

**MONTHLY PROGRESS REPORT #301  
FOR APRIL 2022**

**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 to 30 April 2022.

**1. SUMMARY OF REMEDIATION ACTIONS**

**Remediation Actions (RA) Underway at Camp Edwards as of 29 April 2022:**

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, Base Boundary, and the Leading Edge include extraction wells, an ex-situ treatment process 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 gallons per minute (gpm), with over 2.911 billion gallons of water treated and re-injected as of 29 April 2022. The following Frank Perkins Road Treatment Facility shutdowns occurred in April.

- On 11 April 2022 by the JBCC Fire Department to test battery backup performance of the fire alarm system over a 48-hour period and was restarted on 13 April 2022.
- 1045 on 28 April 2022 due to a power outage and was restarted at 1310 on 28 April 2022.

The Base Boundary MTU continues to operate at a flow rate of 65 gpm. As of 29 April 2022, over 330.5 million gallons of water were treated and re-injected. The following Base Boundary MTU shutdowns occurred in April.

- 0900 on 26 April 2022 to move an electrical disconnect to make space for a VFD cabinet and was restarted at 1038 on 26 April 2022.

The Leading Edge system continues to operate at a flow rate of 100 gpm. As of 29 April 2022, over 298.3 million gallons of water were treated and re-injected. The following Leading Edge system shutdowns occurred in April.

- 0239 on 27 April 2022 due to a power interruption and was restarted at 0758 on 27 April 2022.

The Pew Road Mobile Treatment Unit (MTU) was turned off on 08 March 2021 (formerly operated at a flow rate of 65 GPM). Over 672.9 million gallons of water were treated and re-injected during the RA.

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, an 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 MTUs E and F continue to operate at a flow rate of 250 gpm. As of 29 April 2022, over 1.947 billion gallons of water have been treated and re-injected. No MTU E and F shutdowns occurred in April.

The Northern Treatment Building G continues to operate at a flow rate of 225 gpm. As of 29 April 2022, over 1.473 billion gallons of water have been treated and re-injected. No Northern MTU G shutdowns occurred in April.

#### 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 enters the vadose zone and infiltrates 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 29 April 2022, over 1.587 billion gallons of water have been treated and re-injected. No MTU H and I shutdowns occurred in April.

MTU J continues to operate at a flow rate of 120 gpm. As of 29 April 2022, over 740.0 million gallons of water have been treated and re-injected. The following MTU J shutdowns occurred in April.

- 1835 on 09 April 2022 due to a VFD fault alarm and was restarted at 0820 on 12 April 2022.

MTU K continues to operate at a flow rate of 125 gpm. As of 29 April 2022, over 862.0 million gallons of water have been treated and re-injected. No MTU K shutdowns occurred in April.

#### 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, an ex-situ treatment process to remove explosives compounds and perchlorate from the groundwater and utilizes the existing Fuel Spill-12 (FS-12) infiltration gallery to return treated water to the aquifer.

The J-3 system is currently operating at 195 gpm while EW-IP2 is inactive during maintenance. As of 29 April 2022, over 1.599 billion gallons of water have been treated and re-injected. The following J-3 Range system shutdowns occurred in April.

- 1130 on 17 April 2022 due to a possible power interruption and was restarted at 0746 on 18 April 2022.

- 0545 on 19 April 2022 due to a power interruption and was restarted at 0900 on 19 April 2022.
- 1600 on 19 April 2022 due to a low flow alarm and was restarted at 0740 on 20 April 2022.
- 1124 on 20 April 2022 due to a low flow alarm and was restarted at 1249 on 20 April 2022.
- 1710 on 21 April 2022 due to a low flow alarm and was restarted at 1020 on 22 April 2022.
- 1752 on 22 April 2022 due to a low flow alarm and was restarted at 0759 on 25 April 2022.
- 1300 on 25 April 2022 to test for faults, which determined that the pump and motor must be replaced; both were on order as of 06 May 2022.

### 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, an 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 29 April 2022, over 718.0 million gallons of water have been treated and re-injected. The following J-1 Range Southern system shutdowns occurred in April.

- 0545 on 19 April 2022 due to a power interruption and was restarted at 0740 on 19 April 2022.

#### 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, an 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 29 April 2022, over 1.087 billion gallons of water have been treated and re-injected. No J-1 Range Northern MTU shutdowns occurred in April.

### 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 resin and granular activated carbon 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 29 April 2022, over 2.820 billion gallons of water have been treated and re-injected. The following CIA system shutdowns occurred in April.

