Seattle-Tacoma International Airport
P.O. Box 68727
Seattle, WA 98168
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www.portseattle.org

September 27, 2023

Barry Rogowski
Program Manager, Toxics Cleanup Program
Washington State Department of Ecology
300 Desmond Drive SE
Lacey, Washington 98503

Dear Mr. Rogowski:

The Port of Seattle (Port) as owner and operator of Seattle-Tacoma International Airport (SEA) is aware that the use of aqueous film-forming foam (AFFF), historically mandated by the Federal Aviation Administration (FAA), may have resulted in contamination of soil and groundwater at SEA (Figure 1) with per- and polyfluorinated alkyl substances (PFAS). Our Environment and Sustainability Department and the SEA Fire Department have been working together to transition SEA's operations away from AFFF as soon as feasible following approval of fluorine-free alternatives by the Department of Defense and (concurrently) by the FAA. Until such time, the Port has taken action to minimize releases of AFFF via the use of self-contained systems testing equipment, and off-site training of fire crews to maintain emergency readiness protective of both human life and the environment, and an education campaign for both SEA fire fighters as well as facility tenants and operators. Other actions have included the evaluation of both Port and tenant-owned fixed systems for AFFF replacement, development of system-specific spill response plans for facilities with AFFF, and the integration of PFAS testing in construction practices.

In 2018 following the state of Washington's promulgation of the Revised Code of Washington Chapter 70A.400 Firefighting Agents and Equipment-Toxic Chemical Use, which the Port advocated for, the Port began planning for elimination of AFFF use at SEA. This planning work is ongoing. Additionally, the Port has performed a thorough review of the operational history of SEA to identify areas where AFFF was known or suspected to have been used or released to the environment due to either emergency response actions, regular equipment maintenance/testing, or the accidental discharge of fixed fire-suppression systems. These areas, as illustrated on Figure 2, were then prioritized based on the extent of historical release for further evaluation. Since 2019, three areas at SEA have been the subject of targeted sampling programs intended to define the nature and extent (if any) of PFAS contamination in the underlying soil and groundwater. These areas include the primary Fire Station area, the former on-site fire training area, and the current fuel tank farm. SEA has undertaken a series of sampling events, including the installation and semiannual sampling of an on-site groundwater monitoring well network, as indicated on Figure 3. Soil and groundwater data are summarized in Tables X and Y, and exceedances of the Model Toxics Control Act (MTCA) screening values published in the June 2023 Guidance for Investigating and Remediating PFAS Contamination in Washington State are highlighted.

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The Port recognizes that these exceedances warrant disclosure to Ecology under MTCA, and this letter is intended to meet the Site discovery and reporting requirements of WAC 173-340-300. My team is ready to begin discussions to determine next steps for PFAS investigation and remediation at SEA. In the meantime, we will continue semi-annual groundwater monitoring and, as resources allow, continue investigation to more fully define the nature and extent of PFAS at the facility associated with historical uses of AFFF.

Please reach out to my Contaminated Soil and Groundwater Program Manager, Megan King at (206) 861-6279 or king.m@portseattle.org with any questions, and we look forward to engaging with you on this work.

Sincerely,

Sarah Cox

Sarah Cox
Director, Aviation Environment and Sustainability
Port of Seattle

Cc:
John Evered, Senior Manager
Megan King, Senior Environmental Program Manager
Elizabeth Black, Deputy General Counsel

Attachments:

Table 1	Summary of Analytical Results for Soil
Table 2	Summary of Analytical Results for Groundwater
Figure 1	Vicinity Map
Figure 2	Areas of Known or Suspected Aqueous Film-Forming Foam (AFFF) Use and Release
Figure 3	Groundwater Investigation Locations–Port of Seattle Tank Farm Vicinity
Figure 4	Soil and Groundwater Investigation Locations–Port of Seattle Fire Station Vicinity
Figure 5	Soil Investigation Locations–Port of Seattle Tank Farm Vicinity and Former Fire Training Area Vicinity

TABLE 1
SUMMARY OF ANALYTICAL RESULTS FOR SOIL
PORT OF SEATTLE
SEATTLE - TACOMA INTERNATIONAL AIRPORT
SEATAC, WA

	Action Level		Port of Seatle Fire Station Area										
Location			MW-01	MW-01	MW-01	MW-01	MW-01	MW-02	MW-02	MW-02	MW-02	MW-02	DU1
Sample ID	Washington State Soil Vadose Zone MethodB	Washington State Soil Vadose Zone SAL	MW1-0203-22719 SOIL	MW1-1011-22719 SOIL	MW1-5051-22719 SOIL	MW1-8284-22819 SOIL	MW1-9899-22819 SOIL	MW2-0203-3119 SOIL	MW2-1011-3119 SOIL	MW2-5051-3119 SOIL	MW2-8284-3119 SOIL	MW2-9597-3119 SOIL	DUI-GRAB1-20181212
Sample Date			02/27/2019	02/27/2019	02/27/2019	02/28/2019	02/28/2019	03/01/2019	03/01/2019	03/01/2019	03/01/2019	03/01/2019	12/12/2018
Depth (ft BGS)			2.0 - 3.0 (ft)	10 - 11 (ft)	50 - 51 (ft)	82 - 84 (ft)	98 - 99 (ft)	2.0 - 3.0 (ft)	10 - 11 (ft)	50 - 51 (ft)	82 - 84 (ft)	95 - 97 (ft)	0.5 - 1.0 (ft)
Sample Type			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
PFAS (ug/kg)													
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	--	--	< 0.41	< 0.42	< 0.40	< 0.38	< 0.39	< 0.40	< 0.39	< 0.45	< 0.40	< 0.39	< 0.41
N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	--	--	< 0.43	< 0.44	< 0.43	< 0.40	< 0.41	< 0.42	< 0.41	< 0.47	< 0.42	< 0.41	< 0.44
Perfluorobutanesulfonic acid (PFBS)	25	1.8	< 0.028	< 0.028	< 0.027	**0.072 J**	< 0.026	< 0.027	**0.24**	**0.030 J**	**0.076 J**	< 0.027	< 0.028
Perfluorodecanoic acid (PFDA)	--	--	**8.6**	**18**	< 0.024	< 0.022	< 0.023	**0.67**	< 0.023	< 0.027	< 0.024	< 0.023	**41**
Perfluorododecanoic acid (PFDoDA)	--	--	**1.1**	**1.5**	< 0.073	< 0.068	< 0.071	**1.3**	< 0.071	< 0.081	< 0.072	< 0.071	**12**
Perfluoroheptanoic acid (PFHpA)	--	--	**0.40**	**0.93**	**0.63**	**0.32**	< 0.031	**1.6**	**3.8**	**0.074 J**	**0.19 J**	< 0.031	**1.2**
Perfluorohexanesulfonic acid (PFHxS)	0.97	0.41	**1.1**	**0.75**	**0.61**	**0.37**	< 0.033	**1.7**	**17**	**0.087 J**	**1.3**	**0.047 J**	**0.34**
Perfluorohexanoic acid (PFHxA)	35	--	**0.94**	**2.4**	**0.35**	**0.64**	< 0.044	**1.9**	**2.3**	**0.086 J**	**0.49**	< 0.045	**2.4**
Perfluorononanoic acid (PFNA)	0.36	0.08	**91**	**120**	**1.7**	< 0.037	< 0.038	**320**	**0.074 J**	**5.0**	**4.2**	< 0.038	**30**
Perfluorooctanesulfonic acid (PFOS)	0.55	0.17	**57**	**26**	< 0.22	< 0.20	< 0.21	**25 J**	< 0.21	< 0.24	< 0.22	< 0.21	**120**
Perfluorooctanoic acid (PFOA)	0.3	0.063	**2.6**	**3.5**	**1.4**	**0.19 J**	< 0.091	**4.4**	**53**	**0.10 J**	**1.2**	< 0.091	**6.8**
Perfluorotetradecanoic acid (PFTeDA)	--	--	**0.17 J**	**1.3**	< 0.059	< 0.055	< 0.057	**0.46**	< 0.057	< 0.066	< 0.058	< 0.057	**3.8**
Perfluorotridecanoic acid (PFTrDA)	--	--	**17**	**90**	< 0.056	< 0.052	< 0.054	**45**	< 0.054	**1.0**	< 0.055	< 0.054 F1	**210**
Perfluoroundecanoic acid (PFUnDA)	--	--	**850**	**160**	**0.043 J**	< 0.037	< 0.038	**46**	**0.044 J**	**0.91**	< 0.039	< 0.038	**510**

