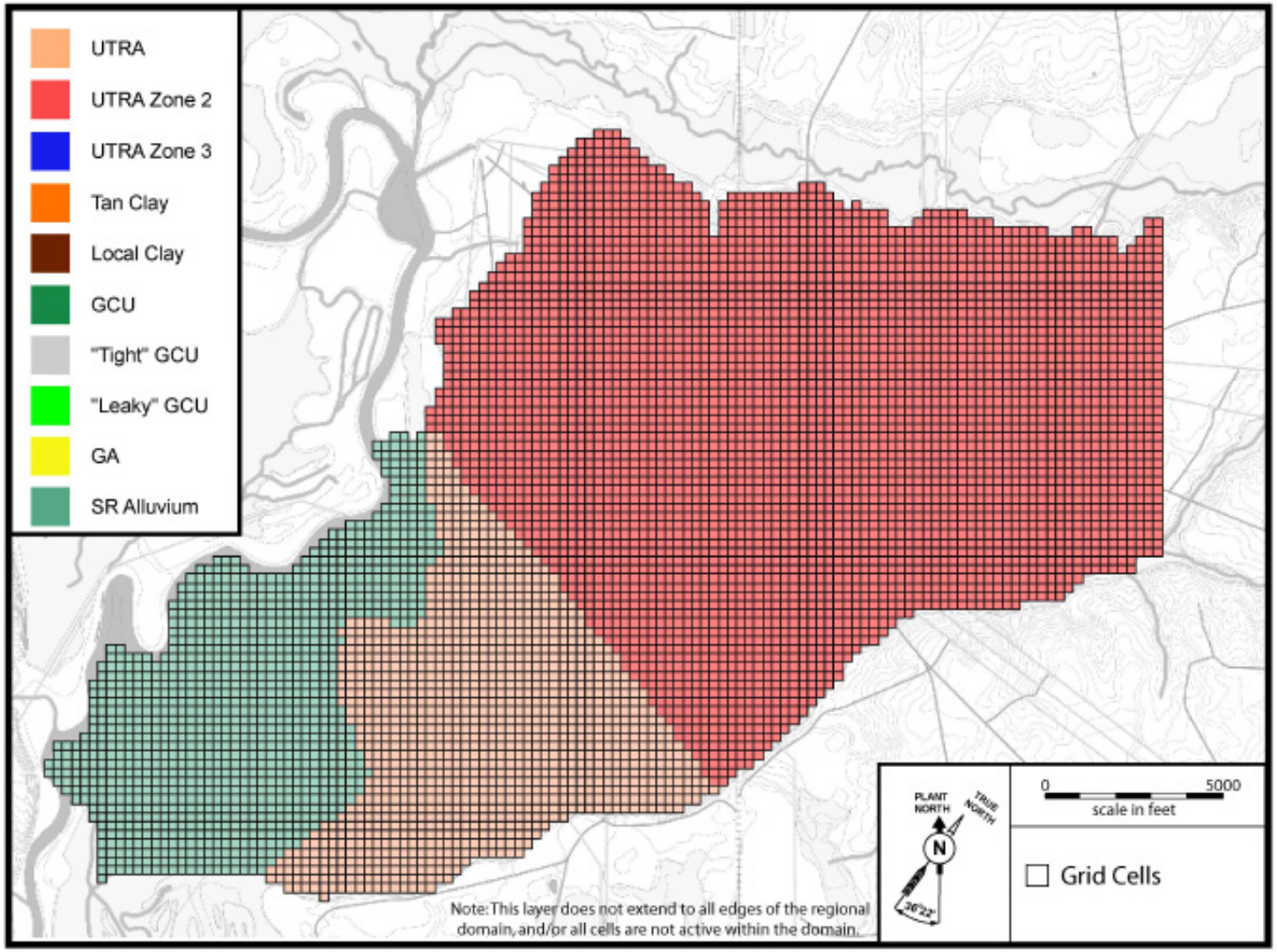
- 10.1 Tritium Concentration 2Q24 (pCi/mL)
- NS Not Sampled
- EQL Estimated Quantation Limit
- NDD Not Decision Data
- Well/Boring
- Potentiometric Surface 2Q24 (ft msl)
- Tritium Isoconcentration Contour 2Q24 (>20pCi/mL) dashed where inferred
- Tritium Isoconcentration Contour 2Q24 (>100 pCi/mL) dashed where inferred



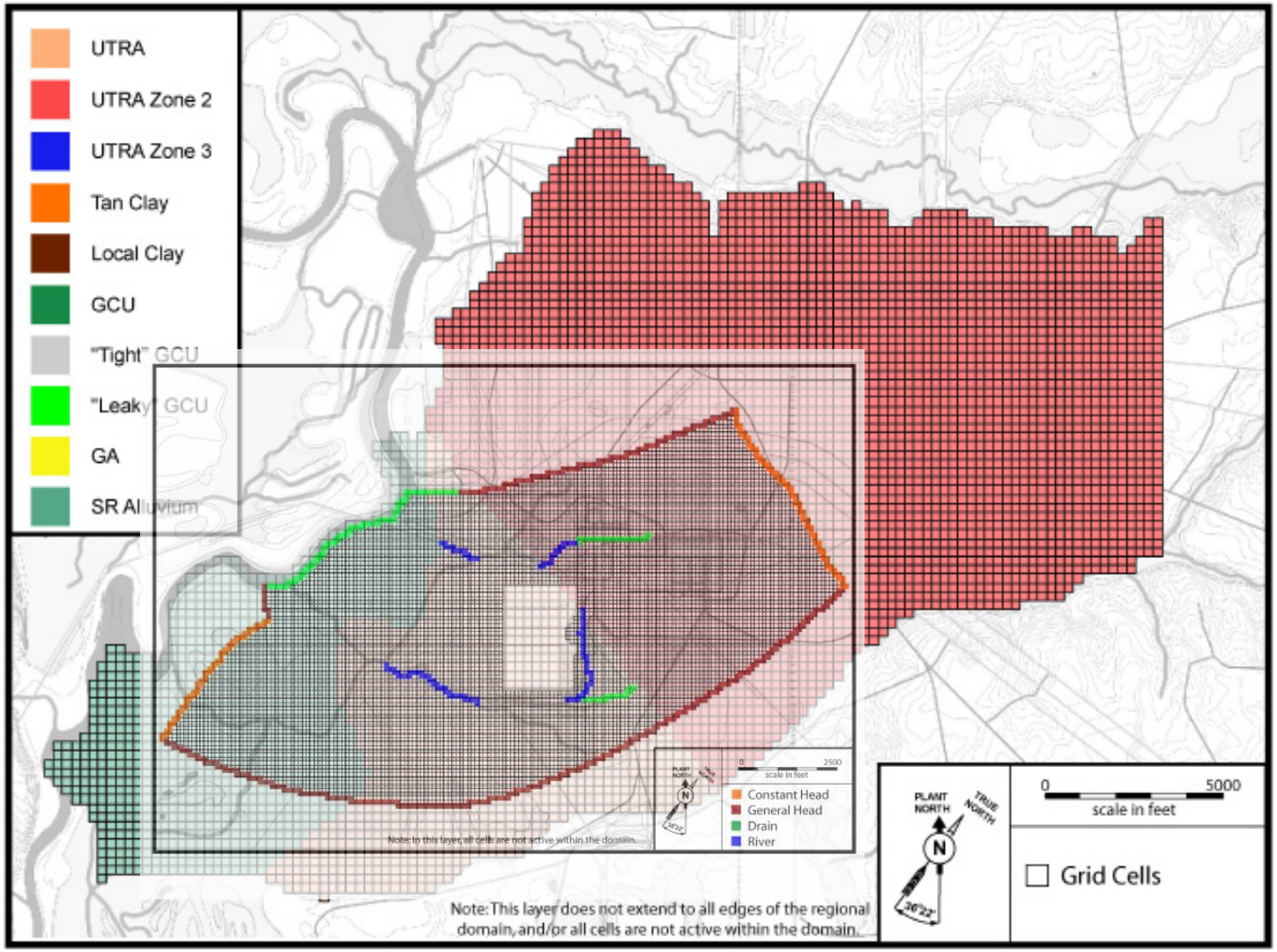
Groundwater Modeling at DAG OU

- 1998-2004 Modeling effort
  - Assist with developing monitoring and sampling plan
  - Three models
    - *DEXOU (regional flow)*
    - *DAG OU (local)*
    - *DOSB (local)*
- Model Update
  - Support decision-making in selecting remedial action
    - *Simulate various remedial scenarios*
  - New data
  - Updated hydrostratigraphy
  - Updated code and model capabilities
  - Calibration
  - Particle-tracking
  - Results

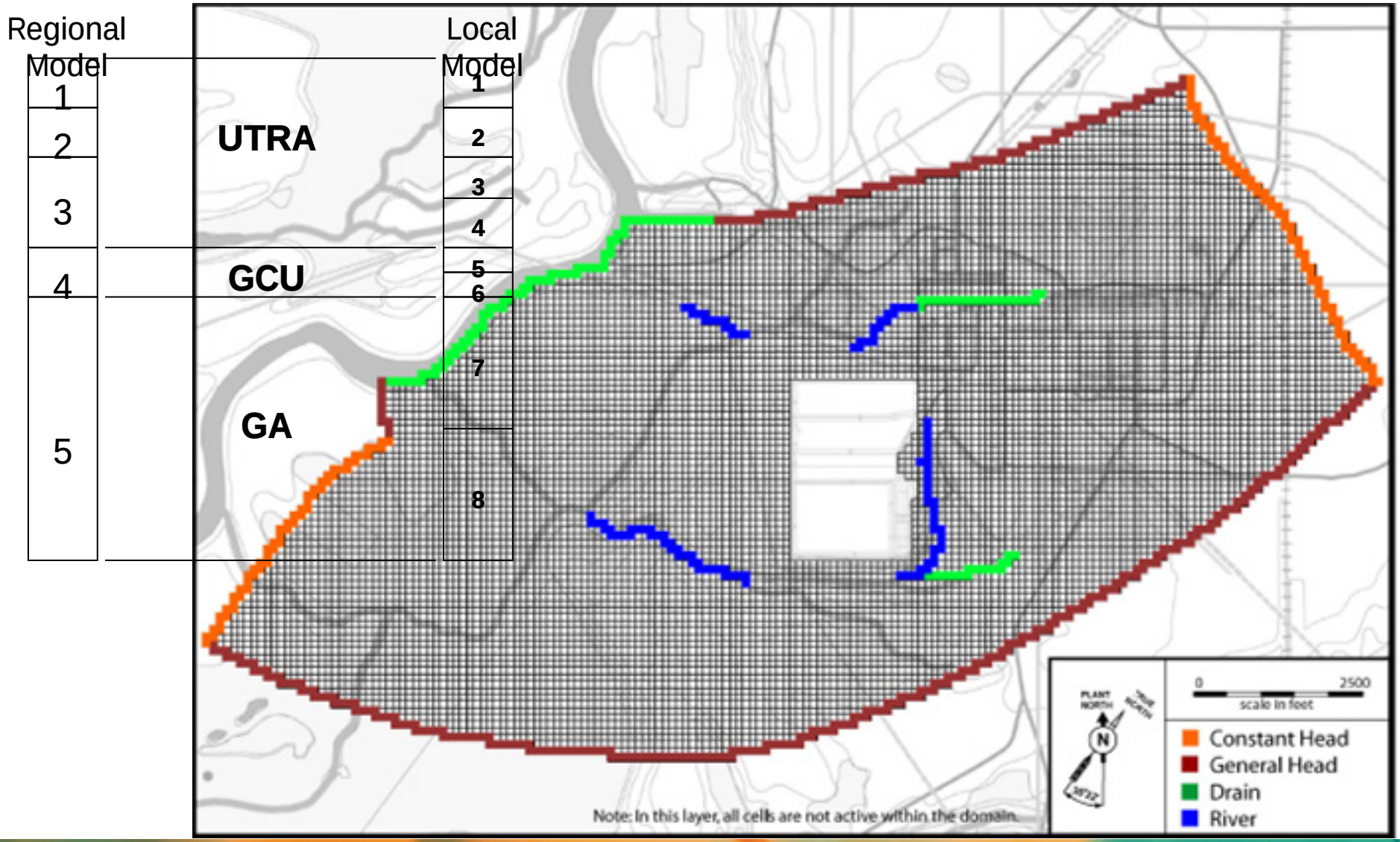
1998 Model – Regional Flow



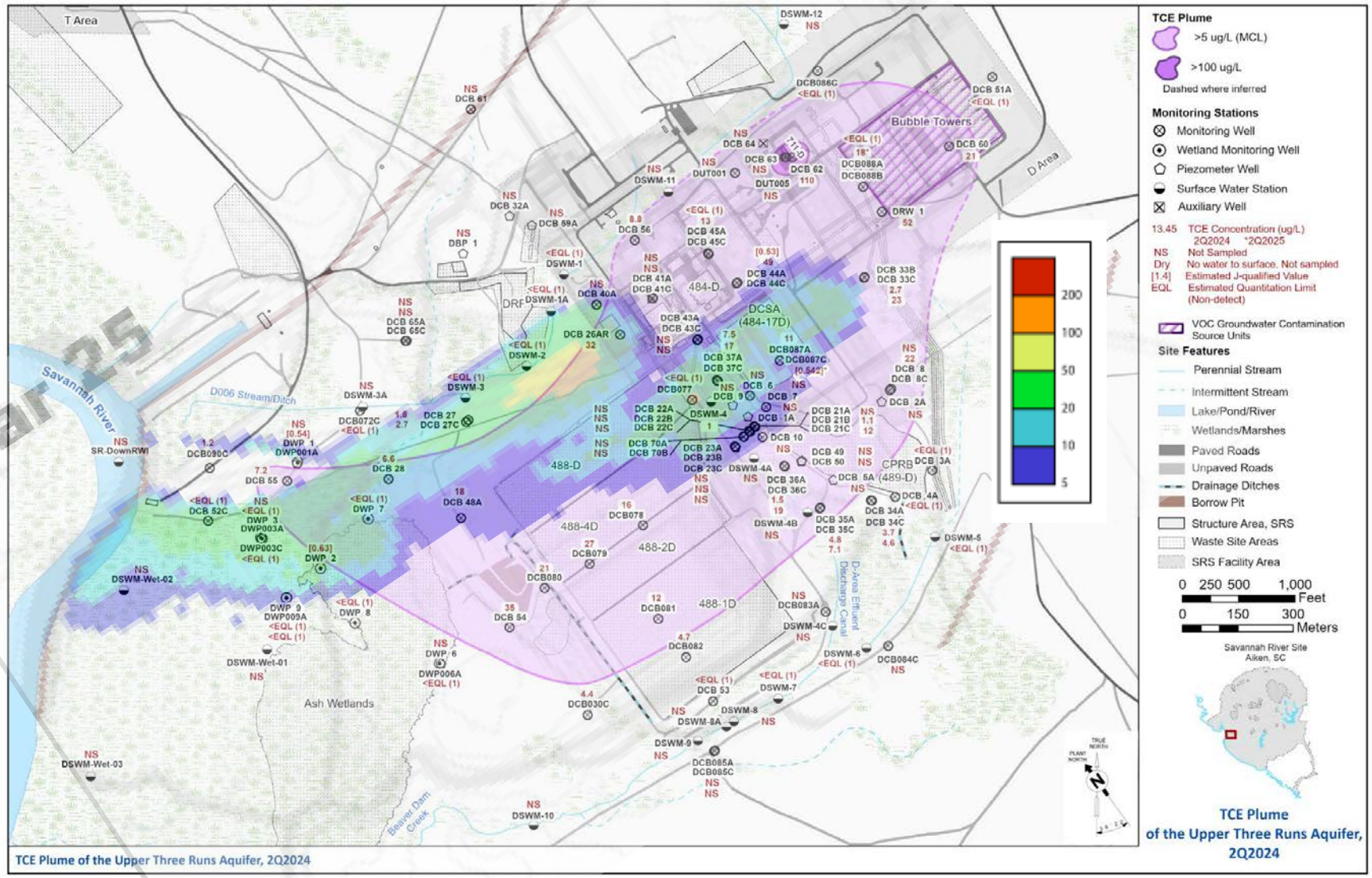
2002 Model – Local Transport



2002 Model – Local Transport

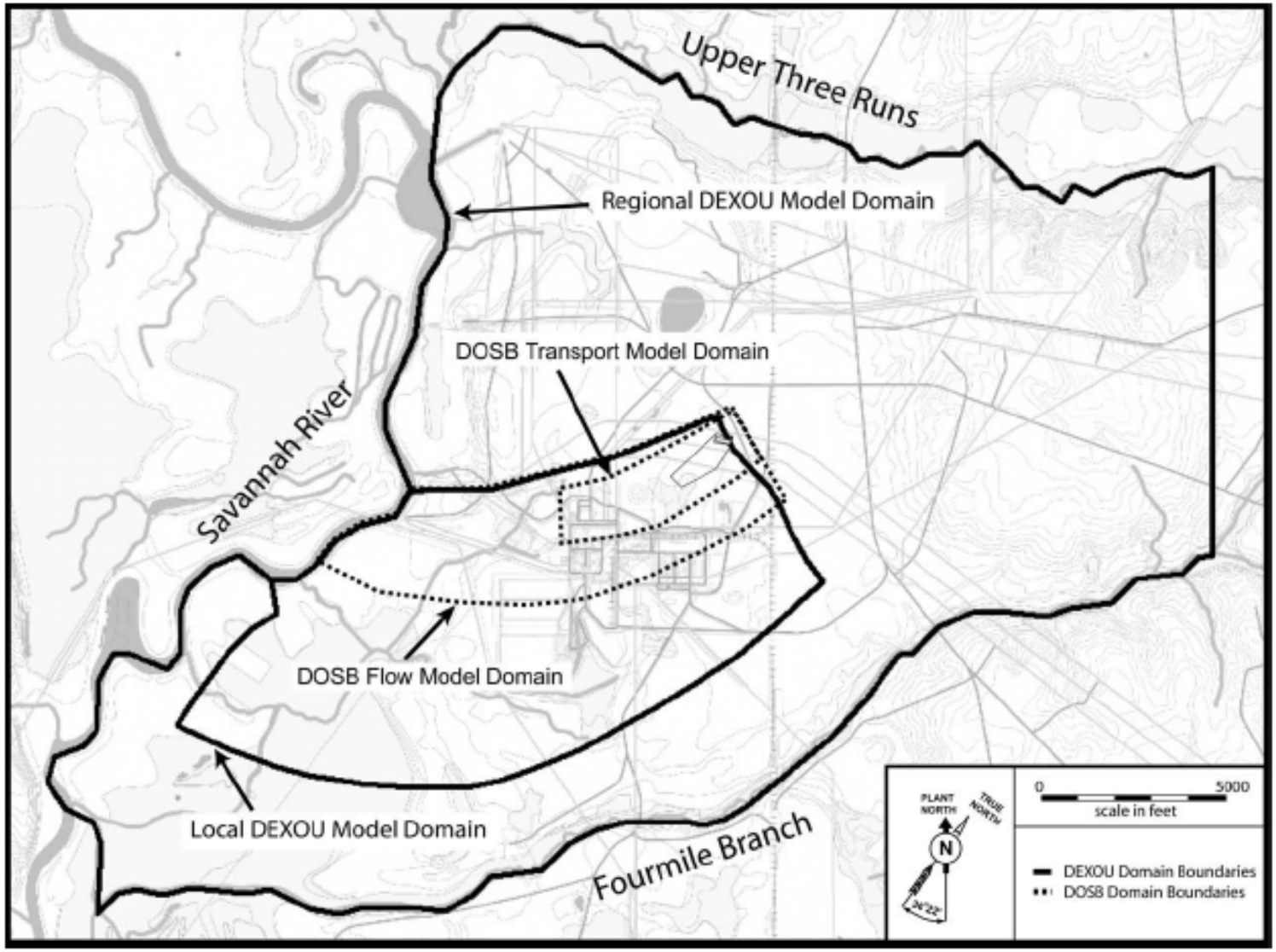


2002 – UTRA TCE Results

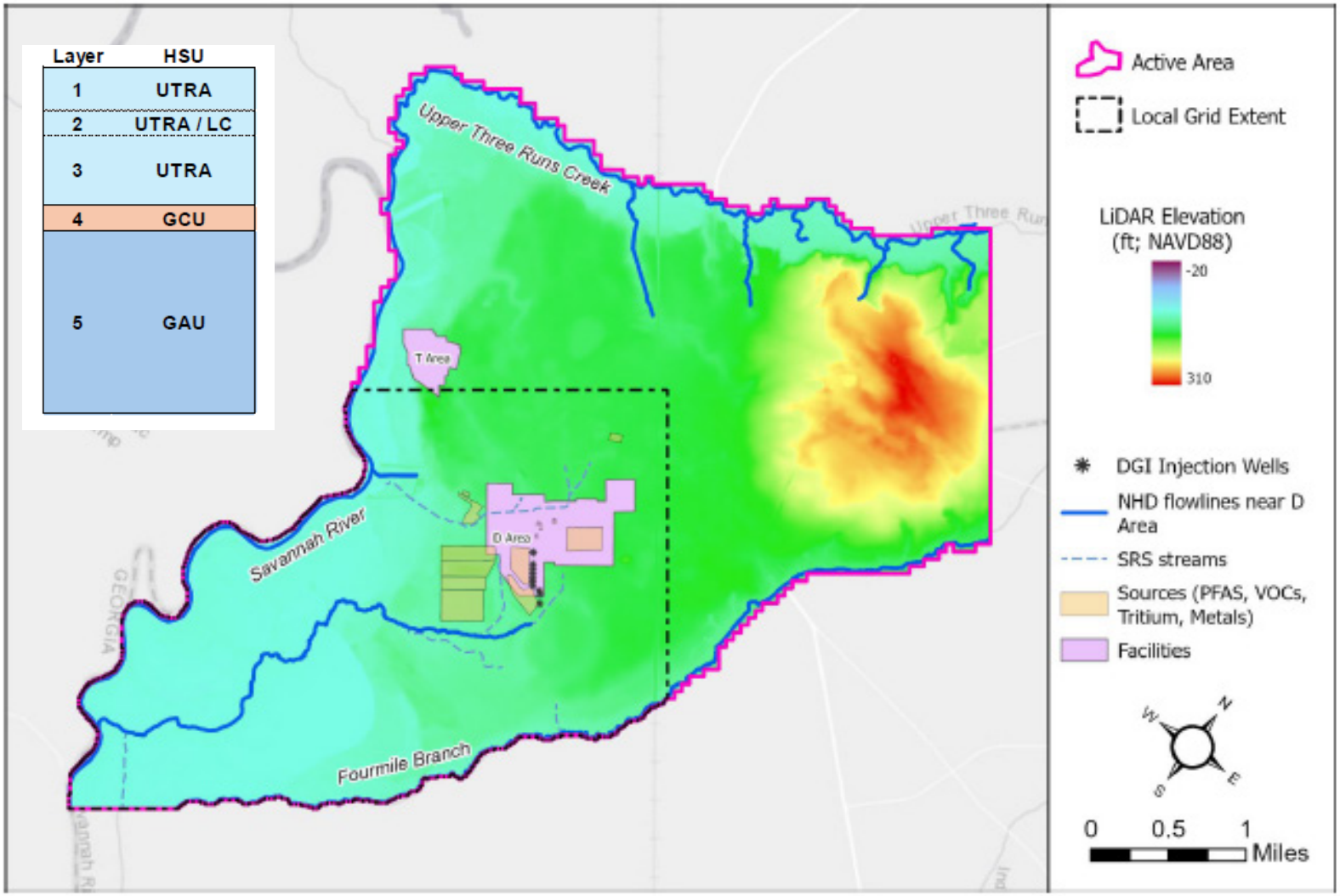


TCE Plume of the Upper Three Runs Aquifer, 2Q2024

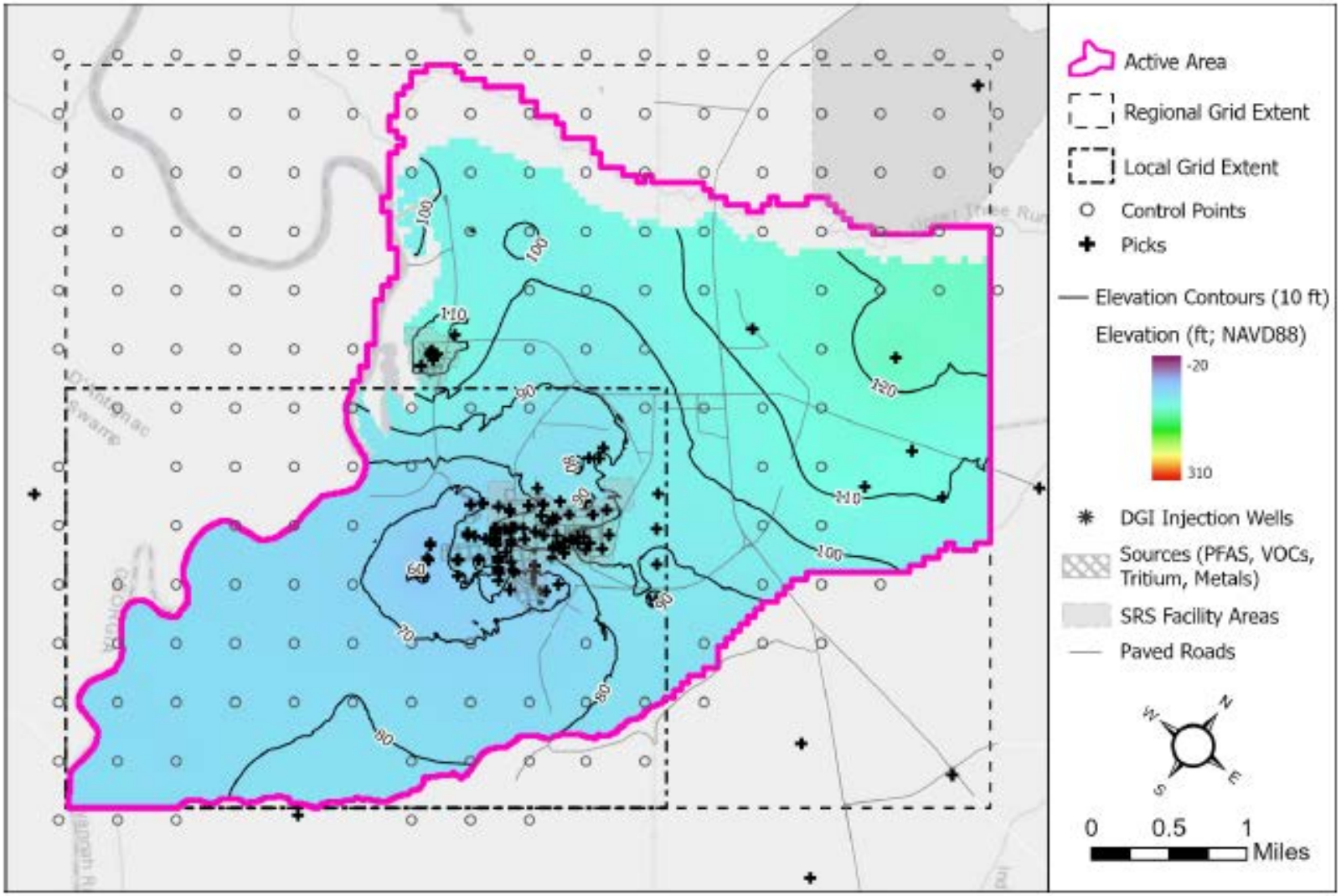
2004 Model – DOSB Flow & Transport



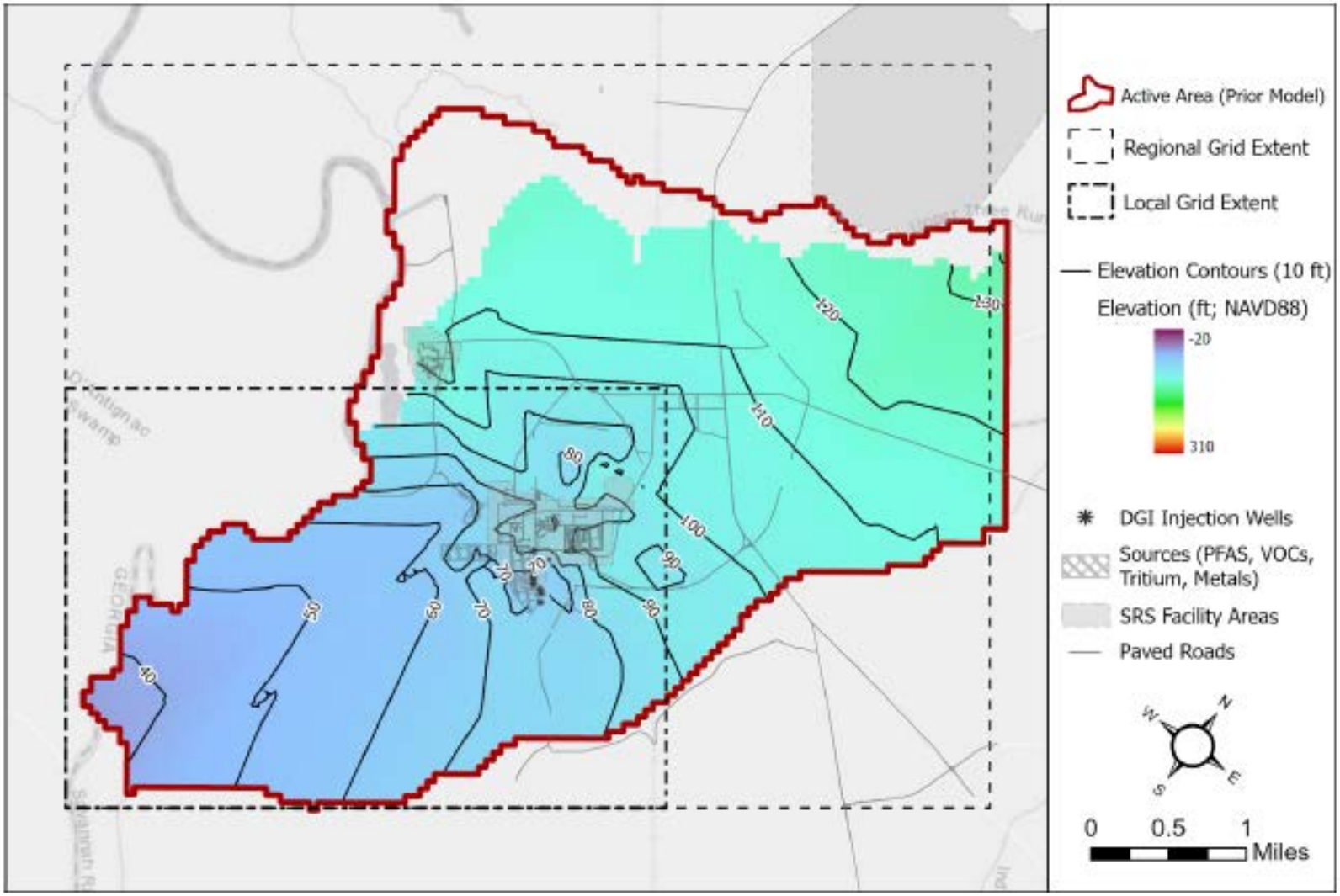
Current Model Update – Support Remedial Decisions



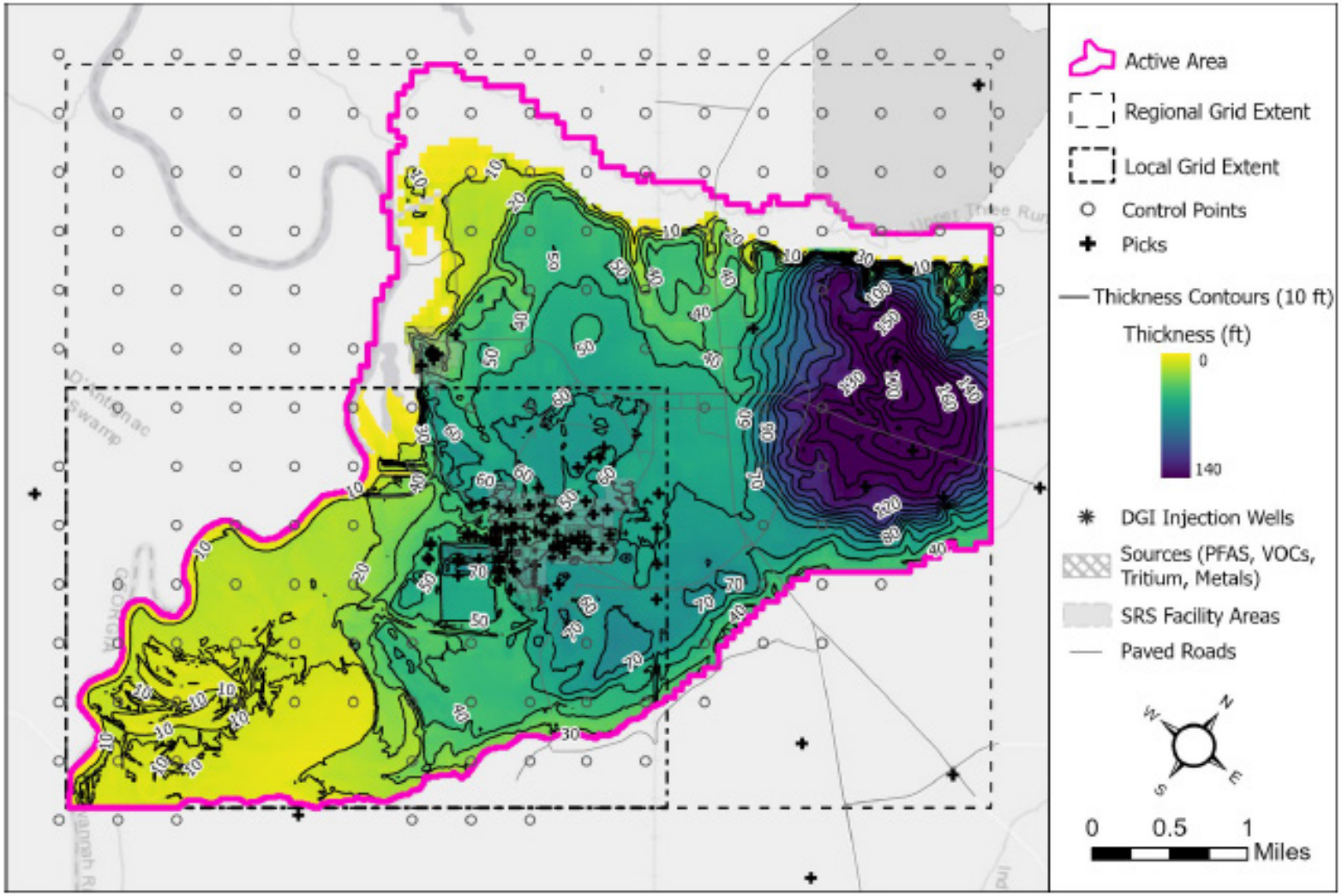
Updated Hydrostratigraphy (Bottom UTRA)



