

**MONTHLY PROGRESS REPORT #285
FOR DECEMBER 2020**

EPA REGION I ADMINISTRATIVE ORDERS SDWA 1-97-1019 and 1-2000-0014

**JOINT BASE CAPE COD (JBCC)
TRAINING RANGE AND IMPACT AREA**

The following summary of progress is for the period from 1 December to 31 December 2020.

1. SUMMARY OF REMEDIATION ACTIONS

Remediation Actions (RA) Underway at Camp Edwards as of 1 January 2021:

Demolition Area 1 Comprehensive Groundwater RA

The Demolition Area 1 Comprehensive Groundwater RA consists of the removal and treatment of contaminated groundwater to control further migration of explosives compounds and perchlorate. Extraction, treatment, and recharge (ETR) systems at Frank Perkins Road, Pew Road, Base Boundary, and the Leading Edge include extraction wells, ex-situ treatment processes to remove explosives compounds and perchlorate from the groundwater, and injection wells to return treated water to the aquifer.

The Frank Perkins Road Treatment Facility has been optimized as part of the Environmental and System Performance Monitoring (ESPM) program at Demolition Area 1. The treatment facility continues to operate at a flow rate of 175 gpm, with over 2.791 billion gallons of water treated and re-injected as of 1 January 2021. The following Frank Perkins Road Treatment Facility shutdowns occurred in December.

- 0800 on 07 December 2020 due to a scheduled JBCC power outage and was restarted at 1410 on 07 December 2020.

The Pew Road Mobile Treatment Unit (MTU) continues to operate at a flow rate of 65 GPM. As of 1 January 2021, over 666.8 million gallons of water was treated and re-injected. The following Pew Road MTU shutdowns occurred in December.

- 1345 on 17 November 2020 due to plumbing and electrical system vandalism and was restarted at 1015 on 01 December 2020.
- 0800 on 07 December 2020 due to a scheduled JBCC power outage and was restarted at 1230 on 07 December 2020.

The Base Boundary MTU continues to operate at a flow rate of 65 gpm. As of 1 January 2021, over 285.4 million gallons of water was treated and re-injected. No Base Boundary MTU shutdowns occurred in December.

The Leading Edge system continues to operate at a flow rate of 100 gpm. As of 1 January 2021, over 230.1 million gallons of water was treated and re-injected. The following Leading Edge system shutdowns occurred in December.

- 1454 on 05 December 2020 due to a power outage and was restarted at 0810 on 07 December 2020.
- 1904 on 27 December 2020 due to a "VFD fault" alarm and was restarted at 1041 on 28 December 2020.

J-2 Range Groundwater RA

Northern Plant

The J-2 Range Northern Treatment facility consists of removal and treatment of contaminated groundwater to control further migration of explosives compounds and perchlorate. The Extraction, Treatment, and Re-infiltration system includes three extraction wells, ex-situ treatment process to remove explosives compounds and perchlorate from the groundwater, and an infiltration basin to return treated water to the aquifer.

The Northern Treatment Building G continues to operate at a flow rate of 225 gpm. As of 1 January 2021, over 1.318 billion gallons of water have been treated and re-injected. The following Northern Treatment Building G shutdowns occurred in December.

- 0503 on 01 December 2020 due to power supply interruption and was restarted at 0819 on 01 December 2020.

The Northern MTUs E and F continue to operate at a flow rate of 250 gpm. As of 1 January 2021, over 1.777 billion gallons of water have been treated and re-injected. The following Northern MTU E shutdowns occurred in December.

- 0601 on 01 December 2020 due to power supply interruption and was restarted at 0804 h on 01 December 2020.
- 2037 on 25 December 2020 due to a "VFD fault" alarm and was restarted at 0800 on 28 December 2020.

Eastern Plant

The J-2 Range Eastern Treatment facility consists of removal and treatment of groundwater to minimize downgradient migration of explosives compounds and perchlorate. The ETI system includes the following components: three extraction wells in an axial array, an ex-situ treatment process consisting of an ion exchange (IX) resin and granular activated carbon (GAC) media to treat perchlorate and explosives compounds, and three infiltration trenches located along the lateral boundaries of the plume where treated water will enter the vadose zone and infiltrate into the aquifer. The J-2 Range Eastern system is running at a combined total flow rate of 495 gpm.

The MTUs H and I continue to operate at a flow rate of 250 gpm. As of 1 January 2021, over 1.431 billion gallons of water have been treated and re-injected. No MTU H and I shutdowns occurred in December.

MTU J continues to operate at a flow rate of 120 gpm. As of 1 January 2021, over 660.4 million gallons of water have been treated and re-injected. No MTU J shutdowns occurred in December.

MTU K continues to operate at a flow rate of 125 gpm. As of 1 January 2021, over 781.2 million gallons of water have been treated and re-injected. No MTU K shutdowns occurred in December.

J-3 Range Groundwater RA

The J-3 Range Groundwater RA consists of removal and treatment of contaminated groundwater to control further migration of explosives compounds and perchlorate. The ETR system includes four extraction wells, ex-situ treatment process to remove explosives compounds and perchlorate from the groundwater, and use of the existing Fuel Spill-12 (FS-12) infiltration gallery to return treated water to the aquifer.

The J-3 system is currently operating at 255 gpm. As of 1 January 2021, over 1.437 billion gallons of water have been treated and re-injected. No J-3 Range system shutdowns occurred in December:

J-1 Range Groundwater RA

Southern Plant

The J-1 Range Southern Groundwater RA consists of removal and treatment of contaminated groundwater to control further migration of explosives compounds. The ETR system includes two extraction wells, ex-situ treatment process to remove explosives compounds from the groundwater, and an infiltration trench to return treated water to the aquifer.

The Southern MTU continues to operate at a flow rate of 125 gpm. As of 1 January 2021, over 638.8 million gallons of water have been treated and re-injected. The following J-1 Range Southern system shutdowns occurred in December.

- 0147 on 29 December 2020 due to replacement of the MTU ball valve and hose and restarted at 0900 on 30 December 2020.

Northern Plant

The J-1 Range Northern Groundwater RA consists of removal and treatment of contaminated groundwater to control further migration of explosives compounds and perchlorate. The ETR system includes two extraction wells, ex-situ treatment process to remove explosives compounds and perchlorate from the groundwater, and an infiltration trench to return treated water to the aquifer.

The Northern MTU continues to operate at a total system flow rate of 250 gpm. As of 1 January 2021, over 917.5 million gallons of water have been treated and re-injected. The following J-1 Range Northern MTU shutdowns occurred in December.

- 0411 on 01 December 2020 due to power supply interruption and was restarted at 0736 on 01 December 2020.

Central Impact Area RA

The Central Impact Area (CIA) Groundwater treatment facility consists of removal and treatment of groundwater to minimize downgradient migration of explosives compounds and perchlorate. The ETR system includes the following components: three extraction wells, an ex-situ treatment process consisting of an ion exchange (IX) resin and granular activated carbon (GAC) media to treat explosives compounds, and three infiltration galleries to return treated water to the aquifer. The CIA systems 1, 2, and 3 continue to run at a combined total flow rate of 750 gpm. As of 1

January 2021, over 2.314 billion gallons of water have been treated and re-injected. The following CIA system shutdowns occurred in December.

- CIA1 MTU at 0800 on 07 December 2020 due to a scheduled JBCC power outage and was restarted at 1310 on 07 December 2020.
- CIA2 MTU at 0800 on 07 December 2020 due to a scheduled JBCC power outage and was restarted at 1325 on 07 December 2020.

2. SUMMARY OF ACTIONS TAKEN

Operable Unit (OU) Activity as of 1 January 2021

CIA

- Perform intrusive investigations
- Perform routine check of the BEM cover
- Perform routine MD processing
- Demobilize for holidays (remobilize early Jan 2021)

Demolition Area 1

- Demo 1 SPM program groundwater sampling
- Exchanged Pew Road MTU system bag filters on 18 December 2020.

Demolition Area 2

- Demo 2 LTM program groundwater sampling

J-1 Range

- J1 North SPM program groundwater sampling and hydraulic monitoring

J-2 Range

- No activity

J-3 Range

- No activity

L Range

- No activity

Small Arms Ranges

- No activity

Training Areas

- Intrusive investigation in Former E Range geophysical investigation grids
- Demobilize for winter (remobilize early March 2021)

Other

- Collected process water samples from the Central Impact Area (Systems 1 ,2, and 3), Demolition Area 1, J1 Range Northern, J1 Range Southern, J2 Range Eastern, J2 Range Northern, and J3 Range treatment systems

JBCC IAGWSP Tech Update Meeting Minutes for 10 December 2020Project and Fieldwork Update

Pew Road Treatment Plant is back up and running as of 12/1, following the repairs from the vandalism incident last month. The damage was not nearly as extensive as originally thought. The LTM crew is still working and will finish the well sampling as planned and on schedule. The wellheads for MW-467 and MW-489 will need to be raised for sampling and that will be coordinated with the contractor.

Dawson is continuing the 20-acre investigation at the Former E Range. The project is approximately fifty percent complete. Investigation of discrete targets/polygons/obstructions has been completed in 58 grids, and the team is currently working on discrete targets in grids E12 and F12. To date, thirty-six MEC items have been found. In addition, 52 20 mm target practice projectiles were found. The team will de-mob on 12/18/2020 and return on 3/2/2021. Intrusive work will continue until May 2021.

TetraTech is working on a proposal to request permission to test satellite imagery and remote sensory technology to see if it can detect subsurface metallic objects and MEC. IAGWSP has no issue with the testing as long as it does not interfere with the program work, however, the official proposal would need to be reviewed. In addition, it would need installation approval for security reasons. IAGWSP sees potential value in the testing that could be applicable and useful for other sites, although likely not at JBCC.

In the Central Impact Area, there are four dig teams working. Survey Units 8 and 9 are underway and ~38-34% complete, respectively. They are expected to be complete by the end of next week. The crew is scheduled to de-mob on 12/18/2020. USACE has asked them to return right after the holidays to finish the remaining 2600 digs. Parson has not yet agreed to return earlier than previously scheduled (in March).

The list of Demo Ops items remaining (previously provided) does not include items in the IRA plan and the staging area since Parsons is still evaluating whether those can be included safely and within contract parameters. The list will be amended once those issues are resolved and it is determined which items can be included and destroyed.

IAGWSP has informed Parsons that they would like to destroy the 44 rocket mortars and 40 warheads during demo operations in December and understand that a contract modification might be required for the items stored in the CDC magazine. Demo Ops is scheduled for 12/14-12/16.

MassDEP advised that the BIP notifications be held UNTIL there is official agency approval on the IRA Plan. IAGWSP will need to notify the town managers and Boards of Health agents.

USACE reported that while it was the intention to have all items destroyed before the Parsons' de-mob and before the new contractor starts, Parsons is pushing back on that and the issue has been elevated to Huntsville for resolution. The situation is further complicated because the two separate contractors will need to be separated and dig teams have to be positioned at least 200 feet apart at all times.

IAGWSP also reported that after review of the videos of recent BEM shots, it was clear that some extra sand/soil were expelled from the sides of the BEM and this is unusual. USACE

determined that, unlike previous detonations, which used 30lbs of net weight explosive, this time Parsons used 40lbs. USACE issued a “6048” form, which identifies a major issue and seeks further clarification. Parsons explained that the SUXOS was following the requirements in the ESS and other crew members were not aware of the difference and therefore did not correct the SUXOS. USACE noted that the 30lb weight was outlined in the QAPP and during the contract kick off meeting so there should not have been any misunderstanding. USACE issued a formal notice of “contract deficiency” and is seeking “corrective action” and “root cause analysis.”

IAGWSP recommends that the scheduled detonations continue as planned and afterwards, the BEM liner be fully exposed and examined to identify if repairs/replacement is needed, which would be Parsons’ responsibility. IAGWSP has also requested a reconnaissance of the area and has asked that all sand/soil be recontained/raked back under the liner for the winter.

Action Items

The action items were discussed and updated.

JBCC Cleanup Team Meeting

The next meeting of the JBCC Cleanup Team (JBCCCT) has not been scheduled. The previous meeting was conducted virtually on October 28, 2020, and the materials can be found on the IAGWSP web site at <https://jbcc-iagwsp.org/iagwsp/community/impact/presentations/>. The Cleanup Team meeting discusses late breaking news and responses to action items, as well as updates from the IAGWSP and the Installation Restoration Program (IRP). The JBCCCT meetings provide a forum for community input regarding issues related to both the IRP and the IAGWSP.