Notes:
J - Estimated Value
ft - feet below ground surface

TABLE 1
SUMMARY OF ANALYTICAL RESULTS FOR SOIL
PORT OF SEATTLE
SEATTLE - TACOMA INTERNATIONAL AIRPORT
SEATAC, WA

	Action Level		Port of Seatle Fire Station Area												
Location			DU1	DU1-A	DU1-B	DU1-B	DU2	DU2	DU2-A	DU3	DU3	DU3-A	DU4	DU4	DU4-A
Sample ID	Washington State Soil Vadose Zone MethodB	Washington State Soil Vadose Zone SAL	DUI-GRAB2-20181212	DUI-A-20181212	DUI-B-20181212	DUI-C-20181212	DU2-GRAB1-20181213	DU2-GRAB2-20181213	DU2-A-20181213	DU3-GRAB1-20181213	DU3-GRAB2-20181213	DU3-A-20181213	DU4-GRAB1-20181213	DU4-GRAB2-20181213	DU4-A-20181213
Sample Date			12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/13/2018	12/13/2018	12/13/2018	12/13/2018	12/13/2018	12/13/2018	12/13/2018	12/13/2018	12/13/2018
Depth (ft BGS)			0.5 - 1.0 (ft)	0.5 - 1.0 (ft)	0.5 - 1.0 (ft)	0.5 - 1.0 (ft)	0.5 - 1.0 (ft)	0.5 - 1.0 (ft)	0.5 - 1.0 (ft)	0.5 - 1.0 (ft)	0.5 - 1.0 (ft)	0.5 - 1.0 (ft)	0.5 - 1.0 (ft)	0.5 - 1.0 (ft)	0.5 - 1.0 (ft)
Sample Type			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
PFAS (ug/kg)															
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	--	--	< 0.39	< 0.37	< 0.36 F1	< 0.36	< 4.3	< 4.4	< 3.8	< 4.3	< 4.4	< 0.37	< 0.41	< 0.41	< 0.37
N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	--	--	< 0.41	< 0.39	< 0.38	< 0.38	< 4.5	< 4.6	< 0.40	< 4.5	< 4.6	< 0.39	< 0.43	< 0.43	< 0.39
Perfluorobutanesulfonic acid (PFBS)	25	1.8	< 0.027	< 0.025	**0.029 J**	**0.026 J**	< 0.29	< 0.30	**0.047 J**	< 0.29	< 0.30	< 0.025	< 0.028	< 0.028	< 0.025
Perfluorodecanoic acid (PFDA)	--	--	**68**	**40**	**31**	**43**	**45**	**22**	**29**	**8.1**	**4.7**	**7.4**	**1.2**	**0.75**	**0.79**
Perfluorododecanoic acid (PFDoDA)	--	--	**6.8**	**10**	**12**	**15**	**55**	**59**	**93**	**43**	**12**	**13**	**2.2**	**0.33**	**1.3**
Perfluoroheptanoic acid (PFHpA)	--	--	**2.0**	**1.6**	**2.1**	**1.9**	**2.4**	**1.8 J**	**1.4**	**0.48 J**	< 0.34	**0.34**	**0.38**	**0.11 J**	**0.13 J**
Perfluorohexanesulfonic acid (PFHxS)	0.97	0.41	**0.90**	**0.60**	**0.69**	**0.75**	**0.56 J**	**3.6**	**2.0**	**0.65 J**	< 0.37	**0.13 J**	< 0.034	< 0.034	**0.044 J**
Perfluorohexanoic acid (PFHxA)	35	--	**6.7**	**3.9**	**5.2 F1**	**5.3**	**3.8**	**3.2**	**3.3**	**0.84 J**	< 0.50	**0.53**	**0.44**	**0.20 J**	**0.13 J**
Perfluorononanoic acid (PFNA)	0.36	0.08	**89**	**65**	**58**	**41**	**88**	**19**	**45**	**5.5**	**3.5**	**6.9**	**0.80**	**0.14 J**	**0.32**
Perfluorooctanesulfonic acid (PFOS)	0.55	0.17	**210**	**120**	**130**	**140**	**49**	**57**	**67**	**18**	< 2.4	**3.0**	< 0.22	< 0.22	**0.24 J**
Perfluorooctanoic acid (PFOA)	0.3	0.063	**6.2**	**5.2**	**5.9 F1**	**6.2**	**5.4**	**5.6**	**5.0**	**1.5 J**	< 1.0	**0.76**	**0.26**	**0.29**	**0.23**
Perfluorotetradecanoic acid (PFTeDA)	--	--	**2.5**	**2.8**	**3.5**	**4.9**	**9.4**	**35**	**30**	**5.5**	**3.3**	**3.0**	**0.51**	**0.13 J**	**0.30**
Perfluorotridecanoic acid (PFTrDA)	--	--	**170**	**190**	**240**	**310**	**1,300**	**2,200**	**1,600**	**830**	**390**	**230**	**34**	**1.5**	**19**
Perfluoroundecanoic acid (PFUnDA)	--	--	**460**	**470**	**470**	**530**	**2,300**	**1,300**	**1,600**	**520**	**250**	**400**	**92**	**8.5**	**36**

Notes:
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TABLE 1
SUMMARY OF ANALYTICAL RESULTS FOR SOIL
PORT OF SEATTLE
SEATTLE - TACOMA INTERNATIONAL AIRPORT
SEATAC, WA