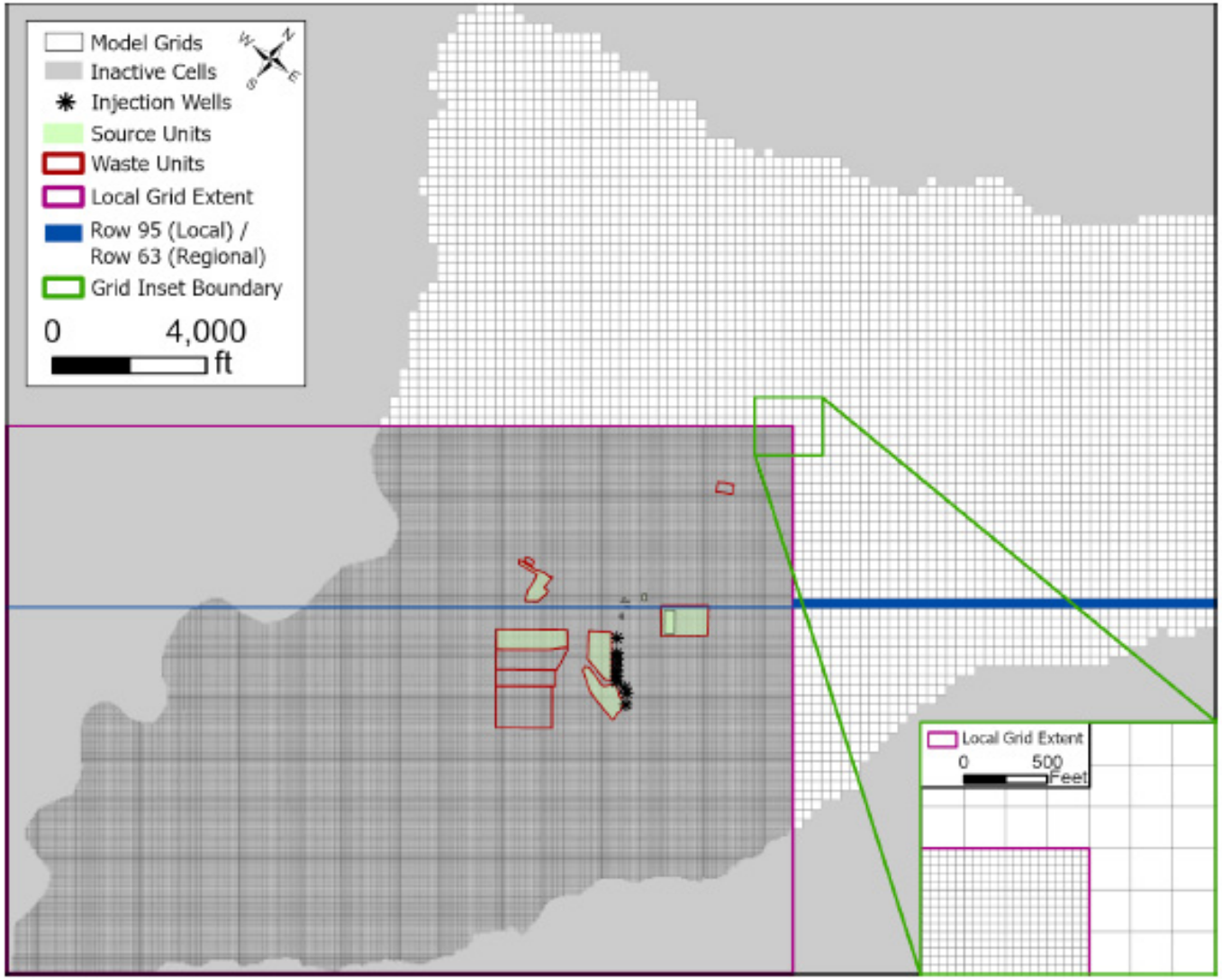
Updated Hydrostratigraphy smoothed



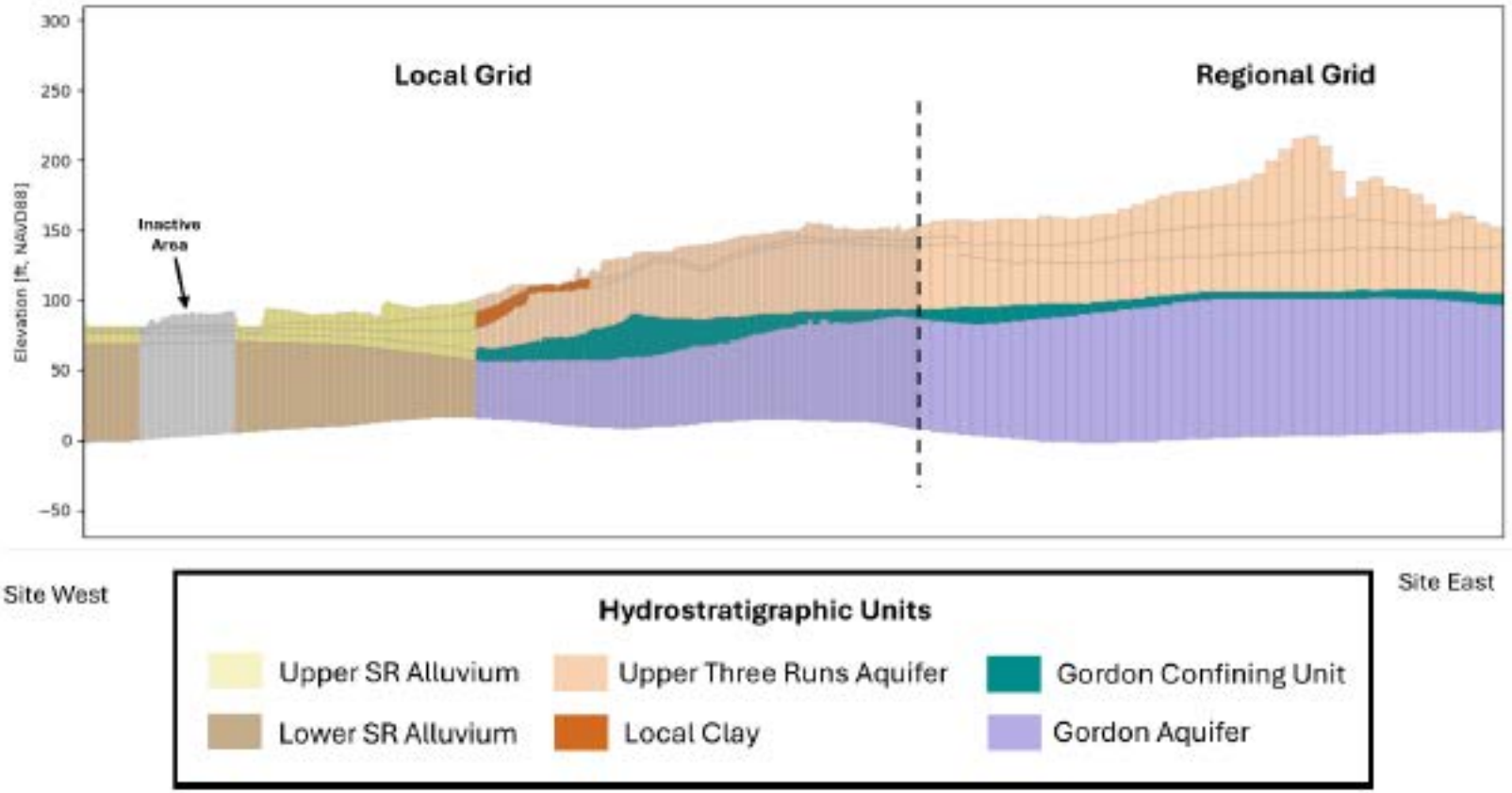
Updated Layer Thickness (UTRA)



Plan View



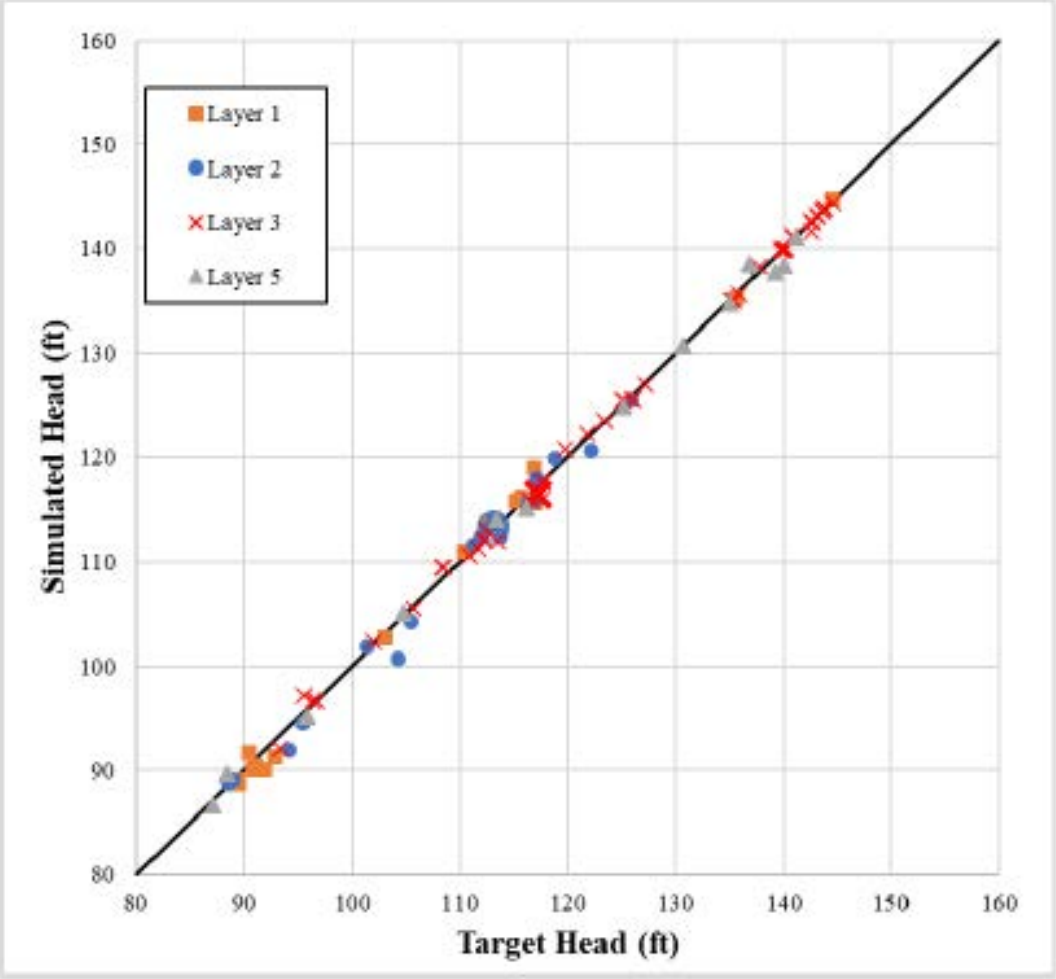
Cross-sectional View



Calibration Statistics (Water Levels)

HSU	Model Layer	Number of Targets	Mean Error (ME), ft	Mean Absolute Error (MAE), ft	RMSE, ft	Residual Range, ft
UTRA / LC	1	17	-0.056	0.867	1.036	-1.79 – 2.05
	2	21	-0.326	0.949	1.218	-3.51 – 1.08
	3	51	-0.025	0.400	0.584	-1.64 – 1.70
GA	5	13	-0.104	0.719	0.918	-1.67 – 1.63
All		**102**	**-0.102**	**0.632**	**0.873**	**-3.51 – 2.05**

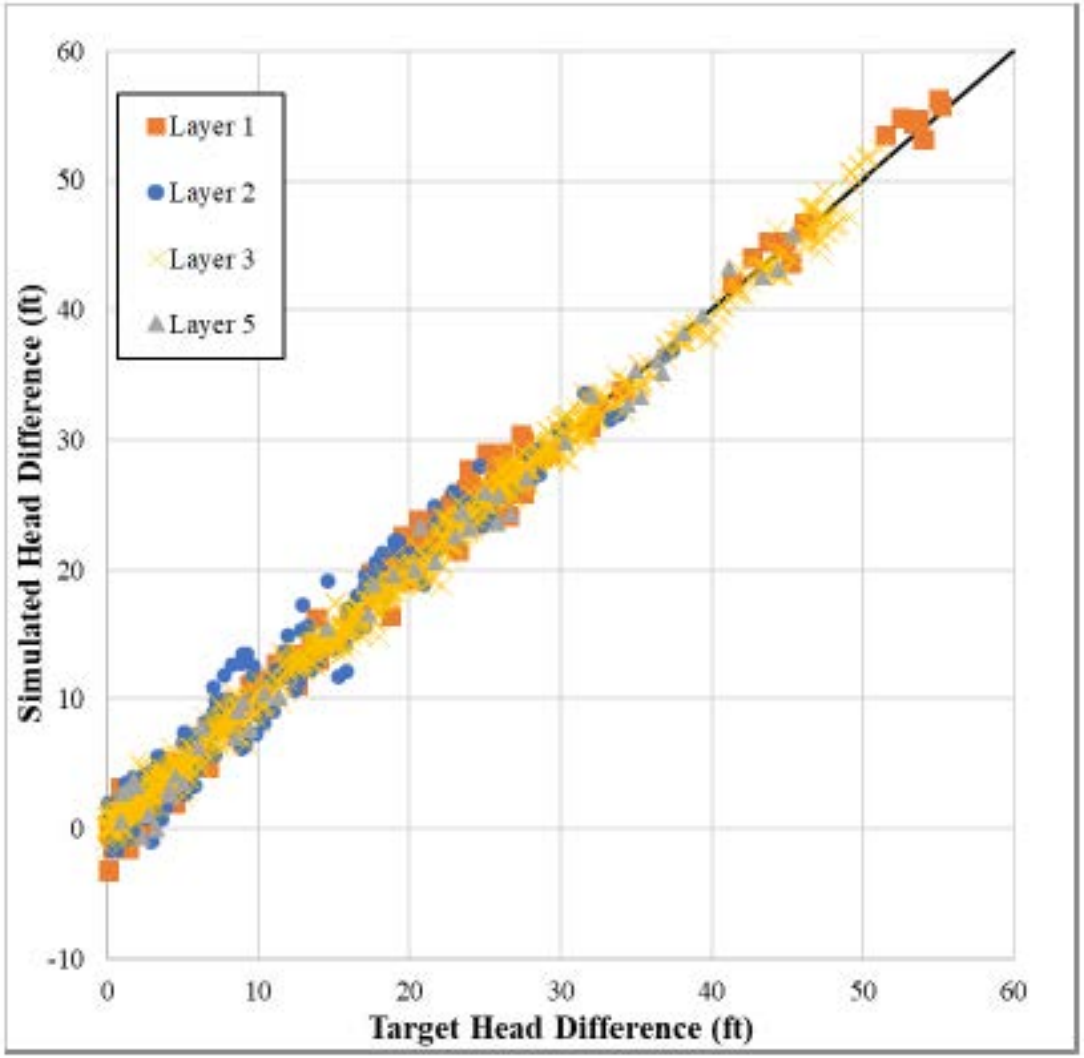
Simulated vs Observed (Water Levels)



Calibration Statistics (HHD)

HSU	Model Layer	Number of Targets	Mean Error (ME), ft	Mean Absolute Error (MAE), ft	RMSE, ft	MAE ÷ Range
UTRA / LC	1	136	0.337	1.252	1.508	2.27%
	2	210	0.205	1.349	1.701	3.62%
	3	1275	-0.048	0.624	0.833	1.22%
GA	5	48	-0.233	1.161	1.387	2.61%
All		**1669**	**0.010**	**0.782**	**1.065**	**1.42%**

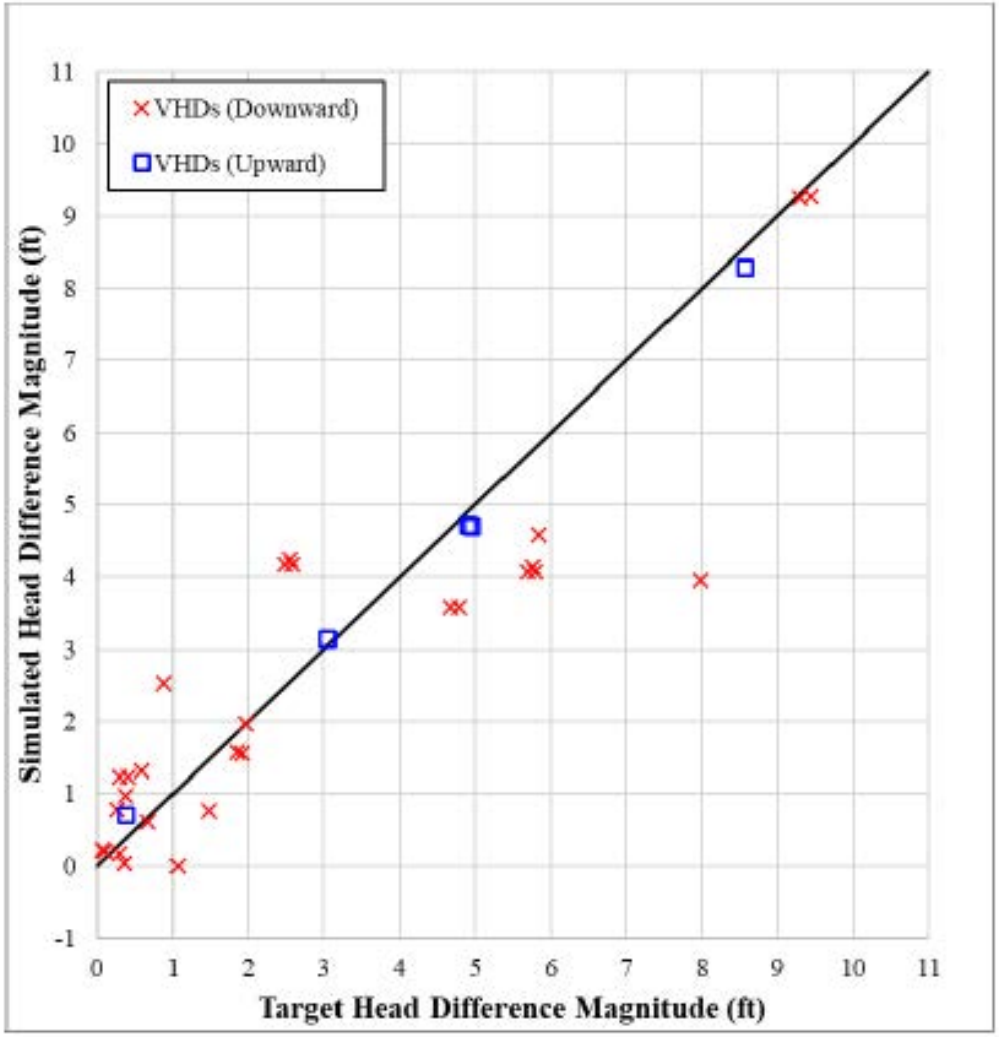
Simulated vs Observed (HHD)



Calibration Statistics (VHD)

Flow Direction	Number of Targets	Mean Error (ME), ft	Mean Absolute Error (MAE), ft	RMSE, ft	MAE ÷ Range
Down	28	-0.19	0.93	1.257	9.95%
Up	5	-0.07	0.23	0.242	2.79%
All	**33**	**-0.17**	**0.83**	**1.161**	**8.81%**

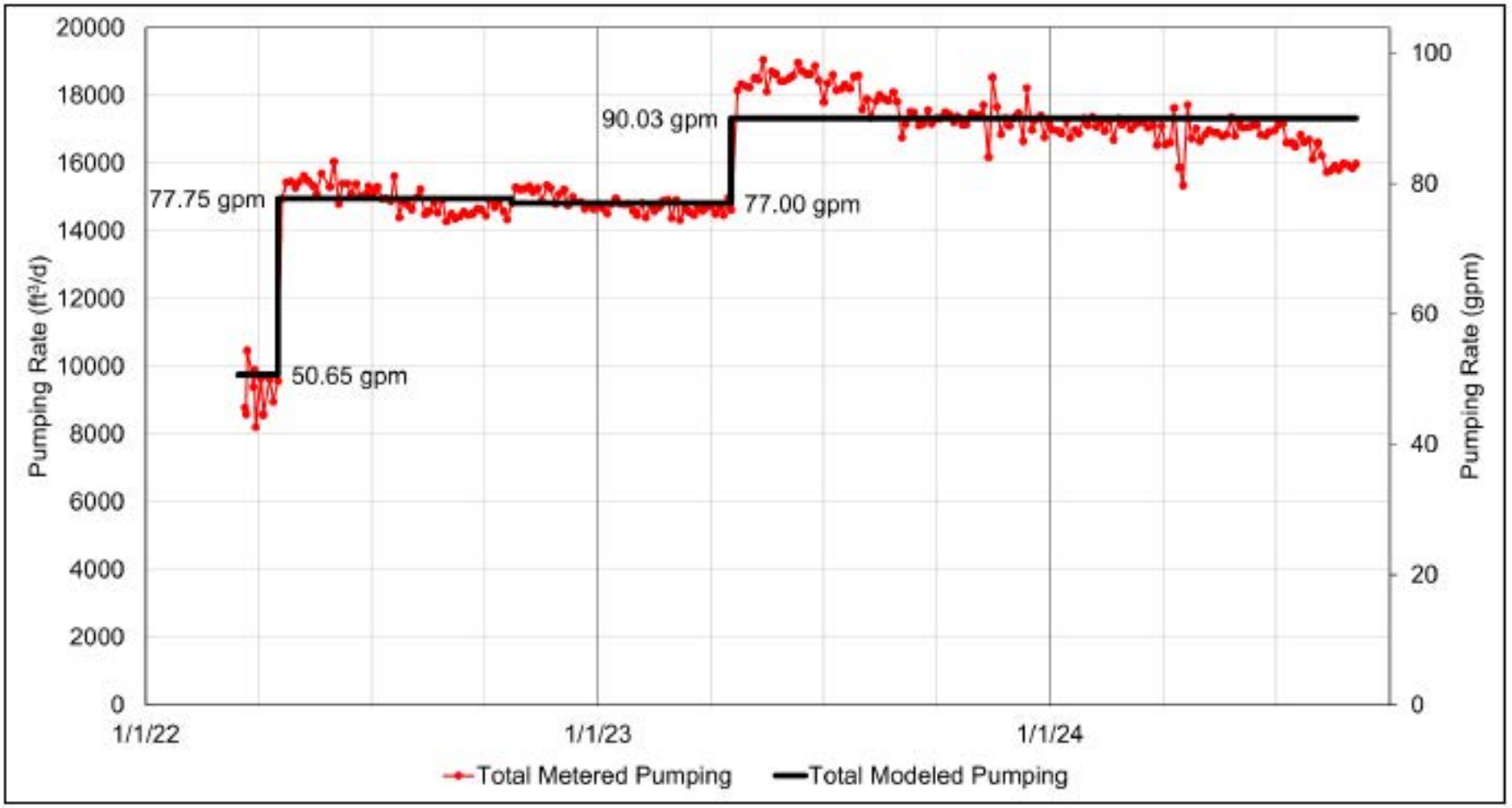
Simulated vs Observed (VHD)



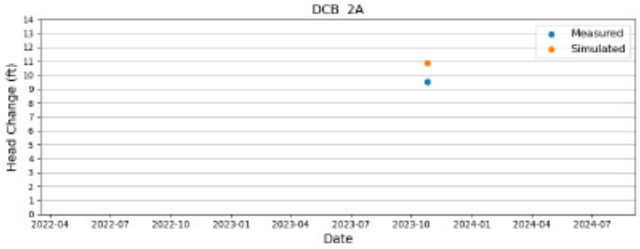
Steady-state Water Budget

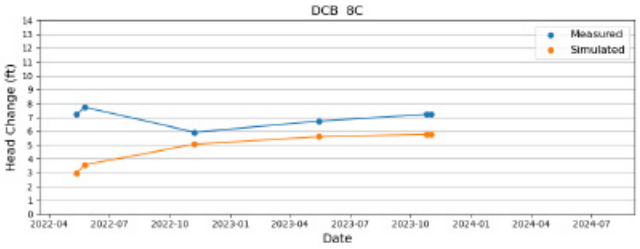
	Model	In (ft^3/d)	Out (ft^3/d)	Net (ft^3/d)	Combined Net (ft^3/d)
Lateral Groundwater Exchange (GHB)	Local	299,835	30,757	269,078	302,693
	Regional	77,230	43,615	33,614	
Recharge (RCH)	Local	187,074	0	187,074	604,257
	Regional	417,183	0	417,183	
Wetlands & waterbodies (DRN)	Local	0	357,465	-357,465	-593,623
	Regional	0	236,158	-236,158	
Streams (SFR)	Local	7,685	140,040	-132,355	-330,657
	Regional	51	198,352	-198,302	
Injections (WEL)	Local	17,331	0	17,331	17,331
	Regional	0	0	0	
Intermodel Exchange (GWF-GWF)	Local	48,621	32,283	16,337	0
	Regional	32,283	48,621	-16,337	
	TOTAL	1,006,388	1,006,388	0	0

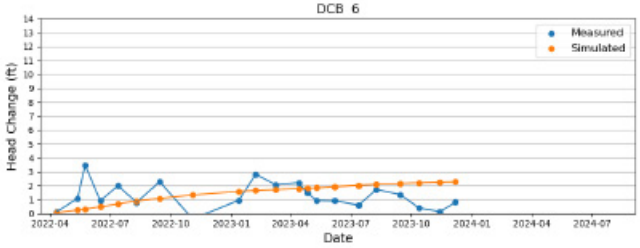
Transient Model (Predictive Mode): Injection Wells

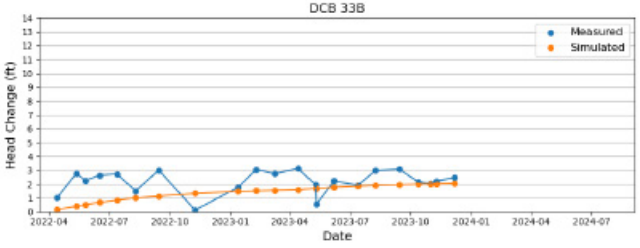


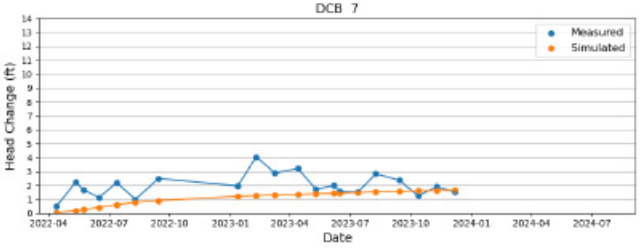
Observed & Simulated Heads (Transient)

