

October 20, 2022

Mr. Steven M. Scharf, PE
Project Engineer
Division of Environmental Remediation
New York State Department of Environmental Conservation, Remedial Bureau A
625 Broadway, 12th Floor
Albany, NY 12233-7015

Re: **Remedial Investigation Results – Phase II of Onsite Work
Groundwater Flow Direction Evaluation
East Hampton Airport Site, NYSDEC Site #152250
200 Daniels Hole Road, Wainscott, NY
FPM File No. 1028g-20-40 (02)**

Dear Steven:

On July 7, 2022, FPM Group (FPM) obtained depth to groundwater measurements at the existing onsite groundwater monitoring wells and nearby offsite monitoring wells for the East Hampton Airport Site. This work was conducted to further evaluate the direction of horizontal groundwater flow in the areas where groundwater vertical profiles and additional monitoring wells will be installed during Phase II of the onsite Remedial Investigation (RI) such that the proposed sampling locations can be confirmed or adjusted as needed. The procedures and results of this work are documented herein. The proposed vertical profile locations for each area of the Site are also evaluated. The proposed new monitoring well locations will be evaluated later, following completion of the vertical profile work.

Groundwater Elevation Measurement Procedures and Results

Preparatory Work

Prior to initiating fieldwork, the existing well elevations, depths, and multiple depth to water measurements were compiled into a master table for use in field-checking the new measurements and identifying and resolving any discrepancies. The data for this master table were obtained from the Site Characterization (SC) reports (initial and addendum) and information provided by the Suffolk County Department of Health Services (SCDHS) for their wells. Some datum discrepancies were noted and resolved sufficiently for the purpose of this initial groundwater flow direction evaluation.

It was also noted that the EH-P1 and EH-P2 locations and elevations were mixed between the initial SC and SC Addendum reports. The correct locations of EH-P1 and EH-P2 were confirmed in the field and the correct elevation measurements were confirmed by comparison to elevation information on the US Geological Survey Sag Harbor, NY quadrangle.

The airport manager was contacted prior to the start of the fieldwork to review the scope of work, confirm access, discuss the schedule, and determine what procedures might be needed to coordinate with ongoing flight operations. The tenants of the other Town-owned properties were also contacted to discuss the schedule and confirm access.

Field Work

At each targeted well location, FPM environmental professionals located and accessed the existing monitoring wells, as feasible. Some of the wells could not be located; each of these is noted on the attached Table 1, which includes a complete list of the Site wells and a partial list of the offsite wells installed by the SCDHS. Following well access, a decontaminated water level indicator (Solinst Model 101 P7) was used to measure the depth to the top of the water table to the nearest 0.01 foot. The depth of each well was also measured to assist with confirming the well's identification and its use as a water table well. The resulting data were recorded in a field logbook and checked against the previously-recorded information. Once the measurements were obtained at each well, the well was resecured.

The following Site groundwater monitoring wells were located, accessed, and measured: EH-A, EH-B, EH-C, EH-E, EH-P1, EH-P2, EH-1, EH-16, EH-18, EH-19A, EH-19A1, EH-19A2, and EH-19B. The following wells could not be located: EH-E1 and EH-B1 in the North Field Area, EH-SAS downgradient of the North Field Area, EH-161 and EH-162 in the Airport Parking Lot Area, EH-P3 along Daniels Hole Road, EH-19B1 associated with the Fire Training Facility, and EH-10 downgradient of the ARFF. Most of these wells were not identified or surveyed during the 2019 SC survey and it is possible that these were temporary wells. Grading and gravel placement had occurred in the EH-10 area and the well manhole lid was found loose on the ground, suggesting that this well was destroyed.

The following SCDHS wells in the Site vicinity were located, accessed, and measured: WPFC-4, WPFC-5, WPFC-6, WPFC-8, WPFC-9, WPFC-10, WPFC-11, WPFC-20, and WPFC-21. Wells WPFC-3 on a dirt road to the west of the airport and WPFC-7 on the LIRR track area to the south of the airport could not be located and are presumed lost.