3. SUMMARY OF DATA RECEIVED

Table 1 summarizes sampling for all media from 1 December to 31 December 2020. Table 2 summarizes the validated detections of explosives compounds and perchlorate for all groundwater results received from 1 December to 31 December 2020. These results are compared to the Maximum Contaminant Levels/Health Advisory (MCL/HA) values for respective analytes. Explosives and perchlorate are the primary contaminants of concern (COC) at Camp Edwards. Table 3 summarizes sampling of influent and groundwater samples for per- and polyfluoroalkyl substances (PFAS) from 1 June 2019 to present.

The twelve OUs under investigation and cleanup at Camp Edwards are the Central Impact Area, Demolition Area 1, Demolition Area 2, Former A Range, J-1 Range, J-2 Range, J-3 Range, L Range, Northwest Corner, Small Arms Ranges, Training Area, and Western Boundary. Environmental monitoring reports for each OU are generated each year to evaluate the current year groundwater results. These reports are available on the site Environmental Data Management System (EDMS) and at the project document repositories (IAGWSP office and Jonathan Bourne Library).

4. SUBMITTED DELIVERABLES

Deliverables submitted during the reporting period include the following:

- Monthly Progress Report No. 284 for November 2020 09 December 2020

5. SCHEDULED ACTIONS

The following documents were being prepared or revised in January 2021.

- CIA and J-2 Range IRA Plan for BEM rocket disposal
- Demolition Area 1 final 2020 Annual Environmental Monitoring Report
- Response to Comments Letter (RCL) for the CIA draft 2020 Annual Environmental Monitoring Report
- J-2 draft Annual Environmental Monitoring Report
- J-3 draft Annual Environmental Monitoring Report
- RCL for the draft Northwest Corner Demonstration of Compliance Report
- Small Arms Ranges Completion of Work Report

TABLE 1
Sampling Progress: 1 through 31 December 2020

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
Demolition Area 1	MW-544M3	MW-544M3_F20	N	12/30/2020	Ground Water	77.5	87.5
Demolition Area 1	MW-544M2	MW-544M2_F20	N	12/30/2020	Ground Water	112	122
Demolition Area 1	MW-544M1	MW-544M1_F20	N	12/30/2020	Ground Water	162	172
Demolition Area 1	MW-659M1	MW-659M1_F20	N	12/30/2020	Ground Water	120	130
Demolition Area 1	MW-341M3	MW-341M3_F20	N	12/29/2020	Ground Water	209.5	219.5
Demolition Area 1	MW-341M2	MW-341M2_F20	N	12/29/2020	Ground Water	264.5	269.5
Demolition Area 1	MW-19S	MW-19S_F20	N	12/29/2020	Ground Water	52.7	62.7
Demolition Area 1	MW-73S	MW-73S_F20	N	12/29/2020	Ground Water	52.2	61.7
Demolition Area 1	EW-658	EW-658_F20	N	12/28/2020	Ground Water	96	136
Demolition Area 1	MW-648M1	MW-648M1_F20	N	12/28/2020	Ground Water	112	122
Demolition Area 1	MW-31S	MW-31S_F20	N	12/28/2020	Ground Water	98	103
Demolition Area 1	MW-31S	MW-31S_F20D	FD	12/28/2020	Ground Water	98	103
Demolition Area 1	MW-31M	MW-31M_F20	N	12/28/2020	Ground Water	113	123
Demolition Area 1	MW-533M1	MW-533M1_F20	N	12/28/2020	Ground Water	160	170
Demolition Area 1	MW-533M1	MW-533M1_F20D	FD	12/28/2020	Ground Water	160	170
Demolition Area 1	MW-545M4	MW-545M4_F20	N	12/23/2020	Ground Water	72	82
Demolition Area 1	MW-545M3	MW-545M3_F20	N	12/23/2020	Ground Water	101.5	111.5
Demolition Area 1	MW-545M2	MW-545M2_F20	N	12/23/2020	Ground Water	142	152
Demolition Area 1	MW-545M1	MW-545M1_F20	N	12/23/2020	Ground Water	162	172
Demolition Area 1	XX9514	XX9514_F20	N	12/23/2020	Ground Water	102	112
Demolition Area 1	MW-431	MW-431_F20	N	12/22/2020	Ground Water	88	188
Demolition Area 1	MW-76M2	MW-76M2_F20	N	12/22/2020	Ground Water	105	115
Demolition Area 1	MW-77M2	MW-77M2_F20	N	12/22/2020	Ground Water	120	130
Demolition Area 1	MW-663D	MW-663D_F20	N	12/22/2020	Ground Water	240.6	250.6
Demolition Area 1	MW-663D	MW-663D_F20D	FD	12/22/2020	Ground Water	240.6	250.6
Demolition Area 1	MW-231M1	MW-231M1_F20	N	12/22/2020	Ground Water	210.5	220.5
Demolition Area 2	MW-380M2	MW-380M2_F20	N	12/22/2020	Ground Water	205.66	215.66
Demolition Area 2	MW-404M2	MW-404M2_F20	N	12/21/2020	Ground Water	200.04	210.04
Demolition Area 2	MW-404M2	MW-404M2_F20D	FD	12/21/2020	Ground Water	200.04	210.04
Demolition Area 2	MW-573M2	MW-573M2_F20	N	12/21/2020	Ground Water	155.4	165.4
Demolition Area 2	MW-573M1	MW-573M1_F20	N	12/21/2020	Ground Water	176.4	186.4
Demolition Area 2	MW-435M2	MW-435M2_F20	N	12/21/2020	Ground Water	149.57	159.93
Demolition Area 2	MW-435M1	MW-435M1_F20	N	12/21/2020	Ground Water	169.94	179.95
Demolition Area 2	MW-161S	MW-161S_F20	N	12/16/2020	Ground Water	145.5	155.5
Demolition Area 2	MW-160S	MW-160S_F20	N	12/16/2020	Ground Water	137.5	147.5
Demolition Area 2	MW-572M1	MW-572M1_F20	N	12/16/2020	Ground Water	164.9	174.9
Demolition Area 2	MW-654M1	MW-654M1_F20	N	12/16/2020	Ground Water	154	164
Demolition Area 2	MW-655M2	MW-655M2_F20	N	12/16/2020	Ground Water	156	166
Demolition Area 2	MW-655M1	MW-655M1_F20	N	12/16/2020	Ground Water	178	188
J1 Range Northern	MW-479M1	MW-479M1_F20	N	12/15/2020	Ground Water	240	250
J1 Range Northern	MW-540M1	MW-540M1_F20	N	12/15/2020	Ground Water	258	268
J1 Range Northern	MW-370M3	MW-370M3_F20	N	12/15/2020	Ground Water	174.96	184.96
J1 Range Northern	MW-370M2	MW-370M2_F20	N	12/15/2020	Ground Water	215.54	225.54
J1 Range Northern	MW-370M1	MW-370M1_F20	N	12/15/2020	Ground Water	245	255
J1 Range Northern	MW-370M1	MW-370M1_F20D	FD	12/15/2020	Ground Water	245	255
J1 Range Northern	MW-369M1	MW-369M1_F20	N	12/14/2020	Ground Water	254.07	264.07
J1 Range Northern	MW-315M2	MW-315M2_F20	N	12/14/2020	Ground Water	195.72	205.72
J1 Range Northern	MW-315M1	MW-315M1_F20	N	12/14/2020	Ground Water	245.49	255.49
J1 Range Northern	J1N-INF1B	J1N-INF1B_F20	N	12/14/2020	Process Water	200	250
J1 Range Northern	J1N-INF1A	J1N-INF1A_F20	N	12/14/2020	Process Water	217	257
J1 Range Northern	MW-306M2	MW-306M2_F20	N	12/10/2020	Ground Water	164.69	174.69
J1 Range Northern	MW-306M1	MW-306M1_F20	N	12/10/2020	Ground Water	184.88	194.88
J1 Range Northern	MW-306D	MW-306D_F20	N	12/10/2020	Ground Water	291.66	301.66
J1 Range Northern	MW-187M1	MW-187M1_F20	N	12/10/2020	Ground Water	160	170
J1 Range Northern	MW-187D	MW-187D_F20	N	12/10/2020	Ground Water	306	316

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 1 through 31 December 2020

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J1 Range Northern	MW-349M2	MW-349M2_F20	N	12/09/2020	Ground Water	195	205
J1 Range Northern	MW-349M1	MW-349M1_F20	N	12/09/2020	Ground Water	229	239
J1 Range Northern	MW-326M3	MW-326M3_F20	N	12/09/2020	Ground Water	165.24	175.26
J1 Range Northern	MW-326M2	MW-326M2_F20	N	12/09/2020	Ground Water	196.27	206.28
J1 Range Northern	MW-326M2	MW-326M2_F20D	FD	12/09/2020	Ground Water	196.27	206.28
J1 Range Northern	MW-326M1	MW-326M1_F20	N	12/09/2020	Ground Water	250.01	260.01
J1 Range Northern	MW-220M1	MW-220M1_F20	N	12/08/2020	Ground Water	248	258
J1 Range Northern	MW-253M1	MW-253M1_F20	N	12/08/2020	Ground Water	265.4	275.4
J1 Range Northern	MW-303M1	MW-303M1_F20	N	12/08/2020	Ground Water	299.07	309.07
J1 Range Northern	MW-245M1	MW-245M1_F20	N	12/07/2020	Ground Water	244	254
J1 Range Northern	MW-136M1	MW-136M1_F20	N	12/07/2020	Ground Water	124	134
J1 Range Northern	MW-136M1	MW-136M1_F20D	FD	12/07/2020	Ground Water	124	134
J1 Range Northern	MW-191M2	MW-191M2_F20	N	12/07/2020	Ground Water	120	130
J1 Range Northern	MW-58S	MW-58S_F20	N	12/07/2020	Ground Water	100	110
J1 Range Northern	MW-563M1	MW-563M1_F20	N	12/03/2020	Ground Water	215	225
Demolition Area 1	PR-EFF	PR-EFF-177A	N	12/03/2020	Process Water	0	0
J1 Range Northern	MW-590M2	MW-590M2_F20	N	12/03/2020	Ground Water	238	248
J1 Range Northern	MW-590M2	MW-590M2_F20D	FD	12/03/2020	Ground Water	238	248
Demolition Area 1	PR-MID-2	PR-MID-2-177A	N	12/03/2020	Process Water	0	0
Demolition Area 1	PR-MID-1	PR-MID-1-177A	N	12/03/2020	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-177A	N	12/03/2020	Process Water	0	0
J1 Range Northern	MW-590M1	MW-590M1_F20	N	12/03/2020	Ground Water	258	268
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-177A	N	12/03/2020	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-177A	N	12/03/2020	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-177A	N	12/03/2020	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-177A	N	12/03/2020	Process Water	0	0
J1 Range Northern	MW-584M2	MW-584M2_F20	N	12/03/2020	Ground Water	228	238
Demolition Area 1	D1LE-EFF	D1LE-EFF-53A	N	12/03/2020	Process Water	0	0
Demolition Area 1	D1LE-MID2	D1LE-MID2-53A	N	12/03/2020	Process Water	0	0
Demolition Area 1	D1LE-MID1	D1LE-MID1-53A	N	12/03/2020	Process Water	0	0
Demolition Area 1	D1LE-INF	D1LE-INF-53A	N	12/03/2020	Process Water	0	0
Demolition Area 1	D1-EFF	D1-EFF-125A	N	12/03/2020	Process Water	0	0
J1 Range Northern	MW-584M1	MW-584M1_F20	N	12/03/2020	Ground Water	248	258
Demolition Area 1	D1-MID-2	D1-MID-2-125A	N	12/03/2020	Process Water	0	0
Demolition Area 1	D1-MID-1	D1-MID-1-125A	N	12/03/2020	Process Water	0	0
Demolition Area 1	D1-INF	D1-INF-125A	N	12/03/2020	Process Water	0	0
J1 Range Northern	MW-346M4	MW-346M4_F20	N	12/02/2020	Ground Water	0	0
J1 Range Northern	MW-346M4	MW-346M4_F20	N	12/02/2020	Ground Water	140	150
J1 Range Southern	J1S-EFF	J1S-EFF-157A	N	12/02/2020	Process Water	0	0
J1 Range Southern	J1S-MID	J1S-MID-157A	N	12/02/2020	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-157A	N	12/02/2020	Process Water	0	0
J1 Range Northern	MW-346M3	MW-346M3_F20	N	12/02/2020	Ground Water	0	0
J1 Range Northern	MW-346M3	MW-346M3_F20	N	12/02/2020	Ground Water	175	185
J3 Range	J3-EFF	J3-EFF-171A	N	12/02/2020	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-171A	N	12/02/2020	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-171A	N	12/02/2020	Process Water	0	0
J3 Range	J3-INF	J3-INF-171A	N	12/02/2020	Process Water	0	0
J1 Range Northern	MW-346M2	MW-346M2_F20	N	12/02/2020	Ground Water	0	0
J1 Range Northern	MW-346M2	MW-346M2_F20	N	12/02/2020	Ground Water	205.28	215.28
J1 Range Northern	MW-346M2	MW-346M2_F20D	FD	12/02/2020	Ground Water	0	0
J1 Range Northern	MW-346M2	MW-346M2_F20D	FD	12/02/2020	Ground Water	205.28	215.28
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-171A	N	12/02/2020	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-171A	N	12/02/2020	Process Water	0	0
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-171A	N	12/02/2020	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-171A	N	12/02/2020	Process Water	0	0

