

PFAS- Summary of the Site Investigation Sampling

Former Naval Weapons Station Seal Beach Detachment Concord

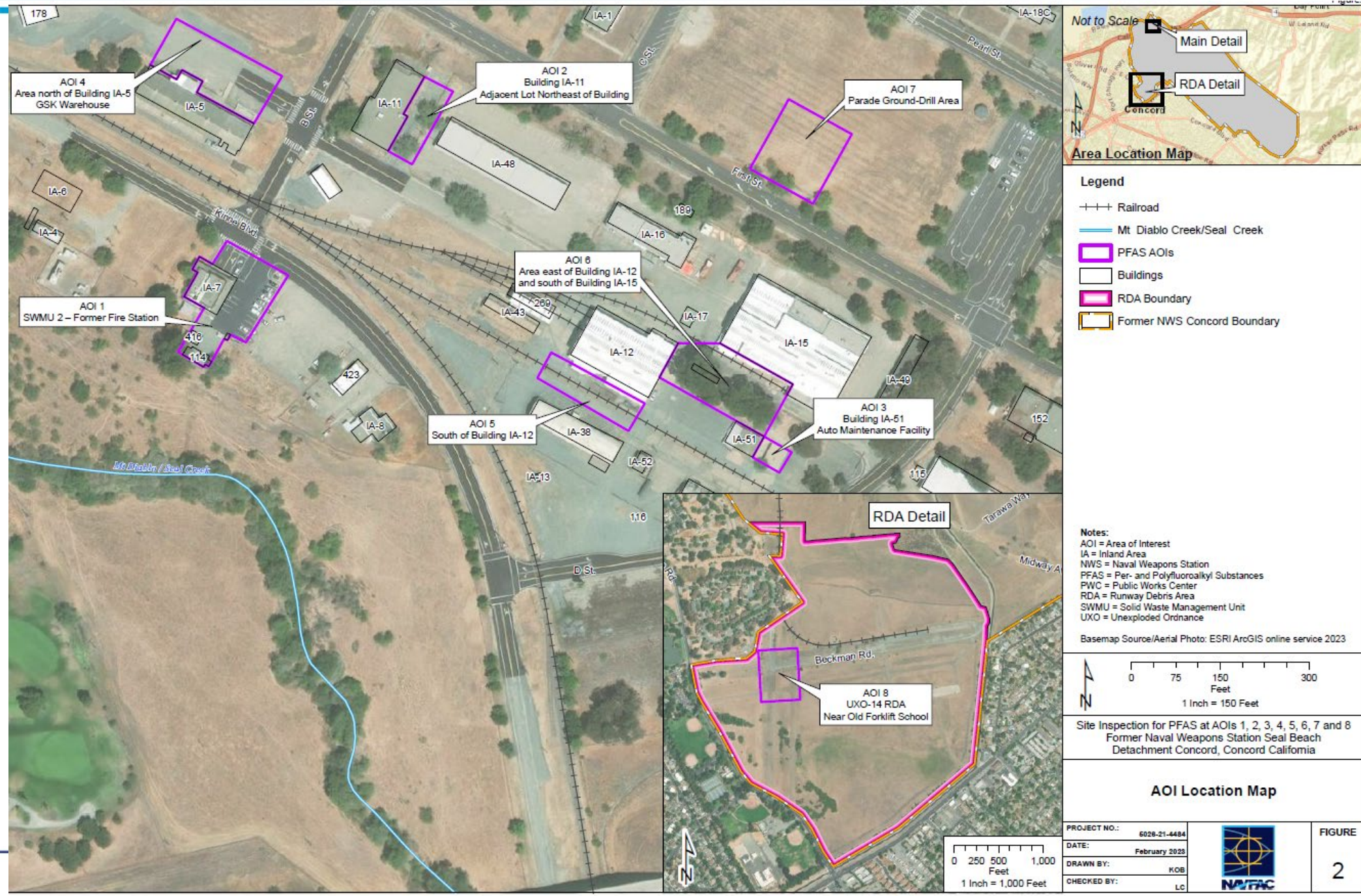
May 24, 2023

Agenda



- Introduction to Investigation Areas
- Summary of Site Inspection (SI) Fieldwork during August 2022
- Summary of Soil and Groundwater Results at each Area of Interest (AOI) and Recommendations
- Questions

Investigation Area Map



SI Field Summary



- SI Sampling and Analysis Plan (SAP) was finalized on March 7, 2022, and distributed to the stakeholders
- Fieldwork mobilization on August 16, 2022, to mark and clear sample locations, receive equipment, and collect media samples
- Sampling occurred between August 23 and September 8, 2022:
 - Biological monitoring was performed at the 8 AOIs
 - 79 soil samples were collected in surface (25) and subsurface (54) soils
 - 25 grab groundwater samples were collected from temporary wells
 - 7 groundwater samples were collected from existing wells near selected AOIs
 - All samples were analyzed by our lab, SGS North America, using the approved method in the Final SAP