Data Evaluation

The depth to water measurements were integrated with the top-of-casing elevations discussed above to determine the water table elevation at each location. The water table elevations were plotted on a scaled site plan and evaluated (see Figure 1, Attachment A). In some instances, the calculated water levels appeared to be inconsistent with nearby data. In these cases, the data were checked against the original logbook notes and survey information to assess the reason for the discrepancy. If no reason for the discrepancy was apparent, the data were marked with a (?) to indicate data uncertainty. Several of these discrepancies were noted to be associated with the SCDHS WPFC wells and, as the source and quality of the surveyed elevations for these wells are unknown, the water table elevations derived from these wells are considered suspect and were not honored during the contouring process.

The water level data were contoured to depict the directions of groundwater flow at the water table surface, as shown on Figure 1. Where the data are uncertain, the data that appear most accurate are contoured and the contours are dashed to indicate uncertainty. In general, the contours indicate a southeasterly direction of groundwater flow at the water table, consistent with prior results, although a more southerly direction of groundwater flow appears to be present toward the western portion of the airport.

Assessment of Proposed Vertical Profile Locations

Each proposed vertical profile location was assessed relative to the groundwater flow direction derived from the contour map and the intended purpose of the vertical profile. The proposed vertical profiles are shown on Figure 1 and, in the case of areas where several closely-spaced profiles are proposed, on additional figures in Attachment B. The groundwater flow directions are noted by arrows on the figures in Attachment B. Based on our assessment of the proposed profile locations and groundwater flow directions, the following are noted:

North Field Area – No proposed change in any locations (P1 through P6)

Airport Parking Lot Area – No proposed change in locations P9 through P13. Recommend moving P14 and P15 somewhat to the east, as shown on Figure 1, to provide better downgradient coverage.

Northeast Woods Plane Crash Site – No proposed change in any locations (P16 & P16A)

Runway Crash Areas – No proposed change in locations P17, P17A, or P18. P20 was moved somewhat to the east to provide better spacing in relation to P42 (see below)

ARFF Station - No proposed change in most locations (onsite: P35 through P37, downgradient: P29, P31 through P34, P39). Recommend moving proposed location P38 somewhat to the northwest away from suspected source areas. Recommend moving proposed upgradient P19 location to the southwest along Industrial Road to provide better downgradient coverage.

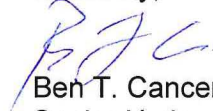
EHFD Fire Training Facility - No proposed change in any locations (P-24 through P26, P26A, P27, and P40)

Two additional vertical profiles (P41 and P42) are proposed to be located upgradient and downgradient of a hangar near the airport control tower to assess groundwater quality in this area of the airport.

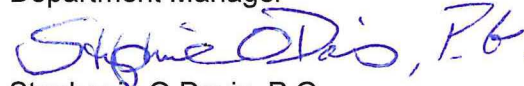
It is also recommended that when the locations and elevations of the vertical profiles are surveyed that the top of each well casing for the onsite wells and SCDHS wells in proximity to the site also be surveyed, with all surveying conducted relative to the NGVD 29. This is anticipated to provide a consistent reference for future groundwater flow direction evaluations.

Should you have any questions, please do not hesitate to call us at (631) 737-6200.