	Action Level		Former Fire Training Area										
Location	Washington State Soil Vadose Zone MethodB	Washington State Soil Vadose Zone SAL	FTP-01	FTP-02	FTP-03	FTP-04	FTP-05	FTP-06	FTP-07	FTP-08	FTP-09	FTP-10	FTP-11	FTP-12
Sample ID			FTP1-GRAB-20201014	FTP2-GRAB-20201014	FTP3-GRAB-20201014	FTP4-GRAB-20201014	FTP5-GRAB-20201014	FTP6-GRAB-20201014	FTP7-GRAB-20201014	FTP8-GRAB-20201014	FTP9-GRAB-20201014	FTP10-GRAB-20201014	FTP11-GRAB-20201014	FTP12-GRAB-20201014
Sample Date			10/14/2020	10/14/2020	10/14/2020	10/14/2020	10/14/2020	10/14/2020	10/14/2020	10/14/2020	10/14/2020	10/14/2020	10/14/2020	10/14/2020
Depth (ft BGS)			0.83 (ft)	1.0 (ft)	1.5 (ft)	1.5 (ft)	1.5 (ft)	1.5 (ft)	1.5 (ft)	1.5 (ft)	1.5 (ft)	1.0 (ft)	1.5 (ft)	0.83 (ft)
Sample Type			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
PFAS (ug/kg)														
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	--	--	< 0.40	< 0.40	< 0.41	< 0.41	< 0.43	< 0.41	< 0.38	< 0.39	< 0.43	< 0.39	< 0.39	< 0.39
N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	--	--	< 0.42	< 0.42	< 0.43	< 0.43	< 0.45	< 0.44	< 0.40	< 0.42	< 0.46	< 0.41	< 0.41	< 0.42
Perfluorobutanesulfonic acid (PFBS)	25	1.8	< 0.027	< 0.027	< 0.027	< 0.028	< 0.029	< 0.028	< 0.026	< 0.027	< 0.029	< 0.026	**1.0**	< 0.027
Perfluorodecanoic acid (PFDA)	--	--	**0.079 J**	**0.072 J**	**0.044 J**	< 0.024	**0.031 J**	**0.029 J**	**0.090 J**	**0.13 J**	**0.47**	< 0.023	**0.069 J**	< 0.023
Perfluorododecanoic acid (PFDoDA)	--	--	< 0.073	< 0.072	< 0.074	< 0.075	< 0.078	< 0.075	**0.21**	< 0.071	**0.15 J**	< 0.071	< 0.070	< 0.071
Perfluoroheptanoic acid (PFHpA)	--	--	**0.36**	**0.046 J**	**0.12 J**	**0.033 J**	**0.043 J**	**0.041 J**	**0.060 J**	**0.050 J**	**0.14 J**	< 0.031	**1.0**	< 0.031
Perfluorohexanesulfonic acid (PFHxS)	0.97	0.41	< 0.034	**0.041 J**	< 0.034	< 0.034	< 0.036	< 0.035	**0.053 J**	**0.046 J**	**0.31**	< 0.033	**0.87**	< 0.033
Perfluorohexanoic acid (PFHxA)	35	--	**0.29**	< 0.045	**0.13 J**	< 0.047	< 0.049	< 0.047	**0.080 J**	**0.057 J**	**0.13 J**	< 0.044	**3.1**	< 0.045
Perfluorononanoic acid (PFNA)	0.36	0.08	**0.27**	**0.18 J**	< 0.040	< 0.040	**0.14 J**	**0.13 J**	**0.17 J**	**0.99**	**1.8**	< 0.038	**8.2**	< 0.038
Perfluorooctanesulfonic acid (PFOS)	0.55	0.17	< 0.54	**0.61**	< 0.55	< 0.56	< 0.58	**0.62**	< 0.51	**1.2**	**3.8**	< 0.21	**1.7**	< 0.21
Perfluorooctanoic acid (PFOA)	0.3	0.063	**0.12 J**	< 0.092	< 0.094	< 0.096	< 0.10	< 0.096	**0.12 J**	< 0.092	**0.26**	< 0.091	**0.43**	< 0.092
Perfluorotetradecanoic acid (PFTeDA)	--	--	< 0.059	< 0.058	< 0.059	< 0.060	< 0.063	< 0.060	**0.10 J**	< 0.057	**0.069 J**	< 0.057	< 0.057	< 0.058
Perfluorotridecanoic acid (PFTrDA)	--	--	**0.15 J**	**0.35**	< 0.056	< 0.057	< 0.059	< 0.057	**4.6**	**0.58**	**0.28**	< 0.054	**0.46**	< 0.054
Perfluoroundecanoic acid (PFUnDA)	--	--	**0.28**	**0.67**	< 0.040	< 0.040	**0.044 J**	**0.055 J**	**6.8**	**1.1**	**4.5**	< 0.038	**0.77**	< 0.038

Notes:
J - Estimated Value
ft - feet below ground surface

TABLE 1
SUMMARY OF ANALYTICAL RESULTS FOR SOIL
PORT OF SEATTLE
SEATTLE - TACOMA INTERNATIONAL AIRPORT
SEATAC, WA

	Action Level		Industrial Waste System Area								Fuel Farm Area				
Location	Washington State Soil Vadose Zone MethodB	Washington State Soil Vadose Zone SAL	IWS-01	IWS-02	IWS-03	IWS-04	IWS-05	IWS-06	IWS-07	IWS-08	FF-01	FF-02	FF-03	FF-04	FF-05
Sample ID			IWS1-GRAB-20201014	IWS2-GRAB-20201014	IWS3-GRAB-20201014	IWS4-GRAB-20201014	IWS5-GRAB-20201015	IWS6-GRAB-20201015	IWS7-GRAB-20201015	IWS8-GRAB-20201015	FF1-GRAB-20201013	FF2-GRAB-20201013	FF3-GRAB-20201013	FF4-GRAB-20201013	FF5-GRAB-20201013
Sample Date			10/14/2020	10/14/2020	10/14/2020	10/14/2020	10/15/2020	10/15/2020	10/15/2020	10/15/2020	10/13/2020	10/13/2020	10/13/2020	10/13/2020	10/13/2020
Depth (ft BGS)			1.0 (ft)	1.0 (ft)	1.0 (ft)	1.0 (ft)	1.5 (ft)	1.2 (ft)	1.5 (ft)	2.0 (ft)	2.0 (ft)	2.0 (ft)	0.75 (ft)	0.67 (ft)	1.0 (ft)
Sample Type			Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
PFAS (ug/kg)															
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	--	--	< 0.40	< 0.38	< 0.40	< 0.38	< 0.39	< 0.39	< 0.40	< 0.40	< 0.39	< 0.41	< 0.41	< 0.41	< 0.45
N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	--	--	< 0.42	< 0.40	< 0.42	< 0.40	< 0.42	< 0.42	< 0.42	< 0.42	< 0.41	< 0.43	< 0.43	< 0.43	< 0.48
Perfluorobutanesulfonic acid (PFBS)	25	1.8	< 0.027	< 0.025	< 0.027	< 0.026	< 0.027	< 0.027	< 0.027	< 0.027	< 0.026	< 0.028	< 0.028	< 0.028	< 0.030
Perfluorodecanoic acid (PFDA)	--	--	**0.90**	**0.25**	**1.7**	**0.22**	**4.1**	**3.0**	**3.9**	< 0.024	**0.032 J**	**0.29**	**0.068 J**	**0.050 J**	< 0.027
Perfluorododecanoic acid (PFDoDA)	--	--	**0.46**	**0.12 J**	**5.8**	**0.094 J**	**0.25**	**0.56**	**0.26**	< 0.072	< 0.070	< 0.075	< 0.074	< 0.074	< 0.082
Perfluoroheptanoic acid (PFHpA)	--	--	**0.28**	**0.056 J**	**0.20 J**	**0.039 J**	**0.12 J**	**1.7**	**0.55**	< 0.031	**0.10 J**	**0.11 J**	**0.23**	**0.059 J**	< 0.035
Perfluorohexanesulfonic acid (PFHxS)	0.97	0.41	**0.090 J**	< 0.031	**0.034 J**	< 0.032	< 0.033	**0.037 J**	< 0.033	< 0.033	< 0.032	< 0.035	< 0.034	< 0.034	< 0.038
Perfluorohexanoic acid (PFHxA)	35	--	**0.55**	**0.060 J**	**0.27**	**0.054 J**	**0.23**	**2.3**	**0.83**	< 0.045	**0.30**	**0.30**	**0.20 J**	**0.087 J**	< 0.051
Perfluorononanoic acid (PFNA)	0.36	0.08	**0.59**	**0.14 J**	**0.75**	**0.18 J**	**1.2**	**1.3**	**2.6**	< 0.039	< 0.038	**0.17 J**	**0.056 J**	**0.10 J**	< 0.044
Perfluorooctanesulfonic acid (PFOS)	0.55	0.17	**0.64**	< 0.51	< 0.54	< 0.52	**0.26 J**	**0.38 J**	**0.50 J**	**0.52 J**	< 0.52	< 0.56	< 0.22	< 0.22	< 0.24
Perfluorooctanoic acid (PFOA)	0.3	0.063	**0.38**	**0.13 J**	**0.68**	**0.14 J**	**0.63**	**2.3**	**1.7**	< 0.092	**0.19 J**	**0.36**	**0.21 J**	< 0.095	< 0.10
Perfluorotetradecanoic acid (PFTeDA)	--	--	**0.18 J**	< 0.055	**2.0**	< 0.056	**0.065 J**	**0.11 J**	**0.10 J**	< 0.058	< 0.057	< 0.060	< 0.059	< 0.060	< 0.066
Perfluorotridecanoic acid (PFTrDA)	--	--	**1.3**	**0.86**	**4.4**	**0.25**	**0.24**	**1.5**	**2.7**	< 0.055	< 0.053	**0.091 J**	< 0.056	**0.064 J**	< 0.062
Perfluoroundecanoic acid (PFUnDA)	--	--	**1.6**	**1.5**	**3.0**	**0.58**	**0.95**	**1.1**	**1.4**	**0.058 J**	< 0.038	**0.16 J**	**0.062 J**	**0.042 J**	**0.054 J**