AOI 1 PFAS Results



Summary

- Two PFAS (PFOS and PFHxS) exceeded the screening levels in soil
- Four PFAS (PFOA, PFOS, PFNA, and PFHxS) exceeded the screening levels in groundwater
- Conduct further action to evaluate PFAS impacts in soil and groundwater

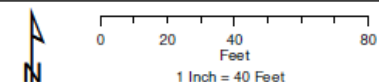


Legend

- Temporary Monitoring Well and Soil Sample for PFAS Sampling
- Existing Monitoring Well for PFAS Sampling
- Existing Monitoring Well Not for PFAS Sampling
- Approximate Location of Storm Drain Catch Basin
- Approximate Location of Storm Drain Culvert
- General Groundwater Flow Direction (August, 2022)
- Railroad
- Buildings
- PFAS AOI
- Former NWS Concord Boundary

Notes:
 Soil results reported in mg/kg
 Groundwater results reported in µg/L
 Depth of soil sample reported in feet below ground surface
 Bold = analyte detected in sample above the detection limit
 Shaded results exceed the screening criteria
 µg/L = micrograms per liter
 AOI = Area of Interest
 FD = field duplicate
 HFPO-DA = hexafluoropropylene oxide dimer acid
 IA = Inland Area
 J = estimated value
 J+ = estimated value with potential high analytical bias
 mg/kg = milligrams per kilogram
 PFAS = per- and polyfluoroalkyl substances
 PFBS = perfluorobutane sulfonic acid
 PFHxS = perfluorohexane sulfonic acid
 PFNA = perfluorononanoic acid
 PFOA = perfluorooctanoic acid
 PFOS = perfluorooctane sulfonic acid
 NWS = Naval Weapons Station
 U = not detected at or above the detection limit

Basemap Source: ESRI Online Streaming Service 2023



Site Inspection for PFAS at AOIs 1, 2, 3, 4, 5, 6, 7 and 8
 Former Naval Weapons Station Seal Beach
 Detachment Concord, Concord California

Soil and Groundwater Sampling Results AOI 1 – SWMU 2 – Former Fire Station

PROJECT NO.: 5026-21-4484
 DATE: February 2023
 DRAWN BY: KOB
 CHECKED BY: LC



FIGURE

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25718-MW02								
Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
Groundwater	8/31/2022	ug/L	0.0332	0.436	0.0127	0.0017 J	0.230	0.0037 U

MW178-5
 25718-MW02

25718-MW18								
Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
Groundwater	8/31/2022	µg/L	0.0794	0.353	0.0259	0.0057	0.763	0.0037 U

25718-MW18

AOI1-PFAS-TW3

AOI-PFAS-TW3								
Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	8/25/2022	mg/kg	0.00037 J	0.0185	0.00052 U	0.00052 U	0.0046	0.00052 U
1 - 1.5			0.00095 J	0.0127	0.00048 J	0.00059 U	0.0063	0.00059 U
27 - 27.5			0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U
Groundwater		µg/L	0.0319	0.0735	0.0309	0.0011 J	0.369	0.0041 U

25718-MW17

25718-MW17								
Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
Groundwater	8/31/2022	µg/L	0.0137	0.113	0.0088	0.0019 U	0.0990	0.0037 U

AOI1-PFAS-TW2								
Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-D
0 - 0.5	8/25/2022	mg/kg	0.0013	0.0526	0.00096 J	0.00053 U	0.0148	0.00053
1.5 - 2			0.0023	0.376	0.0014	0.00054 U	0.0507	0.00054
19 - 19.5			0.00061 U	0.00085 J	0.00061 U	0.00061 U	0.00061 U	0.00061
Groundwater		µg/L	0.118	1.06	0.0790	0.0104	1.28	0.0040

AOI1-PFAS-TW2

AOI1-PFAS-TW1

AOI1-PFAS-TW1								
Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DiA
0-0.5	8/25/2022	mg/kg	0.0080	0.671	0.0012	0.0025 U	0.251	0.00051
1-1.5			0.0052	0.577	0.00084 J	0.00060 J	0.163	0.00055
17.5-18			0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062
Groundwater		µg/L	0.0180	0.230	0.0118	0.0020 J	0.188	0.0040
Groundwater (DUP)			0.0168	0.220	0.0116	0.0019 J	0.184	0.0037

25718-MW11

25718-MW11								
Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
Groundwater	8/31/2022	µg/L	0.0757	1.65	0.0754	0.0103	2.92	0.0037 U

Media	Units	Screening Criteria					
		PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-L
Soil	mg/kg	0.019	0.013	1.9	0.019	0.13	0.023
Groundwater	µg/L	0.006	0.004	0.601	0.006	0.039	0.006

AOI 2 PFAS Results



Summary

- One PFAS (PFOS) exceeded the screening levels in soil
- Three PFAS (PFOA, PFOS, and PFHxS) exceeded the screening levels in groundwater
- Conduct further action to evaluate PFAS impacts in soil and groundwater

Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	8/25/2022	mg/kg	0.00058 U	0.00058 U	0.00058 U	0.00058 U	0.00058 U	0.00058 U
1 - 1.5			0.00057 U	0.00057 U	0.00057 U	0.00057 U	0.00057 U	0.00057 U
30 - 30.5			0.00057 U	0.00057 U	0.00057 U	0.00057 U	0.00057 U	0.00057 U
Groundwater		µg/L	0.0016 J	0.0026 J	0.0024 U	0.0024 U	0.0019 J	0.0048 U

AOI2-PFAS-TW2

AOI2-PFAS-TW1								
Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	8/25/2022	mg/kg	0.00054 U	0.00054 U	0.00054 U	0.00054 U	0.00054 U	0.00054 U
1 - 1.5			0.00054 U	0.00054 U	0.00054 U	0.00054 U	0.00054 U	0.00054 U
32 - 32.5			0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U
Groundwater		µg/L	0.0065	0.0119	0.0022 J	0.0019 U	0.0131	0.0037 U

AOI 2:

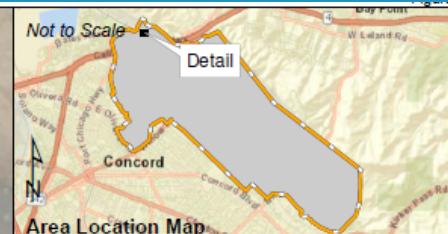
Existing Curb

AOI2-PFAS-TW1

AOI2-PFAS-TW3

AOI2-PFAS-TW3								
Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	8/29/2022	mg/kg	0.010	0.0917	0.00051 U	0.00088 J	0.00063 J	0.00051 U
1.5 - 2			0.0010 J	0.0486	0.00056 U	0.00033 J	0.00056 U	0.00056 U
25 - 25.5			0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U
Groundwater		µg/L	0.0125	0.0594	0.0038 J	0.0048 U	0.0429	0.0095 U

25718-MW20

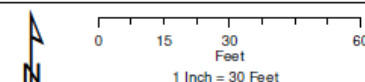


Legend

- Temporary Monitoring Well and Soil Sample for PFAS Sampling
- Existing Monitoring Well Not for PFAS Sampling
- General Groundwater Flow Direction (OTIE, 2018)
- Buildings
- PFAS AOI
- Former NWS Concord Boundary

Notes:
Soil results reported in mg/kg
Groundwater results reported in µg/L
Depth of soil sample reported in feet below ground surface
Bold = analyte detected in sample above the detection limit
Shaded results exceed the screening criteria

µg/L = micrograms per liter
AOI = Area of Interest
PFAS = per- and polyfluoroalkyl substances
PFOS = perfluorooctane sulfonic acid
PFBS = perfluorobutane sulfonic acid
PFHxS = perfluorohexanesulfonic acid
PFNA = perfluorononanoic acid
PFOA = perfluorooctanoic acid
NWS = Naval Weapons Station
U = not detected at or above the detection limit



Site Inspection for PFAS at AOIs 1, 2, 3, 4, 5, 6, 7 and 8
Former Naval Weapons Station Seal Beach
Detachment Concord, Concord California

Soil and Groundwater Sampling Results AOI 2 – Building IA-11 Adjacent Lot Northeast of Building

Media	Units	Screening Criteria					
		PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
Soil	mg/kg	0.019	0.013	1.9	0.019	0.13	0.023
Groundwater	µg/L	0.006	0.004	0.501	0.006	0.039	0.006

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FIGURE

6

AOI 3 PFAS Results



Summary

- No PFAS exceeded the screening levels in soil
- Two PFAS (PFOS and PFHxS) exceeded the screening levels in groundwater
- Conduct further action to evaluate PFAS impacts in groundwater

AOI 6:
(See Other Figure 10)

AO3-PFAS-TW1								
Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	9/2/2022	mg/kg	0.00051 U	0.00051 U	0.00051 U	0.00051 U	0.00051 U	0.00051 U
1 - 1.5			0.00051 U	0.00051 U	0.00051 U	0.00051 U	0.00051 U	0.00051 U
25 - 25.5			0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U
Groundwater		µg/L	0.0036 J	0.0726	0.0024 J	0.0019 U	0.0251	0.0037 U

AOI3-PFAS-TW2								
Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	9/2/2022	mg/kg	0.00053 U	0.00053 U	0.00053 U	0.00053 U	0.00053 U	0.00053 U
1 - 1.5			0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.00052 U
25 - 25.5			0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U
Groundwater		µg/L	0.0053 U	0.144	0.0053 U	0.0053 U	0.0251 J	0.011 U