Sincerely,



Ben T. Cancemi, P.G.
Senior Hydrogeologist
Department Manager



Stephanie O Davis, P.G.
Senior Project Manager
Vice President

Attachments

BTC/SOD:sod

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ATTACHMENT A

**TABLE 1- WATER TABLE MEASUREMENTS
FIGURE 1 – GROUNDWATER CONTOURS**

**TABLE 1
EAST HAMPTON AIRPORT WATER TABLE DATA**

MEASUREMENT DATE: JULY 7, 2022

Well No.	Top of PVC Elevation in Feet (2018)	PVC Diameter (inches)	Depth to Groundwater (feet)	Total Depth (feet)	Water Table Elevation (feet)
Onsite Wells					
EH-A	31.83	1	21.86	30.80	9.97
EH-B	40.99	2	30.39	34.35	10.60
EH-B1*	41.02	1	Missing	-	-
EH-C	40.16	1	30.45	34.86	9.71
EH-E	40.79	1	30.30	34.74	10.49
EH-E1	Not surveyed	1	Missing	-	-
EH-P1	53.85	1	43.46	49.89	10.39
EH-P2	47.79	1	37.30	50.16	10.49
EH-P3	33.35	-	Missing	-	-
EH-1	41.76	2	32.31	38.82	9.45
EH-10	45.21	-	Missing	-	-
EH-16	36.28	1	26.30	33.13	9.98
EH-161	Not surveyed	1	Missing	-	-
EH-18	52.40	1	42.10	52.03	10.30
EH-19A	46.19	2	36.23	42.27	9.96
EH-19A1	Not surveyed	1	35.64	44.82	-
EH-19A2*	47.35	2	37.44	40.47	9.91
EH-19B	45.70	2	36.95	40.98	8.75
EH-19B1	Not surveyed	1	Missing	-	-
EH-SAS	Not surveyed	1	Missing	-	-
EH-162*	35.64	1	Missing	-	-
Offsite Wells in Site Vicinity					
WPFC 3	51.48	-	Missing	-	-
WPFC 4	52.29	1	40.90	50.06	11.39
WPFC 5	44.82	1	33.77	39.75	11.05
WPFC 6	43.14	1	32.41	40.18	10.73
WPFC 7	42.00	-	Missing	-	-
WPFC 8	21.89	1	12.75	30.12	9.14
WPFC 9	23.62	1	14.79	30.11	8.83
WPFC 10	26.85	1	18.26	30.25	8.59
MW-10/WPFC 11	18.36	1	9.87	30.09	8.49
WPFC 20	19.68	1	8.40	9.78	11.28
WPFC 21	37.92	1	26.77	40.22	11.15

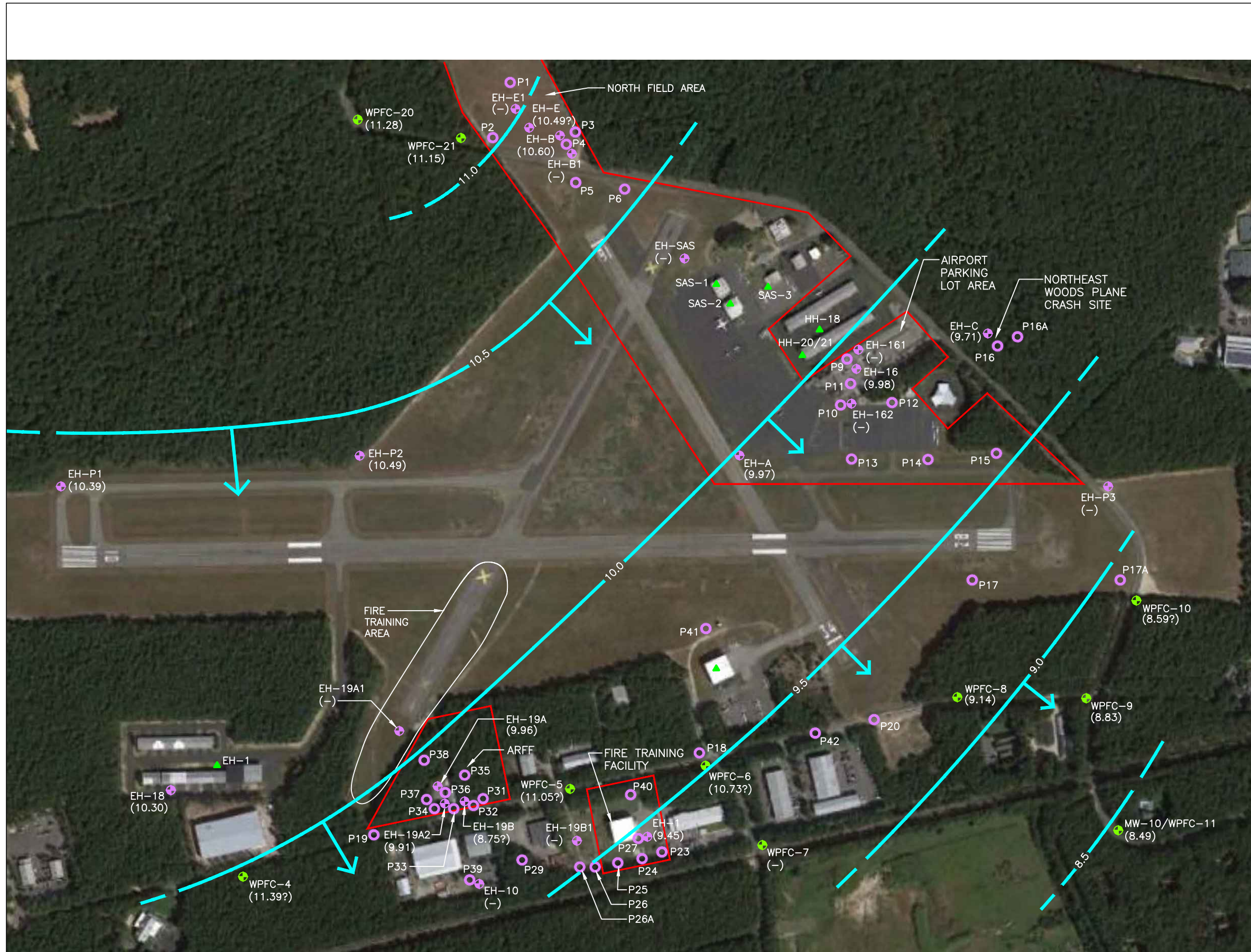
Notes:

All depth measurements were made relative to the top of the well PVC casing.

Wells noted in **Bold** were not located on July 7, 2022.

2018 Top of PVC casing elevations measured relative to the "airport benchmark" (Site Characterization Report).

* = top of casing measurements were adjusted by 0.93 feet from 2019 survey to match the airport benchmark.



LEGEND:

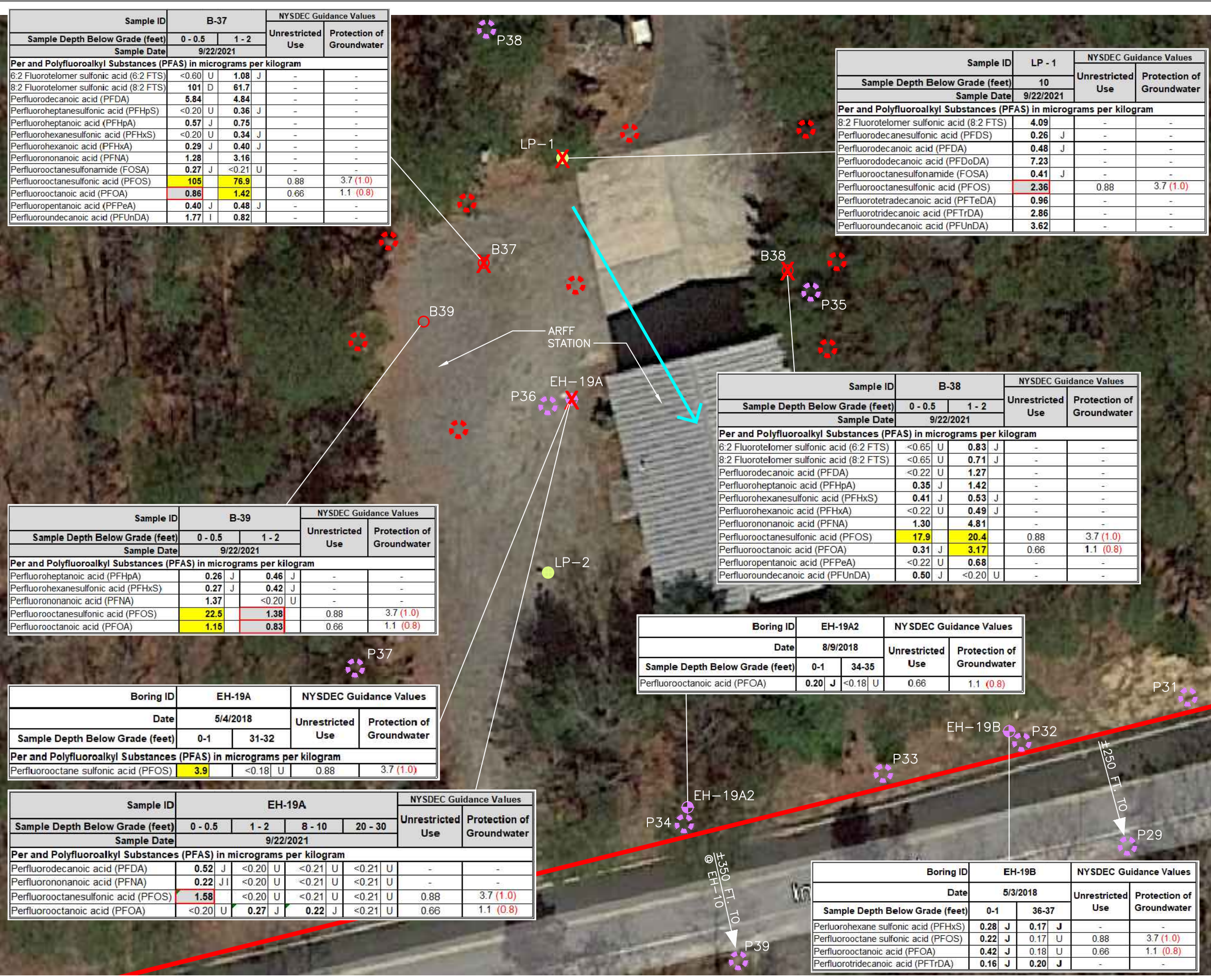
- APPROXIMATE SITE BOUNDARY
- PREVIOUS GROUNDWATER SAMPLING LOCATIONS**
- + EH-E MONITORING WELL/PIEZOMETER
- ▲ SAS-1 TAP WATER SAMPLE
- + WPFC-8 SCDHS VERTICAL PROFILE
- (11.28) WATER TABLE ELEVATION IN FEET
- (-) WATER LEVEL DATA NOT OBTAINED
- (11.28?) WATER TABLE ELEVATION UNCERTAIN
- 10.5 WATER TABLE ELEVATION CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION
- PROPOSED VERTICAL PROFILE SAMPLING LOCATIONS**
- P1 PROPOSED VERTICAL PROFILE LOCATION

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FIGURE 1
WATER TABLE CONTOURS JULY 7, 2022
EAST HAMPTON AIRPORT SITE
WAINSCOTT, NEW YORK