Notes:
J - Estimated Value
ft - feet below ground surface

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
PORT OF SEATTLE
SEATTLE - TACOMA INTERNATIONAL AIRPORT
SEATAC, WA

	Action Level	Port of Seattle Fire Station Area										
Location	Washington State Preliminary Groundwater Cleanup Levels	MW-01	MW-01	MW-01	MW-01	MW-01	MW-01	MW-01	MW-01	MW-01	MW-01	MW-01
Sample Date		03/25/2019	03/25/2019	10/11/2019	10/11/2019	06/05/2020	10/15/2020	04/27/2021	10/11/2021	05/04/2022	12/14/2022	04/18/2023
Sample Type		Primary	Duplicate	Primary	Duplicate	Primary	Primary	Primary	Primary	Primary	Primary	Primary
PFAS (ng/L)												
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	--	< 2.0	< 1.8	< 1.7	< 1.8	< 1.6	< 1.2	< 1.2	< 1.2	< 1.2	< 1.3	< 1.3
N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	--	< 3.2	< 3.0	< 2.8	< 2.9	< 2.7	< 1.1	< 1.1	< 1.1	< 1.1	< 1.2	< 1.2
Perfluorobutanesulfonic acid (PFBS)	345	**2.9**	**2.6**	**5.7**	**5.6**	**12**	**16**	**13**	**26**	**14**	**11**	**18**
Perfluorodecanoic acid (PFDA)	--	**1.6 J**	**1.4 J**	**0.70 J**	**0.88 J**	**1.6 J**	**3.0**	**0.98 J**	< 0.29	**2.1**	**2.4**	**2.3**
Perfluorododecanoic acid (PFDoDA)	--	**1.1 J**	**1.2 J**	**0.65 J**	**0.85 J**	< 0.47	**0.64 J**	< 0.49	**0.86 J**	**0.65 J**	**4.2**	**0.73 J**
Perfluoroheptanoic acid (PFHpA)	--	**21**	**20**	**38**	**38**	**43**	**67**	**79**	**98**	**62**	**47**	**59**
Perfluorohexanesulfonic acid (PFHxS)	65	**1.4 J B**	**1.3 J B**	**4.0 B**	**3.7 B**	**16 B**	**11**	**30**	**30**	**27**	**10**	**20**
Perfluorohexanoic acid (PFHxA)	8000	**78**	**76**	**110**	**110**	**95**	**130**	**130**	**240**	**140**	**140**	**150**
Perfluorononanoic acid (PFNA)	9	**2.6**	**2.6**	**1.9**	**2.1**	**5.4**	**13**	**3.9**	**4.2**	**5.9**	**10**	**9.5**
Perfluorooctanesulfonic acid (PFOS)	15	**3.6**	**2.5**	**1.2 J**	**1.0 J**	**0.81 J**	**1.1 J**	**0.64 J I**	< 0.50	< 0.50	**0.68 J**	**0.84 J**
Perfluorooctanoic acid (PFOA)	10	**4.1**	**4.0**	**6.4**	**6.7**	**15**	**26**	**22**	**26**	**31**	**28**	**27**
Perfluorotetradecanoic acid (PFTeDA)	--	**0.48 J B**	**0.44 J B**	**0.54 J**	**0.54 J**	**0.64 J**	< 0.68	< 0.65	**0.97 J**	**0.69 J**	**2.1**	**0.88 J**
Perfluorotridecanoic acid (PFTrDA)	--	**5.2**	**6.6**	**2.9**	**3.5**	**6.5**	**5.2**	**2.3**	**13**	**7.9**	**31**	**4.2**
Perfluoroundecanoic acid (PFUnDA)	--	**20**	**18**	**16**	**17**	**8.0**	**15**	**2.9**	**6.1**	**17**	**14**	**6.7**

Notes:
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Exceedance of Preliminary Groundwater Cleanup Levels

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
PORT OF SEATTLE
SEATTLE - TACOMA INTERNATIONAL AIRPORT
SEATAC, WA

	Action Level	Port of Seattle Fire Station Area															
Location	Washington State Preliminary Groundwater Cleanup Levels	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02
Sample Date		03/25/2019	10/11/2019	06/05/2020	06/05/2020	10/15/2020	10/15/2020	04/27/2021	04/27/2021	10/11/2021	10/11/2021	05/04/2022	05/04/2022	12/14/2022	12/14/2022	04/18/2023	04/18/2023
Sample Type		Primary	Primary	Primary	Duplicate	Primary	Duplicate	Primary	Duplicate	Primary	Duplicate	Primary	Duplicate	Primary	Duplicate	Primary	Duplicate
PFAS (ng/L)																	
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	--	< 2.0	< 1.8	< 1.6	< 1.6	< 1.1	< 1.2	< 12	< 11	< 1.2	< 1.2	< 1.2	< 1.2	< 1.3	< 1.2	< 1.1	< 1.1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	--	< 3.2	< 2.9	< 2.7	< 2.6	< 1.1	< 1.1	< 11	< 10	< 1.1	< 1.1	< 1.1	< 1.1	< 1.2	< 1.1	< 1.0	< 1.0
Perfluorobutanesulfonic acid (PFBS)	345	**130**	**70**	**22**	**22**	**14**	**12**	**17 J**	**27**	**7.8**	**8.6**	**6.9**	**7.1**	**34**	**36**	**8.6**	**10**
Perfluorodecanoic acid (PFDA)	--	**0.62 J**	< 0.29	< 0.27	**0.53 J I**	**0.59 J I**	**0.74 J**	**15 J**	**12 J**	**12**	**2.5**	**12**	**15**	**3.1**	**3.2**	**5.4**	**5.7**
Perfluorododecanoic acid (PFDoDA)	--	< 0.57	< 0.52	< 0.48	< 0.46	< 0.48	< 0.51	< 4.9	< 4.7	**0.92 J**	< 0.51	< 0.52	< 0.50	< 0.56	< 0.53	< 0.47	< 0.46
Perfluoroheptanoic acid (PFHpA)	--	**4.4**	**49**	**190**	**160**	**150**	**160**	**500**	**620**	**90**	**92**	**170**	**210**	**330**	**340**	**140**	**140**
Perfluorohexanesulfonic acid (PFHxS)	65	**3.1 B**	**7.2 B**	**66 B**	**65 B**	**47**	**49**	**61**	**74**	**21**	**16**	**84**	**91**	**150**	**150**	**93**	**85**
Perfluorohexanoic acid (PFHxA)	8000	**15**	**81**	**270**	**270**	**190**	**190**	**1,700**	**2,000**	**200**	**210**	**290**	**360 E**	**540**	**530**	**200**	**190**
Perfluorononanoic acid (PFNA)	9	**20**	**160**	**840**	**830**	**600**	**620**	**7400 D**	**8200 D**	**1,400**	**930**	**1,800 E**	**2,000 E**	**840**	**800**	**570 J**	**560 J**
Perfluorooctanesulfonic acid (PFOS)	15	**3.1**	**7.5**	**77**	**79**	**46**	**52**	**43**	**45**	**64**	**17**	**130**	**140**	**86**	**84**	**75**	**76**
Perfluorooctanoic acid (PFOA)	10	**4.1**	**100**	**73**	**74**	**51**	**49**	**520**	**610**	**93**	**85**	**210**	**240**	**160**	**160**	**130**	**130**
Perfluorotetradecanoic acid (PFTeDA)	--	**0.31 J B**	< 0.27	< 0.25	< 0.25	< 0.64	< 0.68	< 6.5	< 6.2	< 0.68	< 0.68	< 0.69	< 0.66	< 0.74	< 0.70	< 0.63	< 0.62
Perfluorotridecanoic acid (PFTrDA)	--	**1.5 J**	< 1.2	< 1.1	< 1.1	< 1.1	< 1.2	< 12	< 11	**14**	**5.9**	**4.3**	**11**	**2.8**	**3.7**	< 1.1	**1.3 J**
Perfluoroundecanoic acid (PFUnDA)	--	**5.7**	**3.4**	**1.1 J**	**1.2 J**	**1.0 J**	< 1.0	< 9.8	< 9.3	**94**	**9.0**	**59**	**68**	**3.7**	**4.5**	**8.0**	**8.5**