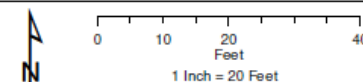
AOI-PFAS-TW3								
Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	9/2/2022	mg/kg	0.00053 U	0.00053 U	0.00053 U	0.00053 U	0.00053 U	0.00053 U
1.5 - 2			0.00053 U	0.00053 U	0.00053 U	0.00053 U	0.00053 U	0.00053 U
25 - 25.5			0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U
Groundwater		µg/L	0.0022 J	0.152	0.0029 J	0.0019 U	0.0377	0.0038 U
DUP04		µg/L	0.0020 J	0.142	0.0028 J	0.0019 U	0.0367	0.0038 U



Legend

- Temporary Monitoring Well and Soil Sample for PFAS Sampling
- Existing Monitoring Well Not for PFAS Sampling
- Approximate Location of Storm Drain Catch Basin
- General Groundwater Flow Direction (OTIE, 2018)
- Railroad
- Buildings
- PFAS AOI
- Former NWS Concord Boundary

Notes:
 Soil results reported in mg/kg
 Groundwater results reported in µg/L
 Depth of soil sample reported in feet below ground surface
 Bold - analysis detected in sample above the detection limit
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 J = estimated value
 J = estimated value with potential low analytical bias
 mg/kg = milligrams per kilogram
 PFAS = per- and polyfluoroalkyl substances
 PFBS = perfluorobutane sulfonic acid
 PFHxS = perfluorohexane sulfonic acid
 PFNA = perfluorononanoic acid
 PFOA = perfluorooctanoic acid
 PFOS = perfluorooctane sulfonic acid
 NWS = Naval Weapons Station
 U = not detected at or above the detection limit



Site Inspection for PFAS at AOIs 1, 2, 3, 4, 5, 6, 7 and 8
 Former Naval Weapons Station Seal Beach
 Detachment Concord, Concord California

Soil and Groundwater Sampling Results
 AOI 3 – Building IA-51
 Auto Maintenance Facility

Media	Units	Screening Criteria					
		PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
Soil	mg/kg	0.019	0.013	1.9	0.019	0.13	0.023
Groundwater	µg/L	0.006	0.004	0.501	0.006	0.039	0.006

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FIGURE

7

AOI 4 PFAS Results



Reference:
Onsida Total Integrated Enterprises (OTIE), 2018, Final Remedial Action Completion Report Solid Waste Management Units 2, 5, 7 And 18 Inland Area Former Naval Weapons Station Seal Beach Detachment Concord, California, December.
Basemap Source: ESRI Online Streaming Service 2023

Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	9/7/2022	mg/kg	0.00027 J	0.0024	0.00054 U	0.00054 U	0.00096 J	0.00054 U
1.5 - 2			0.00058 U	0.0010 J	0.00058 U	0.00058 U	0.00041 J	0.00058 U
22.5 - 23			0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U
Groundwater		µg/L	0.0122	0.0474	0.0047	0.0020	0.0459	0.0040

Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	9/8/2022	mg/kg	0.00037 J	0.0109	0.00053 U	0.00053 U	0.00096 J	0.00053 U
1.5 - 2			0.00120	0.00680	0.00059 U	0.00059 U	0.0012	0.00059 U
20.5 - 21			0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U
Groundwater		µg/L	0.0127	0.0512	0.0055	0.0020	0.0590	0.0040

Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	9/8/2022	mg/kg	0.00052 U	0.0036	0.00052 U	0.00052 U	0.00055 J	0.00052 U
1.5 - 2			0.00063 U	0.00067 J	0.00063 U	0.00063 U	0.0010 J	0.00063 U
21 - 21.5			0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U
Groundwater		µg/L	0.0109	0.0322	0.0052	0.0020	0.0505	0.0040

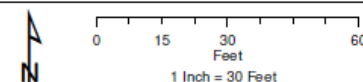


Legend

- Temporary Monitoring Well and Soil Sample for PFAS Sampling
- Approximate Location of Storm Drain Culvert
- General Groundwater Flow Direction (OTIE, 2018)
- Railroad
- Buildings
- PFAS AOI
- Former NWS Concord Boundary

Notes:
Soil results reported in mg/kg
Groundwater results reported in µg/L
Depth of soil sample reported in feet below ground surface
Bold = analyte detected in sample above the detection limit
Shaded results exceed the screening criteria

µg/L = micrograms per liter
AOI = Area of Interest
HFPO-DA = hexafluoropropylene oxide dimer acid
IA = Inland Area
J = estimated value
mg/kg = milligrams per kilogram
PFAS = per- and polyfluoroalkyl substances
PFBS = perfluorobutane sulfonic acid
PFHxS = perfluorohexanesulfonic acid
PFNA = perfluorononanoic acid
PFOA = perfluorooctanoic acid
PFOS = perfluorooctane sulfonic acid
NWS = Naval Weapons Station
U = not detected at or above the detection limit



Site Inspection for PFAS at AOIs 1, 2, 3, 4, 5, 6, 7 and 8
Former Naval Weapons Station Seal Beach
Detachment Concord, Concord California