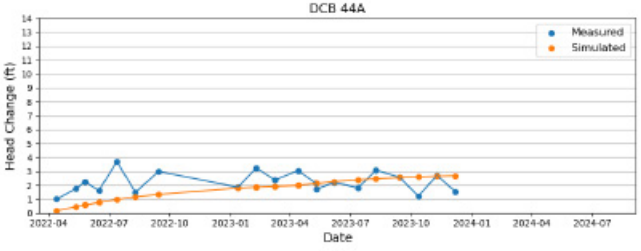


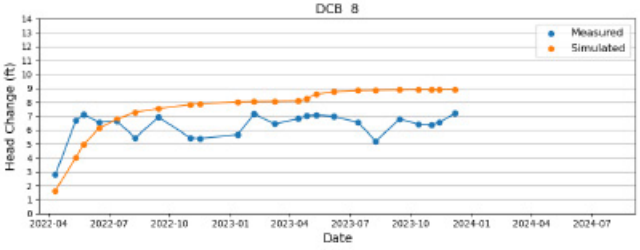


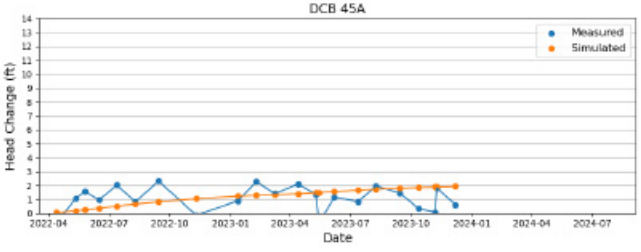




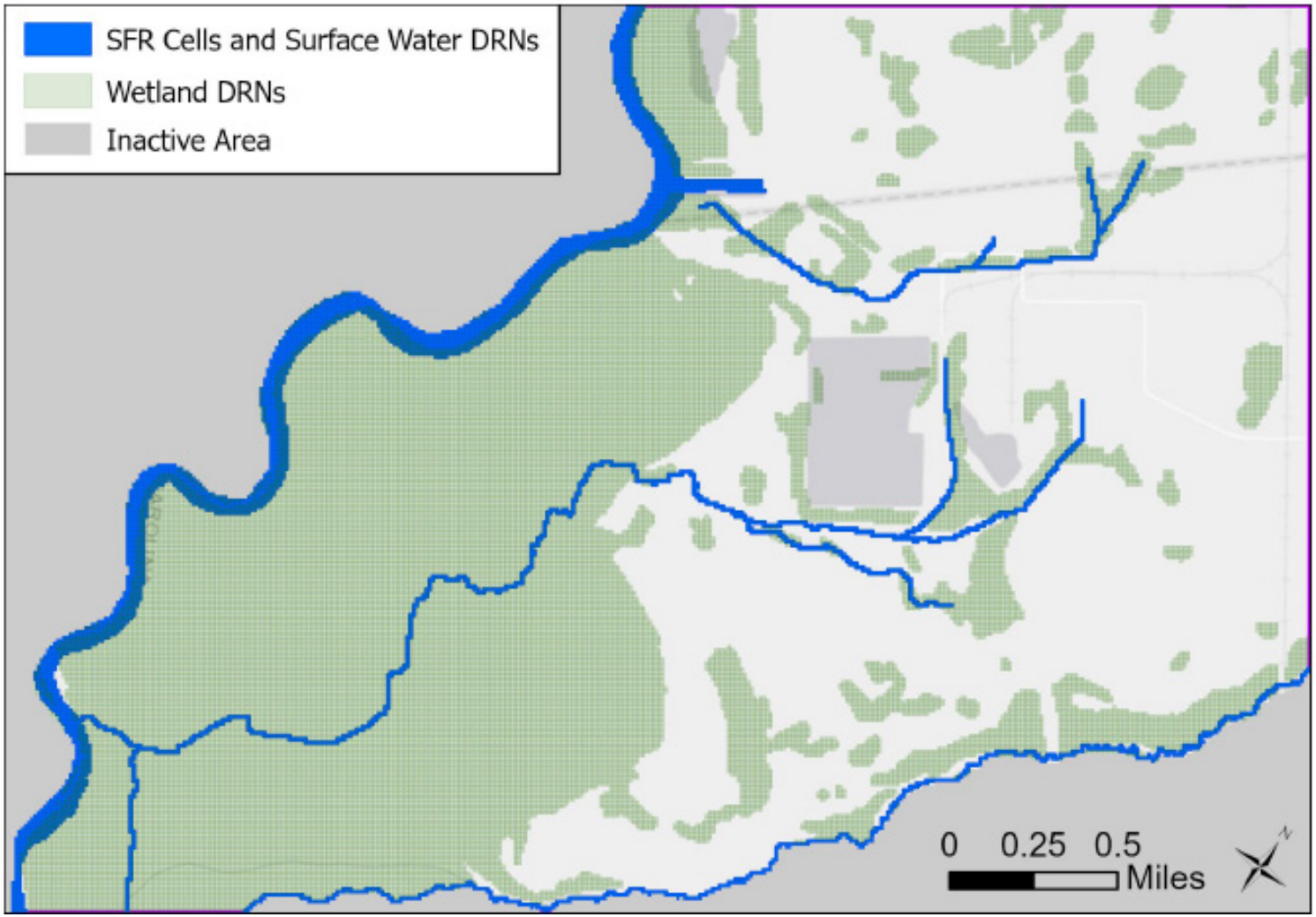






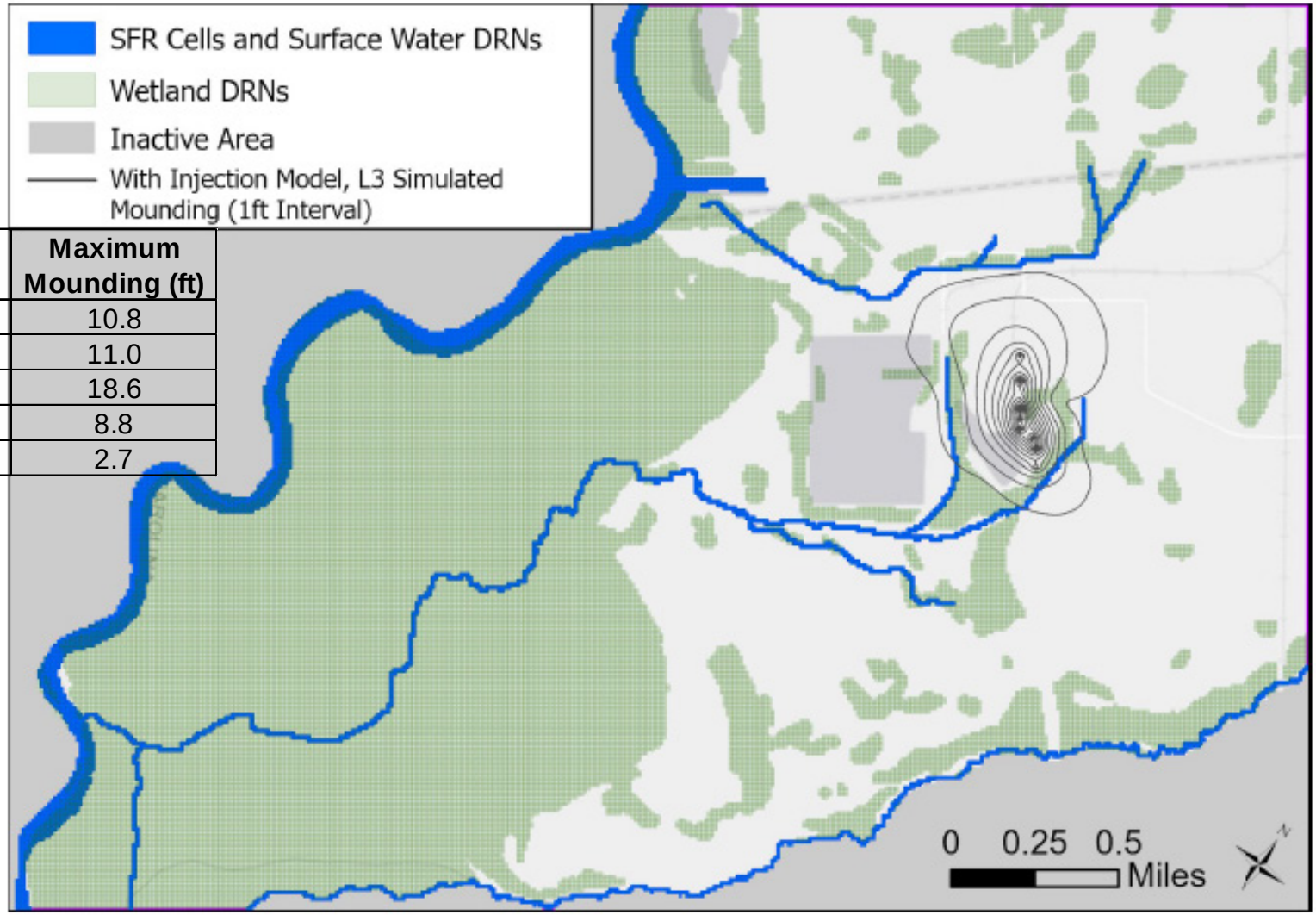


Discharge Boundaries

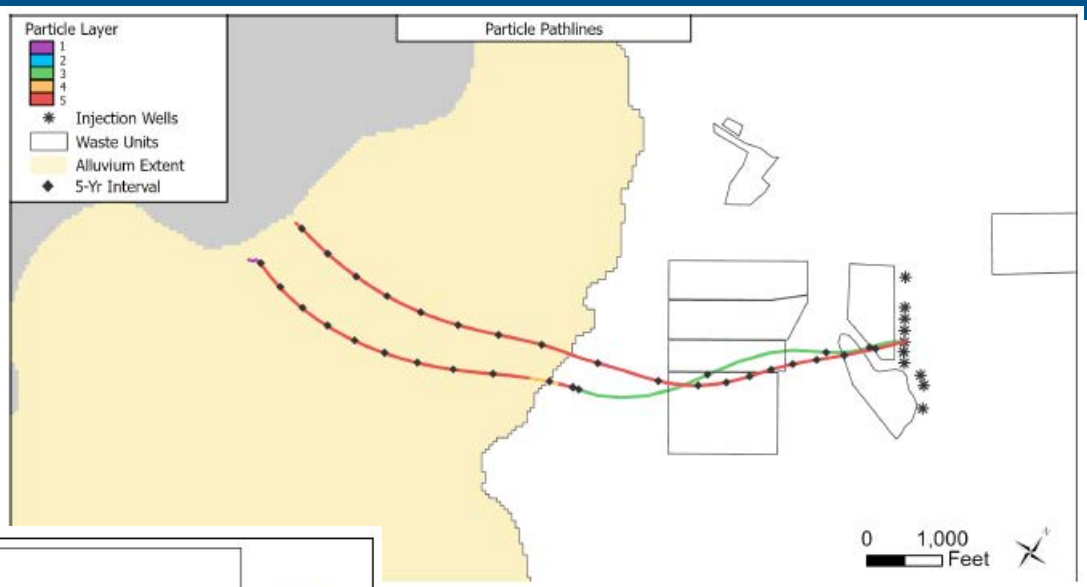


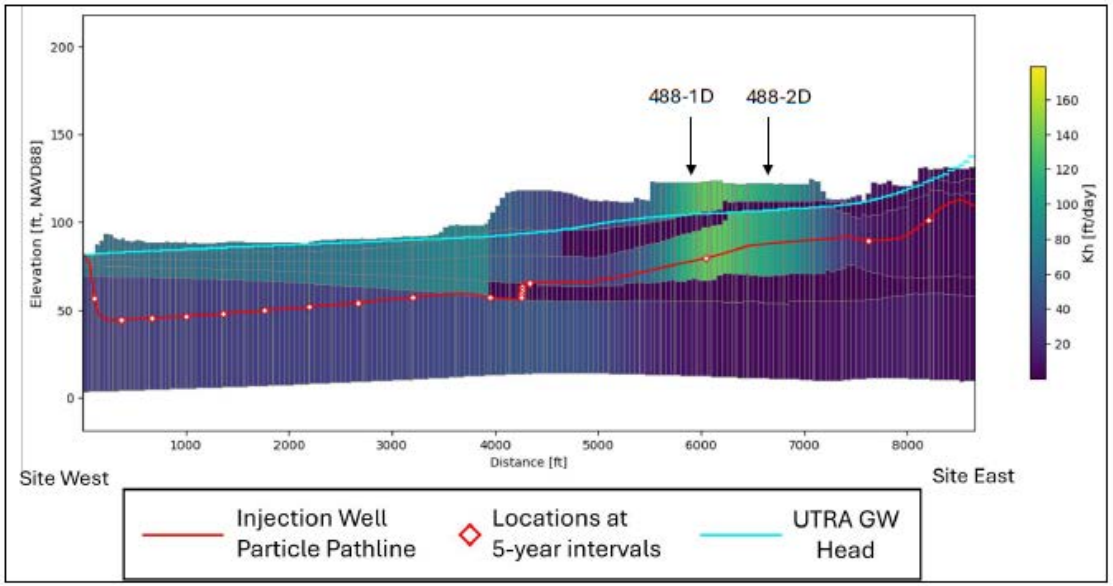
Head Increase due to Injection

Model Layer	Maximum Mounding (ft)
1	10.8
2	11.0
3	18.6
4	8.8
5	2.7

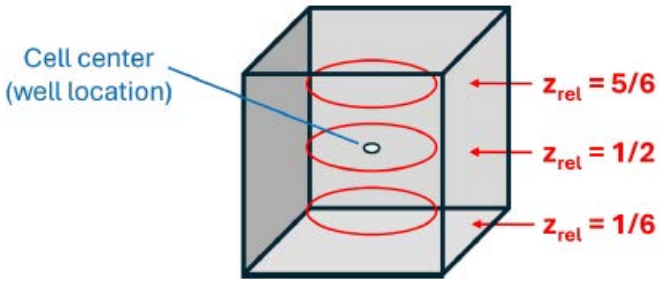


Particle Tracking (Forward)

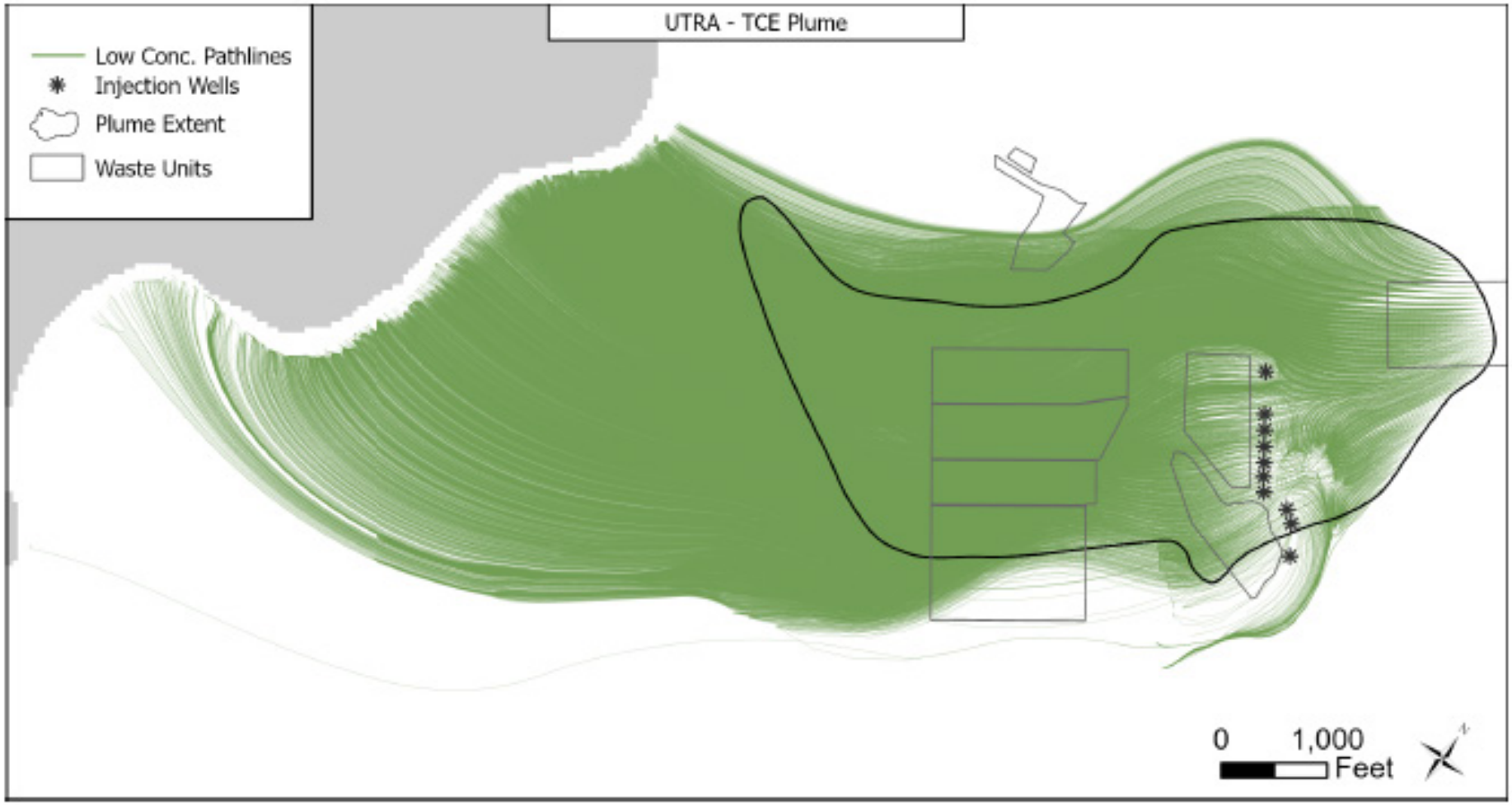




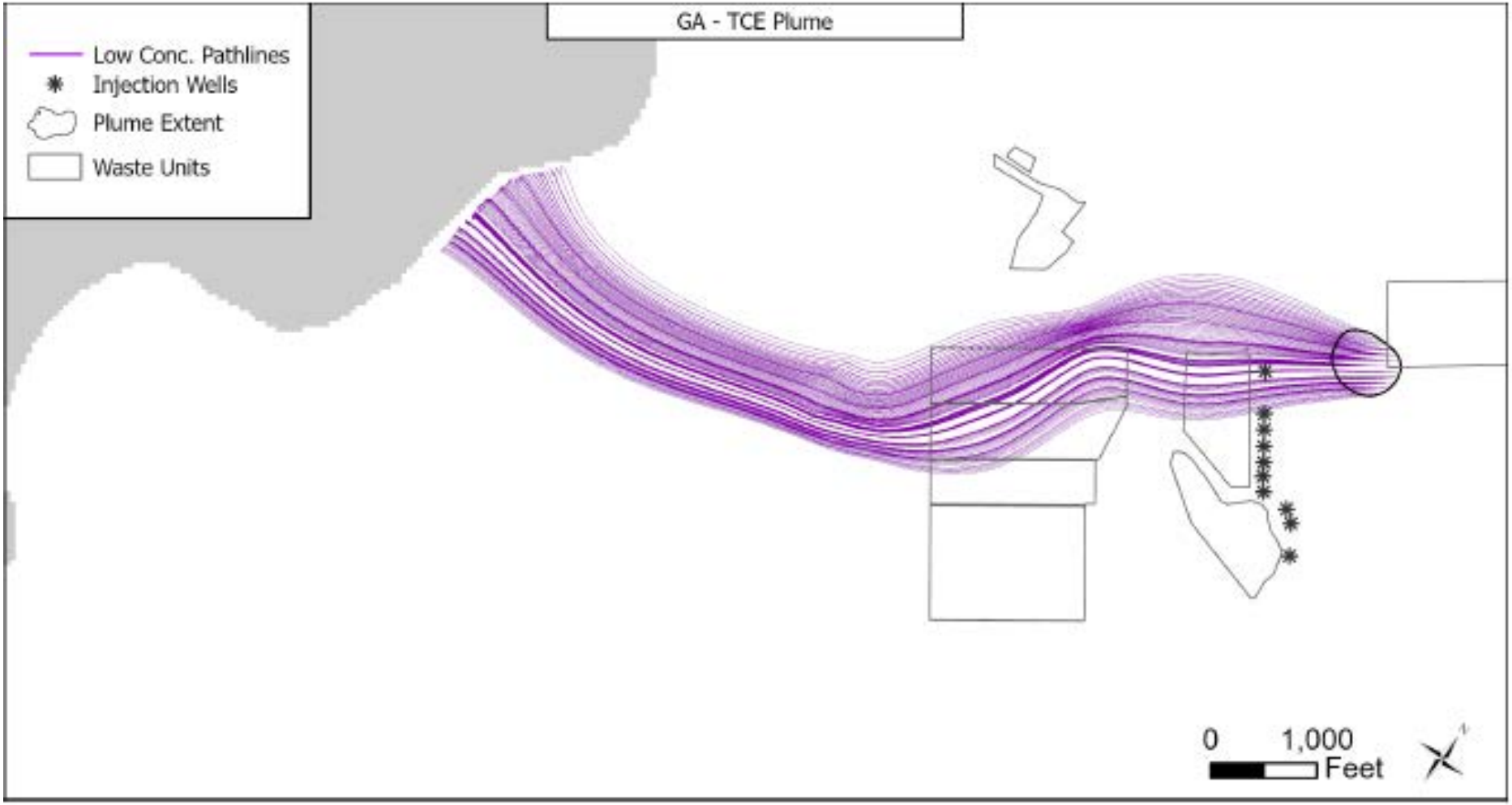
Particle(s) Placement



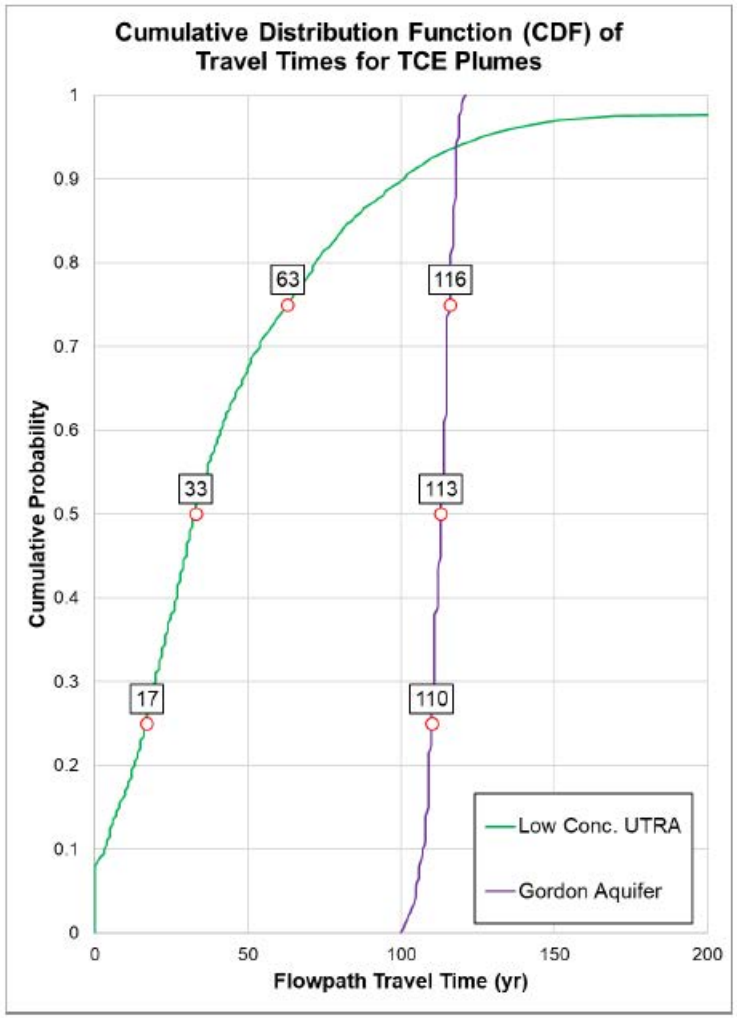
Migration Pathways (UTRA – TCE)



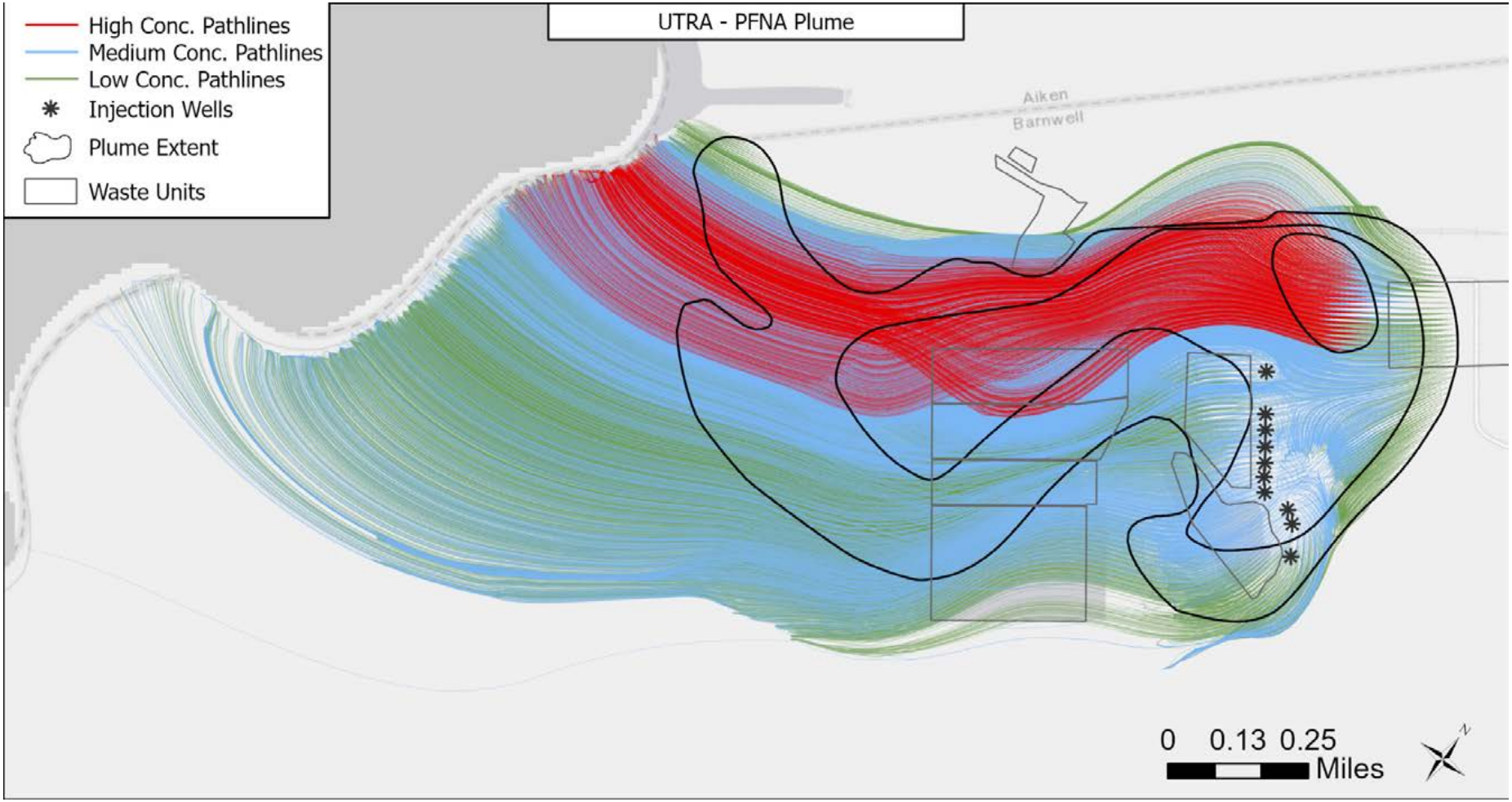
Migration Pathways (GA – TCE)



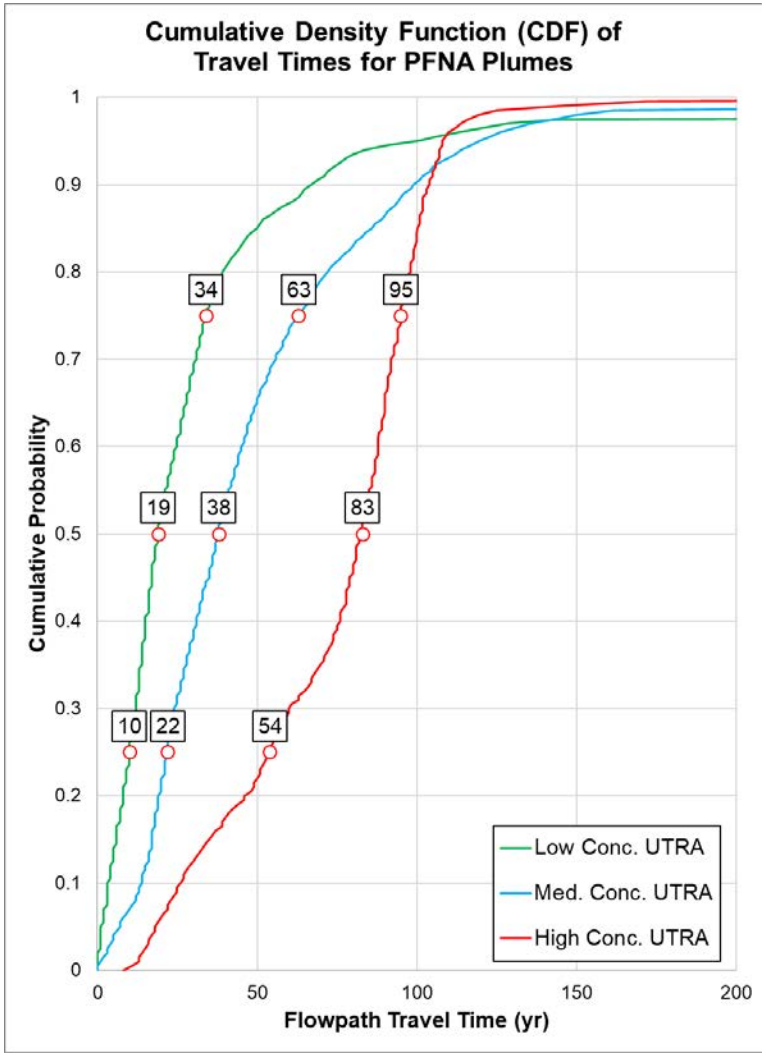
CDF for the Particles (TCE)



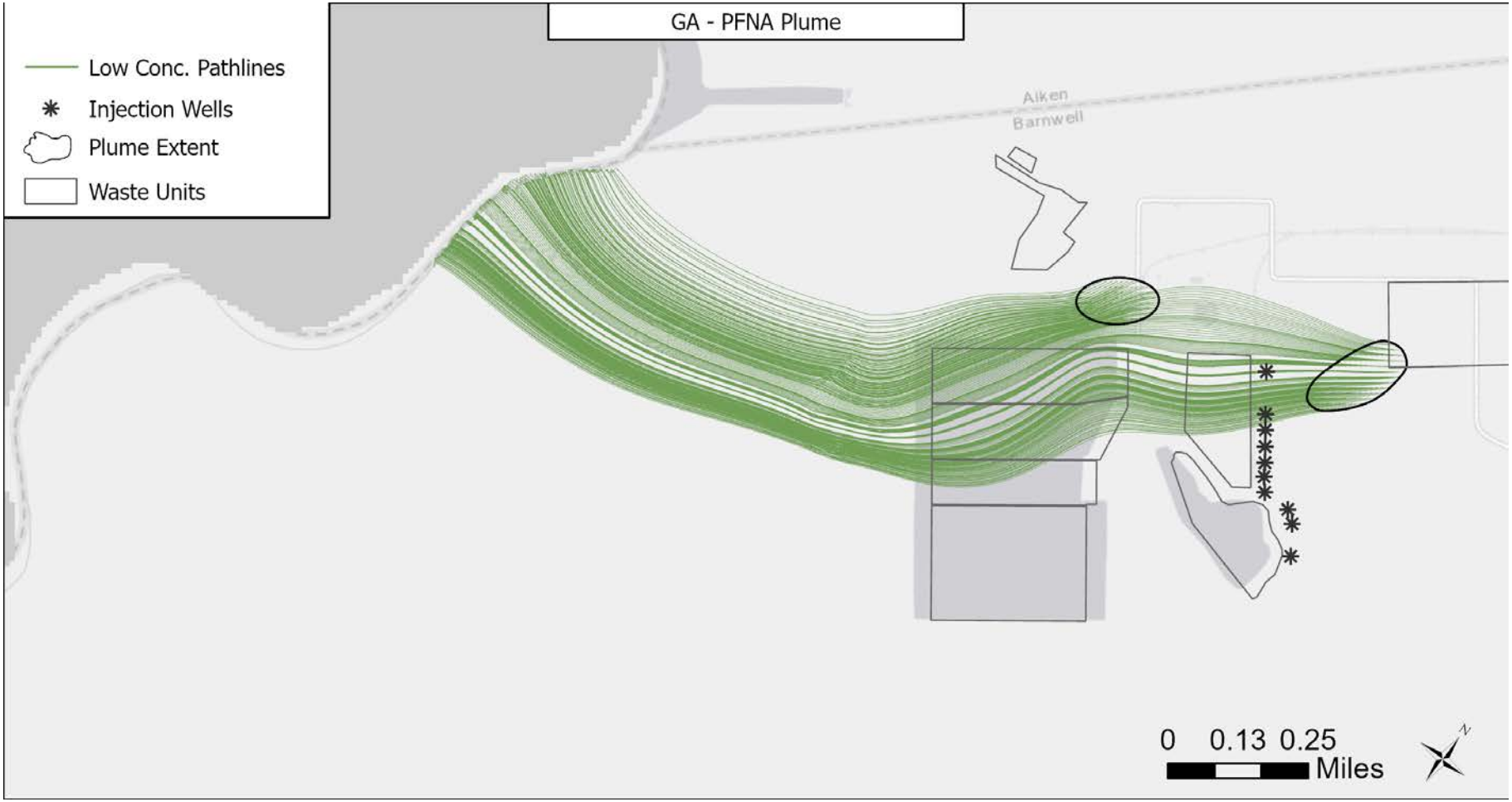
Migration Pathways (UTRA – PFNA)



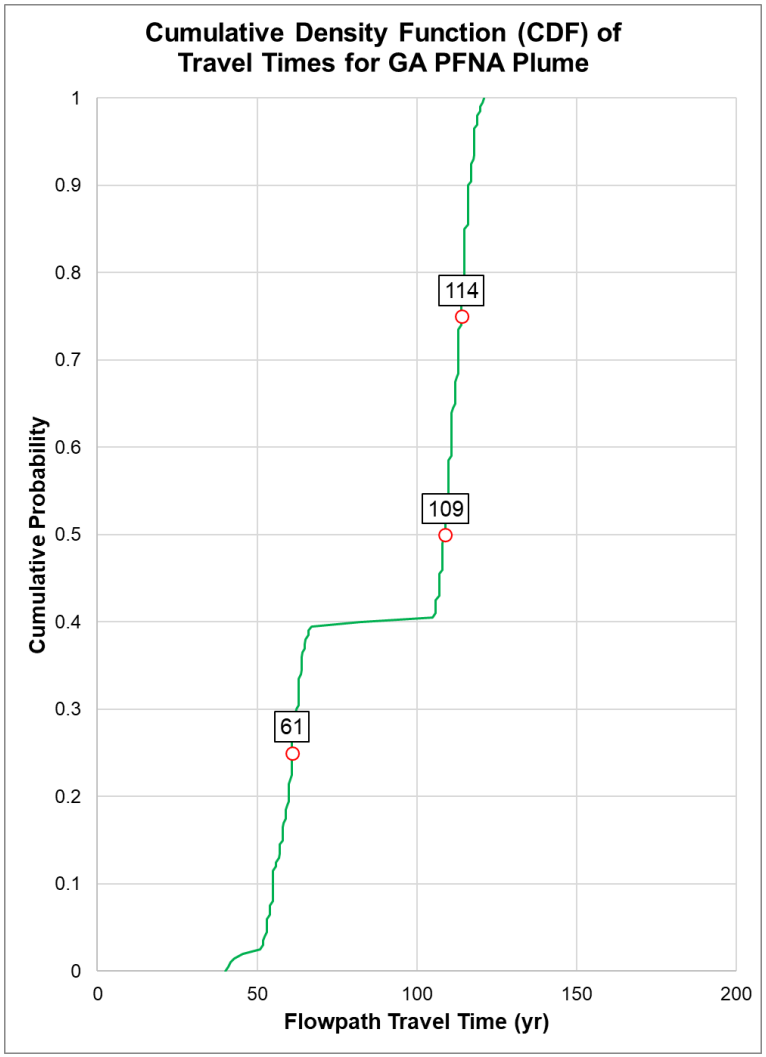
CDF for the Particles (UTRA - PFNA)



Migration Pathways (GA – PFNA)