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Exceedance of Preliminary Groundwater Cleanup Levels

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
PORT OF SEATTLE
SEATTLE - TACOMA INTERNATIONAL AIRPORT
SEATAC, WA

	Action Level	Port of Seattle Fire Station Area								
Location	Washington State Preliminary Groundwater Cleanup Levels	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03	MW-03
Sample Date		03/25/2019	10/11/2019	06/05/2020	10/15/2020	04/27/2021	10/11/2021	05/04/2022	12/14/2022	04/18/2023
Sample Type		Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
PFAS (ng/L)										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	--	< 1.8	< 1.7	< 1.7	< 1.2	< 1.1	< 1.2	< 1.2	< 6.5	< 1.1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	--	< 2.9	< 2.8	< 2.8	< 1.1	< 1.0	< 1.1	< 1.1	< 6.0	< 1.1
Perfluorobutanesulfonic acid (PFBS)	345	**3.6**	**0.51 J**	**0.77 J**	**0.43 J**	**1.2 J**	**1.3 J**	**2.4**	< 1.0	**0.65 J**
Perfluorodecanoic acid (PFDA)	--	< 0.29	< 0.28	< 0.28	< 0.28	**0.33 J**	< 0.29	**0.40 J**	< 1.6	< 0.27
Perfluorododecanoic acid (PFDoDA)	--	< 0.51	< 0.50	< 0.49	< 0.50	< 0.48	< 0.52	< 0.52	< 2.8	< 0.48
Perfluoroheptanoic acid (PFHpA)	--	**57**	**68**	**38**	**49**	**89**	**54**	**77**	**49**	**31**
Perfluorohexanesulfonic acid (PFHxS)	65	**7.7 B**	**2.2 B**	**2.1 B**	**2.7**	**4.1**	**4.2**	**10**	**3.8 J**	**2.9**
Perfluorohexanoic acid (PFHxA)	8000	**60**	**24**	**55**	**20**	**49**	**45**	**58**	**27**	**37**
Perfluorononanoic acid (PFNA)	9	**74**	**100**	**80**	**65**	**56**	**79**	**490 E**	**160**	**100**
Perfluorooctanesulfonic acid (PFOS)	15	**0.74 J**	< 0.49	< 0.49	< 0.49	< 0.47	< 0.51	< 0.51	< 2.7	< 0.47
Perfluorooctanoic acid (PFOA)	10	**28**	**17**	**21**	**15**	**20**	**43**	**56**	**38**	**89**
Perfluorotetradecanoic acid (PFTeDA)	--	**0.30 J B**	< 0.26	< 0.26	< 0.67	< 0.63	< 0.69	< 0.68	< 3.7	< 0.64
Perfluorotridecanoic acid (PFTrDA)	--	< 1.2	< 1.2	< 1.2	< 1.2	< 1.1	< 1.2	< 1.2	< 6.5	< 1.1
Perfluoroundecanoic acid (PFUnDA)	--	**1.7 J**	< 1.0	**1.5 J**	< 1.0	< 0.96	< 1.0	< 1.0	< 5.5	< 0.96

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Exceedance of Preliminary Groundwater Cleanup Levels

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
PORT OF SEATTLE
SEATTLE - TACOMA INTERNATIONAL AIRPORT
SEATAC, WA

	Action Level	Fuel Farm Investigation Area												
Location	Washington State Preliminary Groundwater Cleanup Levels	LAI-4	LAI-4	LAI-4	LAI-4	LAI-4	LAI-4	LAI-4	LAI-4	T-111-MW-1	T-111-MW-1	T-111-MW-1	T-111-MW-1	T-111-MW-1
Sample Date		10/15/2020	11/17/2020	11/17/2020	10/11/2021	11/19/2021	05/04/2022	12/13/2022	04/20/2023	10/11/2021	11/19/2021	05/04/2022	12/13/2022	04/20/2023
Sample Type		Primary	Primary	Duplicate	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
PFAS (ng/L)														
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	--	**1.3 J**	**2.0 J**	**1.9 J**	< 1.2	< 1.1	**1.2 J**	< 1.1	< 1.2	< 1.3	< 1.2	< 1.1	< 1.2 J	< 1.2
N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	--	< 1.1	**1.1 J**	< 1.1	< 1.1	< 1.1	< 0.97	< 1.0	< 1.1	< 1.2	< 1.1	< 0.99	< 1.1 J	< 1.1
Perfluorobutanesulfonic acid (PFBS)	345	**1.2 J**	**1.0 J**	**1.3 J**	**3.2**	**2.3**	**2.3**	**1.6 J**	**1.3 J**	**1.8 J**	**1.1 J**	**1.4 J**	**1.1 J**	**2.1**
Perfluorodecanoic acid (PFDA)	--	**12**	**12**	**13**	**9.6**	**10**	**15**	**20**	**15**	**3.6**	**2.7**	**4.0**	**3.8 J**	**5.8**
Perfluorododecanoic acid (PFDoDA)	--	< 0.49	< 0.51	< 0.50	< 0.52	< 0.48	< 0.45	< 0.48	< 0.50	< 0.56	< 0.49	< 0.45	< 0.51 J	< 0.49
Perfluoroheptanoic acid (PFHpA)	--	**400**	**440**	**470**	**1,600**	**3,900**	**1,700**	**1,000 J**	**710 J**	**37**	**36**	**39**	**27 J**	**68**
Perfluorohexanesulfonic acid (PFHxS)	65	**4.9**	**5.3**	**5.2**	**16**	**10**	**15**	**9.1**	**7.3**	**0.76 J**	**0.52 J**	**0.60 J**	**0.60 J**	**0.97 J**
Perfluorohexanoic acid (PFHxA)	8000	**1,200**	**1,500**	**1,400**	**5,100**	**6,900**	**4,300**	**1,900 J**	**1,600 J**	**47**	**45**	**51**	**34 J**	**90**
Perfluorononanoic acid (PFNA)	9	**52**	**66**	**64**	**130**	**250**	**160**	**130**	**83**	**170**	**140**	**170**	**120 J**	**190**
Perfluorooctanesulfonic acid (PFOS)	15	**13**	**15**	**16**	**18**	**14**	**34**	**25**	**18**	**4.7**	**3.8**	**4.5**	**3.6 J**	**5.3**
Perfluorooctanoic acid (PFOA)	10	**990**	**910**	**980**	**2,800**	**2,600**	**2,700**	**1,300 J**	**870 J**	**37**	**30**	**34**	**26 J**	**55**
Perfluorotetradecanoic acid (PFTeDA)	--	< 0.65	< 0.68	< 0.67	< 0.69	< 0.64	< 0.59	< 0.64	< 0.66	< 0.75	< 0.66	< 0.60	< 0.68 J	< 0.65
Perfluorotridecanoic acid (PFTrDA)	--	< 1.2	< 1.2	< 1.2	< 1.2	< 1.1	< 1.1	< 1.1	< 1.2	< 1.3	< 1.2	< 1.1	< 1.2 J	< 1.2
Perfluoroundecanoic acid (PFUnDA)	--	**3.5**	**3.4**	**4.2**	**2.5**	**1.5 J**	**2.6**	**2.2**	**2.8**	**5.0**	**3.4**	**4.6**	**3.9 J**	**4.1**