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 1 through 31 December 2020

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-171A	N	12/02/2020	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-171A	N	12/02/2020	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-171A	N	12/02/2020	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-171A	N	12/02/2020	Process Water	0	0
J1 Range Northern	MW-346M1	MW-346M1_F20	MS	12/02/2020	Ground Water	0	0
J1 Range Northern	MW-346M1	MW-346M1_F20	N	12/02/2020	Ground Water	0	0
J1 Range Northern	MW-346M1	MW-346M1_F20	N	12/02/2020	Ground Water	245	255
J1 Range Northern	MW-346M1	MW-346M1_F20	SD	12/02/2020	Ground Water	0	0
J1 Range Northern	MW-346M1	MW-346M1_F20D	FD	12/02/2020	Ground Water	0	0
J1 Range Northern	MW-346M1	MW-346M1_F20D	FD	12/02/2020	Ground Water	245	255
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-171A	N	12/02/2020	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-171A	N	12/02/2020	Process Water	0	0
J1 Range Northern	J1N-EFF	J1N-EFF-86A	N	12/02/2020	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-86A	N	12/02/2020	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-86A	N	12/02/2020	Process Water	0	0
J1 Range Northern	J1N-INF2	J1N-INF2-86A	N	12/02/2020	Process Water	0	0
J1 Range Northern	MW-566M1	MW-566M1_F20	N	12/01/2020	Ground Water	232	242
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-147A	N	12/01/2020	Process Water	0	0
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-147A	N	12/01/2020	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-147A	N	12/01/2020	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-147A	N	12/01/2020	Process Water	0	0
J1 Range Northern	MW-656M2	MW-656M2_F20	N	12/01/2020	Ground Water	222.1	232.1
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-147A	N	12/01/2020	Process Water	0	0
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-147A	N	12/01/2020	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-147A	N	12/01/2020	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-147A	N	12/01/2020	Process Water	0	0
J1 Range Northern	MW-656M1	MW-656M1_F20	N	12/01/2020	Ground Water	244.1	254.1
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-147A	N	12/01/2020	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-147A	N	12/01/2020	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-147A	N	12/01/2020	Process Water	0	0
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-147A	N	12/01/2020	Process Water	0	0
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-147A	N	12/01/2020	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-147A	N	12/01/2020	Process Water	0	0
J1 Range Northern	MW-547M2	MW-547M2_F20	N	12/01/2020	Ground Water	178	188
Central Impact Area	CIA2-EFF	CIA2-EFF-83A	N	12/01/2020	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-83A	N	12/01/2020	Process Water	0	0
Central Impact Area	CIA2-MID1	CIA2-MID1-83A	N	12/01/2020	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-83A	N	12/01/2020	Process Water	0	0
Central Impact Area	CIA1-EFF	CIA1-EFF-83A	N	12/01/2020	Process Water	0	0
J1 Range Northern	MW-547M1	MW-547M1_F20	N	12/01/2020	Ground Water	237	247
Central Impact Area	CIA1-MID2	CIA1-MID2-83A	N	12/01/2020	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-83A	N	12/01/2020	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-83A	N	12/01/2020	Process Water	0	0
Central Impact Area	CIA3-EFF	CIA3-EFF-54A	N	12/01/2020	Process Water	0	0
Central Impact Area	CIA3-MID2	CIA3-MID2-54A	N	12/01/2020	Process Water	0	0
Central Impact Area	CIA3-MID1	CIA3-MID1-54A	N	12/01/2020	Process Water	0	0
Central Impact Area	CIA3-INF	CIA3-INF-54A	N	12/01/2020	Process Water	0	0

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received December 2020

Area of Concern	Location ID	Field Sample ID	Top Depth (ft bgs)	Bottom Depth (ft bgs)	Date Sampled	Test Method	Analyte	Result Value	Qualifier	Units	MCL/HA	> MCL/HA	MDL	RL
J1 Range Southern	MW-360M2	MW-360M2_F20	102	112	10/30/2020	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.89		µg/L	400		0.036	0.20
J1 Range Southern	MW-360M2	MW-360M2_F20	102	112	10/30/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.6		µg/L	0.60	X	0.034	0.20
Central Impact Area	MW-728M1	MW-728M1_R2	153.4	163.4	10/30/2020	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.065	J	µg/L	400		0.036	0.20
Central Impact Area	MW-728M1	MW-728M1_R2	153.4	163.4	10/30/2020	SW6850	Perchlorate	0.095	J	µg/L	2.0		0.030	0.20
Central Impact Area	MW-728M1	MW-728M1_R2	153.4	163.4	10/30/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.18	J	µg/L	0.60		0.034	0.20
Central Impact Area	MW-729M1	MW-729M1_R2	231.5	241.5	10/30/2020	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.079	J	µg/L	400		0.036	0.20
Central Impact Area	MW-729M1	MW-729M1_R2	231.5	241.5	10/30/2020	SW6850	Perchlorate	0.53		µg/L	2.0		0.030	0.20
Central Impact Area	MW-729M1	MW-729M1_R2	231.5	241.5	10/30/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.5		µg/L	0.60	X	0.034	0.20
Central Impact Area	MW-729M1	MW-729M1_R2D	231.5	241.5	10/30/2020	SW6850	Perchlorate	0.53		µg/L	2.0		0.030	0.20
Central Impact Area	MW-726S	MW-726S_R2	135.5	145.5	10/30/2020	SW6850	Perchlorate	0.045	J	µg/L	2.0		0.030	0.20
Central Impact Area	MW-726S	MW-726S_R2	135.5	145.5	10/30/2020	SW8330	1,3-Dinitrobenzene	0.046	J	µg/L	1.0		0.022	0.20
Central Impact Area	MW-726S	MW-726S_R2	135.5	145.5	10/30/2020	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.087	J	µg/L	400		0.036	0.20
Central Impact Area	MW-726S	MW-726S_R2	135.5	145.5	10/30/2020	SW8330	1,3,5-Trinitrobenzene	0.14	J	µg/L	1090		0.023	0.20
Central Impact Area	MW-726S	MW-726S_R2	135.5	145.5	10/30/2020	SW8330	2-Amino-4,6-dinitrotoluene	0.25		µg/L	7.3		0.020	0.20
Central Impact Area	MW-726S	MW-726S_R2	135.5	145.5	10/30/2020	SW8330	2,4,6-Trinitrotoluene	0.67		µg/L	2.0		0.041	0.20
Central Impact Area	MW-726S	MW-726S_R2	135.5	145.5	10/30/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.76	J	µg/L	0.60	X	0.034	0.20
Central Impact Area	MW-726S	MW-726S_R2	135.5	145.5	10/30/2020	SW8330	4-Amino-2,6-dinitrotoluene	0.78		µg/L	7.3		0.027	0.20
Central Impact Area	MW-727M1	MW-727M1_R2	145.4	155.4	10/29/2020	SW6850	Perchlorate	0.034	J	µg/L	2.0		0.030	0.20
Central Impact Area	MW-727M1	MW-727M1_R2	145.4	155.4	10/29/2020	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.040	J	µg/L	400		0.036	0.20
Central Impact Area	MW-727M1	MW-727M1_R2	145.4	155.4	10/29/2020	SW8330	4-Amino-2,6-dinitrotoluene	0.066	J	µg/L	7.3		0.027	0.20
Central Impact Area	MW-727M1	MW-727M1_R2	145.4	155.4	10/29/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.6		µg/L	0.60	X	0.034	0.20
Central Impact Area	MW-725M1	MW-725M1_R2	145.2	155.2	10/29/2020	SW8330	4-Amino-2,6-dinitrotoluene	0.041	J	µg/L	7.3		0.027	0.20
Central Impact Area	MW-725M1	MW-725M1_R2	145.2	155.2	10/29/2020	SW6850	Perchlorate	0.66		µg/L	2.0		0.030	0.20
Central Impact Area	MW-725M1	MW-725M1_R2	145.2	155.2	10/29/2020	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.1		µg/L	400		0.036	0.20
Central Impact Area	MW-725M1	MW-725M1_R2	145.2	155.2	10/29/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	4.7		µg/L	0.60	X	0.034	0.20
Central Impact Area	MW-725M1	MW-725M1_R2D	145.2	155.2	10/29/2020	SW8330	4-Amino-2,6-dinitrotoluene	0.040	J	µg/L	7.3		0.027	0.20
Central Impact Area	MW-725M1	MW-725M1_R2D	145.2	155.2	10/29/2020	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.1		µg/L	400		0.036	0.20
Central Impact Area	MW-725M1	MW-725M1_R2D	145.2	155.2	10/29/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	4.8		µg/L	0.60	X	0.034	0.20
Central Impact Area	MW-695S	MW-695S_F20	130	140	10/29/2020	SW8330	1,3-Dinitrobenzene	0.048	J	µg/L	1.0		0.022	0.20
Central Impact Area	MW-695S	MW-695S_F20	130	140	10/29/2020	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.092	J	µg/L	400		0.036	0.20
Central Impact Area	MW-695S	MW-695S_F20	130	140	10/29/2020	SW8330	1,3,5-Trinitrobenzene	0.13	J	µg/L	1090		0.023	0.20
Central Impact Area	MW-695S	MW-695S_F20	130	140	10/29/2020	SW8330	2-Amino-4,6-dinitrotoluene	0.25		µg/L	7.3		0.020	0.20
Central Impact Area	MW-695S	MW-695S_F20	130	140	10/29/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.35	J	µg/L	0.60		0.034	0.20
Central Impact Area	MW-695S	MW-695S_F20	130	140	10/29/2020	SW8330	4-Amino-2,6-dinitrotoluene	0.40		µg/L	7.3		0.027	0.20
Central Impact Area	MW-695S	MW-695S_F20	130	140	10/29/2020	SW8330	2,4,6-Trinitrotoluene	0.76		µg/L	2.0		0.041	0.20
Central Impact Area	MW-695S	MW-695S_F20D	130	140	10/29/2020	SW8330	1,3-Dinitrobenzene	0.049	J	µg/L	1.0		0.022	0.20
Central Impact Area	MW-695S	MW-695S_F20D	130	140	10/29/2020	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.093	J	µg/L	400		0.036	0.20
Central Impact Area	MW-695S	MW-695S_F20D	130	140	10/29/2020	SW8330	1,3,5-Trinitrobenzene	0.12	J	µg/L	1090		0.023	0.20
Central Impact Area	MW-695S	MW-695S_F20D	130	140	10/29/2020	SW8330	2-Amino-4,6-dinitrotoluene	0.23	J	µg/L	7.3		0.020	0.20
Central Impact Area	MW-695S	MW-695S_F20D	130	140	10/29/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.34	J	µg/L	0.60		0.034	0.20
Central Impact Area	MW-695S	MW-695S_F20D	130	140	10/29/2020	SW8330	4-Amino-2,6-dinitrotoluene	0.38		µg/L	7.3		0.027	0.20
Central Impact Area	MW-695S	MW-695S_F20D	130	140	10/29/2020	SW8330	2,4,6-Trinitrotoluene	0.76		µg/L	2.0		0.041	0.20
J1 Range Southern	MW-670M2	MW-670M2_F20	198.5	208.5	10/27/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.098	J	µg/L	0.60		0.034	0.20