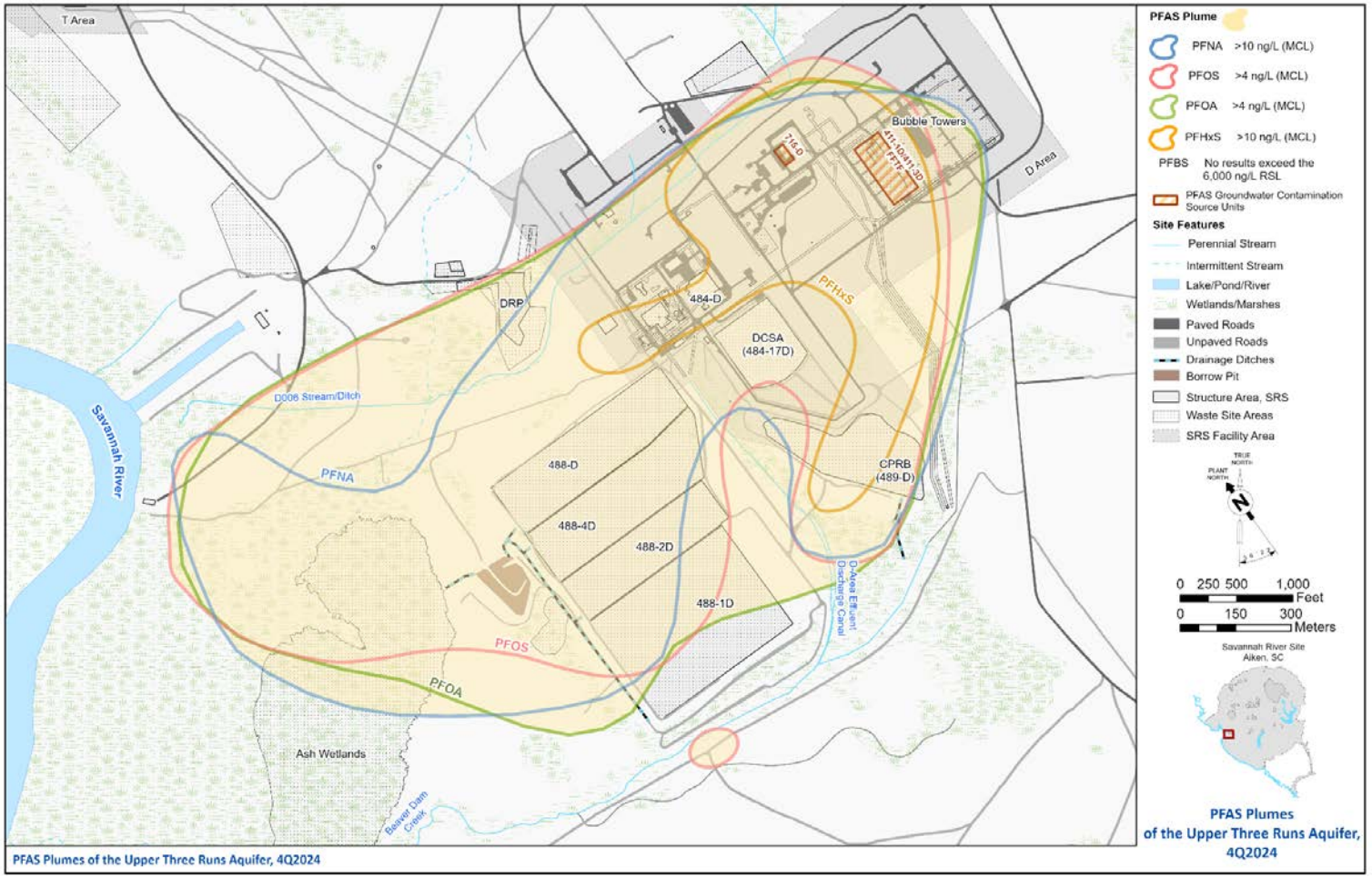


CDF for the Particles (GA – PFNA)

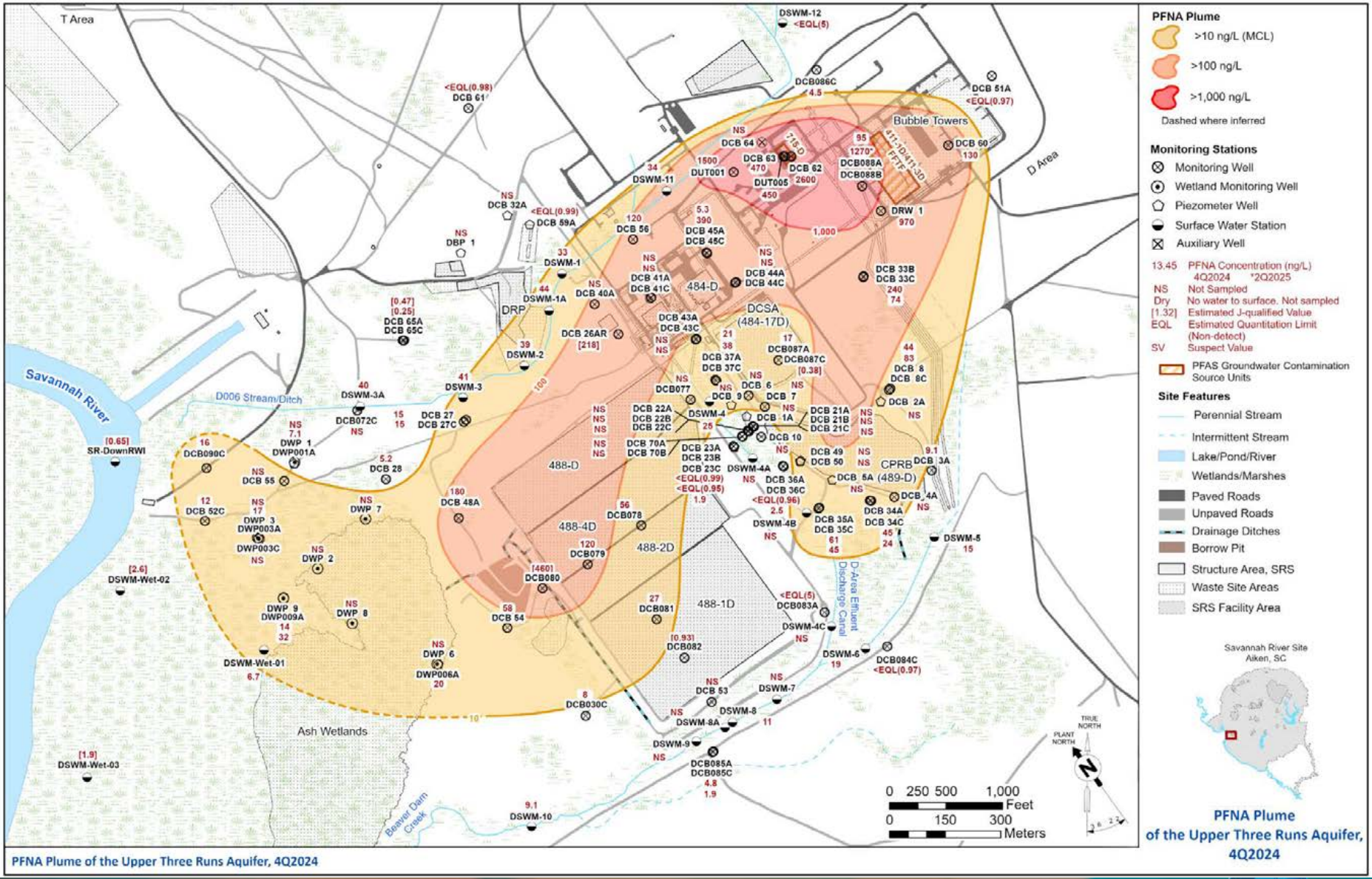


PFAS Contamination in D Area

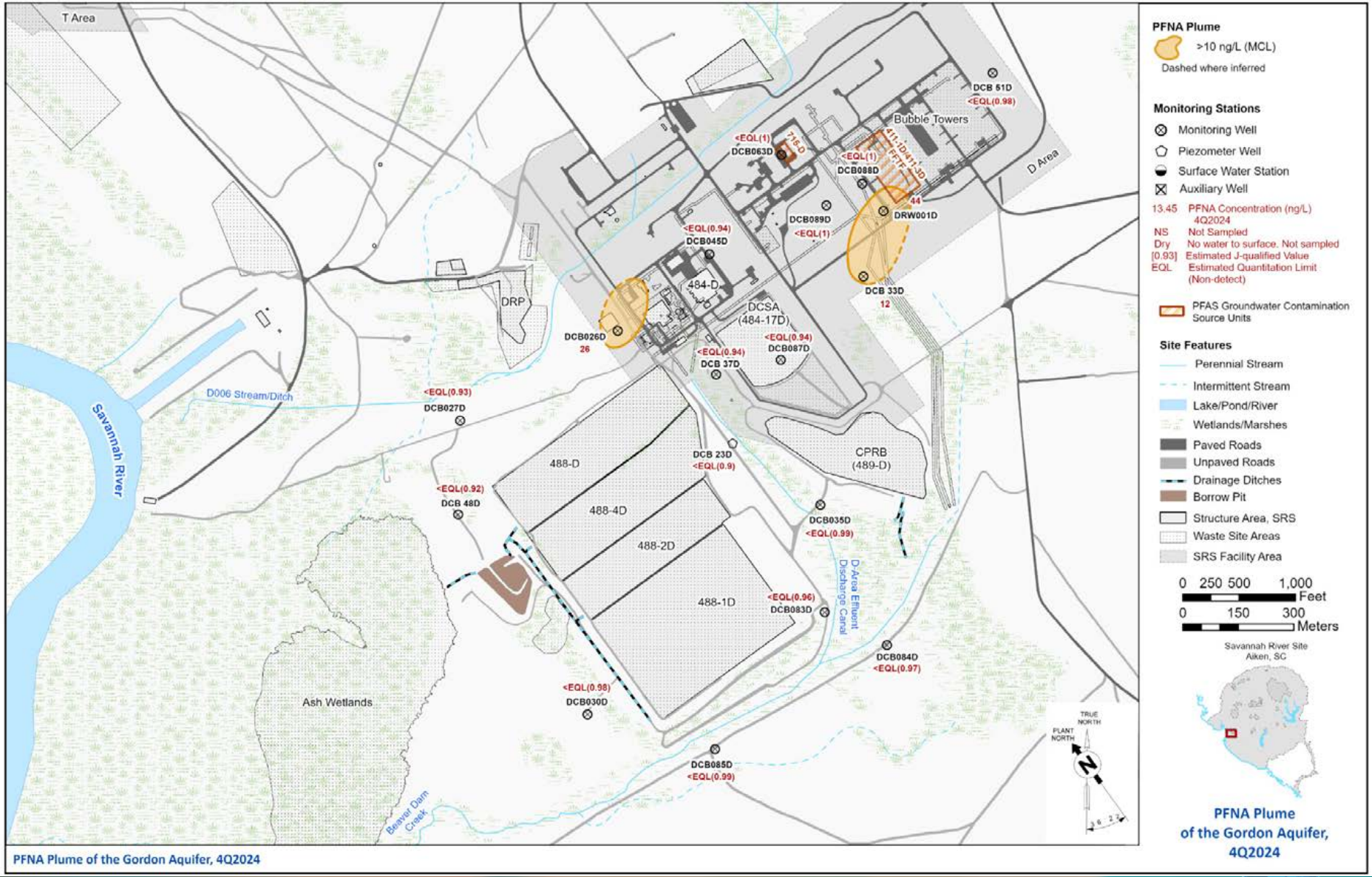
- Groundwater/Surface water PFAS sampling has been ongoing for 6 years.
  - Extent of groundwater PFAS contamination is well known.



PFNA Plume - UTRA

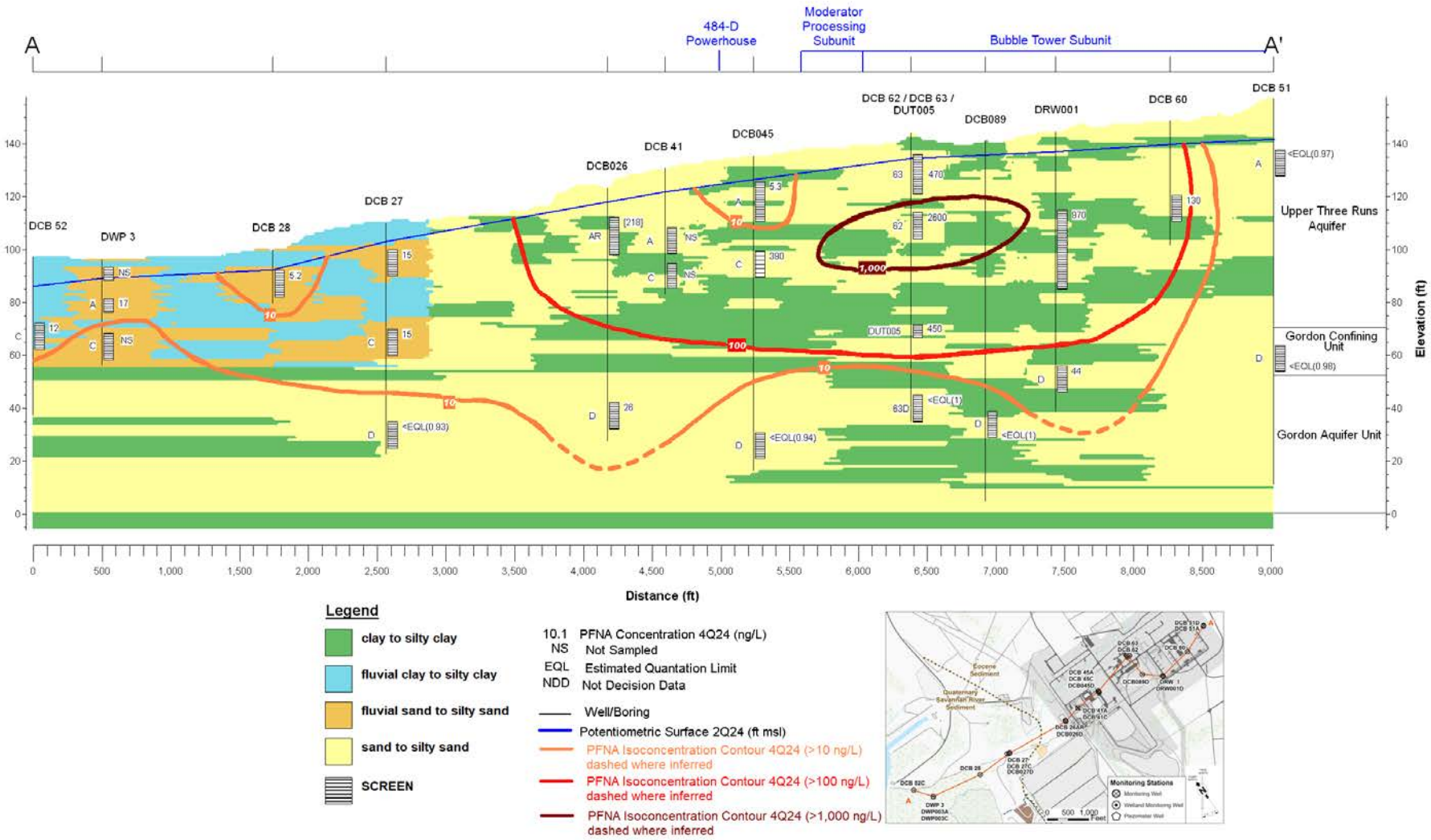


PFNA Plume - GA

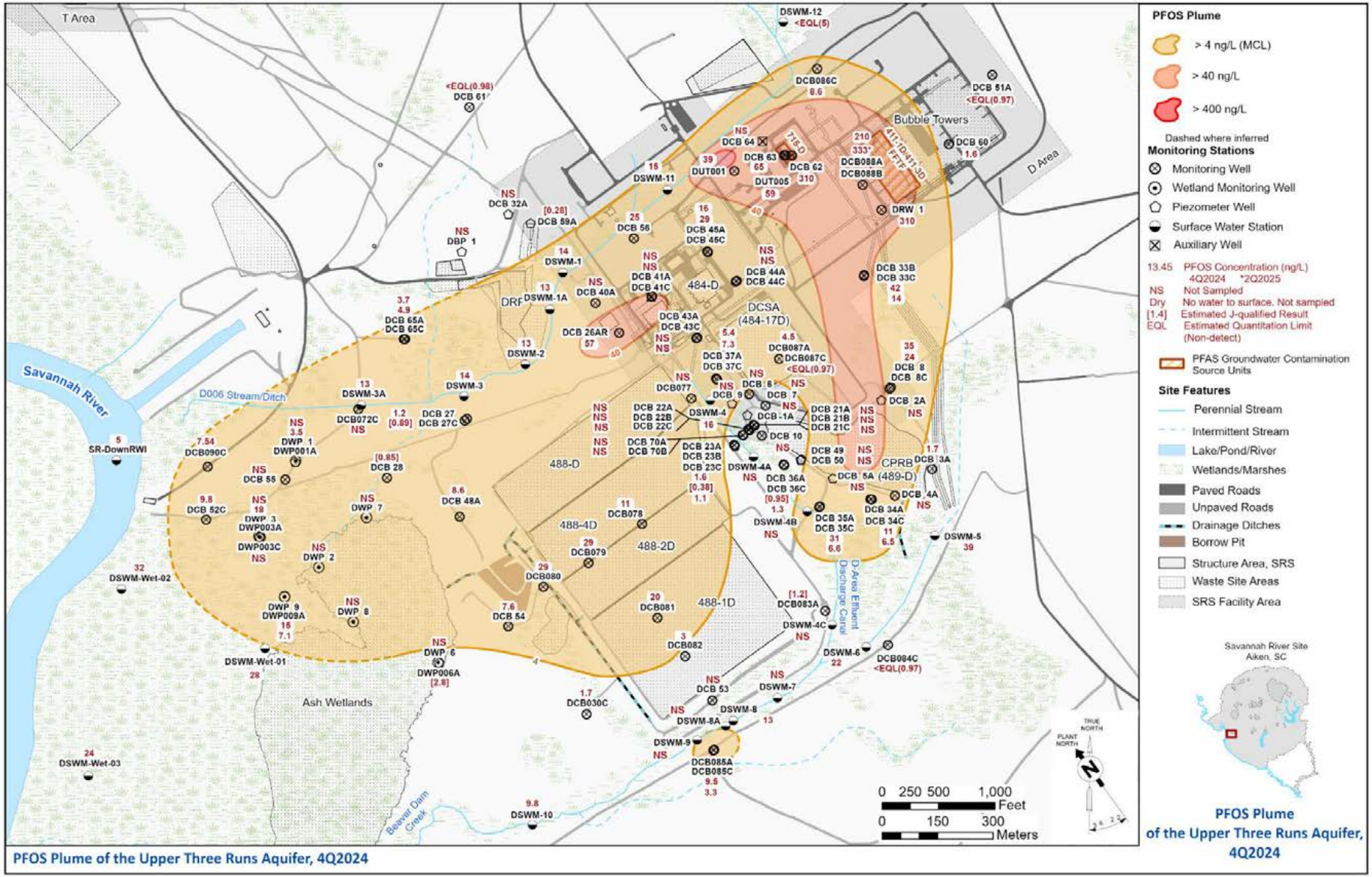


PFNA Plume of the Gordon Aquifer, 4Q2024

PFNA Plume – Cross-Section A-A'



PFOS Plume - UTRA



DAG OU 4Q2024 GW/SW PFAS Results Summary

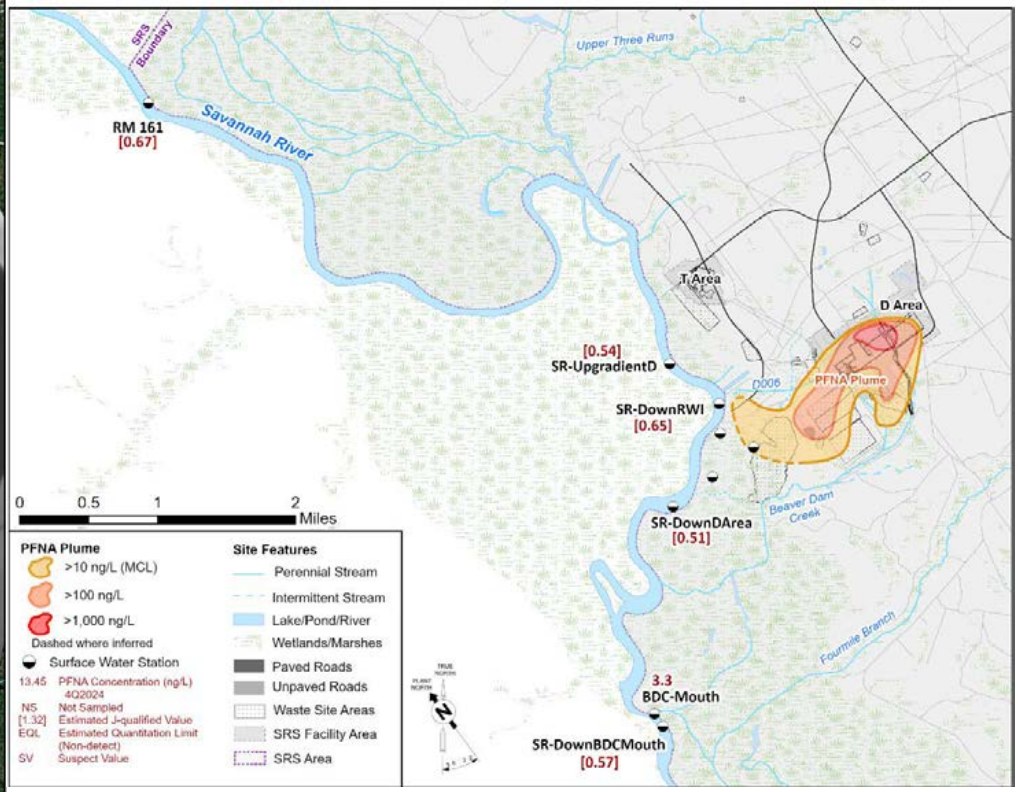
Water Concentrations in ng/L (ppt)

	PFNA	PFOS	PFOA	PFHxS	PFDA	PFBS	GenX
USEPA MCL	*10*	*4*	*4*	*10*	*--*	*--*	*10*
USEPA RSL	*59*	*2*	*0.0027*	*390*	*0.04*	*6,000*	*15*
Max GW Result	2,600	310	150	120	51	600	ND
Max SW Result	44	40.9	18	17	1.6	25	ND

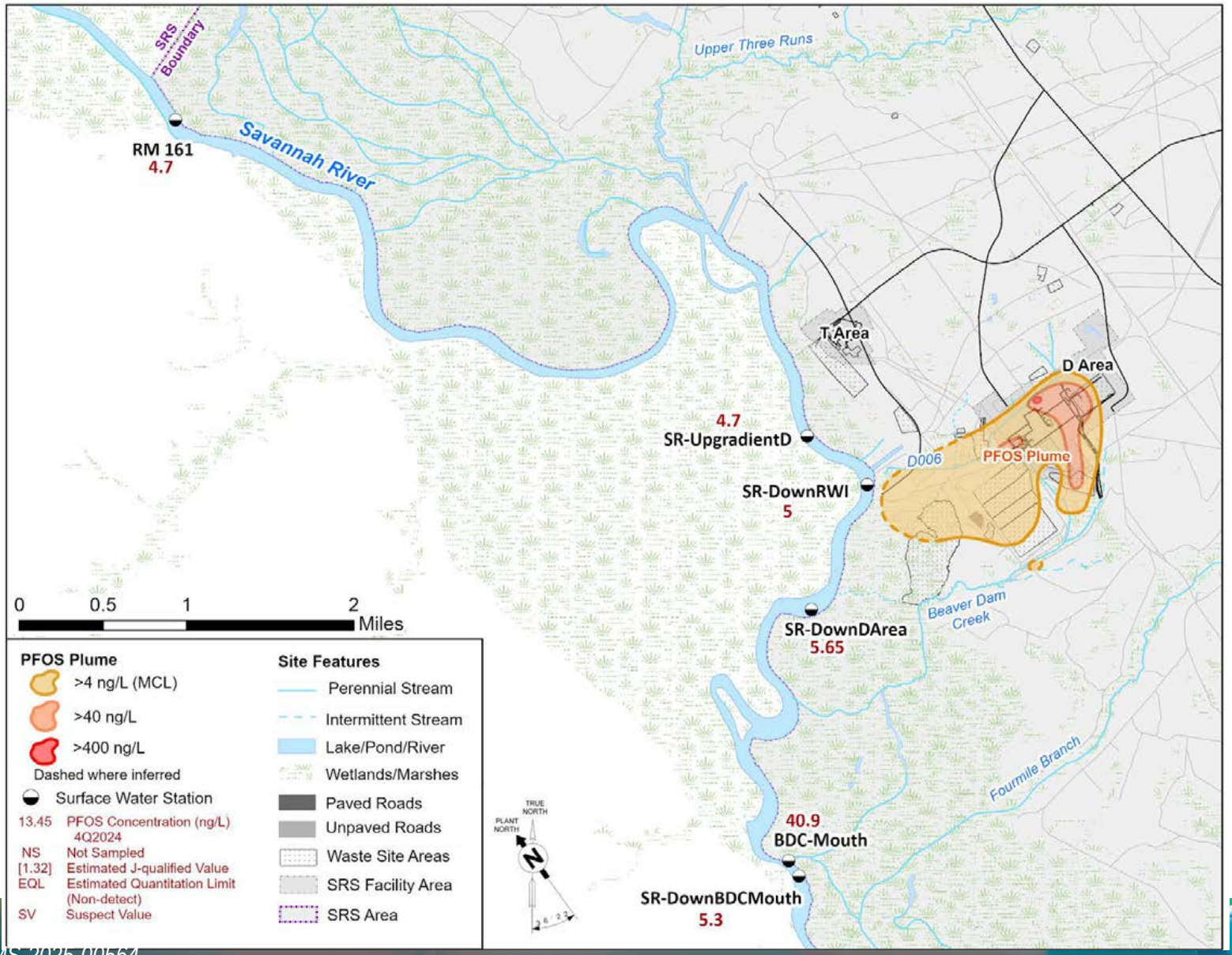
ND	Not Detected
##	Detected
##	>MCL/RSL
##	>10x MCL/RSL
##	>100x MCL/RSL
[##]	Estimated, J-qualified Result

Additional PFAS Surface Water Sample Locations

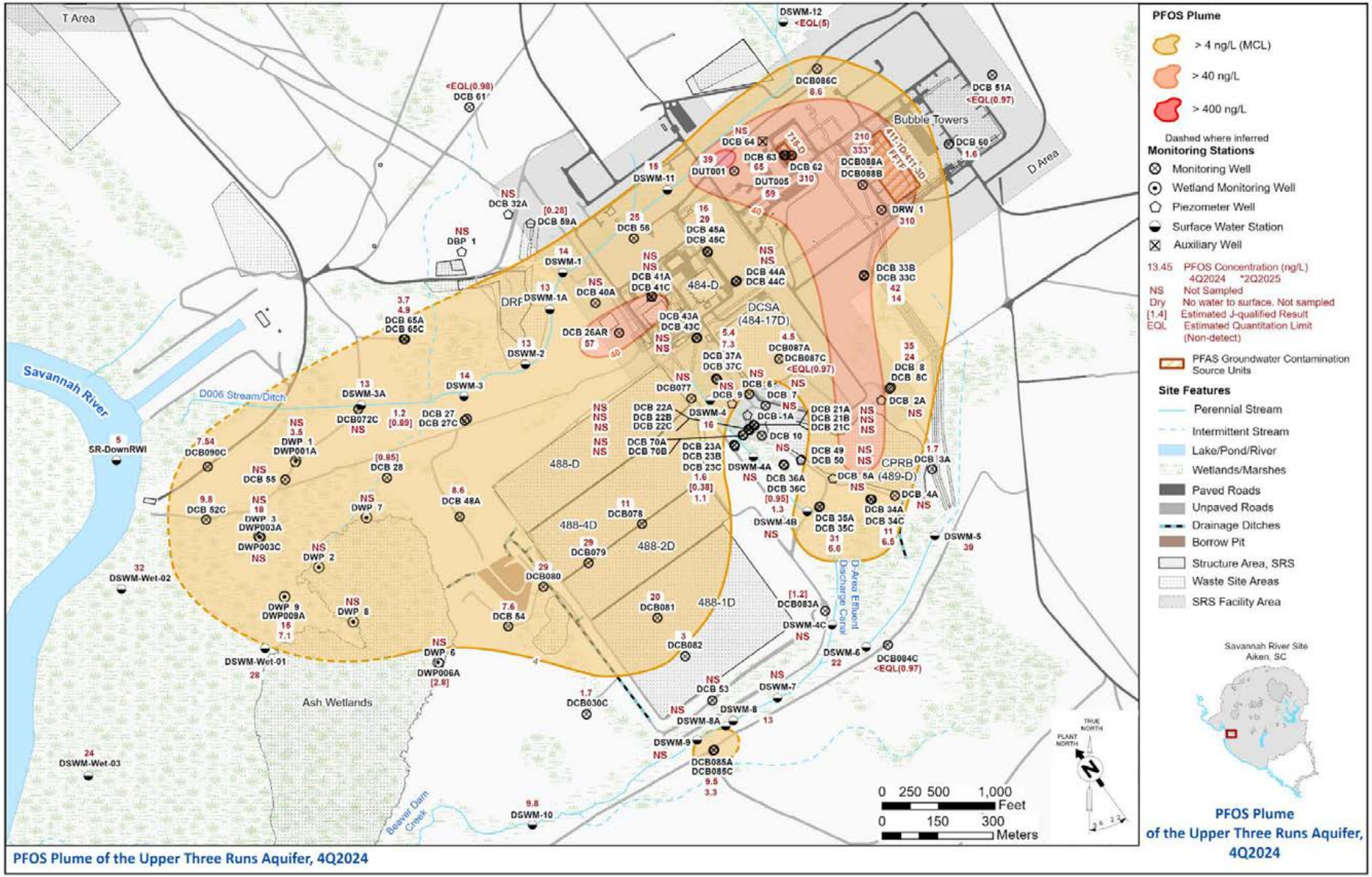
- 3 D-Area Wetland SW Locations
- BDC Mouth SW
- 5 Savannah River SW Locations



Savannah River/BDC PFOS Surface Water Sample Results



PFOS Plume - UTRA



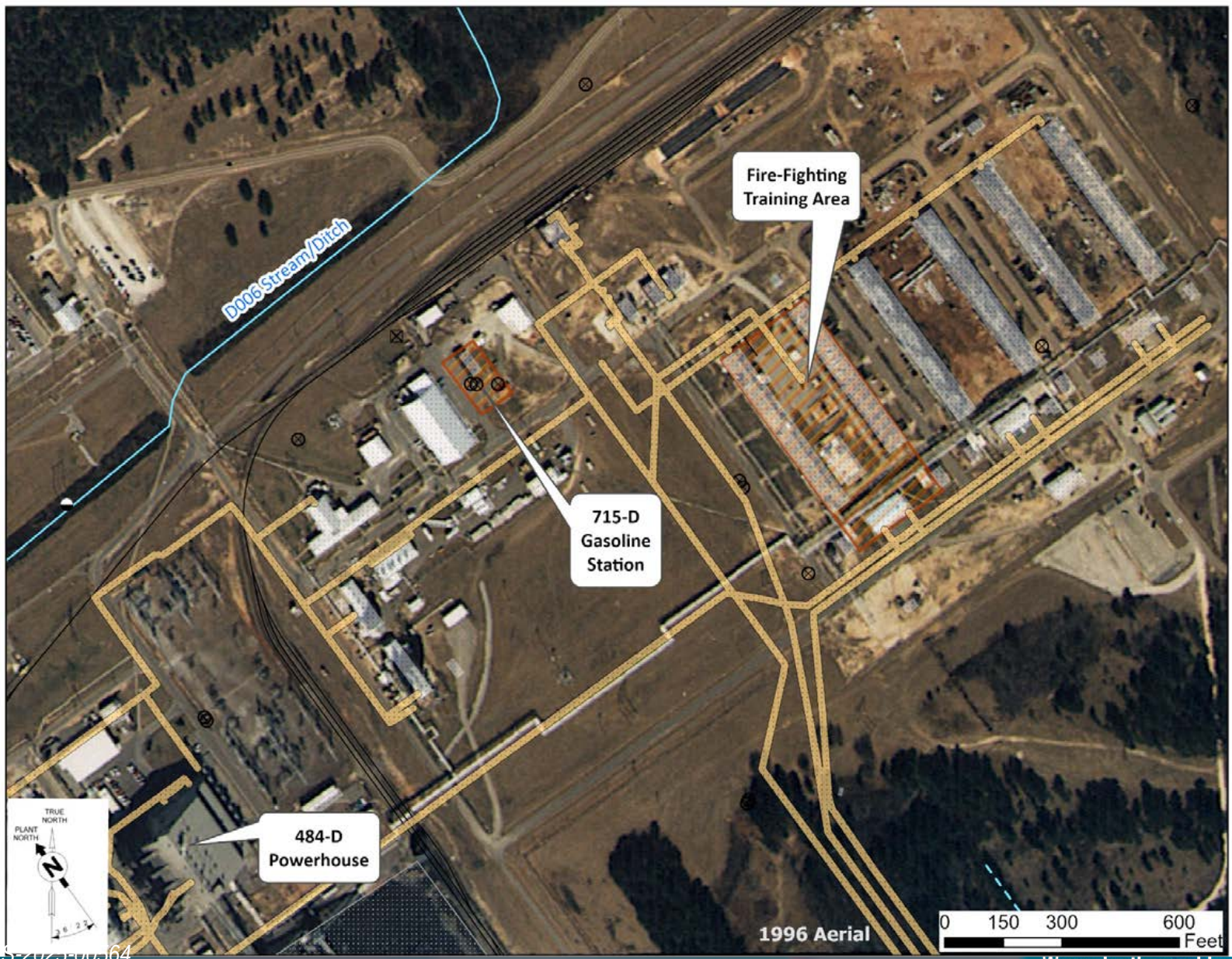
Savannah River/BDC PFAS Surface Water Sample Results