Soil and Groundwater Sampling Results AOI 4 – Area North of Building IA-5

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FIGURE

8

Summary

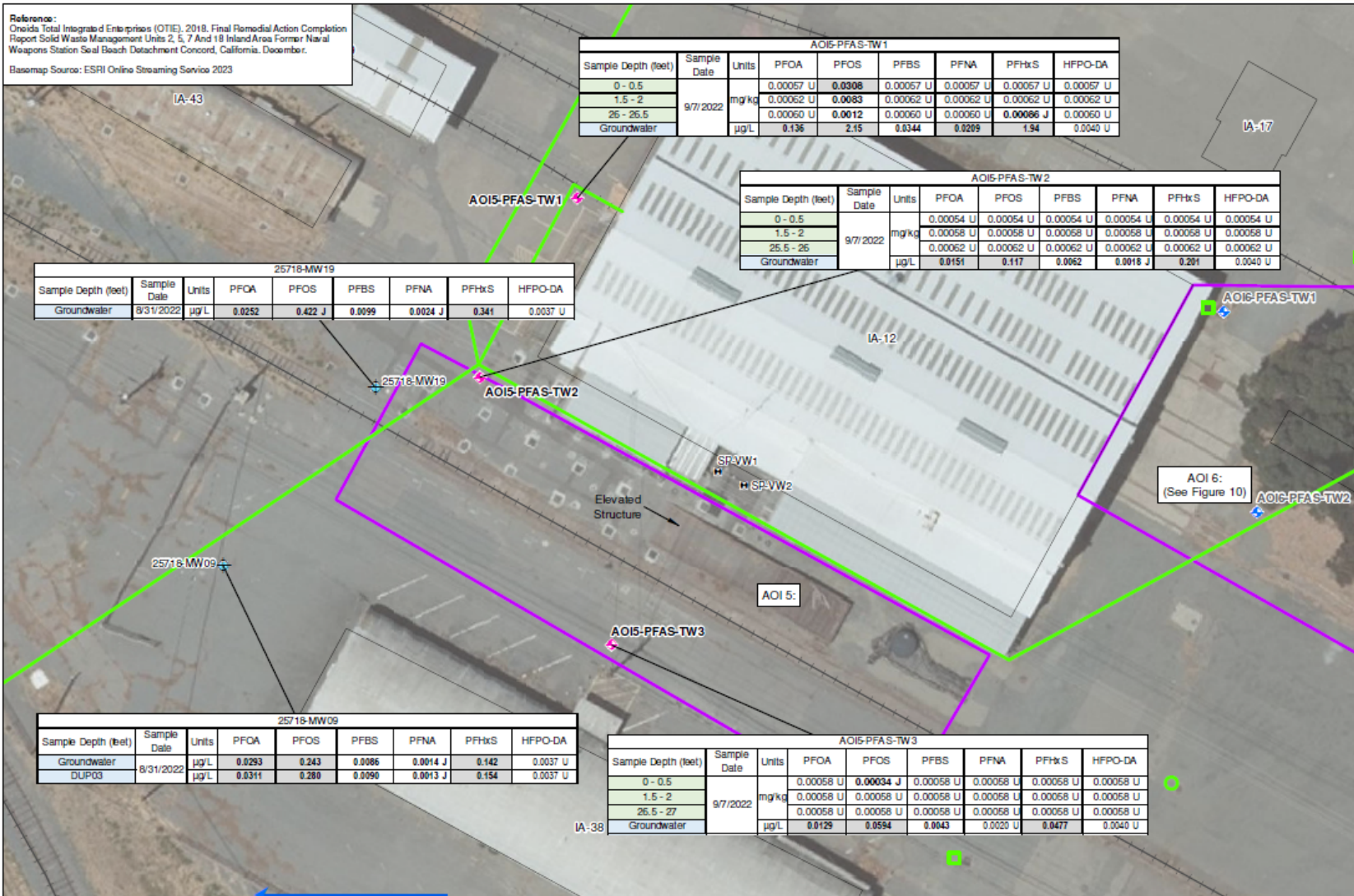
- No PFAS exceeded the screening levels in soil
- Four PFAS (PFOA, PFOS, PFNA, and PFHxS) exceeded the screening levels in groundwater
- Conduct further action to evaluate PFAS impacts in groundwater

Media	Units	Screening Criteria					
		PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
Soil	mg/kg	0.019	0.013	1.9	0.019	0.13	0.023
Groundwater	µg/L	0.006	0.004	0.501	0.006	0.039	0.006

AOI 5 PFAS Results



Reference: Oneida Total Integrated Enterprises (OTIE), 2018, Final Remedial Action Completion Report Solid Waste Management Units 2, 5, 7 And 18 Inland Area Former Naval Weapons Station Seal Beach Detachment Concord, California, December.
 Basemap Source: ESRI Online Streaming Service 2023