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Exceedance of Preliminary Groundwater Cleanup Levels

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
PORT OF SEATTLE
SEATTLE - TACOMA INTERNATIONAL AIRPORT
SEATAC, WA

	Action Level	Fuel Farm Investigation Area									
Location	Washington State Preliminary Groundwater Cleanup Levels	TF-MW-01	TF-MW-01	TF-MW-01	TF-MW-01	TF-MW-01	TF-MW-02	TF-MW-02	TF-MW-02	TF-MW-02	TF-MW-02
Sample Date		10/11/2021	11/19/2021	05/04/2022	12/13/2022	04/20/2023	10/11/2021	11/19/2021	05/04/2022	12/13/2022	04/20/2023
Sample Type		Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
PFAS (ng/L)											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	--	**1.6 J**	< 1.1	< 1.1	< 1.1	< 1.2	< 1.2	< 1.3	< 1.1	< 1.3	< 1.4
N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	--	< 1.1	< 1.0	< 1.0	< 1.0	< 1.1	< 1.1	< 1.2	< 0.97	< 1.2	< 1.3
Perfluorobutanesulfonic acid (PFBS)	345	**0.61 J**	**0.54 J**	**0.75 J**	**0.86 J**	**1.2 J**	**11**	**3.7**	**4.5**	**4.8**	**7.8**
Perfluorodecanoic acid (PFDA)	--	**8.4**	**4.1**	**8.6**	**23**	**13**	**2.1**	< 0.31	< 0.25	< 0.31	< 0.32
Perfluorododecanoic acid (PFDoDA)	--	< 0.50	< 0.46	< 0.47	< 0.48	< 0.49	**0.55 J**	< 0.55	< 0.45	< 0.54	< 0.58
Perfluoroheptanoic acid (PFHpA)	--	**73**	**63**	**93**	**69**	**88**	**9.1**	**10**	**10**	**8.6**	**13**
Perfluorohexanesulfonic acid (PFHxS)	65	< 0.52	< 0.48	**0.91 J**	< 0.49	**0.65 J**	**20**	**22**	**24**	**22**	**29**
Perfluorohexanoic acid (PFHxA)	8000	**100**	**87**	**100**	**58**	**74**	**19**	**15**	**19**	**14**	**22**
Perfluorononanoic acid (PFNA)	9	**16**	**9.7**	**20**	**15**	**18**	**26**	**19**	**12**	**18**	**15**
Perfluorooctanesulfonic acid (PFOS)	15	**3.4**	**2.8**	**5.0**	**5.4**	**4.4**	**79**	**130**	**120**	**130**	**130**
Perfluorooctanoic acid (PFOA)	10	**94**	**58**	**91**	**68**	**77**	**20**	**20**	**18**	**22**	**23**
Perfluorotetradecanoic acid (PFTeDA)	--	< 0.66	< 0.61	< 0.63	< 0.63	< 0.65	< 0.67	< 0.73	< 0.59	< 0.72	< 0.76
Perfluorotridecanoic acid (PFTrDA)	--	< 1.2	< 1.1	< 1.1	< 1.1	< 1.2	**16**	**4.5**	< 1.1	**2.7**	< 1.4
Perfluoroundecanoic acid (PFUnDA)	--	**2.7**	< 0.92	**1.5 J**	**2.6**	**4.2**	**18**	**2.9**	**1.9**	**4.8**	**1.5 J**

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TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
PORT OF SEATTLE
SEATTLE - TACOMA INTERNATIONAL AIRPORT
SEATAC, WA

	Action Level	Fuel Farm Investigation Area														
Location	Washington State Preliminary Groundwater Cleanup Levels	TF-MW-03	TF-MW-03	TF-MW-03	TF-MW-03	TF-MW-03	TF-MW-03	TF-MW-04-D	TF-MW-04-D	TF-MW-04-D	TF-MW-04-D	TF-MW-04-D	TF-MW-04-D	TF-MW-04-D	TF-MW-05	TF-MW-05
Sample Date		10/11/2021	11/19/2021	05/04/2022	05/04/2022	12/13/2022	04/20/2023	10/11/2021	10/11/2021	11/19/2021	11/19/2021	05/04/2022	12/13/2022	04/20/2023	09/23/2022	04/20/2023
Sample Type		Primary	Primary	Primary	Duplicate	Primary	Primary	Primary	Duplicate	Primary	Duplicate	Primary	Primary	Primary	Primary	Primary
PFAS (ng/L)																
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	--	< 1.2	< 1.1	< 1.0	< 1.0	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.0	< 1.3	< 1.1	< 1.1	< 1.2
N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	--	< 1.1	< 1.1	< 0.96	< 0.95	< 1.1	< 1.2	< 1.1	< 1.1	< 1.1	< 1.1	< 0.94	< 1.2	< 1.1	< 1.0	< 1.1
Perfluorobutanesulfonic acid (PFBS)	345	< 0.18	**0.69 J**	**0.45 J**	**0.60 J**	**0.21 J**	**1.1 J**	**3.1**	**3.0**	**1.8**	**1.6 J**	**2.0**	**1.6 J**	**2.0**	**0.96 J**	**1.1 J**
Perfluorodecanoic acid (PFDA)	--	< 0.29	< 0.27	< 0.25	< 0.25	< 0.29	< 0.30	**2.9**	**2.7**	**2.4**	**1.9**	**2.8**	**3.0**	**3.7**	**2.1**	**1.6 J**
Perfluorododecanoic acid (PFDoDA)	--	< 0.51	< 0.48	< 0.44	< 0.44	< 0.51	< 0.53	< 0.51	< 0.51	< 0.50	< 0.49	< 0.43	< 0.53	< 0.48	< 0.46	< 0.50
Perfluoroheptanoic acid (PFHpA)	--	**3.8**	**20**	**8.2**	**8.1**	**9.2**	**20**	**180**	**180**	**180**	**150**	**200**	**180**	**190**	**0.91 J**	**1.6 J**
Perfluorohexanesulfonic acid (PFHxS)	65	< 0.53	**1.0 J**	**0.70 J**	**0.81 J**	**0.52 J**	**1.2 J**	**7.8**	**8.2**	**7.5**	**6.3**	**8.4**	**7.2**	**8.9**	**2.8**	**5.0**
Perfluorohexanoic acid (PFHxA)	8000	**11**	**63**	**21**	**20**	**25**	**58**	**760**	**790**	**750**	**680**	**790**	**650 J**	**610 J**	**1.1 J**	**1.4 J**
Perfluorononanoic acid (PFNA)	9	**1.7 J**	**5.2**	**2.1**	**2.1**	**2.4**	**4.5**	**29**	**29**	**19**	**15**	**21**	**20**	**24**	**5.9**	**5.8**
Perfluorooctanesulfonic acid (PFOS)	15	**3.2**	**3.8**	**2.4**	**2.3**	**1.8**	**3.4**	**12**	**13**	**9.9**	**9.4**	**12**	**10**	**13**	**5.5**	< 15
Perfluorooctanoic acid (PFOA)	10	**6.5**	**30**	**12**	**11**	**12**	**25**	**530**	**510**	**460**	**400**	**520**	**470 J**	**470 J**	**2.8**	**9.2**
Perfluorotetradecanoic acid (PFTeDA)	--	< 0.67	< 0.64	< 0.58	< 0.58	< 0.67	< 0.70	< 0.67	< 0.68	< 0.67	< 0.65	< 0.57	< 0.71	< 0.64	< 0.61	< 0.66
Perfluorotridecanoic acid (PFTrDA)	--	< 1.2	< 1.1	< 1.0	< 1.0	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.0	< 1.3	< 1.1	< 1.1	< 1.2
Perfluoroundecanoic acid (PFUnDA)	--	< 1.0	**1.1 J**	< 0.88	< 0.87	< 1.0	< 1.1	< 1.0	< 1.0	< 1.0	< 0.98	< 0.86	< 1.1	< 0.97	**2.3**	< 1.0