Drawn By: B.F. | Checked By: S.D. | Date: 7/28/22

ATTACHMENT B
VERTICAL PROFILE LOCATIONS (DETAILS)



Sample ID	B-37		NYSDEC Guidance Values	
	Sample Depth Below Grade (feet)	Sample Date	Unrestricted Use	Protection of Groundwater
Per and Polyfluoroalkyl Substances (PFAS) in micrograms per kilogram				
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	<0.60 U	1.08 J	-	-
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	101 D	61.7	-	-
Perfluorodecanoic acid (PFDA)	5.84	4.84	-	-
Perfluoroheptanesulfonic acid (PFHpS)	<0.20 U	0.36 J	-	-
Perfluoroheptanoic acid (PFHpA)	0.57 J	0.75	-	-
Perfluorohexanesulfonic acid (PFHxS)	<0.20 U	0.34 J	-	-
Perfluorohexanoic acid (PFHxA)	0.29 J	0.40 J	-	-
Perfluorononanoic acid (PFNA)	1.28	3.16	-	-
Perfluorooctanesulfonamide (FOSA)	0.27 J	<0.21 U	-	-
Perfluorooctanesulfonic acid (PFOS)	105	76.9	0.88	3.7 (1.0)
Perfluorooctanoic acid (PFOA)	0.86	1.42	0.66	1.1 (0.8)
Perfluoropentanoic acid (PFPeA)	0.40 J	0.48 J	-	-
Perfluoroundecanoic acid (PFUnDA)	1.77 I	0.82	-	-