J = Estimated Result
MDL = Method Detection Limit
RL = Reporting Limit

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received December 2020

Area of Concern	Location ID	Field Sample ID	Top Depth (ft bgs)	Bottom Depth (ft bgs)	Date Sampled	Test Method	Analyte	Result Value	Qualifier	Units	MCL/HA	> MCL/HA	MDL	RL
J1 Range Southern	MW-647M1	MW-647M1_F20	211.3	221.3	10/27/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.27		µg/L	0.60		0.034	0.20
J1 Range Southern	MW-524M1	MW-524M1_F20	148	158	10/26/2020	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.071	J	µg/L	400		0.036	0.20
J1 Range Southern	MW-524M1	MW-524M1_F20	148	158	10/26/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.29		µg/L	0.60		0.034	0.20
J1 Range Southern	MW-524M1	MW-524M1_F20D	148	158	10/26/2020	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.065	J	µg/L	400		0.036	0.20
J1 Range Southern	MW-524M1	MW-524M1_F20D	148	158	10/26/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.28		µg/L	0.60		0.034	0.20
J1 Range Southern	MW-645M2	MW-645M2_F20	143.5	153.5	10/26/2020	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.043	J	µg/L	400		0.036	0.20
J1 Range Southern	MW-645M2	MW-645M2_F20	143.5	153.5	10/26/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.17	J	µg/L	0.60		0.034	0.20
J1 Range Southern	MW-645M1	MW-645M1_F20	183.5	193.5	10/26/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.44		µg/L	0.60		0.034	0.20
J1 Range Southern	MW-645M1	MW-645M1_F20D	183.5	193.5	10/26/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.42		µg/L	0.60		0.034	0.20
J1 Range Southern	MW-402M1	MW-402M1_F20	190.14	200.13	10/22/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.39		µg/L	0.60		0.034	0.20
J1 Range Southern	MW-400M1	MW-400M1_F20	192.76	202.75	10/22/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.11	J	µg/L	0.60		0.034	0.20
J1 Range Southern	MW-483M1	MW-483M1_F20	139.52	149.52	10/21/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.16	J	µg/L	0.60		0.034	0.20
J1 Range Southern	MW-720M2	MW-720M2_F20	126.2	136.2	10/21/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.19	J	µg/L	0.60		0.034	0.20
J1 Range Southern	MW-720M2	MW-720M2_F20	126.2	136.2	10/21/2020	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.22		µg/L	400		0.036	0.20
J1 Range Southern	MW-721M1	MW-721M1_F20	168.1	178.1	10/21/2020	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.079	J	µg/L	400		0.036	0.20
J1 Range Southern	MW-721M1	MW-721M1_F20	168.1	178.1	10/21/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.40		µg/L	0.60		0.034	0.20
Central Impact Area	MW-616M1	MW-616M1_F20	217.1	227.1	10/20/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.58		µg/L	0.60		0.034	0.20
Central Impact Area	MW-617M1	MW-617M1_F20	175.8	185.8	10/20/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.27		µg/L	0.60		0.034	0.20
Central Impact Area	MW-623M3	MW-623M3_F20	275	285	10/19/2020	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.052	J	µg/L	400		0.036	0.20
Central Impact Area	MW-623M3	MW-623M3_F20	275	285	10/19/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.081	J	µg/L	0.60		0.034	0.20
Central Impact Area	MW-623M2	MW-623M2_F20	291.8	301.8	10/19/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.12	J	µg/L	0.60		0.034	0.20
Central Impact Area	MW-623M1	MW-623M1_F20	340	350	10/19/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.098	J	µg/L	0.60		0.034	0.20
Central Impact Area	MW-625M1	MW-625M1_F20	260	270	10/14/2020	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.60		µg/L	0.60		0.034	0.20

J = Estimated Result
MDL = Method Detection Limit
RL = Reporting Limit

PFAS Summary Report – Groundwater
Joint Base Cape Cod, IAGWSP
KGS 2019 PFAS MW&INF
Demolition Area 1

Location	D1-INF	FPR-2-INF	MW-258M1	MW-663D	PR-INF
Field Sample ID	D1-INF_PFAS19	FPR-2-INF_PFAS19	MW-258M1_PFAS19	MW-663D_PFAS19	PR-INF_PFAS19
Sampling Depth	0.00 - 0.00	0.00 - 0.00	109.00 - 119.00	240.60 - 250.60	0.00 - 0.00
Sampling Date	06/24/2019	06/25/2019	06/19/2019	06/24/2019	06/25/2019
SDG	320517141	320517141	320515981	320517141	320517141
Sample Type	Normal	Normal	Normal	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	18.0 U	19.0 U	20.0 U	20.0 U	20.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.10 U	9.50 U	9.80 U	9.80 U	9.80 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.10 U	9.50 U	9.80 U	9.80 U	9.80 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.10 U	9.50 U	9.80 U	9.80 U	9.80 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.910 U	0.950 U	0.980 U	0.980 U	0.980 U
Perfluorobutanesulfonic acid (PFBS)	0.910 U	0.950 U	0.980 U	0.980 U	0.980 U
Perfluorobutanoic acid (PFBA)	1.40 U	1.40 U	1.50 U	1.50 U	1.50 U
Perfluorodecane sulfonate	1.40 U	1.40 U	1.50 U	1.50 U	1.50 U
Perfluorodecanoic acid (PFDA)	0.910 U	0.950 U	0.980 U	2.20	0.980 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.50 U	1.50 U	1.50 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.50 U	1.50 U	1.50 U
Perfluorohexanesulfonic acid (PFHxS)	0.910 U	0.950 U	0.980 U	0.980 U	2.00 U
Perfluorohexanoic acid (PFHxA)	0.910 U	0.950 U	0.980 U	0.980 U	0.980 U
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.50 U	1.00 J	1.50 U
Perfluorooctane sulfonate (PFOS)	2.70 U	2.80 U	2.90 U	3.00 U	2.90 U
Perfluorooctanesulfonamide (FOSA)	2.70 U	2.80 U	2.90 U	3.00 U	2.90 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	1.50 U	1.50 U	1.50 U
Perfluoropentanoic acid (PFPA)	0.910 U	0.950 U	0.980 U	0.460 J	0.980 U
Perfluorotetradecanoic acid (PFTA)	2.70 U	2.80 U	2.90 U	3.00 U	2.90 U
Perfluorotridecanoic acid (PFTrDA)	2.70 U	2.80 U	2.90 U	3.00 U	2.90 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.50 U	1.20 J	1.50 U
†PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.00	0.00	0.00	3.20	0.00
§Sum of All Compounds Collected	0.00	0.00	0.00	4.86	0.00

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J1 Range Northern

Location	J1N-INF2	J1N-INF2	MW-136S	MW-564M1	MW-590M2
Field Sample ID	J1N-INF2_PFAS19	J1N-INF2_PFAS19R	MW-136S_PFAS19	MW-564M1_PFAS19	MW-590M2_PFAS19
Sampling Depth	0.00 - 0.00	0.00 - 0.00	107.00 - 117.00	227.00 - 237.00	238.00 - 248.00
Sampling Date	06/17/2019	07/30/2019	06/24/2019	06/24/2019	06/24/2019
SDG	320514661	320528231	320517141	320517141	320517141
Sample Type	Normal	Normal	Normal	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	19.0 U	19.0 U	20.0 U	18.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.30 U	9.60 U	9.80 U	9.20 U	9.60 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.30 U	9.60 U	9.80 U	9.20 U	9.60 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.30 U	9.60 U	9.80 U	9.20 U	9.60 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.930 U	0.960 U	0.980 U	0.920 U	0.960 U
Perfluorobutanesulfonic acid (PFBS)	0.930 U	0.960 U	0.980 U	0.920 U	0.960 U
Perfluorobutanoic acid (PFBA)	1.90 U	1.40 U	0.990 J	1.40 U	1.40 U
Perfluorodecane sulfonate	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.930 U	0.960 U	0.980 U	0.920 U	0.960 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorohexanesulfonic acid (PFHxS)	0.930 U	1.90 U	2.00 U	1.80 U	0.960 U
Perfluorohexanoic acid (PFHxA)	0.930 U	0.960 U	0.980 U	0.920 U	0.960 U
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorooctane sulfonate (PFOS)	4.90	2.90 U	1.40 J	2.80 U	2.90 U
Perfluorooctanesulfonamide (FOSA)	1.80 J	2.90 U	2.90 U	2.80 U	2.90 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	2.40	1.40 U	1.40 U
Perfluoropentanoic acid (PFPA)	0.930 U	0.960 U	0.980 U	0.920 U	0.960 U
Perfluorotetradecanoic acid (PFTA)	2.80 U	2.90 U	2.90 U	2.80 U	2.90 U
Perfluorotridecanoic acid (PFTrDA)	2.80 U	2.90 U	2.90 U	2.80 U	2.90 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
†PFOS + PFOA (EPA)	4.90	0.00	3.80	0.00	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	4.90	0.00	3.80	0.00	0.00
§Sum of All Compounds Collected	6.70	0.00	4.79	0.00	0.00

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J2 Range Eastern

Location	J2E-INF-I	J2E-INF-J	J2E-INF-K	MW-307M3	MW-307M3	MW-368M1
Field Sample ID	J2E-INF-I_PFAS19	J2E-INF-J_PFAS19	J2E-INF-K_PFAS19	MW-307M3_PFAS19	MW-307M3_PFAS19D	MW-368M1_PFAS19
Sampling Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	125.80 - 135.82	125.80 - 135.82	237.35 - 247.35
Sampling Date	06/20/2019	06/20/2019	06/20/2019	06/18/2019	06/18/2019	06/18/2019
SDG	320515981	320515981	320515981	320514662	320514662	320514662
Sample Type	Normal	Normal	Normal	Normal	Field Duplicate	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	19.0 U	19.0 U	20.0 U	18.0 U	19.0 U	17.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.70 U	9.30 U	9.80 U	9.00 U	9.60 U	8.50 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.70 U	9.30 U	9.80 U	9.00 U	9.60 U	8.50 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.70 U	9.30 U	9.80 U	9.00 U	9.60 U	8.50 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.970 U	0.930 U	0.980 U	0.900 U	0.960 U	0.850 U
Perfluorobutanesulfonic acid (PFBS)	0.970 U	0.930 U	0.980 U	0.900 U	0.960 U	0.850 U
Perfluorobutanoic acid (PFBA)	1.50 U	1.40 U	1.50 U	1.80 U	1.90 U	1.70 U
Perfluorodecane sulfonate	1.50 U	1.40 U	1.50 U	1.30 U	1.40 U	1.30 U
Perfluorodecanoic acid (PFDA)	0.970 U	0.930 U	0.980 U	0.900 U	0.960 U	1.40 J
Perfluorododecanoic acid (PFDoA)	1.50 U	1.40 U	1.50 U	1.30 U	1.40 U	0.450 J
Perfluoroheptanoic acid (PFHpA)	1.50 U	1.40 U	1.50 U	1.30 U	1.40 U	1.30 U
Perfluorohexanesulfonic acid (PFHxS)	0.970 U	0.930 U	0.980 U	0.900 U	0.960 U	0.850 U
Perfluorohexanoic acid (PFHxA)	0.970 U	0.930 U	0.980 U	0.900 U	0.960 U	0.850 U
Perfluorononanoic acid (PFNA)	1.50 U	1.40 U	1.50 U	0.880 J	0.730 J	0.650 J
Perfluorooctane sulfonate (PFOS)	2.90 U	2.80 U	2.90 U	2.70 U	2.90 U	2.60 U
Perfluorooctanesulfonamide (FOSA)	2.90 U	2.80 U	2.90 U	2.70 U	2.90 U	2.60 U
Perfluorooctanoic acid (PFOA)	1.50 U	1.40 U	1.50 U	1.30 U	1.40 U	1.30 U
Perfluoropentanoic acid (PFPA)	0.970 U	0.930 U	0.980 U	0.900 U	0.960 U	0.850 U
Perfluorotetradecanoic acid (PFTA)	2.90 U	2.80 U	2.90 U	2.70 U	2.90 U	2.60 U
Perfluorotridecanoic acid (PFTrDA)	2.90 U	2.80 U	2.90 U	2.70 U	2.90 U	2.60 U
Perfluoroundecanoic acid (PFUnA)	1.50 U	1.40 U	1.50 U	1.30 U	1.40 U	4.90
†PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00	0.00	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.00	0.00	0.00	0.880	0.730	2.05
§Sum of All Compounds Collected	0.00	0.00	0.00	0.880	0.730	7.40