Surface Water Concentrations in ng/L (ppt)

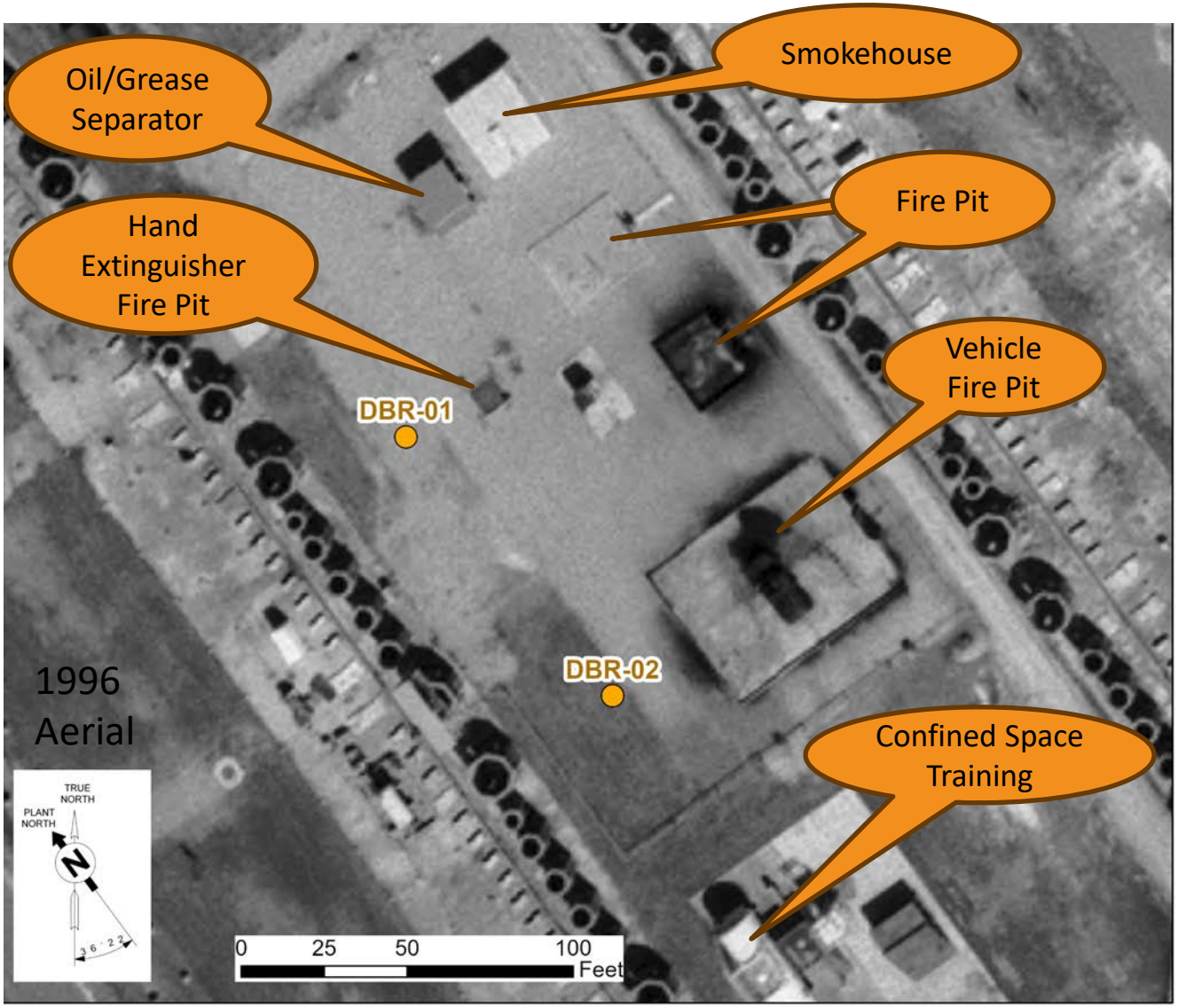
Station	PFNA	PFOS	PFOA	PFHxS	PFDA	PFBS	GENX
USEPA MCL	*10*	*4*	*4*	*10*	--	--	*10*
USEPA RSL	*59*	*2*	*0.0027*	*390*	*0.04*	*6,000*	*15*
RM-161.0	[0.67]	4.7	[5.2]	0.99	[0.28]	4.4	ND
SR-UpgradientD	[0.54]	4.7	4.9	1.1	[0.5]	4.2	ND
SR-DownRWI	[0.65]	5	4.9	[0.93]	ND	4.3	ND
SR-DownRWI - FD	[0.48]	4.5	5.3	[0.95]	[0.36]	4.6	ND
SR-DownDArea	[0.51]	5.2	5.9	1.1	ND	4.6	ND
SR-DownDArea - SPL	ND	5.65	5.1	[0.993]	ND	4.36	ND
DSWM-010	9.1	9.8	8.2	4.7	[0.4]	3.4	ND
BDC-Mouth	3.3	38	16	3.7	0.97	22	ND
BDC-Mouth - SPL	3.26	40.9	18	3.84	[0.91]	22.3	ND
SR-DownBDCMouth	[0.57]	5.3	3.6	1.2	[0.53]	4.4	ND

ND	Not Detected
##	Detected
##	>MCL/RSL
##	>10x MCL/RSL
##	>100x MCL/RSL
[##]	Estimated, J-qualified Result

3Q2024 Sampling – Fire Fighting Training Area (FFTA) and 715-D Gasoline Station

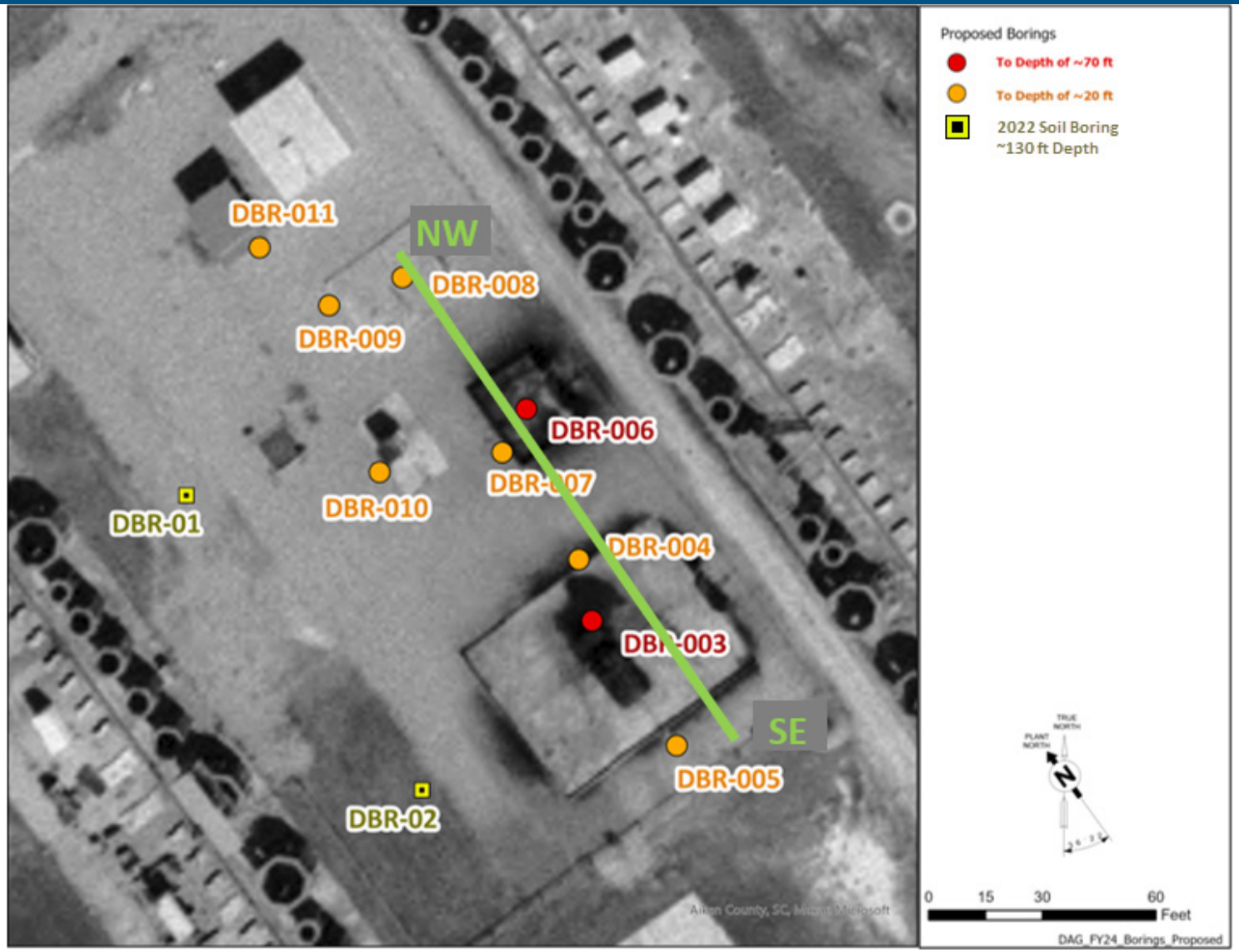


2024 Sampling - D-Area FFTA Buildings and Training Areas



- Multiple Fire Pits for Training Purposes
  - Used AFFF that contained PFAS constituents

3Q2024 – PFAS Sampling in the FFTA



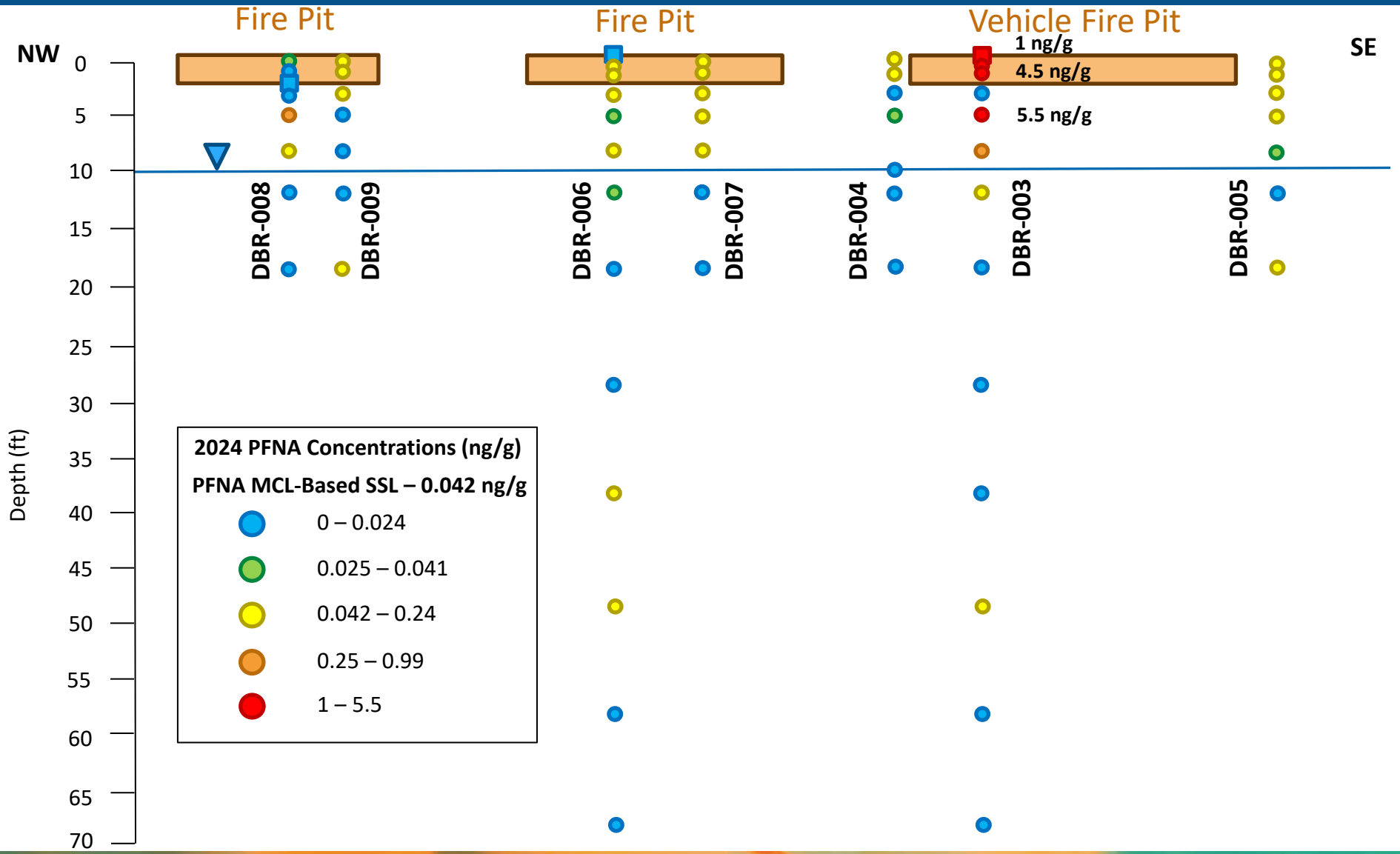
3Q2024 – PFAS Samples at the FFTA

- Concrete samples collected within each fire pit (3 samples)
- Multiple samples within the vadose zone (depth to ~10 ft)
- Two locations with sample depths throughout the UTRA
- Total of 76 samples within the FFTA
- Method EPA 1633

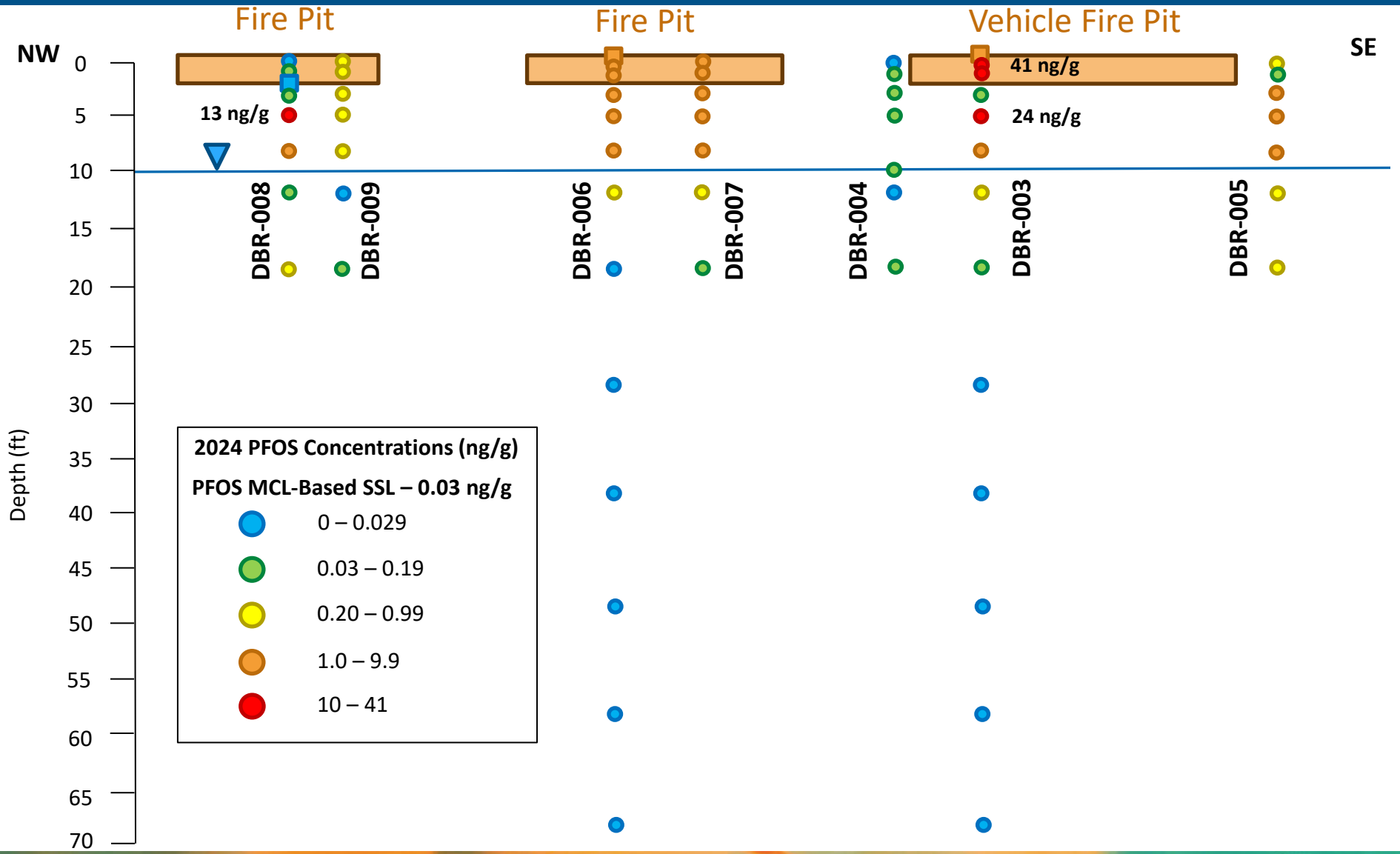
		Vadose Zone						Saturated Zone						
Station	Total Depth	Concrete	0-1	1-2	3-4	5-6	8-10	12-14	18-20	28-30	38-40	48-50	58-60	68-70
DBR-003	70	1	1	1	1	1	1	1	1	1	1	1	1	1
DBR-004	20		1	1	1	1	1	1	1					
DBR-005	20		1	1	1	1	1	1	1					
DBR-006	70	1	1	1	1	1	1	1	1	1	1	1	1	1
DBR-007	20		1	1	1	1	1	1	1					
DBR-008	20	1	1	1	1	1	1	1	1					
DBR-009	20		1	1	1	1	1	1	1					
DBR-010	20		1	1	1	1	1	1	1					
DBR-011	20		1	1	1	1	1	1	1					

Extra Sample Type
Dups
Splits

Cross-Sectional View of FFTA 3Q2024 PFNA Sampling

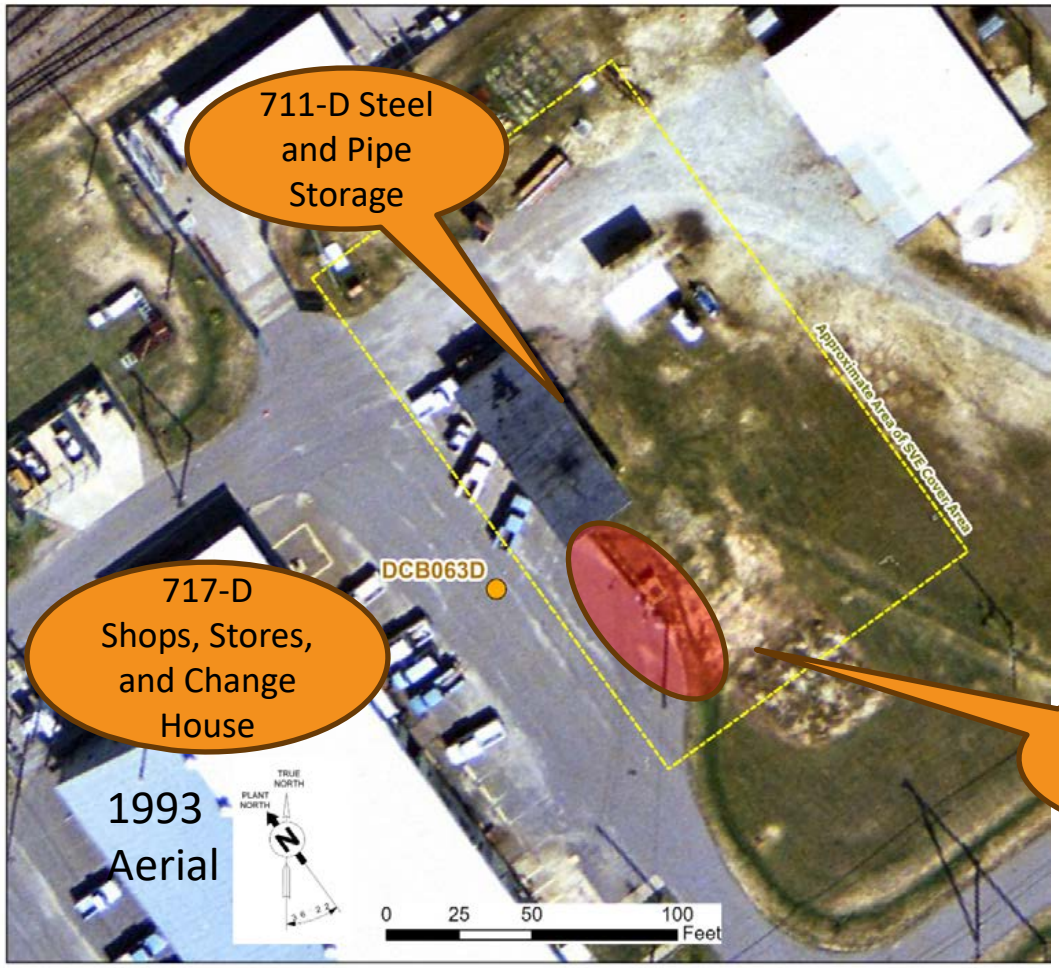


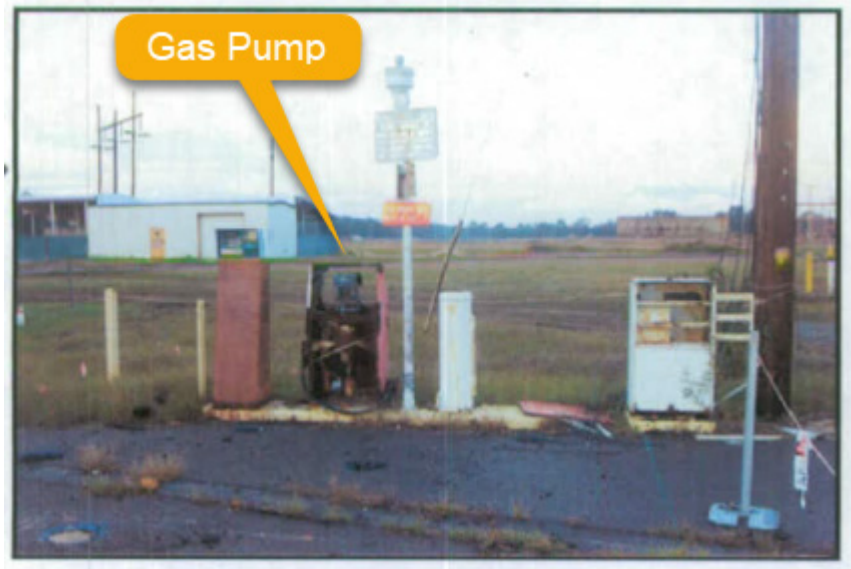
Cross-Sectional View of FFTA 3Q2024 PFOS Sampling



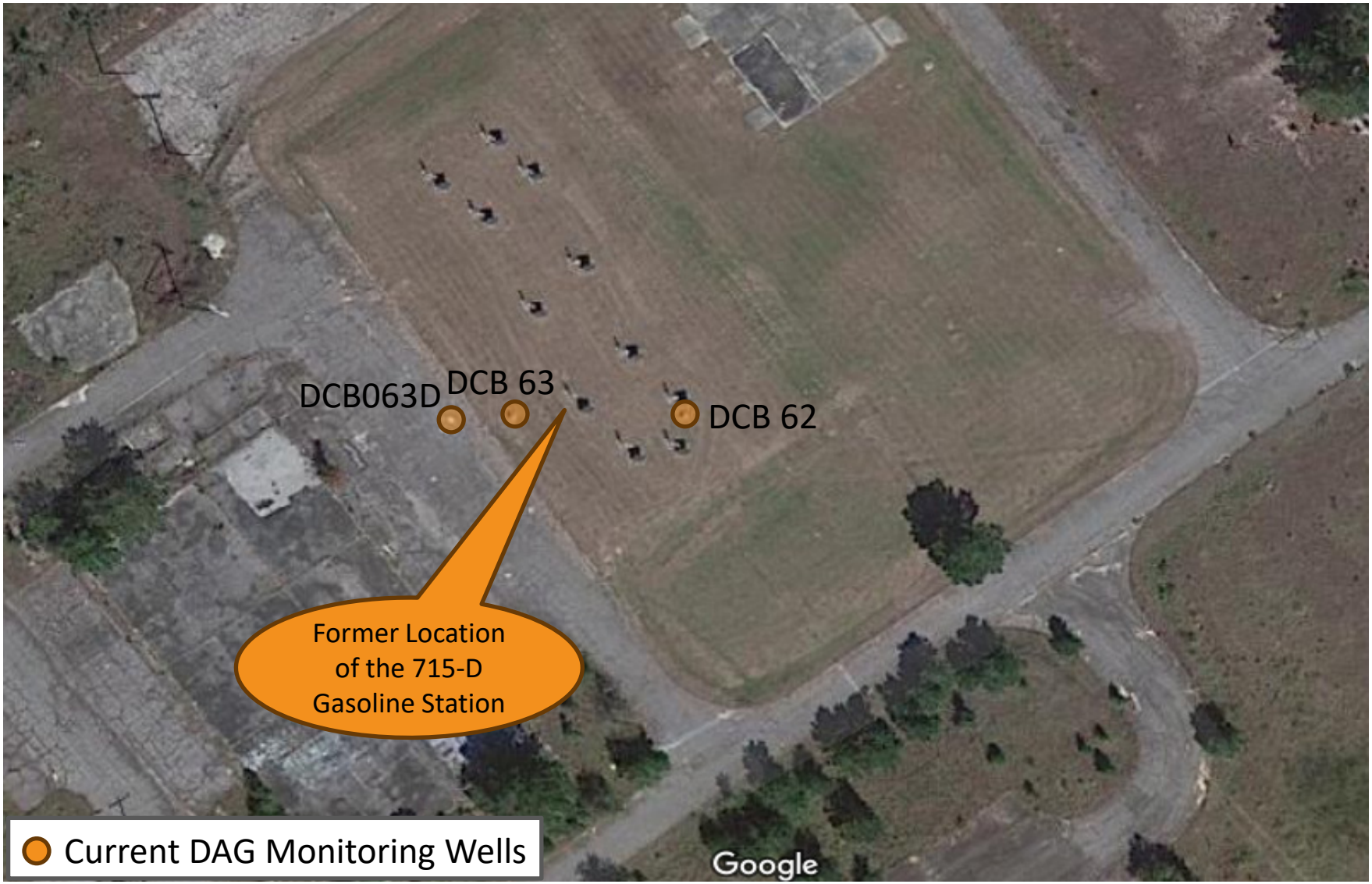
D-Area 715-D Gasoline Station

- A vehicle fire is suspected to have been extinguished with AFFF in the vicinity of the 715-D Gasoline Station

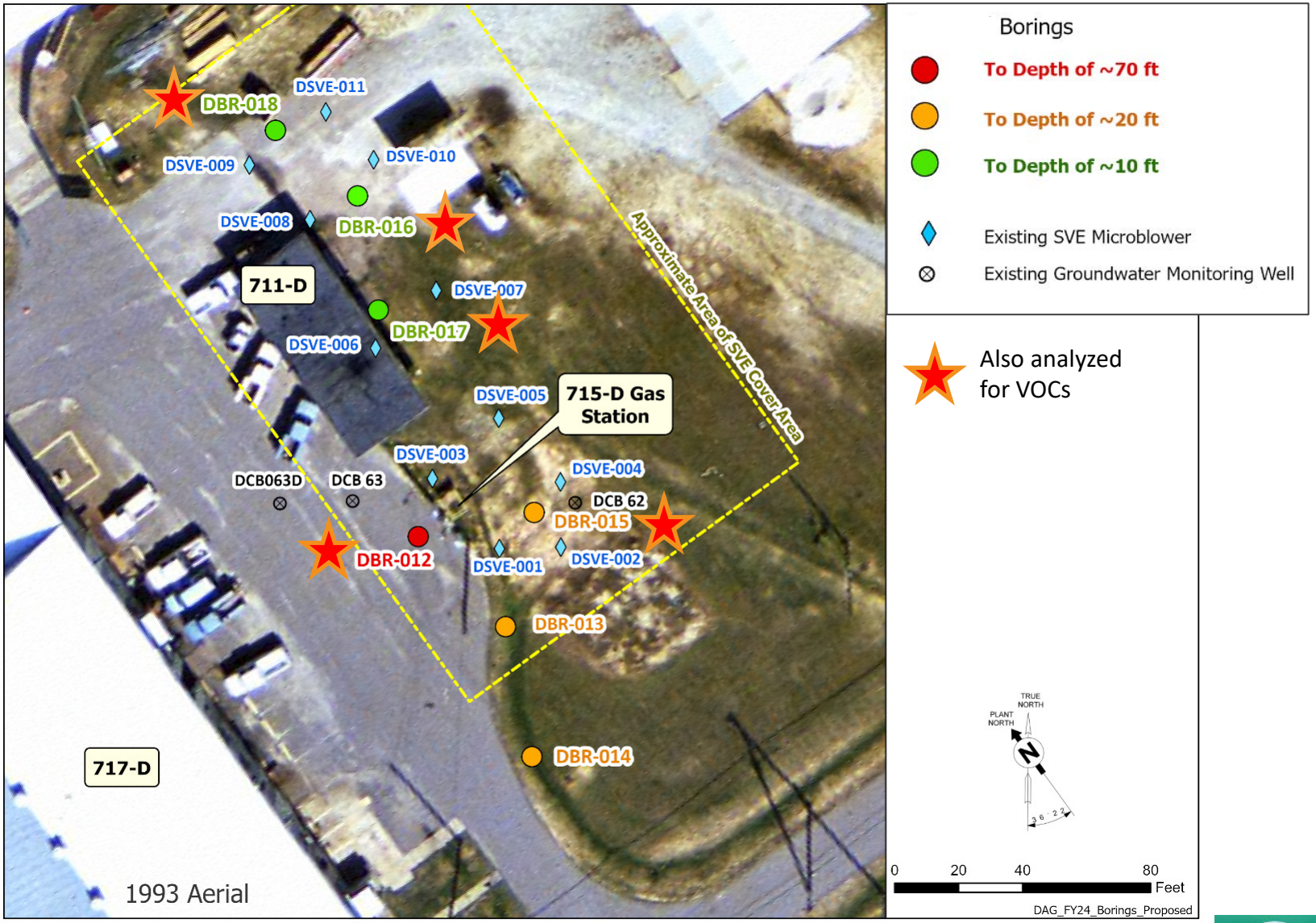




Current View of the Location of the 715-D Gasoline Station



3Q2024 – PFAS and VOC Samples at the 715-D Gasoline Station



3Q2024 – PFAS Samples at the 715-D Gasoline Station

- Collected one concrete/asphalt sample located where a vehicle would park next to the 715-D gasoline station (DBR-012)
- Multiple samples within the vadose zone (depth to ~10 ft)
- One location with sample depths throughout the UTRA
- Total of 39 samples within the 715-D Gasoline Station area
- Method EPA 1633

			Vadose Zone						Saturated Zone						
Station	Total Depth	Concrete	0-1	1-2	3-4	5-6	8-10	12-14	18-20	28-30	38-40	48-50	58-60	68-70
DBR-012	74	1	1	1	1	1	1	1	1	1	1	1	1	1
DBR-013	24		1	1	1	1	1	1	1					
DBR-014	20		1	1	1	1	1	1	1					
DBR-015	24		1	1	1	1	1	1	1					
DBR-016	14		1	1	1	1	1							
DBR-017	14		1	1	1	1	1							
DBR-018	14		1	1	1	1	1							

Extra Sample Type
Dubs
Splits

3Q2024 – Maximum Soil/Concrete PFOA Results (ng/g)

PFOA MCL-based SSL – 0.061

Fire Fighting Training Area

- DBR-003, 3 ft bgs – 1
- DBR-004, 1 ft bgs – 0.091
- DBR-005, 1 ft bgs – 0.15
- DBR-006, Concrete (SPL), 0 ft bgs – 0.29
- DBR-007, 1 ft bgs – 0.17
- DBR-008, 5 ft bgs – 0.26
- DBR-009, 3 ft bgs – 0.045
- DBR-010, 0 ft bgs – 0.39
- DBR-011, ND

715-D Gasoline Station

- DBR-012, 42 ft bgs – 0.028
- DBR-013, 4 ft bgs – 0.098
- DBR-014, 1 ft bgs – 0.24
- DBR-015, 4 ft bgs – 0.046
- DBR-016, 5 ft bgs – 0.34
- DBR-017 (SPL), 4 ft bgs – 0.27
- DBR-018, 5 ft bgs – 0.2

0 – Below SSL
0 – Greater than SSL
0 – 10x greater than SSL
0 – 100x greater than SSL

ft bgs – within groundwater aquifer

3Q2024 – Maximum Soil/Concrete PFOS Results (ng/g)