Sample ID	LP - 1		NYSDEC Guidance Values	
	Sample Depth Below Grade (feet)	Sample Date	Unrestricted Use	Protection of Groundwater
Per and Polyfluoroalkyl Substances (PFAS) in micrograms per kilogram				
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	4.09	9/22/2021	-	-
Perfluorodecanesulfonic acid (PFDS)	0.26 J		-	-
Perfluorodecanoic acid (PFDA)	0.48 J		-	-
Perfluorododecanoic acid (PFDoDA)	7.23		-	-
Perfluorooctanesulfonamide (FOSA)	0.41 J		-	-
Perfluorooctanesulfonic acid (PFOS)	2.36		0.88	3.7 (1.0)
Perfluorotetradecanoic acid (PFTeDA)	0.96		-	-
Perfluorotridecanoic acid (PFTrDA)	2.86		-	-
Perfluoroundecanoic acid (PFUnDA)	3.62		-	-

Sample ID	B-39		NYSDEC Guidance Values	
	Sample Depth Below Grade (feet)	Sample Date	Unrestricted Use	Protection of Groundwater
Per and Polyfluoroalkyl Substances (PFAS) in micrograms per kilogram				
Perfluoroheptanoic acid (PFHpA)	0.26 J	9/22/2021	0.46 J	-
Perfluorohexanesulfonic acid (PFHxS)	0.27 J		0.42 J	-
Perfluorononanoic acid (PFNA)	1.37		<0.20 U	-
Perfluorooctanesulfonic acid (PFOS)	22.5		1.38	0.88 3.7 (1.0)
Perfluorooctanoic acid (PFOA)	1.15		0.83	0.66 1.1 (0.8)

Sample ID	B-38		NYSDEC Guidance Values	
	Sample Depth Below Grade (feet)	Sample Date	Unrestricted Use	Protection of Groundwater
Per and Polyfluoroalkyl Substances (PFAS) in micrograms per kilogram				
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	<0.65 U	9/22/2021	0.83 J	-
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	<0.65 U		0.71 J	-
Perfluorodecanoic acid (PFDA)	<0.22 U		1.27	-
Perfluoroheptanoic acid (PFHpA)	0.35 J		1.42	-
Perfluorohexanesulfonic acid (PFHxS)	0.41 J		0.53 J	-
Perfluorohexanoic acid (PFHxA)	<0.22 U		0.49 J	-
Perfluorononanoic acid (PFNA)	1.30		4.81	-
Perfluorooctanesulfonic acid (PFOS)	17.9		20.4	0.88 3.7 (1.0)
Perfluorooctanoic acid (PFOA)	0.31 J		3.17	0.66 1.1 (0.8)
Perfluoropentanoic acid (PFPeA)	<0.22 U		0.68	-
Perfluoroundecanoic acid (PFUnDA)	0.50 J		<0.20 U	-

Boring ID	EH-19A2	NYSDEC Guidance Values	
Date	8/9/2018	Unrestricted Use	Protection of Groundwater
Sample Depth Below Grade (feet)			
0-1		34-35	
Perfluorooctanoic acid (PFOA)	0.20 J	<0.18 U	0.66 1.1 (0.8)

Boring ID	EH-19A	NYSDEC Guidance Values	
Date	5/4/2018	Unrestricted Use	Protection of Groundwater
Sample Depth Below Grade (feet)			
0-1		31-32	
Per and Polyfluoroalkyl Substances (PFAS) in micrograms per kilogram			
Perfluorooctane sulfonic acid (PFOS)	3.9	<0.18 U	0.88 3.7 (1.0)