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J2 Range Eastern

	Location	MW-368M2	MW-667M1
	Field Sample ID	MW-368M2_PFAS19	MW-667M1_PFAS19
	Sampling Depth	202.73 - 212.73	302.30 - 312.30
	Sampling Date	06/18/2019	06/17/2019
	SDG	320514662	320514661
	Sample Type	Normal	Normal
PFAS 21 Cmps		Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)		18.0 U	18.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		8.80 U	9.00 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		8.80 U	9.00 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		8.80 U	9.00 U
Perfluoro-1-heptanesulfonate (PFHpS)		0.880 U	0.900 U
Perfluorobutanesulfonic acid (PFBS)		0.880 U	0.900 U
Perfluorobutanoic acid (PFBA)		1.30 U	1.80 U
Perfluorodecane sulfonate		1.30 U	1.40 U
Perfluorodecanoic acid (PFDA)		0.800 J	4.30
Perfluorododecanoic acid (PFDoA)		1.30 U	1.40 U
Perfluoroheptanoic acid (PFHpA)		1.30 U	1.40 U
Perfluorohexanesulfonic acid (PFHxS)		0.880 U	0.900 U
Perfluorohexanoic acid (PFHxA)		0.880 U	0.900 U
Perfluorononanoic acid (PFNA)		1.30 U	2.80
Perfluorooctane sulfonate (PFOS)		2.60 U	2.70 U
Perfluorooctanesulfonamide (FOSA)		2.60 U	2.70 U
Perfluorooctanoic acid (PFOA)		1.30 U	1.40 U
Perfluoropentanoic acid (PFPA)		0.880 U	0.900 U
Perfluorotetradecanoic acid (PFTA)		2.60 U	2.70 U
Perfluorotridecanoic acid (PFTrDA)		2.60 U	2.70 U
Perfluoroundecanoic acid (PFUnA)		2.40	1.60 J
	†PFOS + PFOA (EPA)	0.00	0.00
	‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.800	7.10
	§Sum of All Compounds Collected	3.20	8.70

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J2 Range Northern

Location	J2EW0001	J2EW0002	J2N-INF-E	J2N-INF-F	J2N-INF-F	J2N-INF-G
Field Sample ID	J2EW0001_PFAS19	J2EW0002_PFAS19	J2N-INF-E_PFAS19	J2N-INF-F_PFAS19	J2N-INF-F_PFAS19R	J2N-INF-G_PFAS19
Sampling Depth	179.00 - 234.00	198.00 - 233.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Sampling Date	11/20/2019	11/20/2019	06/18/2019	06/18/2019	07/30/2019	07/30/2019
SDG	320565491	320565491	320514662	320514662	320528231	320528231
Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	19.0 U	40.0 U	19.0 U	19.0 U	19.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	19.0 U	20.0 U	9.30 U	9.30 U	9.60 U	9.70 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.60 U	10.0 U	9.30 U	9.30 U	9.60 U	9.70 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.60 U	10.0 U	9.30 U	9.30 U	9.60 U	9.70 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.960 U	0.370 J	0.930 U	0.400 J	0.500 J	0.970 U
Perfluorobutanesulfonic acid (PFBS)	0.960 U	1.00 U	0.930 U	0.930 U	0.960 U	1.40 J
Perfluorobutanoic acid (PFBA)	1.40 U	1.50 U	1.40 U	1.90 U	1.40 U	1.50 U
Perfluorodecane sulfonate	1.40 U	1.50 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluorodecanoic acid (PFDA)	0.960 U	1.00 U	0.930 U	0.930 U	0.960 U	0.970 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.50 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.00 J	1.40 U	0.940 J	1.00 J	1.50 U
Perfluorohexanesulfonic acid (PFHxS)	0.960 U	11.0	0.930 U	9.90	9.00	1.90 U
Perfluorohexanoic acid (PFHxA)	0.960 U	1.30 J	0.930 U	1.20 J	1.30 J	2.30
Perfluorononanoic acid (PFNA)	1.40 U	1.50 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluorooctane sulfonate (PFOS)	2.90 U	1.30 J	2.80 U	2.80 U	1.10 J	2.90 U
Perfluorooctanesulfonamide (FOSA)	2.90 U	3.00 U	2.80 U	2.80 U	2.90 U	2.90 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.50 J	1.40 U	1.70 J	1.50 J	1.50 U
Perfluoropentanoic acid (PFPA)	0.960 U	0.910 J	0.930 U	0.840 J	1.00 J	1.20 J
Perfluorotetradecanoic acid (PFTA)	2.90 U	3.00 U	2.80 U	2.80 U	2.90 U	2.90 U
Perfluorotridecanoic acid (PFTrDA)	2.90 U	3.00 U	2.80 U	2.80 U	2.90 U	2.90 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.50 U	1.40 U	1.40 U	1.40 U	1.50 U
*PFOS + PFOA (EPA)	0.00	2.80	0.00	1.70	2.60	0.00
*PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.00	14.8	0.00	12.5	12.6	0.00
§Sum of All Compounds Collected	0.00	17.4	0.00	15.0	15.4	4.90

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J2 Range Northern

	Location	MW-234M2	MW-313M1	MW-587M2
	Field Sample ID	MW-234M2_PFAS19	MW-313M1_PFAS19	MW-587M2_PFAS19
	Sampling Depth	110.00 - 120.00	255.40 - 265.40	220.00 - 230.00
	Sampling Date	06/17/2019	06/19/2019	06/19/2019
	SDG	320514661	320515981	320515981
	Sample Type	Normal	Normal	Normal
PFAS 21 Cmps		Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)		18.0 U	20.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		8.80 U	9.80 U	9.70 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		8.80 U	9.80 U	9.70 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		8.80 U	9.80 U	9.70 U
Perfluoro-1-heptanesulfonate (PFHpS)		0.880 U	0.980 U	0.970 U
Perfluorobutanesulfonic acid (PFBS)		0.880 U	0.980 U	0.970 U
Perfluorobutanoic acid (PFBA)		1.80 U	0.700 J	1.50 U
Perfluorodecane sulfonate		1.30 U	1.50 U	1.50 U
Perfluorodecanoic acid (PFDA)		0.880 U	1.20 J	0.970 U
Perfluorododecanoic acid (PFDoA)		1.30 U	1.50 U	1.50 U
Perfluoroheptanoic acid (PFHpA)		1.30 U	1.50 U	1.50 U
Perfluorohexanesulfonic acid (PFHxS)		0.600 J	0.980 U	0.970 U
Perfluorohexanoic acid (PFHxA)		0.880 U	0.980 U	0.970 U
Perfluorononanoic acid (PFNA)		1.30 U	1.10 J	1.50 U
Perfluorooctane sulfonate (PFOS)		1.90 J	2.90 U	2.90 U
Perfluorooctanesulfonamide (FOSA)		2.60 U	2.90 U	2.90 U
Perfluorooctanoic acid (PFOA)		0.550 J	1.50 U	1.50 U
Perfluoropentanoic acid (PFPA)		0.880 U	0.680 J	0.970 U
Perfluorotetradecanoic acid (PFTA)		2.60 U	2.90 U	2.90 U
Perfluorotridecanoic acid (PFTrDA)		2.60 U	2.90 U	2.90 U
Perfluoroundecanoic acid (PFUnA)		1.30 U	1.40 J	1.50 U
	†PFOS + PFOA (EPA)	2.45	0.00	0.00
	‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	3.05	2.30	0.00
	§Sum of All Compounds Collected	3.05	5.08	0.00

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J3 Range

Location	J3-INF	J3-INF	MW-163S	MW-163S	MW-163S	MW-227M2
Field Sample ID	J3-INF_PFAS19	J3-INF_PFAS19D	MW-163S_PFAS19	MW-163S_PFAS19D	MW-163S_PFAS19R	MW-227M2_PFAS19
Sampling Depth	0.00 - 0.00	0.00 - 0.00	38.00 - 48.00	38.00 - 48.00	38.00 - 48.00	110.00 - 120.00
Sampling Date	06/17/2019	06/17/2019	06/18/2019	06/18/2019	07/30/2019	06/19/2019
SDG	320514661	320514661	320514662	320514662	320528231	320515981
Sample Type	Normal	Field Duplicate	Normal	Field Duplicate	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	19.0 U	18.0 U	17.0 U	17.0 U	19.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.40 U	9.20 U	8.60 U	8.60 U	9.30 U	9.60 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.40 U	9.20 U	8.60 U	8.60 U	9.30 U	9.60 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.40 U	9.20 U	8.60 U	8.60 U	9.30 U	9.60 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.940 U	0.920 U	0.860 U	0.860 U	0.930 U	0.960 U
Perfluorobutanesulfonic acid (PFBS)	0.940 U	0.920 U	0.860 U	0.860 U	0.930 U	0.960 U
Perfluorobutanoic acid (PFBA)	1.90 U	1.80 U	1.70 U	1.70 U	0.560 J	1.40 U
Perfluorodecane sulfonate	1.40 U	1.40 U	1.30 U	1.30 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.940 U	0.920 U	0.860 U	0.860 U	0.930 U	0.960 U
Perfluorododecanoic acid (PFDoA)	1.70 J	1.40 U	1.30 U	1.30 U	1.40 U	1.40 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.30 U	1.30 U	1.40 U	1.40 U
Perfluorohexanesulfonic acid (PFHxS)	1.50 J	1.50 J	0.690 J	0.610 J	1.90 U	0.540 J
Perfluorohexanoic acid (PFHxA)	0.940 U	0.920 U	0.410 J	0.860 U	0.930 U	0.960 U
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.30 U	1.30 U	1.40 U	1.40 U
Perfluorooctane sulfonate (PFOS)	2.80 U	2.80 U	12.0	12.0	12.0	2.90 U
Perfluorooctanesulfonamide (FOSA)	2.80 U	2.80 U	2.60 U	2.60 U	2.80 U	2.90 U
Perfluorooctanoic acid (PFOA)	0.520 J	1.40 U	1.70	1.60 J	1.30 J	1.40 U
Perfluoropentanoic acid (PFPA)	0.940 U	0.920 U	0.860 U	0.860 U	0.930 U	0.960 U
Perfluorotetradecanoic acid (PFTA)	2.80 U	2.80 U	2.60 U	2.60 U	2.80 U	2.90 U
Perfluorotridecanoic acid (PFTrDA)	1.40 J	2.80 U	2.60 U	2.60 U	2.80 U	2.90 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.30 U	1.30 U	1.40 U	1.40 U
†PFOS + PFOA (EPA)	0.520	0.00	13.7	13.6	13.3	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	2.02	1.50	14.4	14.2	13.3	0.540
§Sum of All Compounds Collected	5.12	1.50	14.8	14.2	13.9	0.540

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J3 Range

	Location	MW-250M2
	Field Sample ID	MW-250M2_PFAS19
	Sampling Depth	145.00 - 155.00
	Sampling Date	06/20/2019
	SDG	320515981
	Sample Type	Normal
PFAS 21 Cmps		Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)		19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		9.70 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		9.70 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		9.70 U
Perfluoro-1-heptanesulfonate (PFHpS)		0.970 U
Perfluorobutanesulfonic acid (PFBS)		0.970 U
Perfluorobutanoic acid (PFBA)		0.710 J
Perfluorodecane sulfonate		1.40 U
Perfluorodecanoic acid (PFDA)		0.970 U
Perfluorododecanoic acid (PFDoA)		1.40 U
Perfluoroheptanoic acid (PFHpA)		1.40 U
Perfluorohexanesulfonic acid (PFHxS)		0.970 U
Perfluorohexanoic acid (PFHxA)		0.970 U
Perfluorononanoic acid (PFNA)		1.40 U
Perfluorooctane sulfonate (PFOS)		2.90 U
Perfluorooctanesulfonamide (FOSA)		2.90 U
Perfluorooctanoic acid (PFOA)		1.40 U
Perfluoropentanoic acid (PFPA)		0.970 U
Perfluorotetradecanoic acid (PFTA)		2.90 U
Perfluorotridecanoic acid (PFTrDA)		2.90 U
Perfluoroundecanoic acid (PFUnA)		1.40 U
	†PFOS + PFOA (EPA)	0.00
	‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.00
	§Sum of All Compounds Collected	0.710