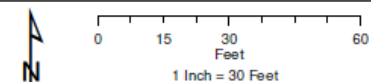


Legend

- ◆ Temporary Monitoring Well and Soil Sample for PFAS Sampling
- ◆ Existing Monitoring Well for PFAS Sampling
- ◆ Temporary Monitoring Well and Soil Sample for PFAS Sampling (See Other Figure)
- Existing Monitoring Well Not for PFAS Sampling
- Approximate Location of Storm Drain Catch Basin
- Approximate Location of Storm Drain Manhole
- Approximate Location of Storm Drain Line
- General Groundwater Flow Direction (OTIE, 2018)
- +—+— Railroad
- Buildings
- PFAS AOI
- Former NWS Concord Boundary

Groundwater results reported in µg/L
 Depth of soil sample reported in feet below ground surface
 Bold = analysis detected in sample above the detection limit
 Shaded results exceed the screening criteria

µg/L = micrograms per liter
 AOI = Area of Interest
 FD = field duplicate
 HFPO-DA = hexafluoropropylene oxide dimer acid
 IA = Inland Area
 J = estimated value
 mg/kg = milligrams per kilogram
 PFAS = per- and polyfluoroalkyl substances
 PFBS = perfluorobutane sulfonic acid
 PFHxS = perfluorohexanesulfonic acid
 PFNA = perfluorononanoic acid
 PFOA = perfluorooctanoic acid
 PFOS = perfluorooctane sulfonic acid
 NWS = Naval Weapons Station
 U = not detected at or above the detection limit



Site Inspection for PFAS at AOIs 1, 2, 3, 4, 5, 6, 7 and 8
 Former Naval Weapons Station Seal Beach
 Detachment Concord, Concord California

Soil and Groundwater Sampling Results AOI 5 – South of Building IA-12

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 DATE: February 2023
 DRAWN BY: KOB
 CHECKED BY: LC



FIGURE

9

Summary

- One PFAS (PFOS) exceeded the screening levels in soil
- Three PFAS (PFOA, PFOS, and PFHxS) exceeded the screening levels in groundwater
- Conduct further action to evaluate PFAS impacts in soil and groundwater

		Screening Criteria					
		PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
Soil	mg/kg	0.019	0.013	1.9	0.019	0.13	0.023
Groundwater	µg/L	0.006	0.004	0.601	0.006	0.039	0.006