Sample ID	EH-19A				NYSDEC Guidance Values	
	Sample Depth Below Grade (feet)	Sample Date	Unrestricted Use	Protection of Groundwater	Unrestricted Use	Protection of Groundwater
Per and Polyfluoroalkyl Substances (PFAS) in micrograms per kilogram						
Perfluorodecanoic acid (PFDA)	0.52 J	9/22/2021	<0.20 U	<0.21 U	<0.21 U	-
Perfluorononanoic acid (PFNA)	0.22 J		<0.20 U	<0.21 U	<0.21 U	-
Perfluorooctanesulfonic acid (PFOS)	1.58		<0.20 U	<0.21 U	<0.21 U	0.88 3.7 (1.0)
Perfluorooctanoic acid (PFOA)	<0.20 U		0.27 J	0.22 J	<0.21 U	0.66 1.1 (0.8)

Boring ID	EH-19B		NYSDEC Guidance Values	
	Date	Sample Depth Below Grade (feet)	Unrestricted Use	Protection of Groundwater
Per and Polyfluoroalkyl Substances (PFAS) in micrograms per kilogram				
Perfluorohexane sulfonic acid (PFHxS)	5/3/2018	0-1	0.28 J	0.17 J
Perfluorooctane sulfonic acid (PFOS)		36-37	0.22 J	0.17 U
Perfluorooctanoic acid (PFOA)			0.42 J	0.18 U
Perfluorotridecanoic acid (PFTrDA)			0.16 J	0.20 J

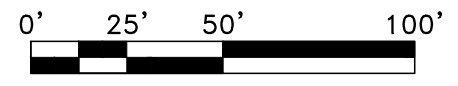
LEGEND:

- APPROXIMATE SITE BOUNDARY
- PREVIOUS SAMPLING LOCATIONS
- MONITORING WELL/PIEZOMETER
- RI SOIL SAMPLING LOCATIONS
- B39 SOIL BORING (PFAS)
- ⊗ B37 SOIL BORING (PFAS, 1,4-DIOXANE, DER-10)
- ✗ PRIOR BORING, ADDITIONAL SAMPLING (PFAS)
- LP-1 LEACHING STRUCTURE
- GROUNDWATER FLOW DIRECTION

PROPOSED SAMPLING LOCATIONS:

- ✗ SOIL BORING (DEEP)
- SOIL BORING
- GROUNDWATER VERTICAL PROFILE

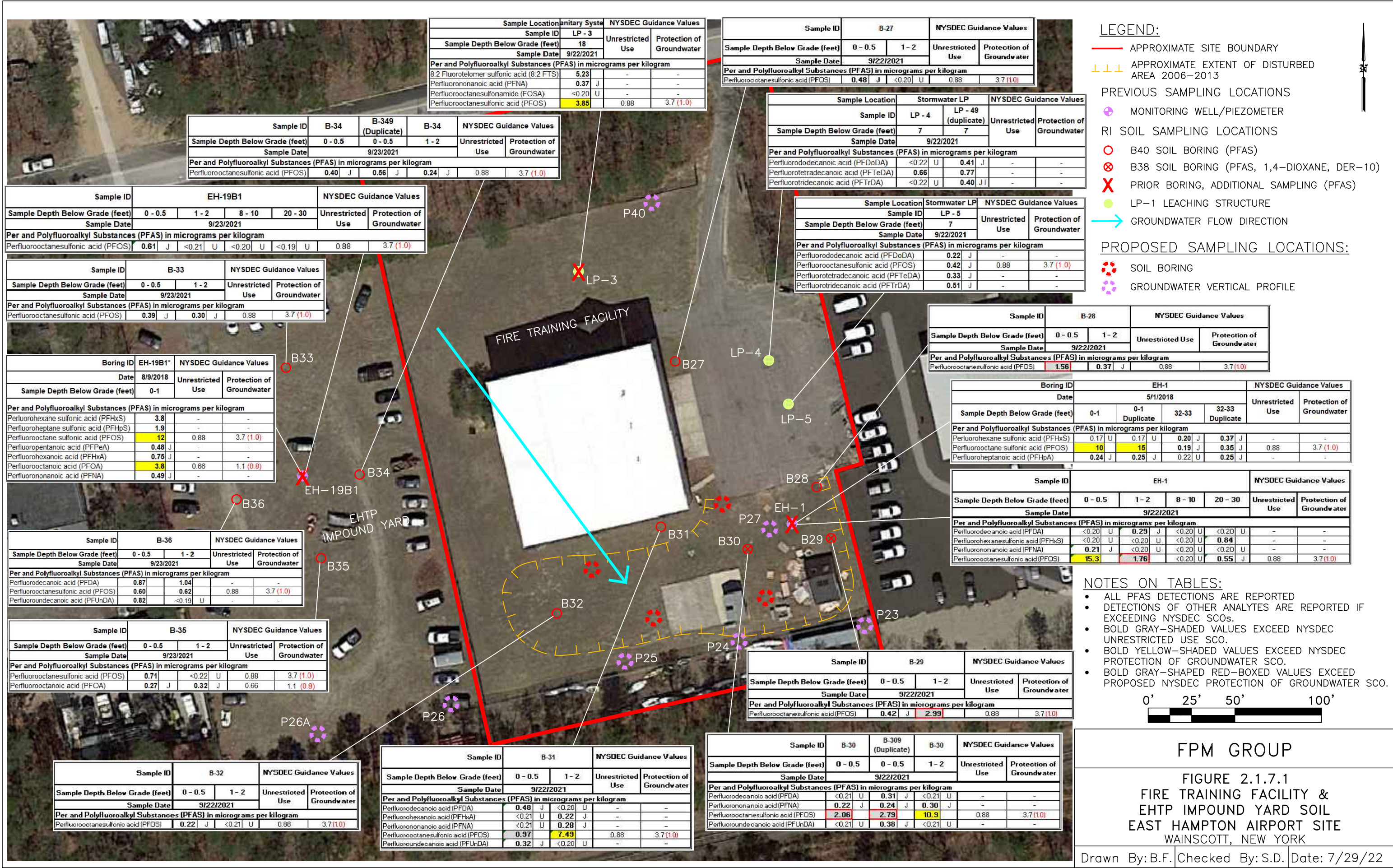
- NOTES ON TABLES:**
- ALL PFAS DETECTIONS ARE REPORTED
 - DETECTIONS OF OTHER ANALYTES ARE REPORTED IF EXCEEDING NYSDEC SCOs.
 - BOLD GRAY-SHADED VALUES EXCEED NYSDEC UNRESTRICTED USE SCO.
 - BOLD YELLOW-SHADED VALUES EXCEED NYSDEC PROTECTION OF GROUNDWATER SCO.
 - BOLD GRAY-SHAPED RED-BOXED VALUES EXCEED PROPOSED NYSDEC PROTECTION OF GROUNDWATER SCO.



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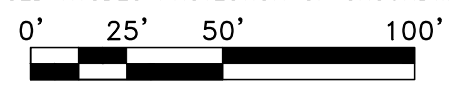
FIGURE 2.1.6.1
ARFF STATION SOIL
EAST HAMPTON AIRPORT SITE
WAINSCOTT, NEW YORK

Drawn By: B.F. | Checked By: S.D. | Date: 7/29/22



NOTES ON TABLES:

- ALL PFAS DETECTIONS ARE REPORTED
- DETECTIONS OF OTHER ANALYTES ARE REPORTED IF EXCEEDING NYSDEC SCOs.
- BOLD GRAY-SHADED VALUES EXCEED NYSDEC UNRESTRICTED USE SCO.
- BOLD YELLOW-SHADED VALUES EXCEED NYSDEC PROTECTION OF GROUNDWATER SCO.
- BOLD GRAY-SHADED RED-BOXED VALUES EXCEED PROPOSED NYSDEC PROTECTION OF GROUNDWATER SCO.



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FIGURE 2.1.7.1
FIRE TRAINING FACILITY & EHTP IMPOUND YARD SOIL
EAST HAMPTON AIRPORT SITE
WAINSCOTT, NEW YORK

Drawn By: B.F. | Checked By: S.D. | Date: 7/29/22