PFAS Summary Report – Groundwater
Joint Base Cape Cod, IAGWSP
KGS 2020 J1 Ranges SPM Fall
J1 Range Northern

Location	MW-136M1	MW-136M1	MW-191M2	MW-245M1	MW-245M2	MW-303M2
Field Sample ID	MW-136M1_F20	MW-136M1_F20D	MW-191M2_F20	MW-245M1_F20	MW-245M2_F20	MW-303M2_F20
Sampling Depth	124.00 - 134.00	124.00 - 134.00	120.00 - 130.00	244.00 - 254.00	204.00 - 214.00	235.09 - 245.10
Sampling Date	12/07/2020	12/07/2020	12/07/2020	12/07/2020	11/10/2020	12/08/2020
SDG	320677691	320677691	320677691	320677691	320665921	320677701
Sample Type	Normal	Field Duplicate	Normal	Normal	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	19.0 U	18.0 U	19.0 U	19.0 U	19.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.60 U	9.20 U	9.70 U	9.30 U	9.30 U	9.50 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.60 U	9.20 U	15.0 J	9.30 U	9.30 U	9.50 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.60 U	9.20 U	2.90 J	9.30 U	9.30 U	9.50 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.960 U	0.920 U	0.970 U	0.930 U	0.930 U	0.950 U
Perfluorobutanesulfonic acid (PFBS)	0.960 U	0.920 U	0.970 U	0.930 U	0.930 U	0.950 U
Perfluorobutanoic acid (PFBA)	0.920 J	0.670 J	1.50 U	1.40 U	4.00	1.40 U
Perfluorodecane sulfonate	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.960 U	0.920 U	0.970 U	0.930 U	0.930 U	0.700 J
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U	1.70 J
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.50 U	1.40 U	0.700 J	1.40 U
Perfluorohexanesulfonic acid (PFHxS)	0.360 J	0.920 U	0.970 U	0.930 U	0.930 U	0.950 U
Perfluorohexanoic acid (PFHxA)	0.960 U	0.920 U	0.970 U	0.930 U	0.850 J	0.950 U
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U	1.40 U
Perfluorooctane sulfonate (PFOS)	2.90 U	2.80 U	2.90 U	2.80 U	2.80 U	2.90 U
Perfluorooctanesulfonamide (FOSA)	2.90 U	2.80 U	2.90 U	2.80 U	2.80 U	2.90 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U	1.40 U
Perfluoropentanoic acid (PFPA)	0.960 U	0.920 U	0.970 U	0.930 U	4.00	0.410 J
Perfluorotetradecanoic acid (PFTA)	2.90 U	2.80 U	2.90 U	2.80 U	2.80 U	2.90 U
Perfluorotridecanoic acid (PFTTrDA)	2.90 U	2.80 U	2.90 U	2.80 U	2.80 U	2.90 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U	2.80
†PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00	0.00	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.360	0.00	0.00	0.00	0.700	0.700
§Sum of All Compounds Collected	1.28	0.670	17.9	0.00	9.55	5.61

PFAS Summary Report – Groundwater
Joint Base Cape Cod, IAGWSP
KGS 2020 J1 Ranges SPM Fall
J1 Range Northern

Location	MW-303M3	MW-326M1	MW-326M2	MW-326M3	MW-346M1	MW-346M2
Field Sample ID	MW-303M3_F20	MW-326M1_F20	MW-326M2_F20	MW-326M3_F20	MW-346M1_F20	MW-346M2_F20
Sampling Depth	139.74 - 149.69	250.01 - 260.01	196.27 - 206.28	165.24 - 175.26	0.00 - 0.00	0.00 - 0.00
Sampling Date	12/08/2020	12/09/2020	12/09/2020	12/09/2020	12/02/2020	12/02/2020
SDG	320677701	320678771	320678771	320678771	320675551	320675551
Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	18.0 U	20.0 U	20.0 U	19.0 U	19.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	8.90 U	10.0 U	10.0 U	9.50 U	9.70 U	9.30 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	8.90 U	10.0 U	10.0 U	9.50 U	9.70 U	9.30 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	8.90 U	10.0 U	10.0 U	9.50 U	9.70 U	9.30 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.890 U	1.00 U	1.00 U	0.950 U	0.970 U	0.930 U
Perfluorobutanesulfonic acid (PFBS)	0.890 U	1.00 U	1.00 U	0.950 U	0.970 U	0.930 U
Perfluorobutanoic acid (PFBA)	0.920 J	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U
Perfluorodecane sulfonate	1.30 U	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	1.60 J	0.950 J	5.40	3.50	2.50	2.40
Perfluorododecanoic acid (PFDoA)	1.30 U	1.50 U	1.20 J	0.600 J	1.40 U	1.40 U
Perfluoroheptanoic acid (PFHpA)	1.30 U	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U
Perfluorohexanesulfonic acid (PFHxS)	0.890 U	1.00 U	1.00 U	0.950 U	0.970 U	0.930 U
Perfluorohexanoic acid (PFHxA)	0.890 U	1.00 U	1.00 U	0.950 U	0.970 U	0.930 U
Perfluorononanoic acid (PFNA)	2.60	1.50 J	1.40 J	2.70	3.40	3.50
Perfluorooctane sulfonate (PFOS)	2.70 U	3.00 U	3.00 U	2.90 U	2.90 U	2.80 U
Perfluorooctanesulfonamide (FOSA)	2.70 U	3.00 U	3.00 U	2.90 U	2.90 U	2.80 U
Perfluorooctanoic acid (PFOA)	1.30 U	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U
Perfluoropentanoic acid (PFPA)	0.890 U	0.440 J	1.00 U	0.950 U	0.620 J	0.870 J
Perfluorotetradecanoic acid (PFTA)	2.70 U	3.00 U	3.00 U	2.90 U	2.90 U	2.80 U
Perfluorotridecanoic acid (PFTTrDA)	2.70 U	3.00 U	3.00 U	2.90 U	2.90 U	2.80 U
Perfluoroundecanoic acid (PFUnA)	1.30 U	1.00 J	13.0	6.90	5.90	2.50
†PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00	0.00	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	4.20	2.45	6.80	6.20	5.90	5.90
§Sum of All Compounds Collected	5.12	3.89	21.0	13.7	12.4	9.27

PFAS Summary Report – Groundwater
Joint Base Cape Cod, IAGWSP
KGS 2020 J1 Ranges SPM Fall
J1 Range Northern

Location	MW-346M3	MW-346M4	MW-58S
Field Sample ID	MW-346M3_F20	MW-346M4_F20	MW-58S_F20
Sampling Depth	0.00 - 0.00	0.00 - 0.00	100.00 - 110.00
Sampling Date	12/02/2020	12/02/2020	12/07/2020
SDG	320675551	320675551	320677691
Sample Type	Normal	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	20.0 U	18.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.80 U	9.20 U	9.30 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.80 U	9.20 U	9.30 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.80 U	9.20 U	9.30 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.980 U	0.920 U	0.930 U
Perfluorobutanesulfonic acid (PFBS)	0.980 U	0.920 U	0.930 U
Perfluorobutanoic acid (PFBA)	1.50 U	1.40 U	1.40 U
Perfluorodecane sulfonate	1.50 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.730 J	1.70 J	0.930 U
Perfluorododecanoic acid (PFDoA)	1.50 U	1.40 U	1.40 U
Perfluoroheptanoic acid (PFHpA)	1.50 U	1.40 U	1.40 U
Perfluorohexanesulfonic acid (PFHxS)	0.980 U	0.920 U	0.930 U
Perfluorohexanoic acid (PFHxA)	0.980 U	0.920 U	0.930 U
Perfluorononanoic acid (PFNA)	2.20	0.650 J	1.40 U
Perfluorooctane sulfonate (PFOS)	2.90 U	2.80 U	2.80 U
Perfluorooctanesulfonamide (FOSA)	2.90 U	2.80 U	2.80 U
Perfluorooctanoic acid (PFOA)	1.50 U	1.40 U	1.40 U
Perfluoropentanoic acid (PFPA)	0.750 J	0.410 J	0.930 U
Perfluorotetradecanoic acid (PFTA)	2.90 U	2.80 U	2.80 U
Perfluorotridecanoic acid (PFTTrDA)	2.90 U	2.80 U	2.80 U
Perfluoroundecanoic acid (PFUnA)	1.00 J	6.00	1.40 U
†PFOS + PFOA (EPA)	0.00	0.00	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	2.93	2.35	0.00
§Sum of All Compounds Collected	4.68	8.76	0.00

PFAS Summary Report – Groundwater
Joint Base Cape Cod, IAGWSP
KGS 2020 J2 Ranges SPM Fall
J2 Range Northern

Location	J2EW0002	J2EW0002	J2EW2-MW2-B	J2EW2-MW2-C	MW-293M2	MW-293M2
Field Sample ID	J2EW0002_F20	J2EW0002_F20D	J2EW2-MW2-B_F20	J2EW2-MW2-C_F20	MW-293M2_F20	MW-293M2_F20D
Sampling Depth	198.00 - 233.00	198.00 - 233.00	209.79 - 219.79	243.83 - 253.81	196.42 - 206.42	196.42 - 206.42
Sampling Date	09/10/2020	09/10/2020	09/09/2020	09/09/2020	08/27/2020	08/27/2020
SDG	320645641	320645641	320645661	320645661	320641331	320641331
Sample Type	Normal	Field Duplicate	Normal	Normal	Normal	Field Duplicate
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	20.0 U	19.0 U	19.0 U	19.0 U	18.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.90 U	9.50 U	9.40 U	9.70 U	9.20 U	9.50 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.90 U	9.50 U	9.40 U	9.70 U	9.20 U	9.50 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.90 U	9.50 U	9.40 U	9.70 U	9.20 U	9.50 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.990 U	0.950 U	0.940 U	0.970 U	0.920 U	0.950 U
Perfluorobutanesulfonic acid (PFBS)	0.990 U	0.950 U	0.940 U	0.970 U	3.40	3.60
Perfluorobutanoic acid (PFBA)	1.50 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorodecane sulfonate	1.50 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.990 U	0.950 U	0.940 U	0.970 U	4.90	4.50
Perfluorododecanoic acid (PFDoA)	1.50 U	1.40 U	1.40 U	1.50 U	3.50	3.60
Perfluoroheptanoic acid (PFHpA)	0.930 J	0.910 J	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorohexanesulfonic acid (PFHxS)	9.80	9.30	0.940 U	0.970 U	0.920 U	0.950 U
Perfluorohexanoic acid (PFHxA)	1.10 J	1.10 J	0.940 U	0.970 U	0.920 U	0.950 U
Perfluorononanoic acid (PFNA)	1.50 U	1.40 U	1.40 U	1.50 U	2.00	1.50 J
Perfluorooctane sulfonate (PFOS)	3.00 U	2.80 U	2.80 U	2.90 U	2.80 U	2.80 U
Perfluorooctanesulfonamide (FOSA)	3.00 U	2.80 U	2.80 U	2.90 U	2.80 U	2.80 U
Perfluorooctanoic acid (PFOA)	1.70 J	1.70 J	1.40 U	1.50 U	1.40 U	1.40 U
Perfluoropentanoic acid (PFPA)	1.10 J	1.20 J	0.940 U	0.970 U	0.460 J	0.410 J
Perfluorotetradecanoic acid (PFTA)	3.00 U	2.80 U	2.80 U	2.90 U	2.80 U	2.80 U
Perfluorotridecanoic acid (PFTrDA)	3.00 U	2.80 U	2.80 U	2.90 U	1.50 J	1.90 J
Perfluoroundecanoic acid (PFUnA)	1.50 U	1.40 U	1.40 U	1.50 U	25.0	28.0
†PFOS + PFOA (EPA)	1.70	1.70	0.00	0.00	0.00	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	12.4	11.9	0.00	0.00	6.90	6.00
§Sum of All Compounds Collected	14.6	14.2	0.00	0.00	40.8	43.5

PFAS Summary Report – Groundwater
Joint Base Cape Cod, IAGWSP
KGS 2020 J2 Ranges SPM Fall
J2 Range Northern