Notes:
J - Estimated value.
B - Parameter detected in associated blank sampleh.
D - Result from a diluted sample analysis
E- Result exceeded the instrument calibration, estimated value.
Exceedance of Preliminary Groundwater Cleanup Levels

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
PORT OF SEATTLE
SEATTLE - TACOMA INTERNATIONAL AIRPORT
SEATAC, WA

	Action Level	Fuel Farm Investigation Area										
Location	Washington State Preliminary Groundwater Cleanup Levels	TF-MW-06-D	TF-MW-06-D	TF-MW-06-D	TF-MW-07	TF-MW-07	TF-MW-08-D	TF-MW-08-D	Tyee Well	Tyee Well	Tyee Well	DMC Augmentation Well
Sample Date		09/23/2022	09/23/2022	04/20/2023	09/23/2022	04/20/2023	09/23/2022	04/20/2023	10/29/2021	10/29/2021	05/04/2022	08/16/2022
Sample Type		Primary	Duplicate	Primary	Primary	Primary	Primary	Primary	Primary	Duplicate	Primary	Primary
PFAS (ng/L)												
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	--	< 1.1	< 1.1	< 1.2	< 1.1	< 1.2	< 1.2	< 1.1	< 1.2	< 1.3	< 1.2	< 1.1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	--	< 1.0	< 1.0	< 1.1	< 1.0	< 1.1	< 1.1	< 1.0	< 1.2	< 1.2	< 1.1	< 1.0
Perfluorobutanesulfonic acid (PFBS)	345	**1.3 J**	**0.96 J**	**0.87 J**	**1.6 J**	**2.1**	**0.80 J**	**1.0 J**	**1.7 J**	**1.6 J**	**2.1**	< 0.17
Perfluorodecanoic acid (PFDA)	--	**0.38 J**	< 0.26	< 0.28	< 0.26	< 0.28	< 0.28	< 0.27	< 0.30	< 0.30	**0.56 J**	< 0.27
Perfluorododecanoic acid (PFDoDA)	--	< 0.48	< 0.46	< 0.50	< 0.47	< 0.49	< 0.49	< 0.47	< 0.53	< 0.54	< 0.51	< 0.48
Perfluoroheptanoic acid (PFHpA)	--	**2.2**	**2.1**	**3.2**	**0.80 J**	**1.1 J**	< 0.22	< 0.22	**0.44 J**	< 0.24	**0.48 J**	< 0.22
Perfluorohexanesulfonic acid (PFHxS)	65	**1.9**	**1.5 J**	**1.8**	**2.5**	**2.7**	**3.1**	**3.5**	**4.4**	**4.2**	**4.1**	< 0.50
Perfluorohexanoic acid (PFHxA)	8000	**1.8**	**1.6 J**	**2.3**	**0.65 J**	**1.2 J**	< 0.52	< 0.50	< 0.56	**0.81 J**	**0.90 J**	< 0.50
Perfluorononanoic acid (PFNA)	9	**39**	**32**	**56**	< 0.23	< 0.24	**0.43 J**	**0.62 J**	**2.5**	**2.4**	**3.7**	**0.44 J**
Perfluorooctanesulfonic acid (PFOS)	15	**2.5**	**1.9**	**1.4 J**	**1.0 J**	**1.8**	< 0.48	< 0.47	**1.8 J**	**1.8 J**	**3.7**	< 0.47
Perfluorooctanoic acid (PFOA)	10	**3.7**	**3.6**	**3.3**	**1.9**	**2.4**	**1.9**	**1.8**	**1.3 J**	**1.4 J**	**2.1**	< 0.74
Perfluorotetradecanoic acid (PFTeDA)	--	< 0.63	< 0.62	< 0.66	< 0.62	< 0.65	< 0.65	< 0.63	< 0.70	< 0.71	< 0.68	< 0.63
Perfluorotridecanoic acid (PFTrDA)	--	< 1.1	< 1.1	< 1.2	< 1.1	< 1.2	< 1.2	< 1.1	< 1.2	< 1.3	< 1.2	< 1.1
Perfluoroundecanoic acid (PFUnDA)	--	**1.3 J**	**1.0 J**	< 0.99	< 0.93	< 0.98	< 0.98	< 0.95	< 1.1	< 1.1	**1.1 J**	< 0.96

Notes:
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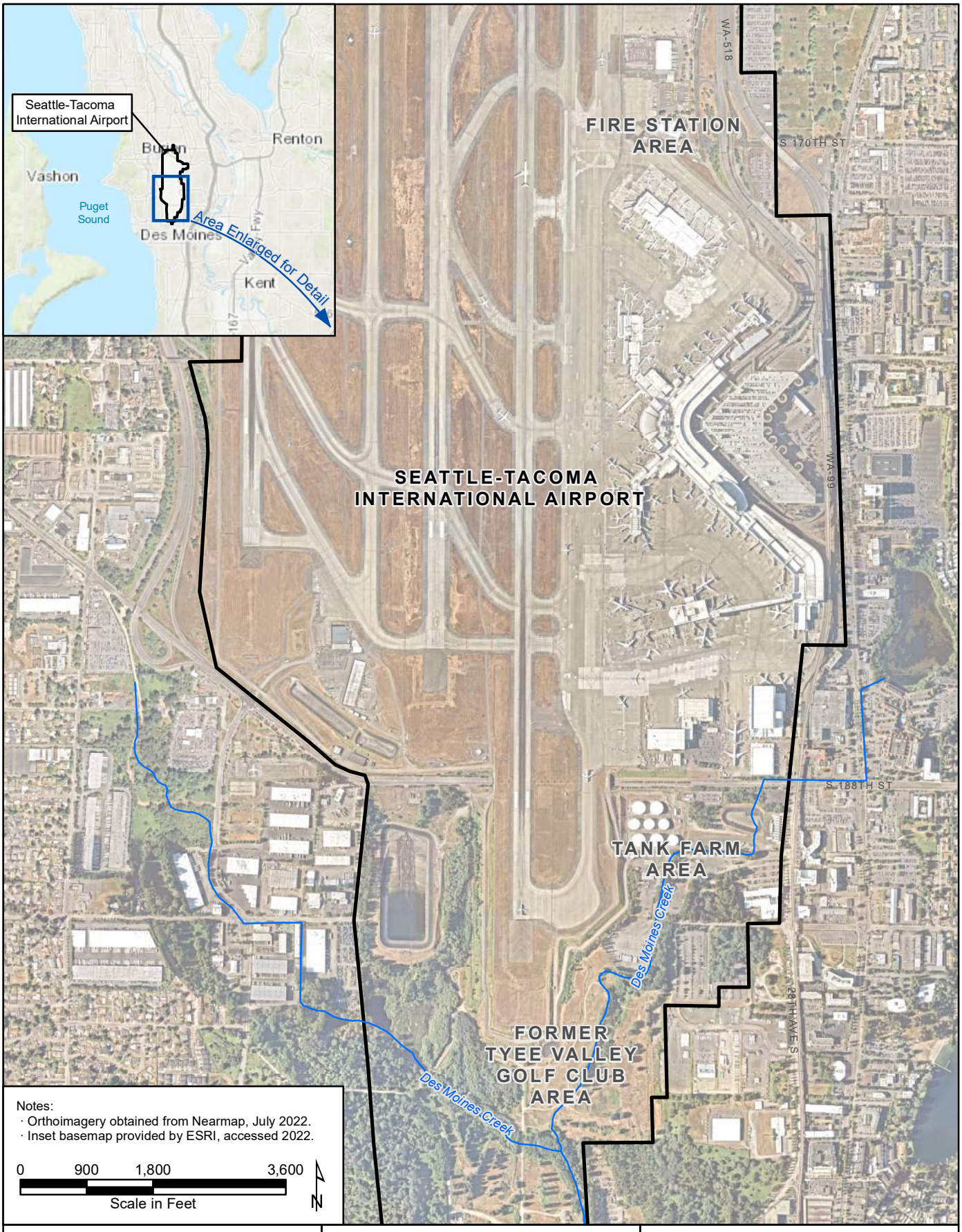
D - Result from a diluted sample analysis
E- Result exceeded the instrument calibration, estimated value.
Exceedance of Preliminary Groundwater Cleanup Levels