PFOS MCL-based SSL – 0.03

Fire Fighting Training Area

- DBR-003, 0.5 ft bgs – 41
- DBR-004, 1 ft bgs – 0.1
- DBR-005, 5 ft bgs – 7.9
- DBR-006, 3 ft bgs – 9.2
- DBR-007, 8 ft bgs – 7.5
- DBR-008, 5 ft bgs – 13
- DBR-009, 3 ft bgs – 0.34
- DBR-010, 0 ft bgs – 7.8
- DBR-011, 0 ft bgs – 0.34

715-D Gasoline Station

- DBR-012, 32 ft bgs – 0.2
- DBR-013, 4 ft bgs – 0.13
- DBR-014, 1 ft bgs – 1.1
- DBR-015, 4 ft bgs – 0.21
- DBR-016, 5 ft bgs – 1.2
- DBR-017 (SPL), 4 ft bgs – 0.65
- DBR-018, 9 ft bgs – 0.13

0 – Below SSL
0 – Greater than SSL
0 – 10x greater than SSL
0 – 100x greater than SSL

ft bgs – within groundwater aquifer

3Q2024 – Maximum Soil/Concrete PFNA Results (ng/g)

PFNA MCL-based SSL – 0.042

Fire Fighting Training Area

- DBR-003, 5 ft bgs – 5.5
- DBR-004, 1 ft bgs – 0.13
- DBR-005, 0 ft bgs – 0.21
- DBR-006, 48 ft bgs – 0.16
- DBR-007, 1 ft bgs – 0.24
- DBR-008, 5 ft bgs – 0.52
- DBR-009, 0 ft bgs – 0.16
- DBR-010, 0 ft bgs – 0.51
- DBR-011 (FD), 18 ft bgs – 0.091

715-D Gasoline Station

- DBR-012, 32 ft bgs – 0.52
- DBR-013, 22 ft bgs – 0.3
- DBR-014, 18 ft bgs – 0.86
- DBR-015, 5 ft bgs – 0.05
- DBR-016, 5 ft bgs – 0.13
- DBR-017, 4 ft bgs – 0.075
- DBR-018, ND

0 – Below SSL
0 – Greater than SSL
0 – 10x greater than SSL
0 – 100x greater than SSL

ft bgs – within groundwater aquifer

3Q2024 –Maximum Soil/Concrete PFHxS Results (ng/g)

PFHxS MCL-based SSL – 0.0042

Fire Fighting Training Area

- DBR-003 (Concrete, FD), 0 ft bgs – 1.5
- DBR-004, ND
- DBR-005, 18 ft bgs – 0.081
- DBR-006 (Concrete, SPL), 0 ft bgs – 0.71
- DBR-007, 0 ft bgs – 0.083
- DBR-008, 3 ft bgs – 0.32
- DBR-009, ND
- DBR-010, 0 ft bgs – 0.16
- DBR-011, ND

715-D Gasoline Station

- DBR-012, 32 ft bgs – 0.5
- DBR-013, ND
- DBR-014, ND
- DBR-015, ND
- DBR-016, ND
- DBR-017, 4 ft bgs – 0.057
- DBR-018, ND

0 – Below SSL
0 – Greater than SSL
0 – 10x greater than SSL
0 – 100x greater than SSL

ft bgs – within groundwater aquifer

3Q2024 –Maximum Soil/Concrete PFDA Results (ng/g)

PFDA Risk-based SSL – 0.000081

Fire Fighting Training Area

- DBR-003, 0.5 ft bgs – 0.53
- DBR-004, 3 ft bgs – 0.18
- DBR-005, 0 ft bgs – 0.3
- DBR-006, 3 ft bgs – 0.12
- DBR-007, 0 ft bgs – 0.46
- DBR-008, 0 ft bgs – 0.076
- DBR-009, 0 ft bgs – 0.52
- DBR-010, 0 ft bgs – 0.34
- DBR-011, 0 ft bgs – 0.23

715-D Gasoline Station

- DBR-012, ND
- DBR-013, ND
- DBR-014, 1 ft bgs – 0.65
- DBR-015, 4 ft bgs – 0.11
- DBR-016, 5 ft bgs – 0.29
- DBR-017, 4 ft bgs – 0.078
- DBR-018, ND

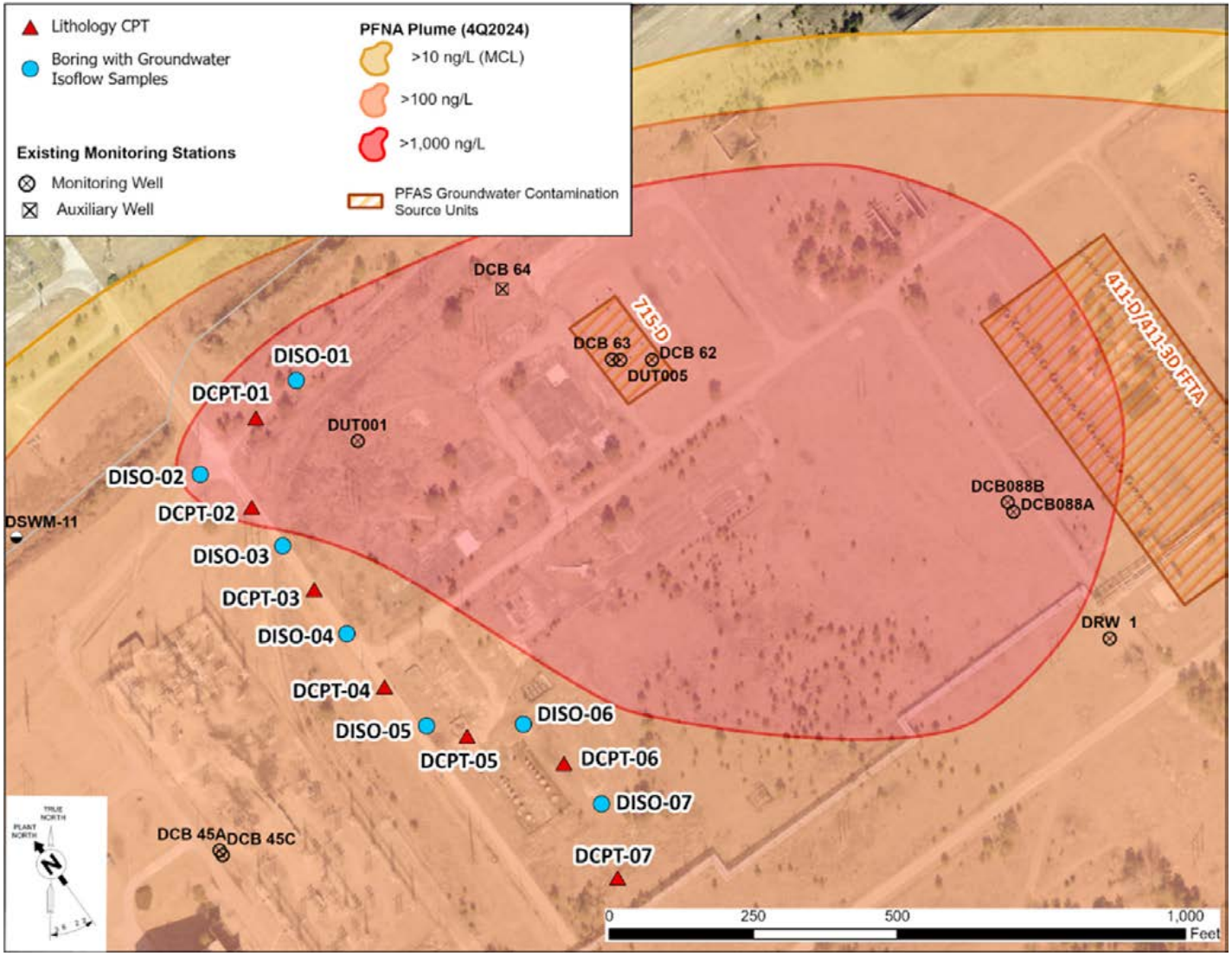
0 – Below SSL
0 – Greater than SSL
0 – 10x greater than SSL
0 – 100x greater than SSL

2024 MDLs: 0.032 - 0.053

3Q2024 – Soil/Concrete Sampling Conclusions

- FFTA has significant (10 to 100x SSL) PFAS contamination in the vadose zone soils
- 715-D Gas Station area had lower PFAS concentrations than the FFTA
  - Higher concentrations below the water table observed at some locations

1Q2025 – IsoFlow® and CPT Borings



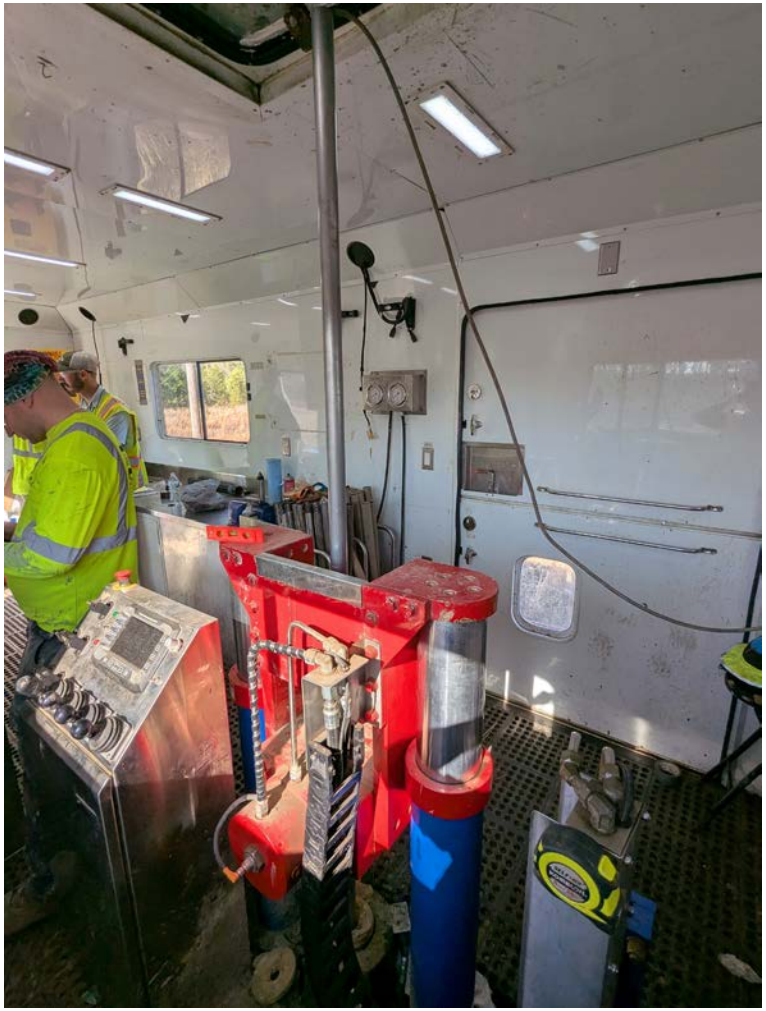
7 CPT Borings

7 ISOFlow® Borings

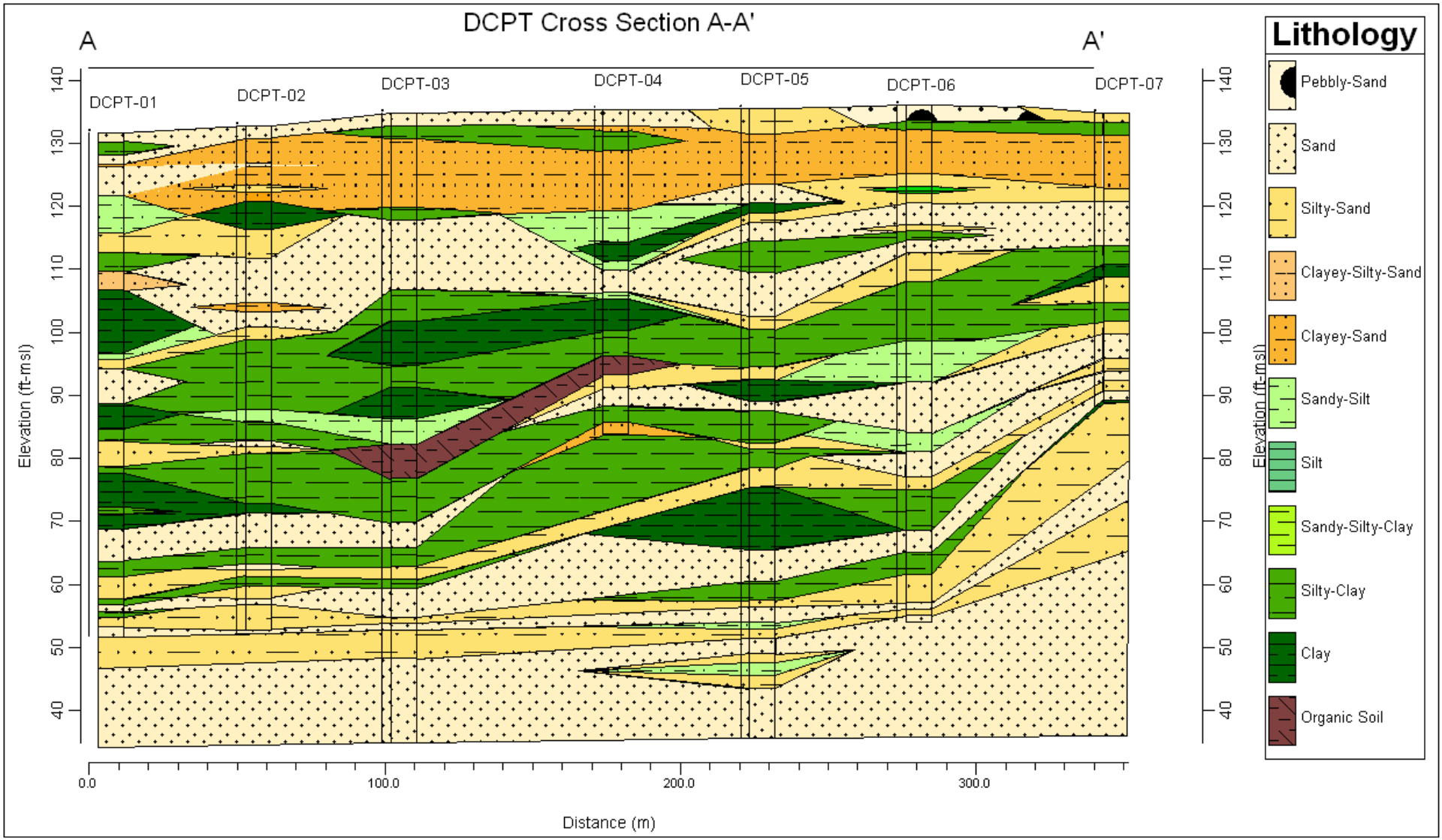
- **5 sampling intervals each**

1Q2025 – CPT Rig

CPT Boring



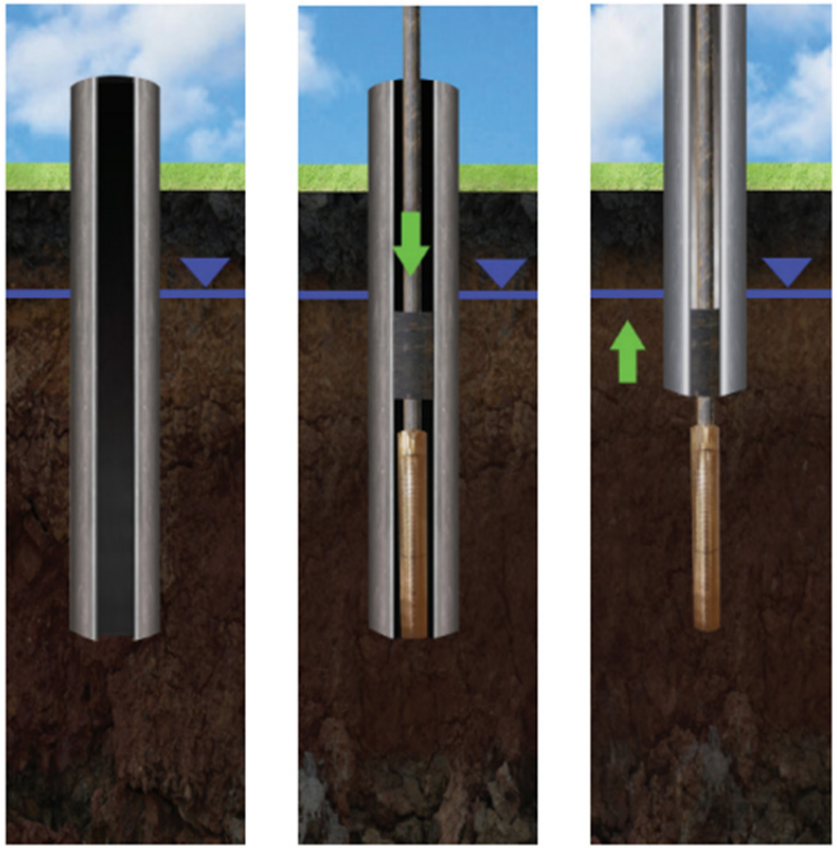
CPT Results



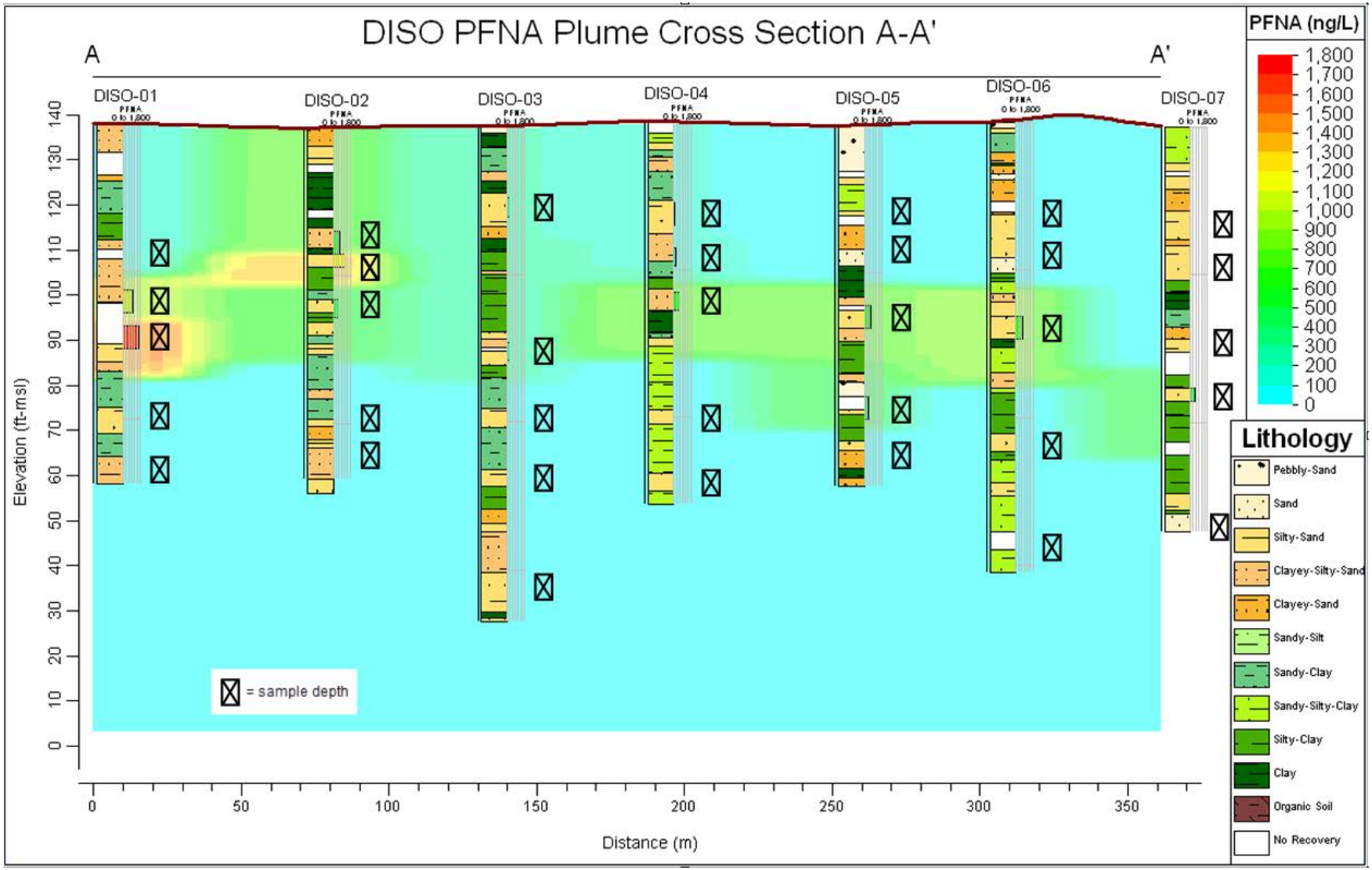
1Q2025 – IsoFlow® and CPT Borings

Isoflow® Discrete Groundwater Sampler

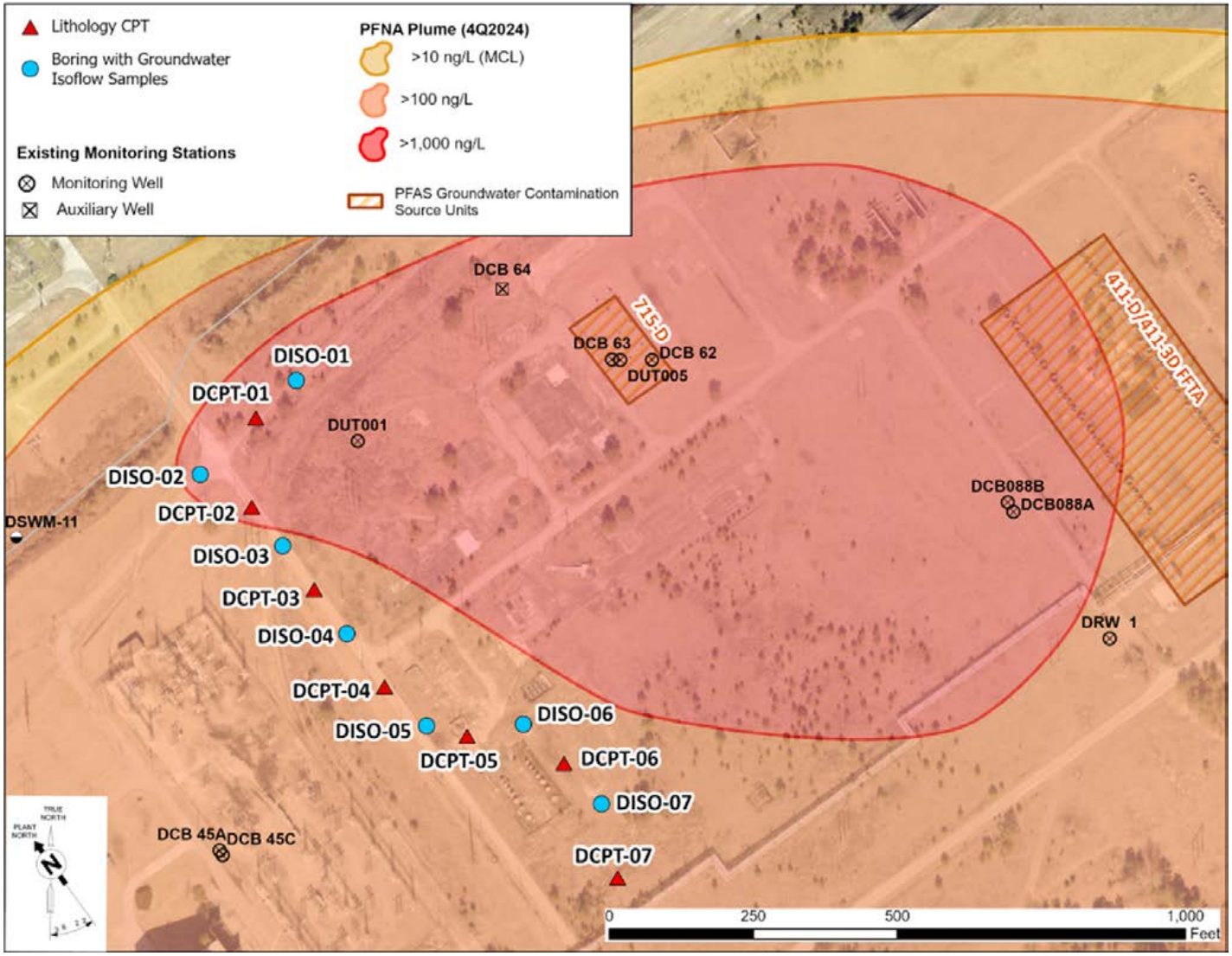
CASCADE



IsoFlow® Results



1Q2025 – IsoFlow® and CPT Borings

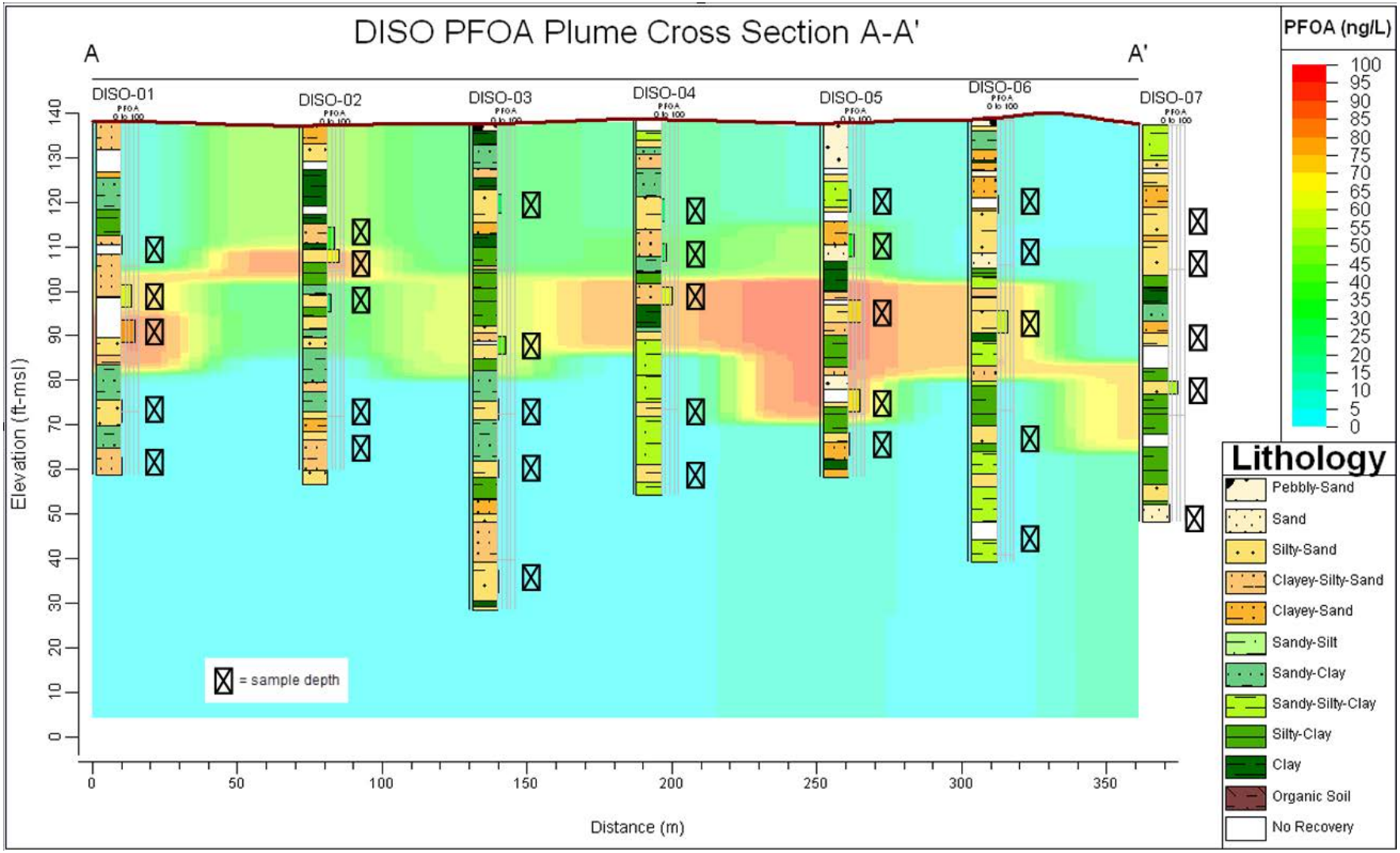


7 CPT Borings

7 ISOFlow® Borings

- **5 sampling intervals each**

IsoFlow® Results



IsoFlow® Results

Station	Depth Range	PFBA	PFBS	PFDA	PFHxA	PFHxS	PFNA	PFOA	PFOS	PFUnA	TCE
		ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ug/L
USEPA MCL		--	--	--	--	*10*	*10*	*4*	*4*	--	*5*
USEPA RSL		*18000*	*6000*	*0.04*	*9900*	*390*	*59*	*0.0027*	*2*	*6000*	*0.49*
DCB-088-B		--	--	--	--	--	--	--	--	--	11.4
DISO-01											
	26 to 30	ND	ND	0.707	ND	3.27	27.1	1.98	7.02	1.36	ND
	37 to 42	8.94	16.5	17	26.2	122	1,090	62.5	205	19.5	19.4
	45 to 50	8.72	15.9	46	32	150	1,670	80.2	440	49.4	28
	63 to 68	0.824	2.74	ND	4.77	4.02	4.47	5.25	1.15	ND	ND
	76 to 80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DISO-02											
	23 to 28	5.5	0.687	15	4.67	3.86	632	39.6	28	29.6	3.02
	28 to 31	14.1	6.76	21	5.73	43.1	1,200	67.7	180	46.9	6
	38 to 42	2.38	2.15	19	ND	13.1	524	20.7	46.4	46.3	1.75
	63 to 67	--	--	--	--	--	--	--	--	--	ND
	69 to 74	--	--	--	--	--	--	--	--	--	ND
DISO-03											
	16 to 20	2.82	0.993	4	6.05	6.6	226	23.4	48.4	13	9.92
	48 to 52	1.58	1.65	ND	6.61	14.9	224	45.7	16.6	ND	4.65
	62 to 67	ND	ND	ND	ND	ND	1.28	1.03	ND	ND	0.45
	76 to 80	0.755	1.11	ND	2.77	ND	ND	2.18	ND	ND	ND
	101 to 106	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DISO-04											
	18 to 23	5.28	0.768	2.93	10	4.39	111	19.4	18.1	25.6	2.78
	28 to 32	6.79	0.692	4	11.7	5.24	195	25.4	22.7	37.3	7.82
	38 to 42	18.3	1.1	7	6.68	8.4	632	63.7	35.2	1.34	32.6
	64 to 68	ND	ND	ND	1.02	ND	4.91	3.04	ND	ND	ND
	78 to 83	--	--	--	--	--	--	--	--	--	ND
DISO-05											
	15 to 20	3.02	0.704	0.946	2.23	1.53	2.44	9.7	27.7	ND	ND
	25 to 30	5.14	1.07	ND	6.66	9.16	15.5	35.5	8.51	1.26	0.93
	40 to 45	10.4	1.39	11	30.2	9	622	72.7	26.7	84.9	12.8
	60 to 65	4.7	1.23	2.8	15.4	8.18	474	70.9	6.94	ND	7.92
	70 to 75	1.43	ND	ND	5.6	0.751	18.3	8.69	ND	ND	ND
DISO-06											
	17 to 21	3.56	1.39	ND	2.51	4.65	3.86	7.82	3.4	2.31	ND
	25 to 30	3	ND	ND	0.953	2.42	5.22	4.4	1.39	ND	ND
	43 to 48	6.19	1.48	14	17.4	9.5	734	60.9	36.2	69.5	17.6
	69 to 73	ND	ND	ND	ND	ND	4.06	ND	ND	0.626	ND
	90 to 95	1.46	ND	ND	2.17	ND	2.9	2.03	ND	ND	ND
DISO-07											
	19 to 24	ND	ND	ND	ND	ND	1.07	0.747	ND	ND	ND
	29 to 34	1.06	ND	1.18	2.49	1.69	46.8	6.59	4.45	2.16	2.41
	45 to 50	1.17	ND	0.902	2.54	2.4	44.4	5.14	8.43	7.51	0.85
	58 to 61	8.99	2.61	6	25.3	14.2	478	56.4	18.2	ND	26.1
	86 to 90	1.72	ND	ND	4.56	0.765	3.2	13.2	ND	ND	ND
	Maximum Result	18.3	16.5	46	32	150	1,670	80.2	440	84.9	32.6

--	Constituent not analyzed for
ND	Not Detected
##	Detected
##	>MCL/RSL
##	>10x MCL/RSL
##	>100x MCL/RSL

Proposed RSER/EE/CA for High Concentration PFAS Plume

Scope and Objectives

- Scope
  - PFAS contamination in the UTRA 10 to 100 times greater than MCLs.
  - Depth: PFAS contamination in the UTRA (generally between 3.0-18.3 m bgs [10-60 ft bgs]).
  - Width: Although the entire plume width is between ~ 1066.8-1219.2 m (3500-4000 ft), the higher concentration portion of the plume (~ 304.8 m [1000 ft]) is the focus of this action.
  - Transect of the PFAS plume approximated by the location of the 1Q2025 investigative sampling event
- Objectives
  - Reduce the PFAS concentrations from the higher concentration area (~26 acres) of the PFAS plume to groundwater downgradient by 90%.
  - Mitigate impacts to wetlands and surface water