Location	MW-300M1	MW-300M2	MW-300M3	MW-302M2	MW-305M1	MW-348M2
Field Sample ID	MW-300M1_F20	MW-300M2_F20	MW-300M3_F20	MW-302M2_F20	MW-305M1_F20	MW-348M2_F20
Sampling Depth	293.03 - 303.02	197.23 - 207.23	135.31 - 145.31	194.35 - 204.43	202.82 - 212.82	206.54 - 216.54
Sampling Date	09/08/2020	09/08/2020	09/08/2020	08/27/2020	08/31/2020	08/31/2020
SDG	320644781	320644781	320644781	320641331	320642421	320642421
Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	19.0 U	18.0 U	19.0 U	18.0 U	18.0 U	20.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.50 U	9.00 U	9.40 U	9.20 U	9.10 U	9.80 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.50 U	9.00 U	9.40 U	9.20 U	9.10 U	9.80 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.50 U	9.00 U	9.40 U	9.20 U	9.10 U	9.80 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.950 U	0.900 U	0.940 U	0.920 U	0.910 U	0.980 U
Perfluorobutanesulfonic acid (PFBS)	0.950 U	0.900 U	0.940 U	0.920 U	0.910 U	0.980 U
Perfluorobutanoic acid (PFBA)	1.40 U	1.40 U	0.550 J	1.40 U	1.40 U	1.00 J
Perfluorodecane sulfonate	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluorodecanoic acid (PFDA)	3.10	3.60	1.50 J	2.80	2.40	2.50
Perfluorododecanoic acid (PFDoA)	0.800 J	1.10 J	0.610 J	1.70 J	1.40 U	2.20
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluorohexanesulfonic acid (PFHxS)	1.90 U	0.900 U	0.940 U	0.920 U	0.910 U	0.980 U
Perfluorohexanoic acid (PFHxA)	0.950 U	0.900 U	0.940 U	0.920 U	0.910 U	0.980 U
Perfluorononanoic acid (PFNA)	3.90	2.30	0.960 J	1.00 J	1.40 J	1.50 U
Perfluorooctane sulfonate (PFOS)	2.90 U	2.70 U	2.80 U	2.80 U	2.70 U	2.90 U
Perfluorooctanesulfonamide (FOSA)	2.90 U	2.70 U	2.80 U	2.80 U	2.70 U	2.90 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluoropentanoic acid (PFPA)	0.580 J	0.430 J	0.940 U	1.40 J	0.910 U	1.20 J
Perfluorotetradecanoic acid (PFTA)	2.90 U	2.70 U	2.80 U	2.80 U	2.70 U	2.90 U
Perfluorotridecanoic acid (PFTTrDA)	2.90 U	0.880 J	2.80 U	2.80 U	2.70 U	2.90 U
Perfluoroundecanoic acid (PFUnA)	8.50	9.20	4.80	22.0	1.40 J	8.10
†PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00	0.00	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	7.00	5.90	2.46	3.80	3.80	2.50
§Sum of All Compounds Collected	16.9	17.5	8.42	28.9	5.20	15.0

PFAS Summary Report – Groundwater
Joint Base Cape Cod, IAGWSP
KGS 2020 J2 Ranges SPM Fall
J2 Range Northern

Location	MW-586M1	MW-586M2	MW-587M1	MW-588M1	MW-588M2	MW-589M1
Field Sample ID	MW-586M1_F20	MW-586M2_F20	MW-587M1_F20	MW-588M1_F20	MW-588M2_F20	MW-589M1_F20
Sampling Depth	237.00 - 247.00	211.00 - 221.00	250.00 - 260.00	238.00 - 248.00	198.00 - 208.00	240.00 - 250.00
Sampling Date	09/02/2020	09/02/2020	09/10/2020	08/27/2020	08/27/2020	09/02/2020
SDG	320643521	320643521	320645641	320641331	320641331	320643521
Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	18.0 U	19.0 U	19.0 U	19.0 U	18.0 U	18.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.20 U	9.60 U	9.40 U	9.30 U	9.20 U	9.00 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.20 U	9.60 U	9.40 U	9.30 U	9.20 U	9.00 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.20 U	9.60 U	9.40 U	9.30 U	9.20 U	9.00 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.920 U	0.960 U	0.940 U	0.930 U	0.920 U	0.900 U
Perfluorobutanesulfonic acid (PFBS)	0.920 U	0.960 U	0.940 U	0.930 U	3.60	0.900 U
Perfluorobutanoic acid (PFBA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorodecane sulfonate	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.920 U	0.960 U	0.940 U	0.930 U	0.920 U	0.900 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorohexanesulfonic acid (PFHxS)	0.920 U	0.960 U	0.940 U	0.930 U	0.920 U	0.900 U
Perfluorohexanoic acid (PFHxA)	0.920 U	0.960 U	0.940 U	0.930 U	0.920 U	0.900 U
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorooctane sulfonate (PFOS)	2.80 U	2.90 U	2.80 U	2.80 U	2.80 U	2.70 U
Perfluorooctanesulfonamide (FOSA)	2.80 U	2.90 U	2.80 U	2.80 U	2.80 U	2.70 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	0.600 J
Perfluoropentanoic acid (PFPA)	0.490 J	0.490 J	0.940 U	0.420 J	0.920 U	0.600 J
Perfluorotetradecanoic acid (PFTA)	2.80 U	2.90 U	2.80 U	2.80 U	2.80 U	2.70 U
Perfluorotridecanoic acid (PFTTrDA)	2.80 U	2.90 U	2.80 U	2.80 U	2.80 U	2.70 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
†PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00	0.00	0.600
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.00	0.00	0.00	0.00	0.00	0.600
§Sum of All Compounds Collected	0.490	0.490	0.00	0.420	3.60	1.20

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J2 Range Northern

Location	MW-589M2	MW-621M1	MW-621M2	MW-622M1	MW-622M2	MW-631M1
Field Sample ID	MW-589M2_F20	MW-621M1_F20	MW-621M2_F20	MW-622M1_F20	MW-622M2_F20	MW-631M1_F20
Sampling Depth	211.00 - 221.00	249.40 - 259.40	219.40 - 229.40	245.40 - 255.40	220.40 - 230.40	233.10 - 243.10
Sampling Date	09/02/2020	08/26/2020	08/26/2020	09/01/2020	09/01/2020	08/26/2020
SDG	320643521	320641331	320641331	320642411	320642411	320641331
Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	19.0 U	19.0 U	19.0 U	19.0 U	19.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.40 U	9.60 U	9.40 U	9.30 U	9.40 U	9.60 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.40 U	9.60 U	9.40 U	9.30 U	9.40 U	9.60 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.40 U	9.60 U	9.40 U	9.30 U	9.40 U	9.60 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.940 U	0.960 U	0.940 U	0.930 U	0.940 U	0.960 U
Perfluorobutanesulfonic acid (PFBS)	0.940 U	0.960 U	0.940 U	0.930 U	0.940 U	0.960 U
Perfluorobutanoic acid (PFBA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorodecane sulfonate	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.940 U	0.960 U	0.940 U	0.930 U	0.940 U	0.960 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorohexanesulfonic acid (PFHxS)	0.940 U	0.960 U	0.940 U	0.930 U	0.940 U	0.960 U
Perfluorohexanoic acid (PFHxA)	0.940 U	0.960 U	0.940 U	0.930 U	0.940 U	0.960 U
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorooctane sulfonate (PFOS)	2.80 U	2.90 U	2.80 U	2.80 U	2.80 U	2.90 U
Perfluorooctanesulfonamide (FOSA)	2.80 U	2.90 U	2.80 U	2.80 U	2.80 U	2.90 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluoropentanoic acid (PFPA)	0.940 U	0.440 J	0.940 U	0.400 J	0.940 U	0.420 J
Perfluorotetradecanoic acid (PFTA)	2.80 U	2.90 U	2.80 U	2.80 U	2.80 U	2.90 U
Perfluorotridecanoic acid (PFTTrDA)	2.80 U	2.90 U	2.80 U	2.80 U	2.80 U	2.90 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
†PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00	0.00	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.00	0.00	0.00	0.00	0.00	0.00
§Sum of All Compounds Collected	0.00	0.440	0.00	0.400	0.00	0.420

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J2 Range Northern

Location	MW-631M2	MW-632M1	MW-632M2	MW-632M2	MW-640M1	MW-640M2
Field Sample ID	MW-631M2_F20	MW-632M1_F20	MW-632M2_F20	MW-632M2_F20D	MW-640M1_F20	MW-640M2_F20
Sampling Depth	200.10 - 210.10	254.50 - 264.50	229.50 - 239.50	229.50 - 239.50	246.00 - 256.00	216.00 - 226.00
Sampling Date	08/26/2020	09/03/2020	09/03/2020	09/03/2020	09/03/2020	09/03/2020
SDG	320641331	320643511	320643511	320643511	320643511	320643511
Sample Type	Normal	Normal	Normal	Field Duplicate	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	18.0 U	19.0 U	18.0 U	19.0 U	19.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.20 U	9.40 U	9.00 U	9.60 U	9.40 U	9.30 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.20 U	9.40 U	9.00 U	9.60 U	9.40 U	9.30 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.20 U	9.40 U	9.00 U	9.60 U	9.40 U	9.30 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.920 U	0.940 U	0.900 U	0.960 U	0.940 U	0.930 U
Perfluorobutanesulfonic acid (PFBS)	8.50	0.940 U	0.900 U	0.960 U	0.940 U	0.930 U
Perfluorobutanoic acid (PFBA)	1.70 J	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorodecane sulfonate	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.920 U	0.940 U	0.900 U	0.960 U	0.940 U	0.930 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorohexanesulfonic acid (PFHxS)	1.80 U	0.940 U	0.900 U	0.960 U	0.360 J	0.930 U
Perfluorohexanoic acid (PFHxA)	5.40	0.940 U	0.900 U	0.960 U	0.940 U	0.930 U
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorooctane sulfonate (PFOS)	2.80 U	2.80 U	2.70 U	2.90 U	2.80 U	2.80 U
Perfluorooctanesulfonamide (FOSA)	2.80 U	2.80 U	2.70 U	2.90 U	2.80 U	2.80 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluoropentanoic acid (PFPA)	1.90	0.450 J	0.900 U	0.960 U	0.630 J	0.930 U
Perfluorotetradecanoic acid (PFTA)	2.80 U	2.80 U	2.70 U	2.90 U	2.80 U	2.80 U
Perfluorotridecanoic acid (PFTTrDA)	2.80 U	2.80 U	2.70 U	2.90 U	2.80 U	2.80 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
†PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00	0.00	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.00	0.00	0.00	0.00	0.360	0.00
§Sum of All Compounds Collected	17.5	0.450	0.00	0.00	0.990	0.00

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Location	MW-703M1	MW-703M2	MW-704M1	MW-704M2
Field Sample ID	MW-703M1_F20	MW-703M2_F20	MW-704M1_F20	MW-704M2_F20
Sampling Depth	248.00 - 258.00	224.10 - 234.10	244.00 - 254.00	217.80 - 227.80
Sampling Date	08/31/2020	08/31/2020	09/01/2020	09/01/2020
SDG	320642421	320642421	320642411	320642411
Sample Type	Normal	Normal	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	18.0 U	18.0 U	19.0 U	18.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.10 U	9.20 U	9.70 U	9.20 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.10 U	9.20 U	9.70 U	9.20 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.10 U	9.20 U	9.70 U	9.20 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.910 U	0.920 U	0.970 U	0.920 U
Perfluorobutanesulfonic acid (PFBS)	0.910 U	0.920 U	0.970 U	0.920 U
Perfluorobutanoic acid (PFBA)	1.40 U	1.40 U	1.40 J	1.40 U
Perfluorodecane sulfonate	1.40 U	1.40 U	1.50 U	1.40 U
Perfluorodecanoic acid (PFDA)	3.20	1.60 J	1.50 J	1.90
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.50 U	1.40 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.50 U	1.40 U
Perfluorohexanesulfonic acid (PFHxS)	0.910 U	0.920 U	0.970 U	0.920 U
Perfluorohexanoic acid (PFHxA)	0.910 U	0.920 U	0.970 U	0.920 U
Perfluorononanoic acid (PFNA)	1.80	0.900 J	1.50 U	0.890 J
Perfluorooctane sulfonate (PFOS)	2.70 U	2.70 U	2.90 U	2.80 U
Perfluorooctanesulfonamide (FOSA)	1.30 J	2.20 J	2.90 U	2.80 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	1.50 U	1.40 U
Perfluoropentanoic acid (PFPA)	0.650 J	0.830 J	1.10 J	0.400 J
Perfluorotetradecanoic acid (PFTA)	2.70 U	2.70 U	2.90 U	2.80 U
Perfluorotridecanoic acid (PFTTrDA)	2.70 U	2.70 U	2.90 U	2.80 U
Perfluoroundecanoic acid (PFUnA)	0.650 J	1.40 U	1.00 J	1.40 U
†PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	5.00	2.50	1.50	2.79
§Sum of All Compounds Collected	7.60	5.53	5.00	3.19