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Semiannual Groundwater and Surface Water Monitoring Report
Port of Seattle Tank Farm Vicinity
SeaTac, Washington

Figure 1
Vicinity Map

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6/7/2023

Legend

Stream

Potential PFAS Source

N

0 1,000 Feet

FIGURE 2

Areas of Known or Suspected Aqueous Film-Forming Foam (AFFF) Use and Release

SEPTEMBER 2023

HALEY ALDRICH

TANK FARM AREA

T-111 MW-1
LAI-4
TF-MW-01
TF-MW-02
TF-MW-04-D
TF-MW-03
TF-MW-08-D
TF-MW-07
TF-MW-05
TF-MW-06-D
DMC Augmentation Well
Tyee Well

FORMER TYEE VALLEY GOLF CLUB AREA

Des Moines Creek

S 192TH ST
24TH AVE S
S 194TH ST
S 200TH ST

0 150 300 600
Scale in Feet

N

Legend

- Monitoring Well (Perched)
- Monitoring Well (C1 Aquifer)(1)
- Irrigation Supply Well
- Des Moines Creek

Notes:
1. C1 Aquifer monitoring well locations have been offset slightly from their actual location for display purposes only.
· Orthoimagery obtained from Nearmap, August 2023.

Abbreviations:
DMC = Des Moines Creek
Perched = Perched water bearing zone

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Port of Seattle Tank Farm Vicinity
SeaTac, Washington

Figure 3
Groundwater Investigation Locations—
Port of Seattle Tank Farm Vicinity

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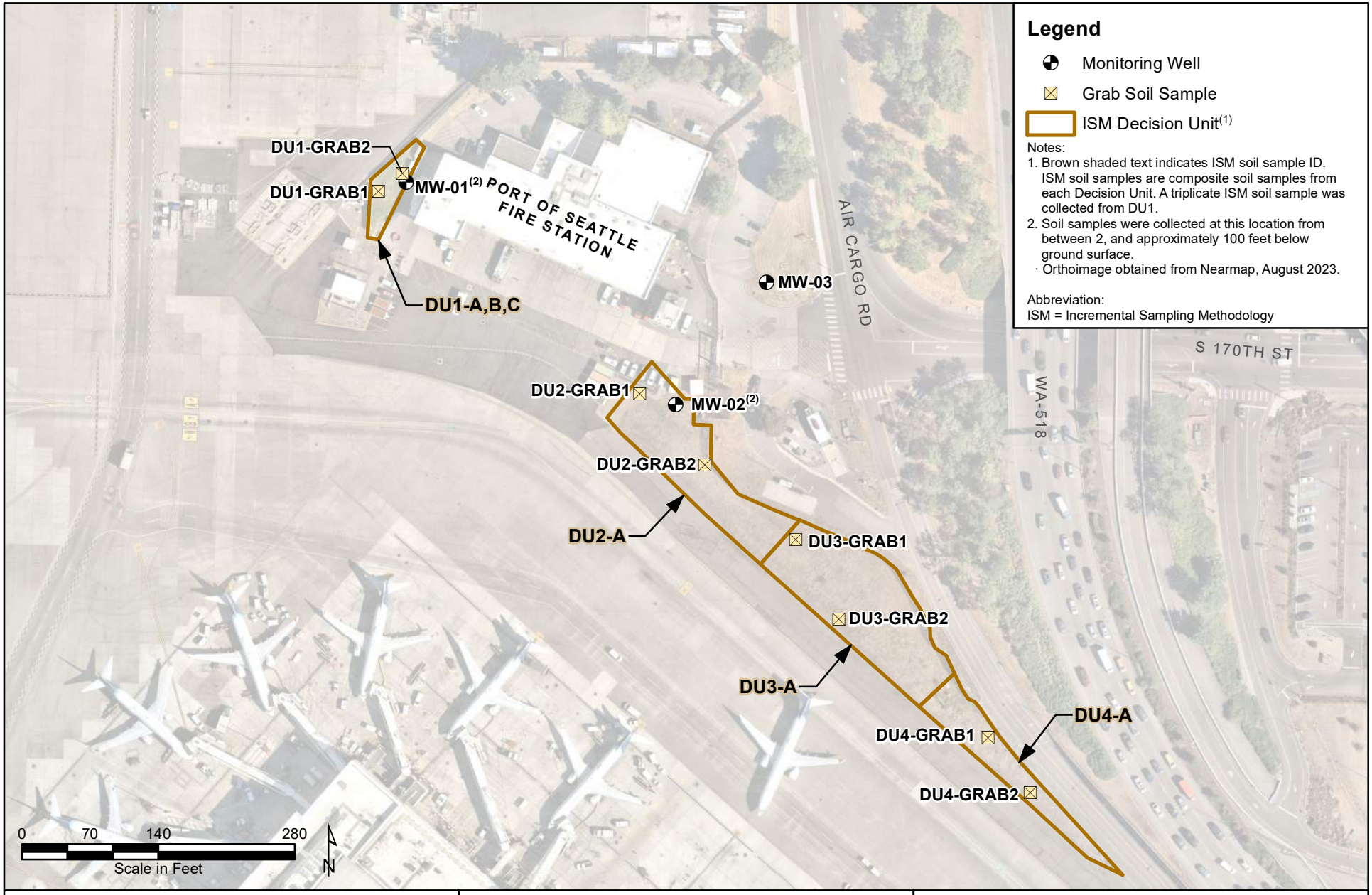
9/20/2023



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Port of Seattle Fire Station
SeaTac, Washington

Figure 4
Soil and Groundwater Investigation Locations—
Port of Seattle Fire Station Vicinity

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Port of Seattle Tank Farm Vicinity
SeaTac, Washington

Figure 5
Soil Investigation Locations—
Port of Seattle Tank Farm Vicinity
and Former Fire Training Area Vicinity

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9/20/2023