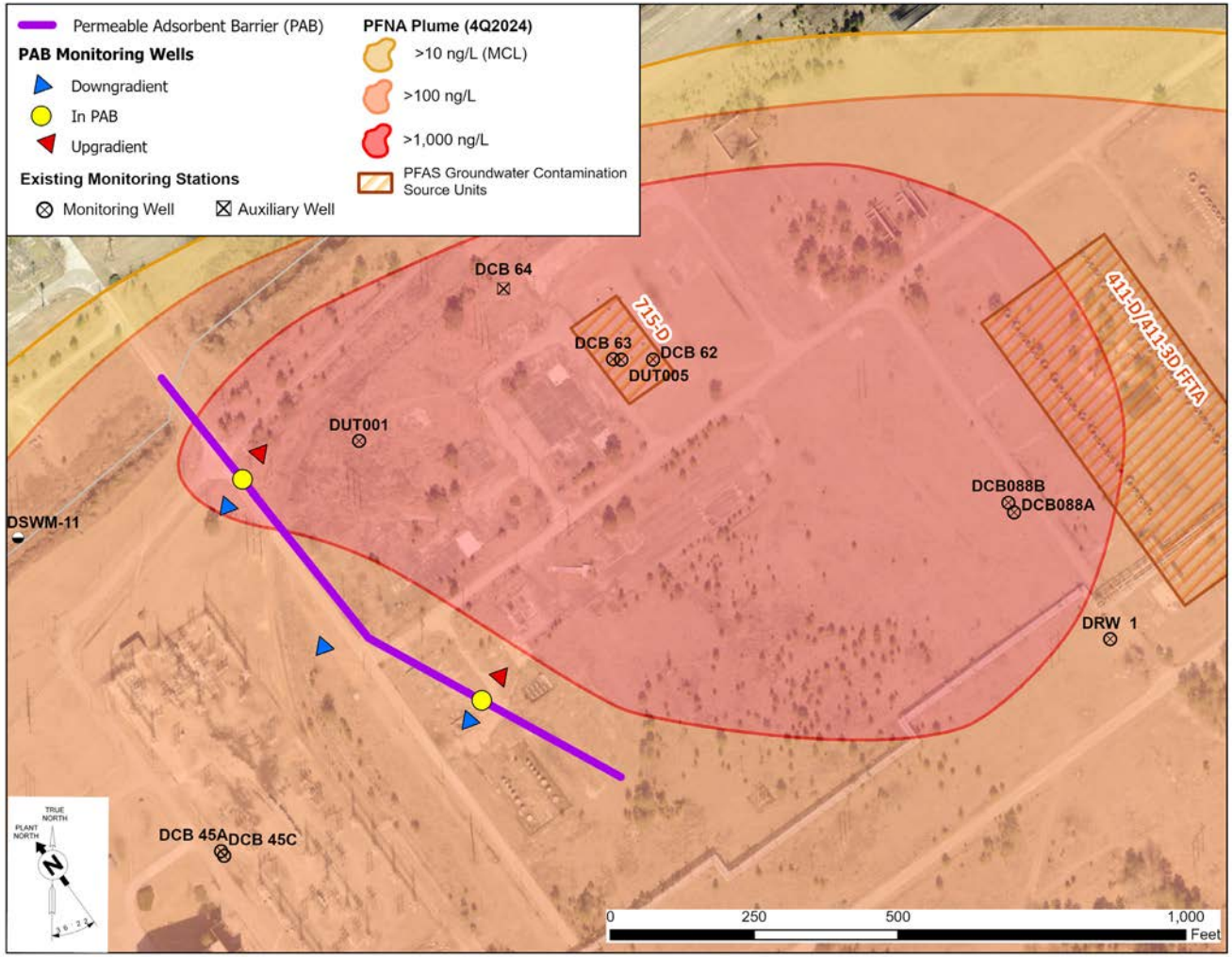
Proposed RSER/EE/CA Technology Screening

Technology	Method	Waste Stream Created
In-situ		
PAB	Adsorptive material placement in subsurface	None
Sonolysis	Cavitation and OH Radical Formation	None
Ex-situ		
Pump and Treat	GAC filter vessels	Spent GAC
Pump and Treat	Anion Exchange Resins	Spent resin
Pump and Treat	GAC and Anion Exchange Resins	Spent GAC and resin
Pump and Treat	Reverse Osmosis	Concentrate
Pump and Treat	Foam Fractionation	Concentrate
Pump and Treat	Photocatalytic degradation	Non-toxic byproducts
Pump and Treat	Nanofiltration	Concentrate

PAB - Permeable Adsorptive Barrier

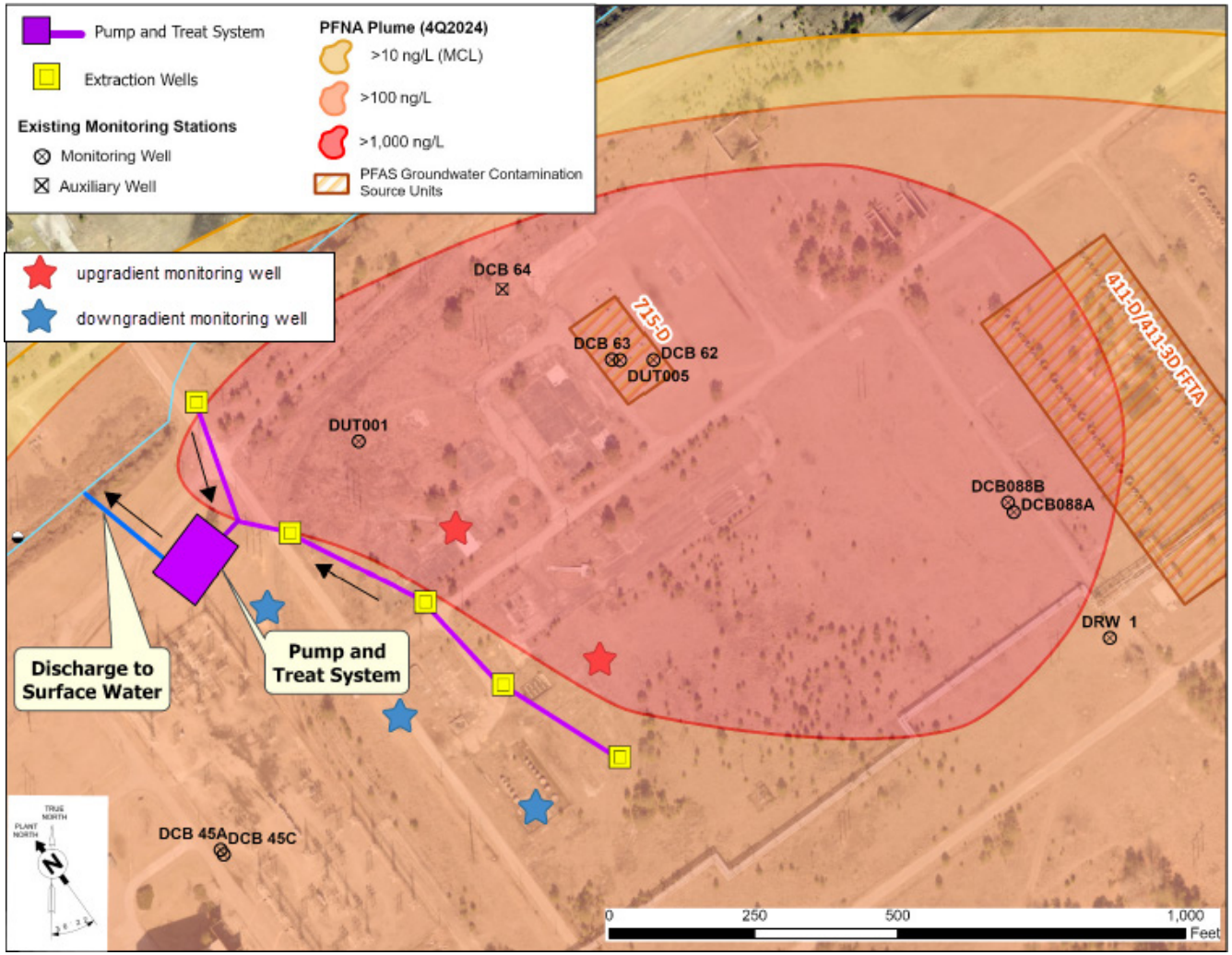
GAC - Granular Activated Carbon

Proposed RSER/EE/CA – Alternative 2, In-situ PAB



- Placement of adsorptive material in the subsurface
- Behaves as a passive subsurface filter for groundwater

Proposed RSER/EE/CA – Alternative 3, Pump and Treat



- Installation of extraction wells
- Onsite treatment facility (GAC filter vessels)
- Offsite GAC reactivation

Proposed RSER/EE/CA – Comparative Analysis

	Effectiveness	Implementability	Cost*	Acceptance
Alternative 1 No Action	Low	High	$0	Low
Alternative 2 In-situ PAB	Medium	High	CAC Injections - $15.59M GAC Trench - $40.19M	High
Alternative 3 Pump and Treat	High	Medium	$24.27M	High

Note: Range is Low to High, where Low = worst and High = best.

PAB – permeable adsorptive barrier; CAC – colloidal activated carbon; GAC – granular activated carbon

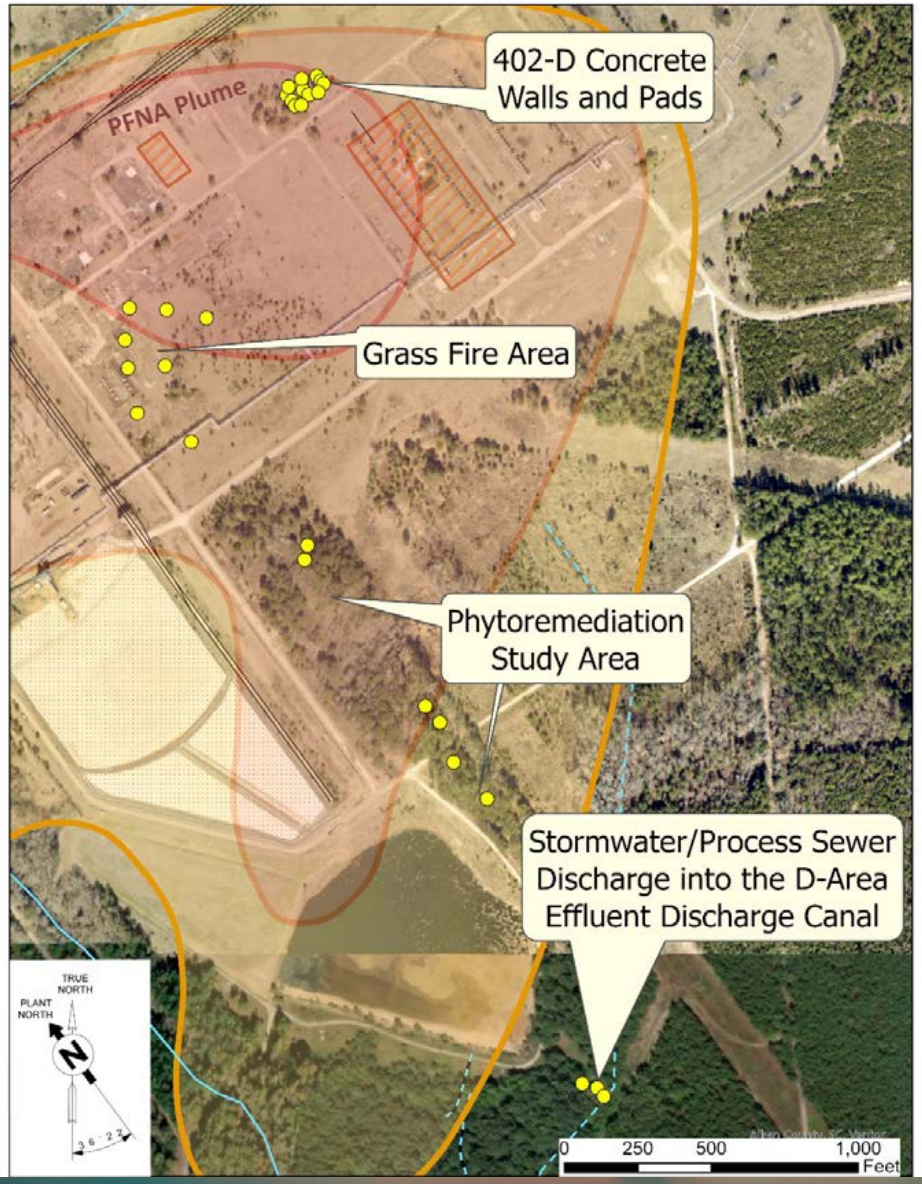
*Million (M)

Proposed RSER/EE/CA – Recommended Removal Action

Alternative 2, In-situ Permeable Adsorptive Barrier, using Colloidal Activated Carbon Injections

- Passive treatment
  - One time application with limited O&M
- No waste disposal pathway required
- Prevents possible ex-situ treatment-related exposure pathways
- Most cost effective

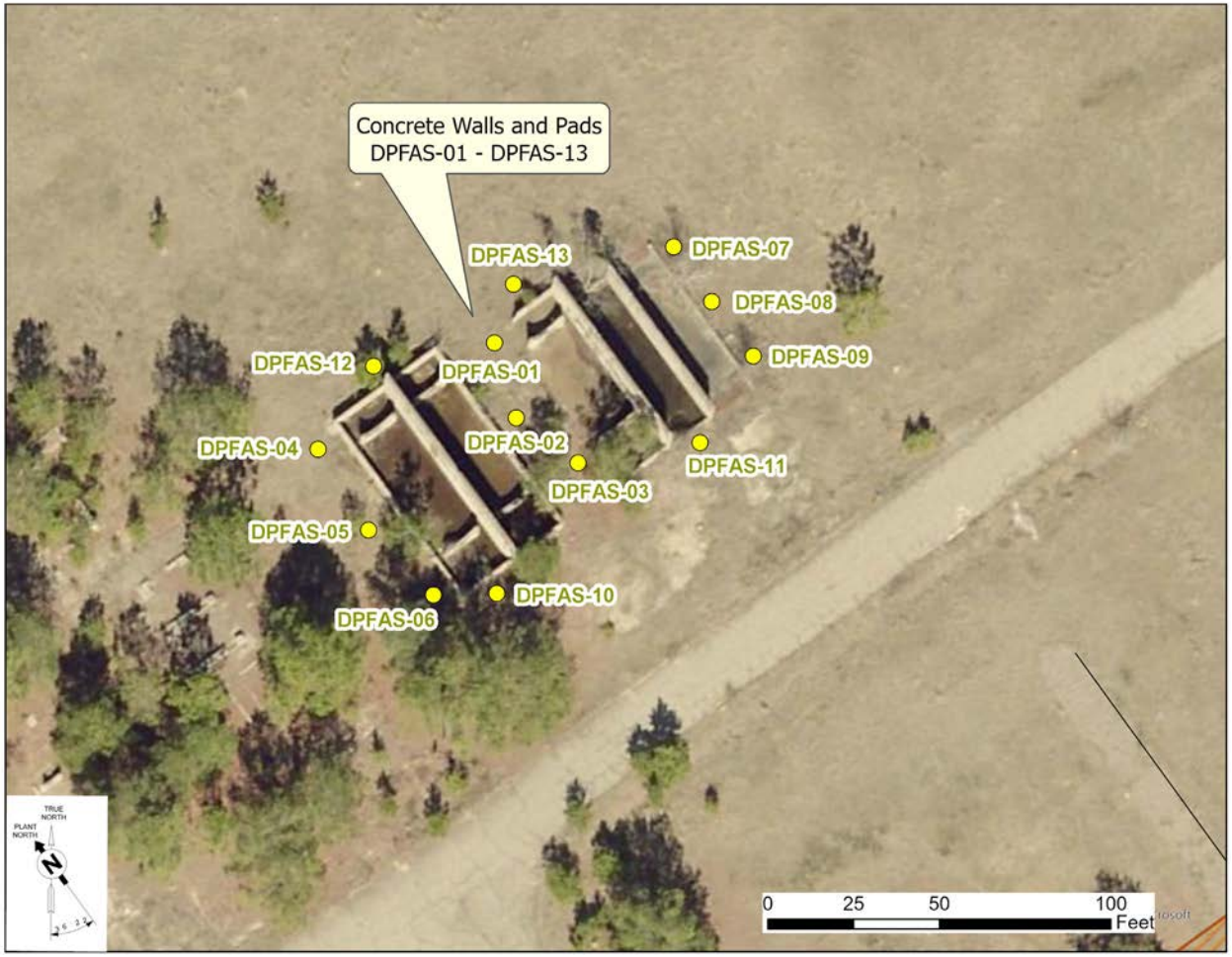
Potential Additional PFAS Sources



- Potential PFAS Sources
  - 402-D Concrete Walls/Pads
    - *Practiced spraying AFFF foam over tall walls.*
  - Grass Fire Area
    - *A transmission line/transformer failure caused a large grass fire that may have been partially extinguished with AFFF.*
  - Phytoremediation Study Area
    - *Groundwater from well DRW 1 was mainly used for a VOC Phytoremediation Treatability Study.*
  - Stormwater/Process Sewer Discharge and Sediment
    - *Stormwater/process water from the FFTA was discharged to the D-Area Effluent Discharge Canal.*
- Thirty 0-1 ft samples were collected and analyzed using EPA Method 1633.

402-D Tank Farm Concrete Walls

3Q2025 – Potential Source Area Sampling – 402-D



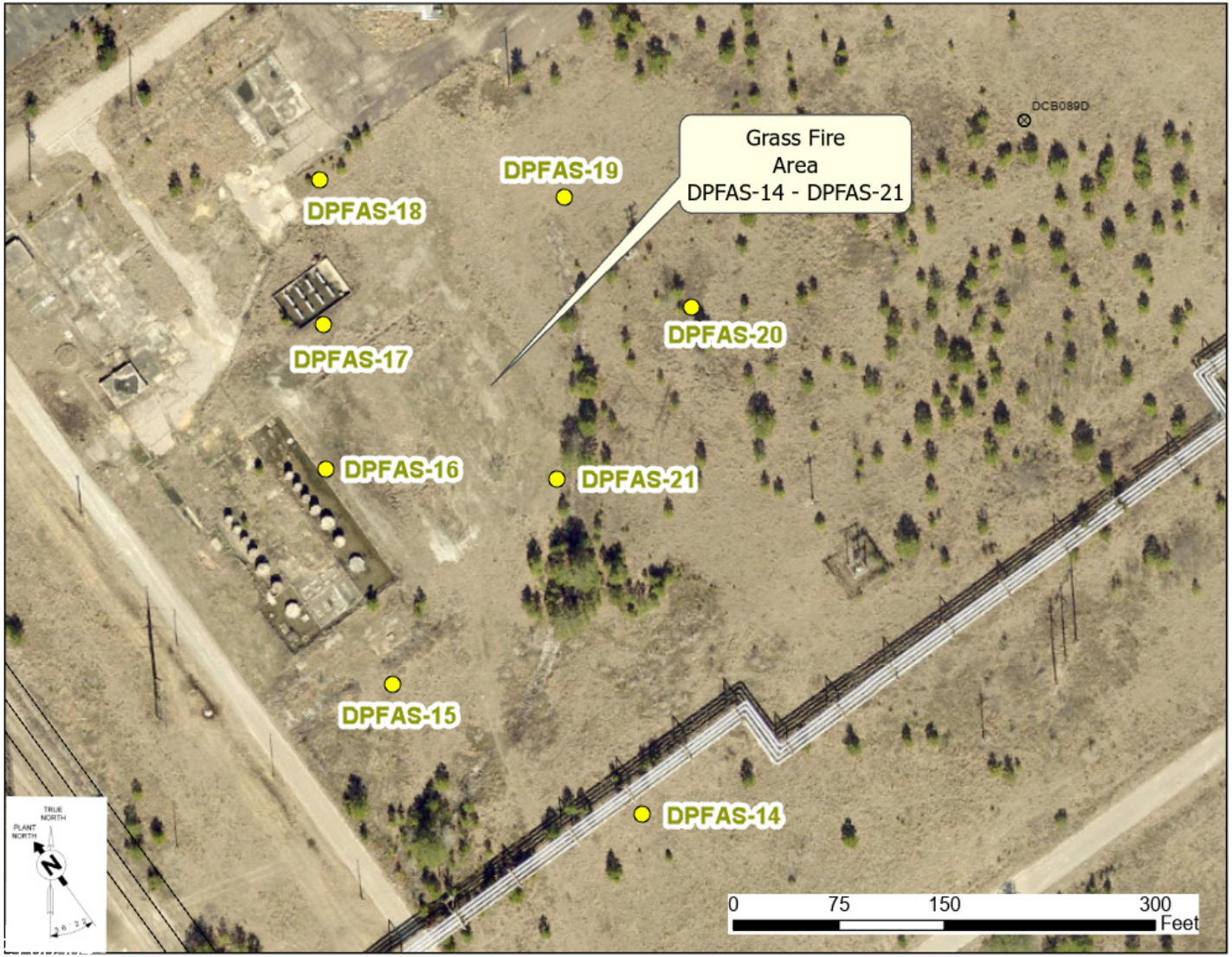
- Due to deep contamination in the groundwater around 715-D, such as that in well DCB 62, an upgradient source was suspected
- Further corroborated by firsthand accounts of prior D Area workers who stated that the concrete structure (402-D Tank Farm remnants) upgradient of the 715-D Former Gas Station was used for AFFF foam training.
- 13 0-1 ft soil samples collected

D-Area Grass Fire Area

- An area that experienced a grass fire due to transmission line/transformer malfunction
- May have been extinguished using AFFF because of proximity to FFTA

3Q2025 – Potential Source Area Sampling – Grass Fire Area

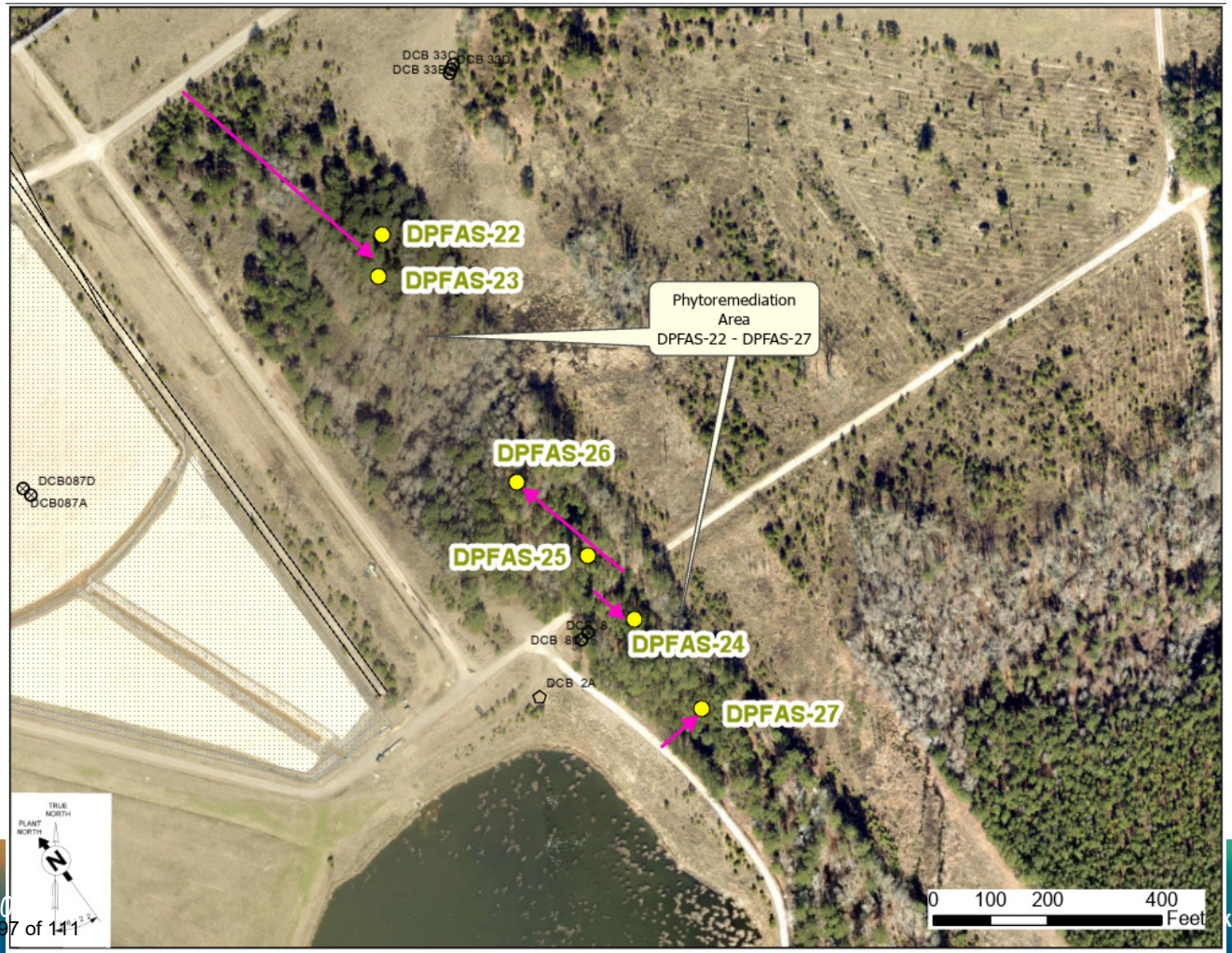
- Eight 0-1 ft soil samples collected



D-Area Phytoremediation Early 2000's Study Area

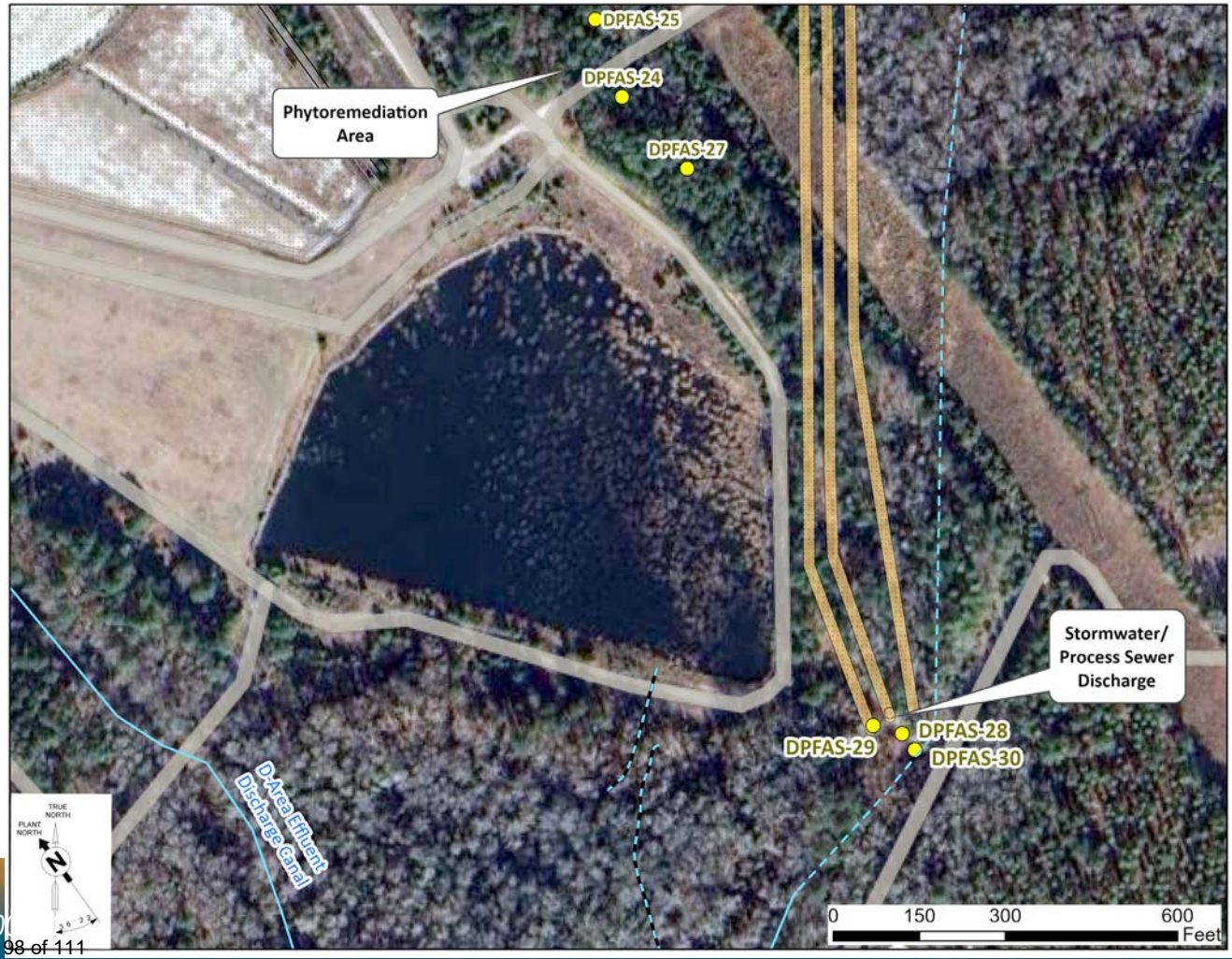
3Q2025 – Potential Source Area Sampling – Phyto Area

- Wooded area previously used for a phytoremediation study
- Used D Area well water for the study (Well DRW 1 and DCB-8C)
- Six 0-1 ft soil samples collected



3Q2025 – Potential Source Area Sampling – Discharge Area

- Stormwater/process sewer for D Area including Bubble Tower Subunit where FFTA was located; mostly all a concrete structure.
- Three 0-1 ft soil samples collected from breaks/cracks in concrete



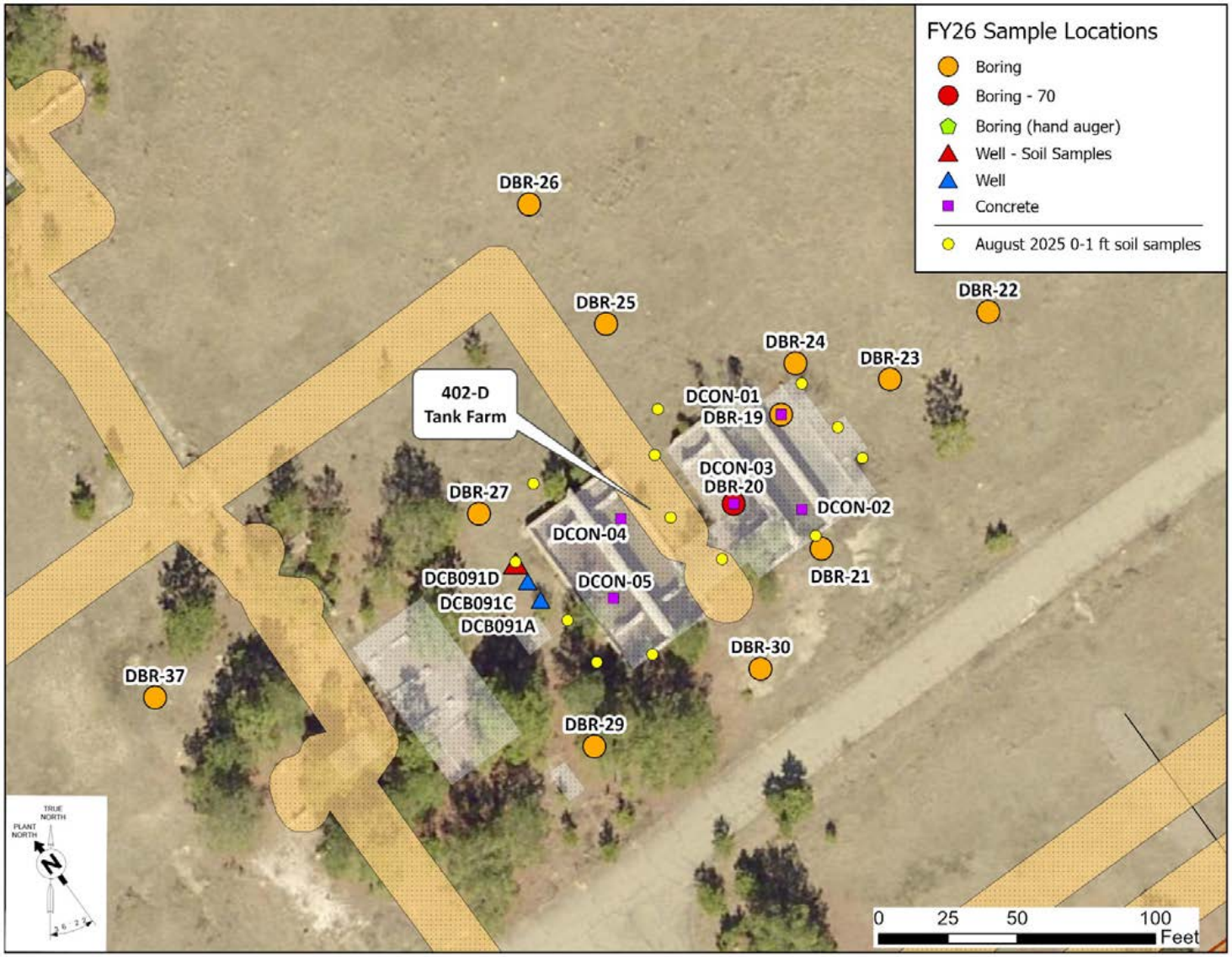
3Q2025 – Potential Source Area Sampling

Max (ng/g) (ppb)