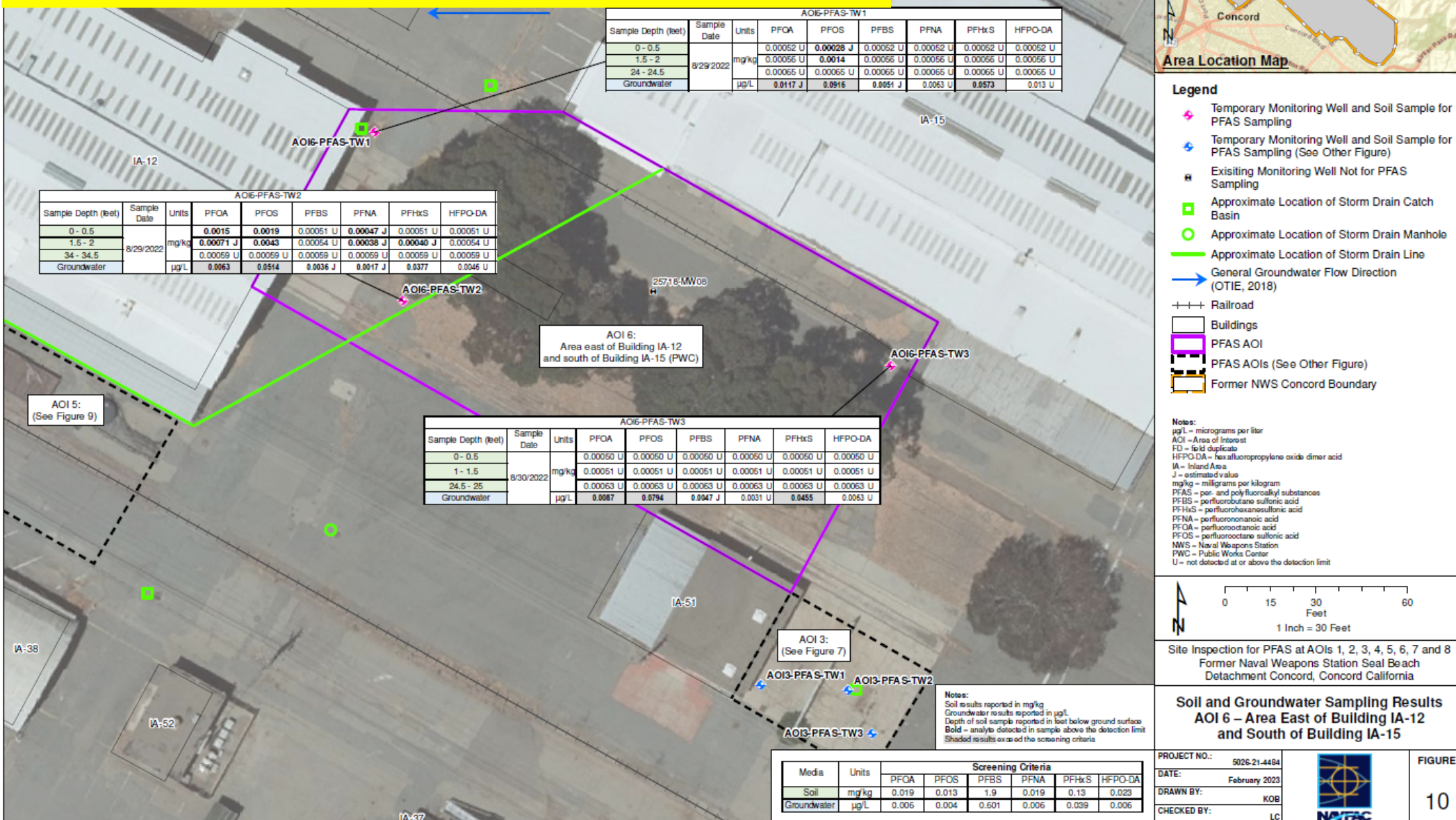
IA-13

AOI 6 PFAS Results



Summary

- No PFAS exceeded the screening levels in soil
- Three PFAS (PFOA, PFOS, and PFHxS) exceeded the screening levels in groundwater
- Conduct further action to evaluate PFAS impacts in groundwater



AOI 7 PFAS Results



Reference: Onidea Total Integrated Enterprises (OTIE), 2018, Final Remedial Action Completion Report Solid Waste Management Units 2, 5, 7 And 18 Inland Area Former Naval Weapons Station Seal Beach Detachment Concord, California, December.
Basemap Source: ESRI Online Streaming Service 2023

Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	8/31/2022	mg/kg	0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.00052 U
1 - 1.5			0.00053 U	0.00036 J	0.00053 U	0.00053 U	0.00053 U	0.00053 U
19 - 19.5			0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U
Groundwater		µg/L	0.010	0.0130	0.0026 J	0.0017 J	0.0169	0.0041 U

Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	8/30/2022	mg/kg	0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.0026 U
1.5 - 2			0.00053 U	0.00027 J	0.00053 U	0.00053 U	0.00053 U	0.0027 U
13 - 13.5			0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U
Groundwater		µg/L	0.0125	0.0294	0.0042	0.0011 J	0.0337	0.0037 U

Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	8/30/2022	mg/kg	0.00054 U	0.00037 J	0.00054 U	0.00054 U	0.00054 U	0.00064 U
1 - 1.5			0.00053 U	0.00077 J	0.00053 U	0.00053 U	0.00053 U	0.00053 U
34 - 34.5			0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U
Groundwater		µg/L	0.0171	0.0295	0.0048 J	0.0028 U	0.0306	0.0056 U

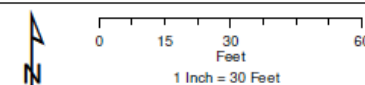


Legend

- Temporary Monitoring Well and Soil Sample for PFAS Sampling
- General Groundwater Flow Direction (OTIE, 2018)
- Buildings
- PFAS AOI
- Former NWS Concord Boundary

Notes:
Soil results reported in mg/kg
Groundwater results reported in µg/L
Depth of soil sample reported in feet below ground surface
Bold = analyte detected in sample above the detection limit
Shaded results exceed the screening criteria

µg/L = micrograms per liter
AOI = Area of Interest
HFPO-DA = hexafluoropropylene oxide dimer acid
IA = Inland Area
J = estimated value
J = estimated value with potential low analytical bias
mg/kg = milligrams per kilogram
PFAS = per- and polyfluoroalkyl substances
PFBS = perfluorobutane sulfonic acid
PFHxS = perfluorohexane sulfonic acid
PFNA = perfluorononanoic acid
PFOA = perfluorooctanoic acid
PFOS = perfluorooctane sulfonic acid
NWS = Naval Weapons Station
U = not detected at or above the detection limit



Site Inspection for PFAS at AOIs 1, 2, 3, 4, 5, 6, 7 and 8
Former Naval Weapons Station Seal Beach
Detachment Concord, Concord California

Soil and Groundwater Sampling Results AOI 7 – Parade Ground – Drill Area

PROJECT NO.: 5025-21-4484
DATE: February 2023
DRAWN BY: KOB
CHECKED BY: LC



FIGURE

11

Summary

- No PFAS exceeded the screening levels in soil
- Two PFAS (PFOA and PFOS) exceeded the screening levels in groundwater
- Conduct further action to evaluate PFAS impacts in groundwater

Media	Units	Screening Criteria					
		PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
Soil	mg/kg	0.019	0.013	1.9	0.019	0.13	0.023
Groundwater	µg/L	0.006	0.004	0.501	0.006	0.039	0.006

AOI 8 PFAS Results



Summary

- No PFAS exceeded the screening levels in soil
- No PFAS exceeded the screening levels in groundwater
- No further action in soil or groundwater