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Location	MW-143M2	MW-143M3	MW-163S	MW-163S	MW-181S	MW-193M1
Field Sample ID	MW-143M2_F20	MW-143M3_F20	MW-163S_F20	MW-163S_F20D	MW-181S_F20	MW-193M1_F20
Sampling Depth	117.00 - 122.00	107.00 - 112.00	38.00 - 48.00	38.00 - 48.00	32.25 - 42.25	57.50 - 62.50
Sampling Date	07/20/2020	07/21/2020	07/16/2020	07/16/2020	07/21/2020	07/16/2020
SDG	320629171	320629171	320627321	320627321	320629171	320627321
Sample Type	Normal	Normal	Normal	Field Duplicate	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	19.0 U	19.0 U	19.0 U	20.0 U	19.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.40 U	9.50 U	9.70 U	9.80 U	9.40 U	9.60 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.40 U	9.50 U	9.70 U	9.80 U	9.40 U	9.60 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.40 U	9.50 U	9.70 U	9.80 U	9.40 U	9.60 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.940 U	0.950 U	0.970 U	0.980 U	0.940 U	0.960 U
Perfluorobutanesulfonic acid (PFBS)	1.20 J	0.620 J	0.970 U	0.980 U	0.940 U	0.960 U
Perfluorobutanoic acid (PFBA)	1.40 U	1.40 U	1.00 J	1.00 J	1.40 U	0.570 J
Perfluorodecane sulfonate	1.40 U	1.40 U	1.50 U	1.50 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.940 U	0.950 U	0.970 U	0.980 U	0.940 U	0.960 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.50 U	1.50 U	1.40 U	1.40 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.50 U	1.50 U	1.40 U	1.40 U
Perfluorohexanesulfonic acid (PFHxS)	26.0	4.20	1.90 U	2.00 U	1.90 U	1.90 U
Perfluorohexanoic acid (PFHxA)	0.940 U	0.950 U	0.970 U	0.980 U	0.940 U	0.960 U
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.50 U	1.50 U	1.40 U	1.40 U
Perfluorooctane sulfonate (PFOS)	2.80 U	2.80 U	4.90	5.00	16.0	2.90 U
Perfluorooctanesulfonamide (FOSA)	2.80 U	2.80 U	2.90 U	2.90 U	2.80 U	2.90 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	0.840 J	0.940 J	0.510 J	1.40 U
Perfluoropentanoic acid (PFPA)	0.940 U	0.950 U	0.970 U	0.460 J	0.940 U	0.490 J
Perfluorotetradecanoic acid (PFTA)	2.80 U	2.80 U	2.90 U	2.90 U	2.80 U	2.90 U
Perfluorotridecanoic acid (PFTTrDA)	2.80 U	2.80 U	2.90 U	2.90 U	2.80 U	2.90 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.50 U	1.50 U	1.40 U	1.40 U
†PFOS + PFOA (EPA)	0.00	0.00	5.74	5.94	16.5	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	26.0	4.20	5.74	5.94	16.5	0.00
§Sum of All Compounds Collected	27.2	4.82	6.74	7.40	16.5	1.06

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Location	MW-193S	MW-196M1	MW-196S	MW-197M1	MW-197M2	MW-197M3
Field Sample ID	MW-193S_F20	MW-196M1_F20	MW-196S_F20	MW-197M1_F20	MW-197M2_F20	MW-197M3_F20D
Sampling Depth	32.50 - 37.50	45.00 - 50.00	32.00 - 37.00	120.00 - 125.00	80.20 - 85.20	60.20 - 65.20
Sampling Date	07/16/2020	07/23/2020	07/23/2020	07/20/2020	07/20/2020	07/20/2020
SDG	320627321	320630121	320630121	320629171	320629171	320629171
Sample Type	Normal	Normal	Normal	Normal	Normal	Field Duplicate
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	18.0 U	18.0 U	18.0 U	19.0 U	19.0 U	18.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.20 U	9.20 U	9.00 U	9.40 U	9.30 U	9.20 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.20 U	9.20 U	9.00 U	9.40 U	9.30 U	9.20 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.20 U	9.20 U	9.00 U	9.40 U	9.30 U	9.20 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.920 U	0.920 U	0.900 U	0.940 U	0.930 U	0.920 U
Perfluorobutanesulfonic acid (PFBS)	2.20	0.920 U	0.900 U	0.940 U	1.80 J	0.920 U
Perfluorobutanoic acid (PFBA)	1.20 J	1.80 U	1.80 U	1.40 U	4.90	1.40 J
Perfluorodecane sulfonate	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.920 U	0.550 J	0.900 U	0.940 U	0.930 U	0.920 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.30 U	1.40 U	4.00	1.40 U
Perfluorohexanesulfonic acid (PFHxS)	19.0	1.00 J	0.900 U	1.90 U	37.0	1.80 U
Perfluorohexanoic acid (PFHxA)	0.830 J	0.950 J	0.510 J	0.940 U	8.40	0.450 J
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U
Perfluorooctane sulfonate (PFOS)	2.80 U	1.10 J	3.80	2.80 U	10.0	2.80 U
Perfluorooctanesulfonamide (FOSA)	2.80 U	2.80 U	2.70 U	2.80 U	2.80 U	2.80 U
Perfluorooctanoic acid (PFOA)	1.40 U	2.10	1.10 J	0.550 J	3.10	1.10 J
Perfluoropentanoic acid (PFPA)	1.30 J	0.660 J	0.440 J	0.400 J	6.50	0.440 J
Perfluorotetradecanoic acid (PFTA)	2.80 U	2.80 U	2.70 U	2.80 U	2.80 U	2.80 U
Perfluorotridecanoic acid (PFTTrDA)	2.80 U	2.80 U	2.70 U	2.80 U	2.80 U	2.80 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U
†PFOS + PFOA (EPA)	0.00	3.20	4.90	0.550	13.1	1.10
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	19.0	4.75	4.90	0.550	54.1	1.10
§Sum of All Compounds Collected	24.5	6.36	5.85	0.950	75.7	3.39

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Location	MW-197M3	MW-198M1	MW-198M2	MW-198M3	MW-198M4	MW-232M1
Field Sample ID	MW-197M3_F20	MW-198M1_F20	MW-198M2_F20	MW-198M3_F20	MW-198M4_F20	MW-232M1_F20
Sampling Depth	60.20 - 65.20	150.00 - 155.00	120.00 - 125.00	100.00 - 105.00	70.00 - 75.00	77.50 - 82.50
Sampling Date	07/20/2020	07/15/2020	07/15/2020	07/15/2020	07/15/2020	07/16/2020
SDG	320629171	320627321	320627321	320627321	320627321	320627321
Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	18.0 U	19.0 U	19.0 U	19.0 U	19.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.20 U	9.50 U	9.50 U	9.50 U	9.50 U	9.50 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.20 U	9.50 U	9.50 U	9.50 U	9.50 U	9.50 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.20 U	9.50 U	9.50 U	9.50 U	9.50 U	9.50 U
Perfluoro-1-heptanesulfonate (PFHpS)	0.920 U	0.950 U	0.950 U	0.950 U	0.950 U	0.950 U
Perfluorobutanesulfonic acid (PFBS)	0.920 U	0.950 U	0.950 U	0.950 U	0.950 U	0.950 U
Perfluorobutanoic acid (PFBA)	1.50 J	1.40 U	0.740 J	0.740 J	6.50	2.20
Perfluorodecane sulfonate	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.920 U	0.950 U	0.950 U	0.950 U	0.950 U	0.950 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.40 U	1.40 U	1.80 J	1.40 U
Perfluorohexanesulfonic acid (PFHxS)	1.80 U	0.950 U	0.950 U	1.90 U	4.40	0.950 U
Perfluorohexanoic acid (PFHxA)	0.920 U	0.950 U	0.950 U	0.950 U	3.70	0.950 U
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorooctane sulfonate (PFOS)	1.00 J	2.80 U	2.90 U	2.80 U	2.30 J	2.90 U
Perfluorooctanesulfonamide (FOSA)	2.80 U	2.80 U	2.90 U	2.80 U	2.80 U	2.90 U
Perfluorooctanoic acid (PFOA)	0.990 J	1.40 U	1.40 U	1.40 U	2.30	0.640 J
Perfluoropentanoic acid (PFPA)	0.430 J	0.460 J	0.950 U	0.950 U	2.80	0.420 J
Perfluorotetradecanoic acid (PFTA)	2.80 U	2.80 U	2.90 U	2.80 U	2.80 U	2.90 U
Perfluorotridecanoic acid (PFTTrDA)	2.80 U	2.80 U	2.90 U	2.80 U	2.80 U	2.90 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
†PFOS + PFOA (EPA)	1.99	0.00	0.00	0.00	4.60	0.640
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	1.99	0.00	0.00	0.00	10.8	0.640
§Sum of All Compounds Collected	3.92	0.460	0.740	0.740	23.8	3.26

PFAS Summary Report – Groundwater
Joint Base Cape Cod, IAGWSP
KGS 2020 J3 Range SPM Fall
J3 Range

Location	MW-232M2	MW-30
Field Sample ID	MW-232M2_F20	MW-30_F20
Sampling Depth	61.00 - 66.00	26.00 - 36.00
Sampling Date	07/16/2020	07/21/2020
SDG	320627321	320629171
Sample Type	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	20.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	10.0 U	9.40 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	10.0 U	9.40 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	10.0 U	9.40 U
Perfluoro-1-heptanesulfonate (PFHpS)	1.00 U	0.940 U
Perfluorobutanesulfonic acid (PFBS)	1.00 U	0.940 U
Perfluorobutanoic acid (PFBA)	3.20	1.40 U
Perfluorodecane sulfonate	1.50 U	1.40 U
Perfluorodecanoic acid (PFDA)	1.00 U	0.940 U
Perfluorododecanoic acid (PFDoA)	1.50 U	1.40 U
Perfluoroheptanoic acid (PFHpA)	1.50 U	1.40 U
Perfluorohexanesulfonic acid (PFHxS)	1.00 U	0.940 U
Perfluorohexanoic acid (PFHxA)	1.00 U	0.940 U
Perfluorononanoic acid (PFNA)	1.50 U	1.40 U
Perfluorooctane sulfonate (PFOS)	3.00 U	15.0
Perfluorooctanesulfonamide (FOSA)	3.00 U	2.80 U
Perfluorooctanoic acid (PFOA)	1.10 J	0.790 J
Perfluoropentanoic acid (PFPA)	0.520 J	0.940 U
Perfluorotetradecanoic acid (PFTA)	3.00 U	2.80 U
Perfluorotridecanoic acid (PFTTrDA)	3.00 U	2.80 U
Perfluoroundecanoic acid (PFUnA)	1.50 U	1.40 U
†PFOS + PFOA (EPA)	1.10	15.8
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	1.10	15.8
§Sum of All Compounds Collected	4.82	15.8

PFAS Summary Report – Groundwater Joint Base Cape Cod, IAGWSP

Notes:

ng/L = nanograms per liter; ug/kg = micrograms per kilogram; U = not detected; J = estimated; UJ = estimated non detect

The LOQ value will be used to report non-detects when blank contamination occurs

Bolded results indicate detections of PFAS

Bolded and highlighted results indicate detection of PFAS above the EPA Lifetime Health Advisory: PFOS + PFOA > 70 ng/L.

Bolded and highlighted results indicate detection of PFAS6 above the MassDEP MCL: PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA > 20 ng/L

† Lifetime Health Advisory, US Environmental Protection Agency, May 2016

‡ PFAS Maximum Contaminant Level (MCL) Final Amendments ("MCL", 310 CMR 22.00 PFAS MCL Amendments), Massachusetts Department of Environmental Protection, October 2, 2020

§ PFAS compounds used in the summation of all analytes are listed in the above table