	Station	GENX	PFBA	PFBS	PFDA	PFDoA	PFHxA	PFHxS	PFNA	PFOA	PFOS	PFTA	PFUnA
	Residental RSL (ng/g)	*230*	*78,000*	*19,000*	*130*	*3,200*	*32,000*	*1,300*	*190*	*0.019*	*6.3*	*63,000*	*19,000*
	Risk Based SSL (ng/g)	*0.015*	*6.5*	*3*	*0.000081*	*170*	*2.4*	*0.17*	*0.25*	*0.00004*	*0.015*	*9,400*	*45*
	MCL Based SSL (ng/g)	*0.01*	*--*	*--*	*--*	*--*	*--*	*0.0042*	*0.042*	*0.061*	*0.03*	*--*	*--*
	EQL	*0.78 - 7.8*	*0.78 - 7.8*	*0.2 - 2.0*	*0.2 - 2.0*	*0.2 - 2.0*	*0.2 - 2.0*	*0.2 - 2.0*	*0.2 - 2.0*	*0.2 - 2.0*	*0.2 - 2.0*	*0.2 - 2.0*	*0.2 - 2.0*
Concrete Walls	DPFAS-01	ND	ND	ND	0.22	0.17	ND	ND	0.093	ND	0.6	0.26	2.2
	DPFAS-02	ND	ND	ND	0.28	0.19	ND	ND	ND	ND	0.63	ND	2.6
	DPFAS-03	ND	ND	ND	0.28	0.12	ND	ND	0.31	ND	0.63	ND	2.4
	DPFAS-04	ND	0.11	ND	0.21	ND	0.047	ND	0.3	0.17	0.69	ND	0.16
	DPFAS-05	ND	ND	ND	ND	ND	0.078	ND	0.091	0.15	0.23	ND	0.11
	DPFAS-06	ND	ND	ND	ND	0.044	0.062	0.1	0.34	0.11	0.12	0.043	0.078
	DPFAS-07	ND	0.16	ND	0.4	2.5	0.099	0.14	0.19	0.095	0.43	1.4	200
	DPFAS-08	ND	ND	ND	0.067	0.43	ND	ND	0.13	ND	0.5	0.16	6.7
	DPFAS-09	ND	ND	ND	0.095	0.67	ND	ND	ND	ND	0.069	0.23	4.5
	DPFAS-10	ND	ND	ND	ND	0.41	ND	ND	0.076	ND	0.2	0.26	2
	DPFAS-11	ND	ND	ND	0.12	7.2	0.056	0.18	0.077	ND	0.41	5.3	26
	DPFAS-12	ND	ND	ND	ND	ND	ND	ND	0.076	ND	0.075	ND	ND
	DPFAS-13	ND	ND	ND	0.82	0.85	ND	ND	2.6	ND	3.2	0.44	5.5
Grass Fire	DPFAS-14	ND	ND	ND	ND	ND	ND	ND	0.079	ND	0.25	ND	ND
	DPFAS-15	ND	0.11	ND	0.16	ND	ND	ND	0.14	0.22	0.39	ND	0.068
	DPFAS-16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	DPFAS-17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	DPFAS-18	ND	ND	ND	0.13	0.072	ND	ND	ND	0.036	0.32	ND	0.31
	DPFAS-19	ND	ND	ND	0.11	ND	ND	ND	0.56	0.13	0.27	ND	0.41
	DPFAS-20	ND	0.12	ND	ND	ND	ND	ND	0.11	0.1	0.26	ND	0.09
	DPFAS-21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phyto	DPFAS-22	ND	ND	ND	ND	ND	ND	ND	0.24	ND	0.11	ND	0.13
	DPFAS-23	ND	ND	ND	ND	ND	ND	ND	0.41	0.098	0.32	ND	ND
	DPFAS-24	ND	ND	ND	ND	ND	ND	ND	0.069	ND	0.13	ND	ND
	DPFAS-25	ND	ND	ND	0.06	ND	ND	ND	0.64	0.059	0.23	ND	0.06
	DPFAS-26	ND	ND	ND	ND	0.037	ND	ND	0.17	0.066	0.25	ND	0.075
	DPFAS-27	ND	ND	ND	ND	ND	ND	ND	0.071	ND	0.15	ND	ND
Outfall	DPFAS-28	ND	0.89	ND	1.9	1.4	0.62	0.57	2.6	1.3	3.9	0.32	15
	DPFAS-29	ND	0.5	ND	0.35	0.26	0.27	0.1	1.9	0.66	4.2	0.079	1
	DPFAS-30	ND	ND	ND	0.62	0.69	ND	ND	1.7	0.49	7.8	ND	6.7

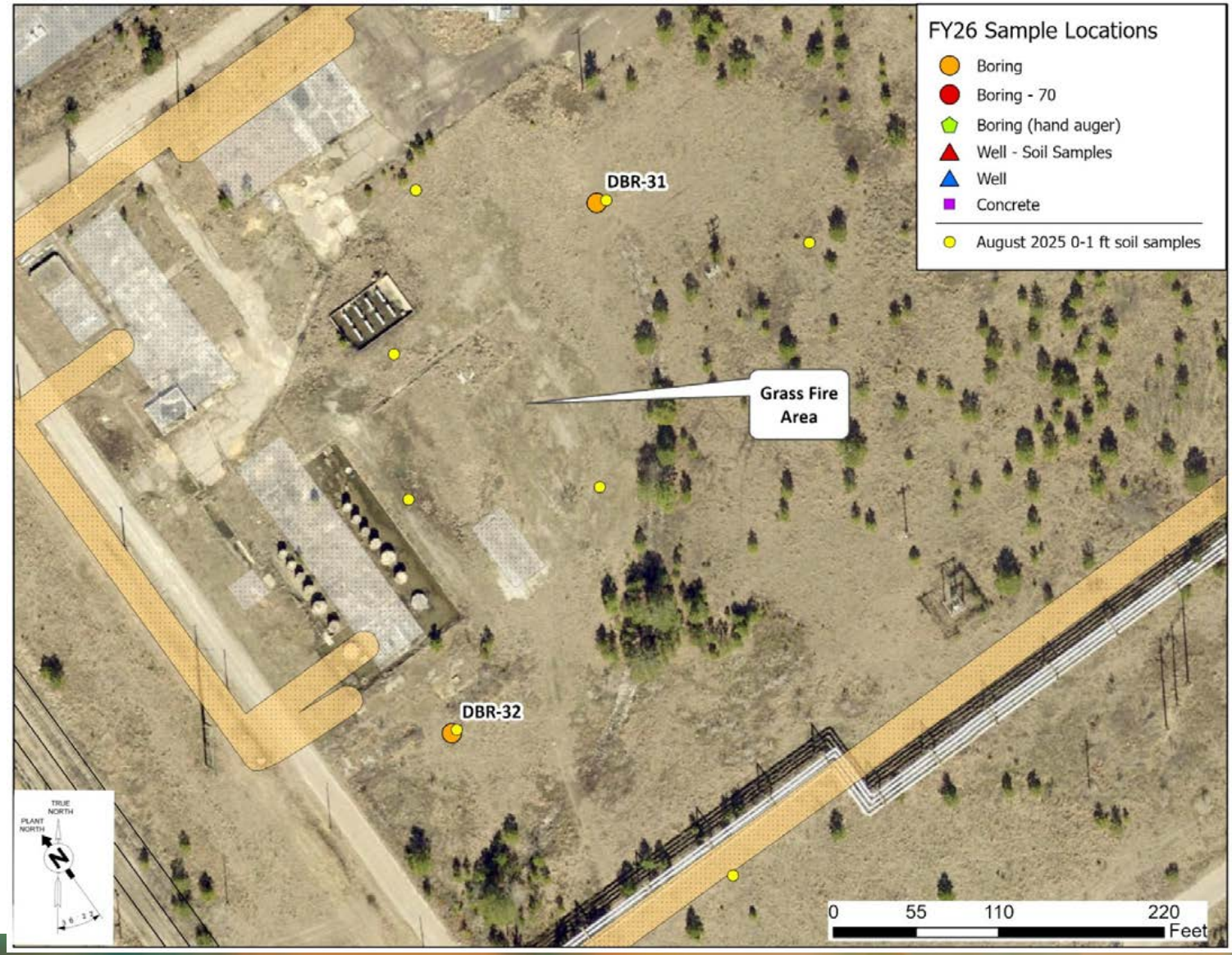
ND	0.89	ND	1.9	7.2	0.62	0.57	2.6	1.3	7.8	5.3	200
--	DPFAS-28	--	DPFAS-28	DPFAS-11	DPFAS-28	DPFAS-28	DPFAS-13	DPFAS-28	DPFAS-30	DPFAS-11	DPFAS-07

Proposed 402-D Area Soil/Concrete Samples



- Twelve Borings
  - 10 – 20 ft
  - 1 – 120 ft
  - 1 – 70 ft
- Five Concrete Samples
- Three Monitoring Wells
  - 2 UTRA
  - 1 GA

Proposed Grass Area Soil Samples



- Two Borings
  - 20 ft

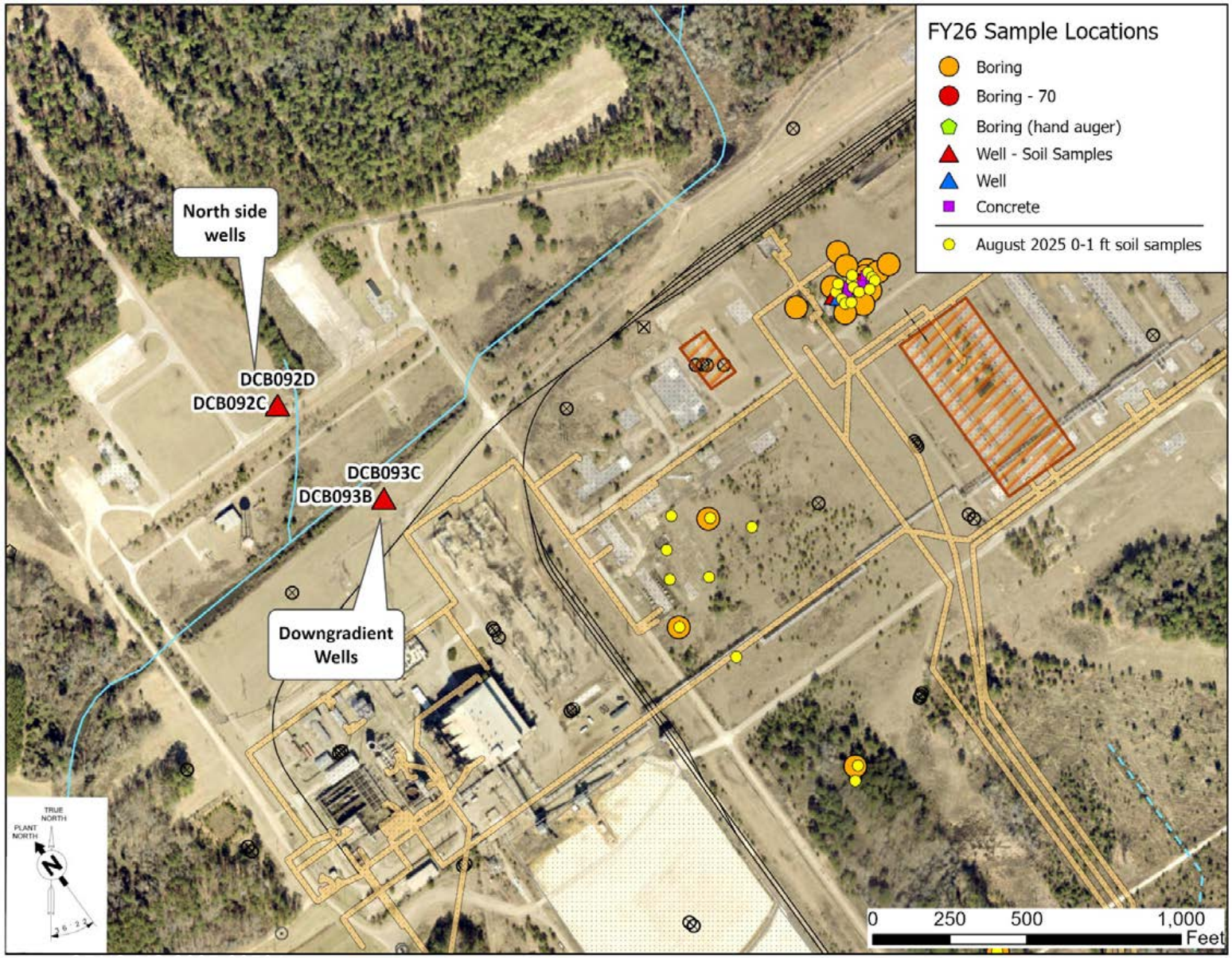
Proposed Phytoremediation Area Soil Samples

- Two Borings
  - 2 – 20 ft

Proposed Discharge Concrete/Sediment Samples

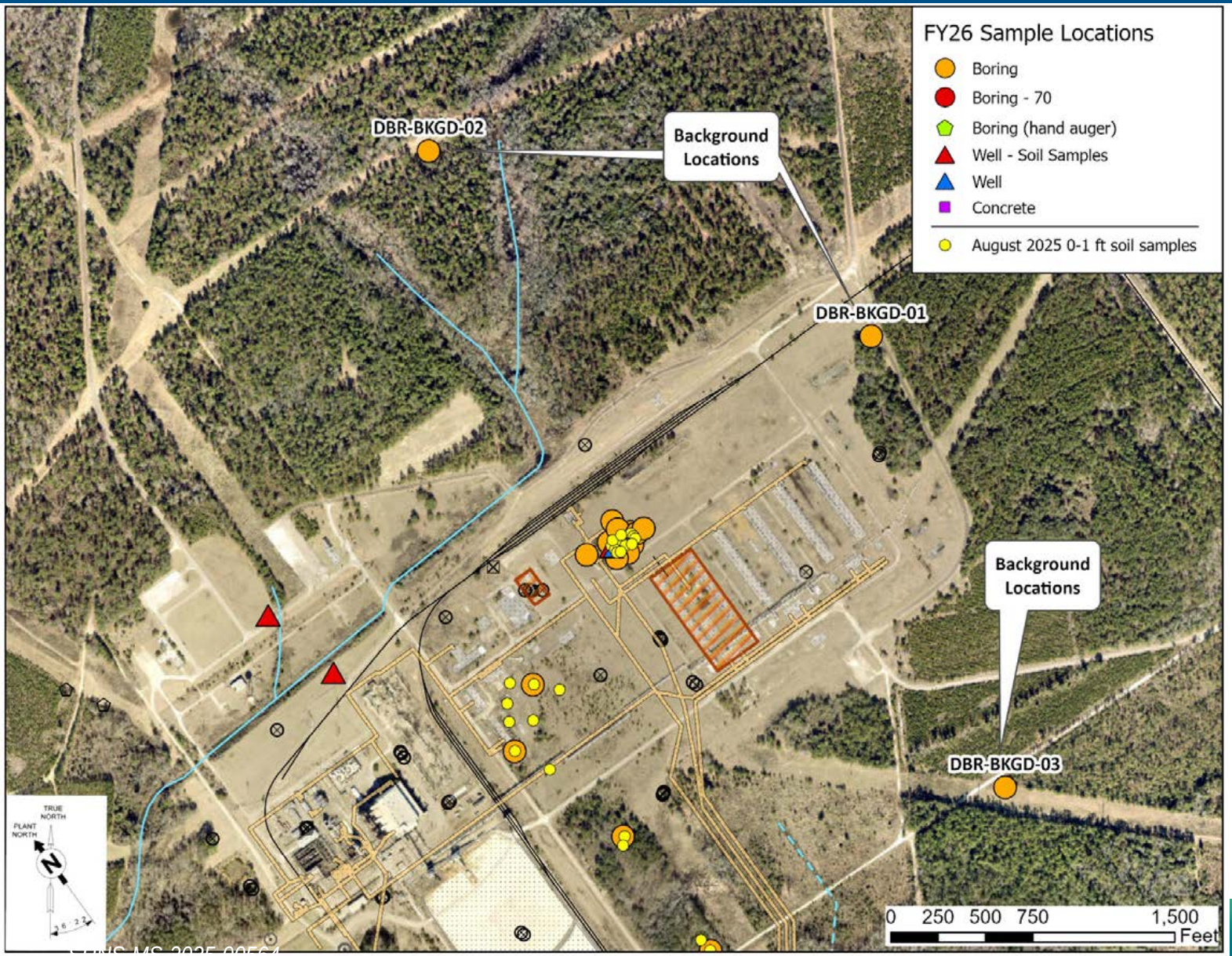
- Three Hand Auger Borings
  - 2 Shallow Intervals
- One Concrete Sample

Proposed Monitoring Wells – North Side & Downgradient



- Four Wells
  - One Middle UTRA
  - Two Lower UTRA
  - One GA
- Includes PFAS soil sampling

Proposed Background Borings



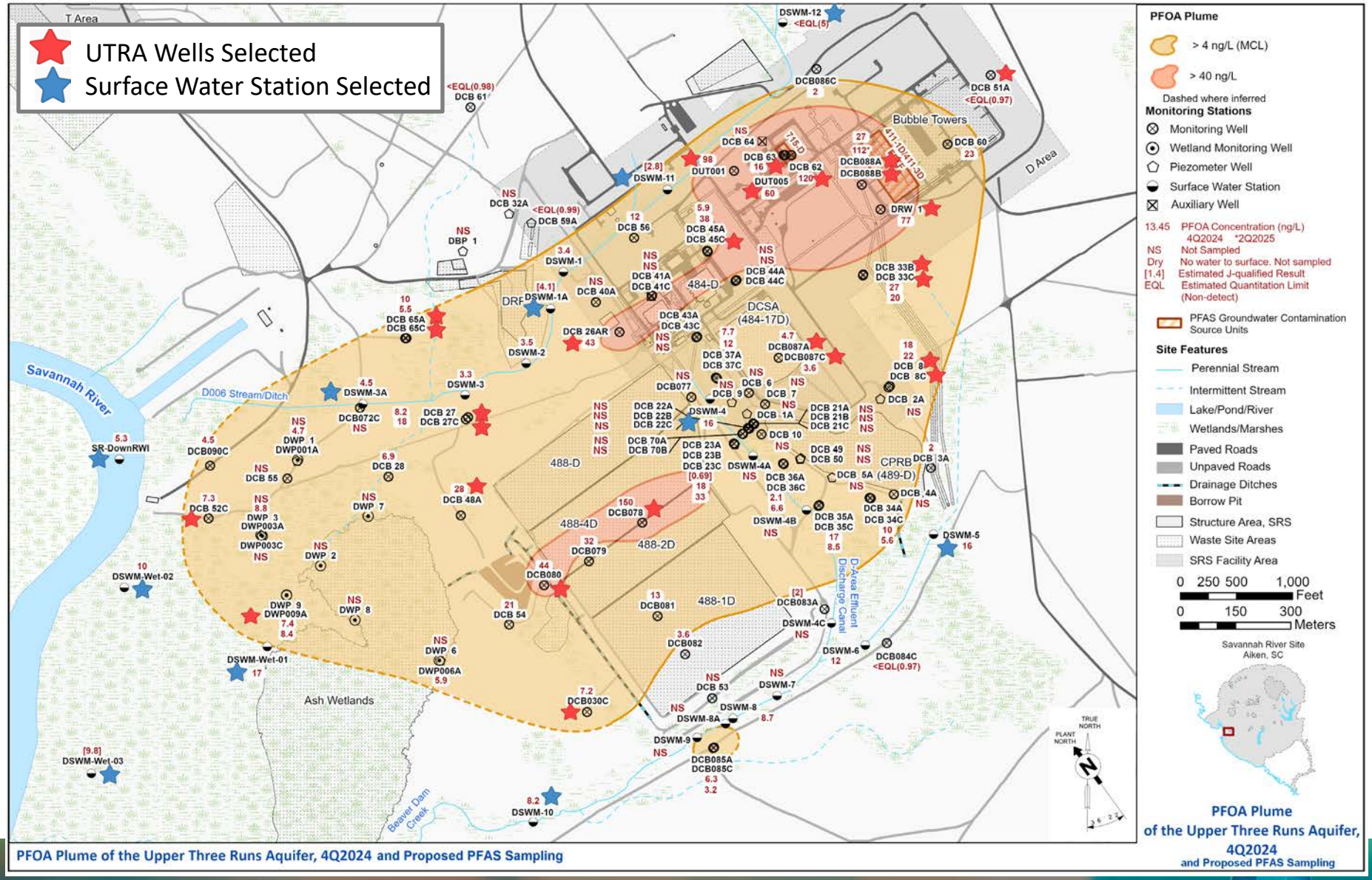
- Three Borings
  - 20 ft
  - 5 sample intervals

Total Number of Samples

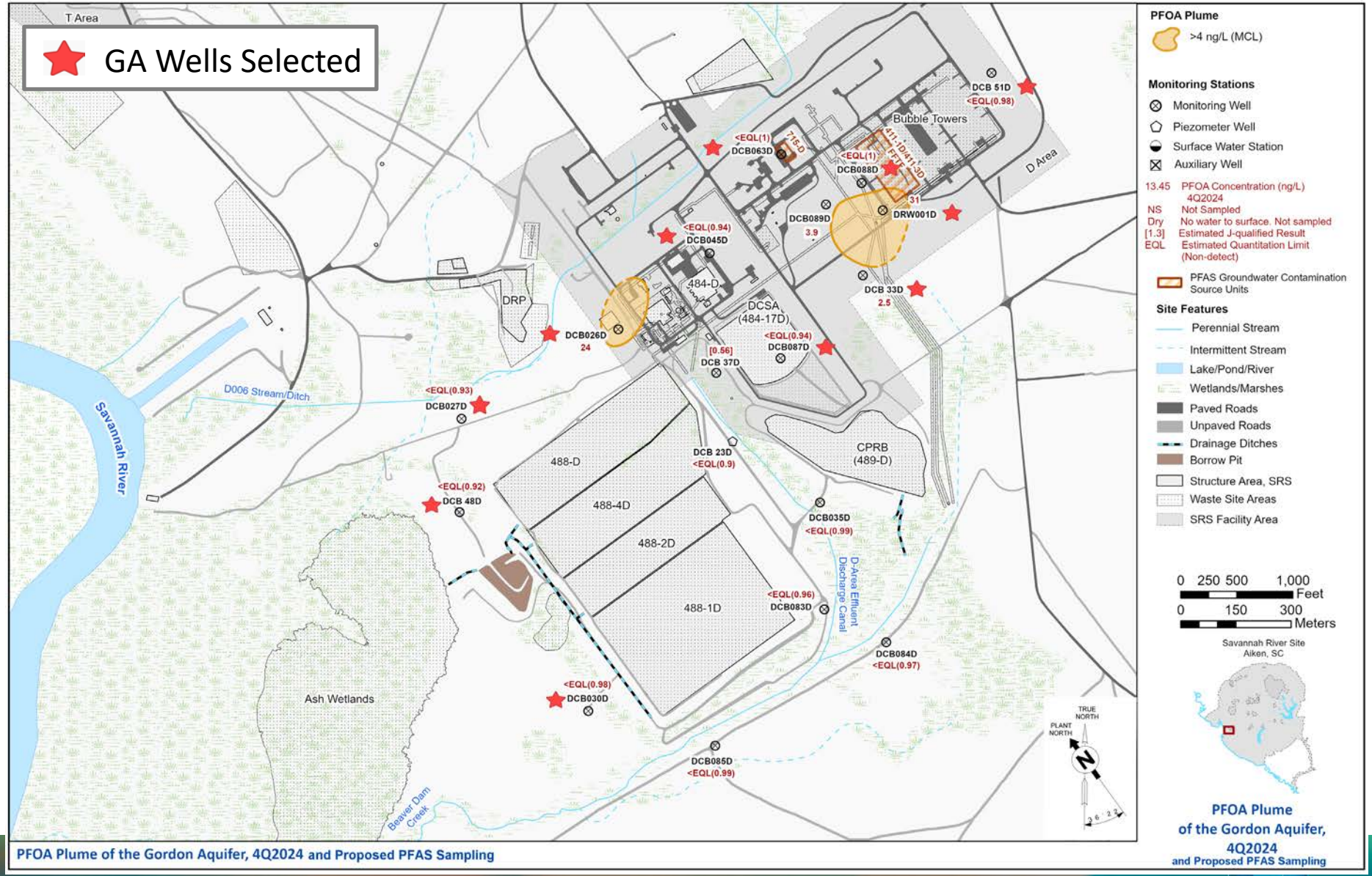
- Soils (146) and Sediment (6)
  - PFAS, TOC, pH
- Concrete (6)
  - PFAS
- Groundwater (7 Wells)
  - PFAS, VOCs

  - 5% Splits (8) and Duplicates (8)
  - Equipment Blanks (4)
  - 5% Definitive level data, 95% Verified and Validated

Proposed Optimized PFAS Groundwater/Surface Water Sampling in the UTRA

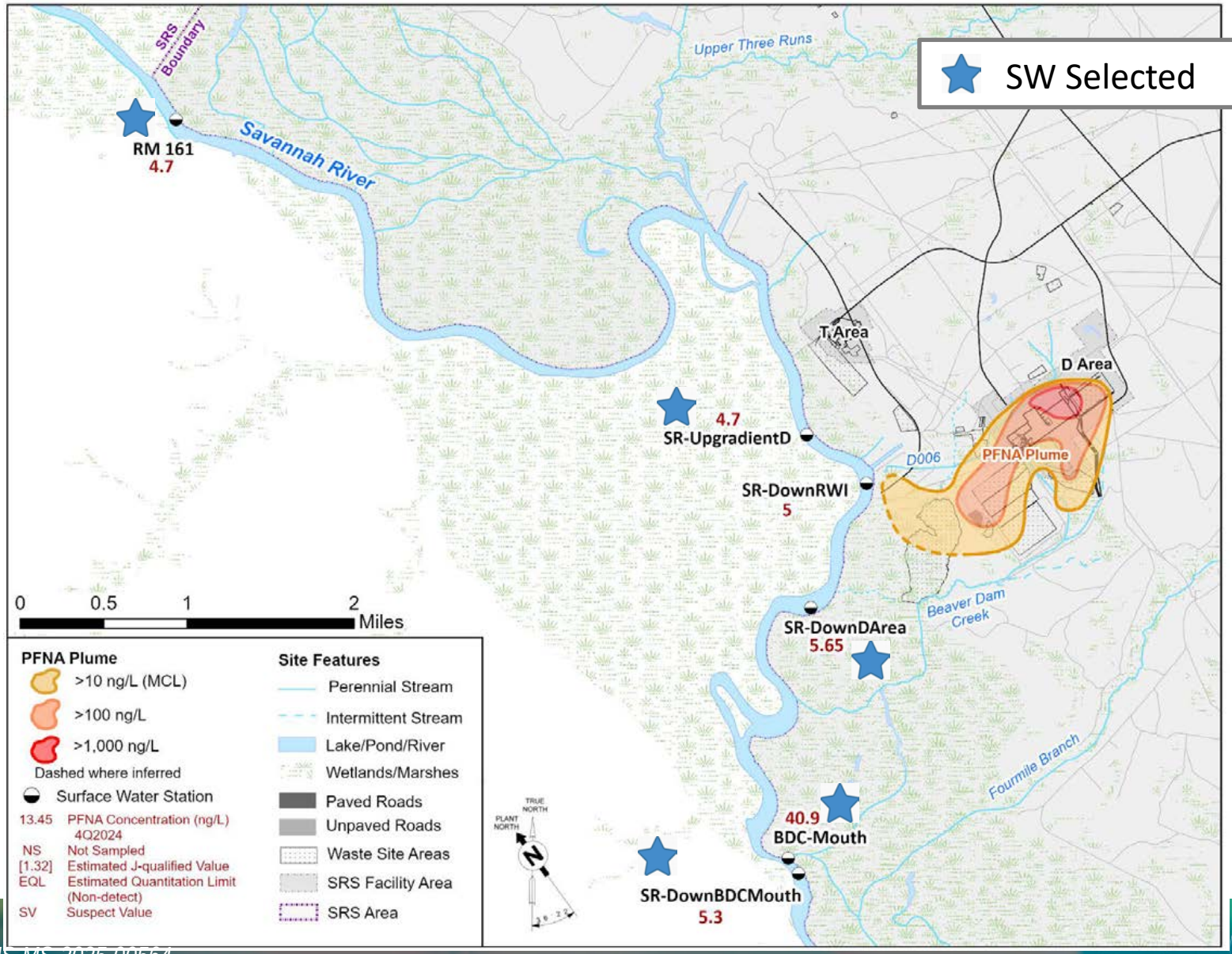


Proposed Optimized PFAS Groundwater/Surface Water Sampling in the GA

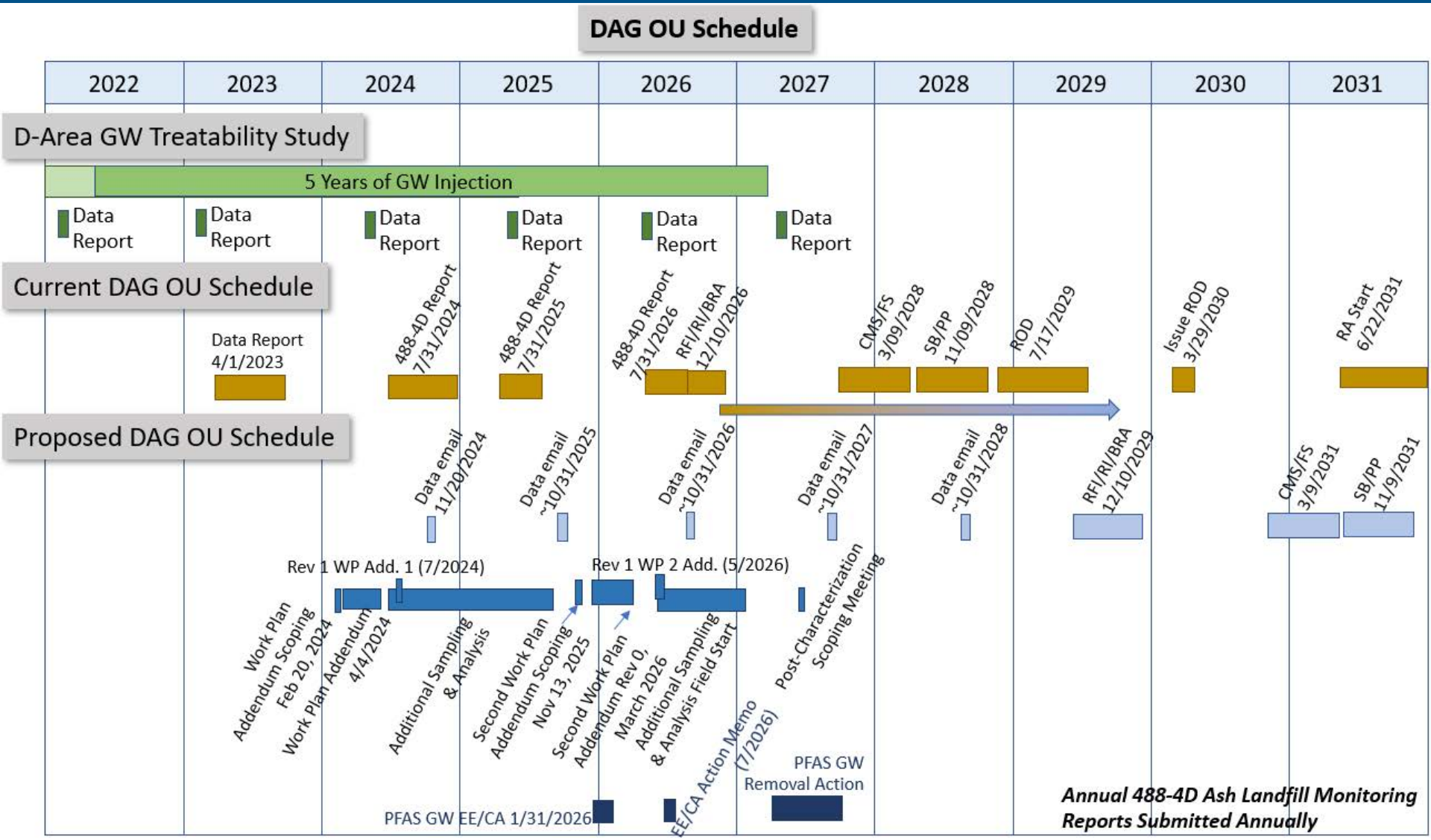


PFOA Plume of the Gordon Aquifer, 4Q2024 and Proposed PFAS Sampling

Proposed Optimized PFAS Surface Water Sampling in the D-Area Wetlands, BDC, and Savannah River



Proposed DAG OU Schedule

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