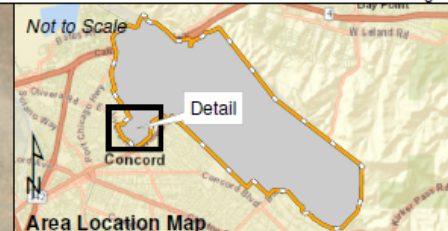
Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	8/24/2022	mg/kg	0.00050 U	0.00025 J	0.00050 U	0.00050 U	0.00050 U	0.00050 U
1.5 - 2			0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U
3.5 - 4			0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U	0.00061 U
18 - 18.5			0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U
Groundwater		µg/L	0.0020 U	0.0020 U	0.0051	0.0020 U	0.0049	0.0040 U

Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	8/24/2022	mg/kg	0.00050 U	0.00031 J	0.00050 U	0.00050 U	0.00050 U	0.00050 U
1 - 1.5			0.00060 U	0.00060 U	0.00060 U	0.00060 U	0.00060 U	0.00060 U
3 - 3.5			0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U
13.5 - 14			0.00060 U	0.00060 U	0.00060 U	0.00060 U	0.00060 U	0.00060 U
Groundwater		µg/L	0.0018 J	0.0023 J	0.0044	0.0012 J	0.0056	0.0040 U

Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	8/24/2022	mg/kg	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
1.5 - 2			0.00058 U	0.00058 U	0.00058 U	0.00058 U	0.00058 U	0.00058 U
3.5 - 4			0.00060 U	0.00060 U	0.00060 U	0.00060 U	0.00060 U	0.00060 U
17 - 17.5			0.00064 U	0.00064 U	0.00064 U	0.00064 U	0.00064 U	0.00064 U
Groundwater		µg/L	0.0019 U	0.0019 J	0.0051	0.0019 U	0.0048	0.0037 U
DUP02		µg/L	0.0020 U	0.0020 U	0.0051	0.0020 U	0.0048	0.0040 U

Sample Depth (feet)	Sample Date	Units	PFOA	PFOS	PFBS	PFNA	PFHxS	HFPO-DA
0 - 0.5	8/24/2022	mg/kg	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U
1.5 - 2			0.00060 U	0.00060 U	0.00060 U	0.00060 U	0.00060 U	0.00060 U
2.5 - 3			0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U
17.5 - 18			0.00063 U	0.00063 U	0.00063 U	0.00063 U	0.00063 U	0.00063 U
Groundwater		µg/L	0.0022 J	0.0032 J	0.0044 J	0.0024 U	0.0052	0.0048 U

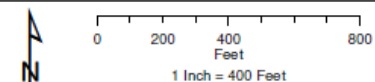
Media	Units	Screening Criteria					
Soil	mg/kg	0.019	0.013	1.9	0.019	0.13	0.023
Groundwater	µg/L	0.006	0.004	0.501	0.006	0.039	0.006



Legend

- Temporary Monitoring Well and Soil Sample for PFAS Sampling
- Existing Monitoring Well Not for PFAS Sampling
- Railroad
- General Groundwater Flow Direction (MMEC, 2021)
- Clayton Canal/Contra Costa Canal
- Buildings
- PFAS AOI
- RDA Boundary
- Freshwater Marsh (H.T. Harvey, 2011)
- Other Waters (H.T. Harvey, 2011)
- Seasonal Wetland (H.T. Harvey, 2011)
- Former NWS Concord Boundary

Notes:
 Soil results reported in mg/kg
 Groundwater results reported in µg/L
 Depth of soil sample reported in feet below ground surface
 Bold = analyte detected in sample above the detection limit
 µg/L = micrograms per liter
 AOI = Area of Interest
 FD = field duplicate
 HFPO-DA = hexafluorooxypentane dimer acid
 J = estimated value
 J+ = estimated value with potential high analytical bias
 mg/kg = milligrams per kilogram
 PFAS = per- and polyfluoroalkyl substances
 PFBS = perfluorobutane sulfonic acid
 PFHxS = perfluorohexanesulfonic acid
 PFNA = perfluorononanoic acid
 PFOA = perfluorooctanoic acid
 PFOS = perfluorooctane sulfonic acid
 NWS = Naval Weapons Station
 RDA = Runway Debris Area
 SWMU = Solid Waste Management Unit
 U = not detected at or above the detection limit
 UKO = Unexploded Ordnance



Site Inspection for PFAS at AOIs 1, 2, 3, 4, 5, 6, 7 and 8
 Former Naval Weapons Station Seal Beach
 Detachment Concord, Concord California

Soil and Groundwater Sampling Locations
 AOI 8 – UXO-14
 Runway Debris Area Near Old Forklift School

PROJECT NO.: 5025-21-4484
 DATE: February 2023
 DRAWN BY: KOB
 CHECKED BY: LC



FIGURE

12

QUESTIONS