- 0850 on 23 March 2022 to diagnose the reinjection well failure, to repair the well screen, and to reinstall vessel carbon and was restarted at 0755 on 5 April 2022.
- 0500 on 08 April 2022 to repair an antenna conduit failure which allowed water ingress, to replace a power supply, and to reprogram the programmable logic computer (PLC) and was restarted at 1340 on 08 April 2022.
- 0840 on 22 April 2022 to replace the uninterrupted power supply and was restarted at 0900 on 22 April 2022.
- 1045 on 28 April 2022 due to a power outage and was restarted at 1340 on 28 April 2022.
- 1045 on 28 April 2022 due to a power outage and was restarted at 1330 on 28 April 2022.

## 2. SUMMARY OF ACTIONS TAKEN

### Operable Unit (OU) Activity as of 29 April 2022:

#### CIA

- Groundwater sampling within CIA SPM
- Hydraulic monitoring within CIA SPM
- Intrusive investigations
- Surface and vegetation clearance
- Routine processing of MD
- Routine check of CSS cover
- Demolition operations
- Staking of grids

#### Demolition Area 1

- Installation of new fire panel, pull stations, and strobes followed system test by JBCC Fire Department

#### Demolition Area 2

- No activity

#### J-1 Range

- Groundwater sampling within J-1 South SPM

#### J-2 Range

- Hydraulic monitoring within J-2 East SPM
- Bag filters exchanged.

#### J-3 Range

- Groundwater sampling within J-3 SPM

#### L Range

- No activity

#### Small Arms Ranges

- No activity

Northwest Corner

- No activity

Training Areas

- Inspected staged soil at H Range

Impact Area Roads

- No activity

Other

- Collected process water samples from Central Impact Area, Demolition Area 1, J-1 Range Northern, J-1 Range Southern, J-2 Range Eastern, J-2 Range Northern, and J-3 Range treatment systems

**JBCC Impact Area Groundwater Study Program (IAGWSP) Tech Update Meeting Minutes for 14 April 2022**Project and Fieldwork Update

Discussion was held on observations made by EPA during consolidated shot operations. During a field visit, EPA had questions on the set up, the plastic being used, and the soil outside of the BEM structure. It was noted that the sandbags and plywood were being used as a safety measure but that this wasn't in the written SOP. It was noted that it is standard and will be added to the SOP. The plastic seen during observations was originally beneath the clean soil stockpile before it was placed on the structure. EPA noted that there appeared to be much more sand outside of the structure compared to when it was originally constructed. It was agreed that it needs to be cleaned up and moved to the stockpile.

Weston has four teams in the CIA conducting intrusive in SU3-2 and SU4; those are carryovers from Phase IV Area 1. Weston is also staking the next five acres of grids and doing surface clearance ahead of vegetation clearance. Weston is working in the northernmost area around the SCAR Rocket area.

The LTM crews are currently performing the annual LTM sampling in the CIA which will be ongoing through April. They will move to the J-1 South, then J-3 PFAS then Demolition Area 2. The LTM crews will need to go back to CIA to collect samples from a few wells in the CIA proper that they were unable to collect to while Weston was away. All the treatment systems are currently up and running at normal flow rates. Monthly process water sampling were collected 1 April through 7 April. CIA 2 was shut down on 23 March due to a failing reinjection well. Video inspection showed that the screen was partially filled with material. Further inspection determined the material was carbon, which was evacuated from the well, and the well was redeveloped. On 4 April, the carbon was removed from the lag vessel, which was determined to be the source. The effluent screen was inspected and was determined to be partially broken. The screen was repaired, and the vessel was refilled with carbon. It shut down again on 8 April because water was entering the control panel from a broken conduit outside. The electric and control panels were reprogrammed, and the effluent screen went back online the same day. J-2 East Unit J plant tripped and was shut down on 9 April. It was determined to be blown fuses on two separate power poles. Review of camera footage determined that a crow landed on one of

the transformers, which resulted in damage to the starter motor and VFD panel. They were replaced, and the system was brought back online on 12 April.

The disposal of the 50 cubic yards of soil currently staged at H Range is still pending. All paperwork is in place. Huntsville is in the process of updating the ESS.

### Action Items

The action items were discussed and updated.

## **JBCC Impact Area Groundwater Study Program (IAGWSP) Tech Update Meeting Minutes for 28 April 2022**

### Project and Fieldwork Update

The new permanent Ordnance and Explosives Safety Specialist (OESS) from Huntsville arrived this week. It is Stormy Baird, who has worked at JBCC in the past and is very familiar with the project. In the CIA, Weston has completed clearing the items from in the CDC bunker. They are preparing for BIPS, with approximately thirty to complete. The BIP notifications will be sent shortly. USACE is waiting for a memo from Weston outlining their request to demolish all the white phosphorus (WP) rounds in a grid. Weston met with the JBCC Fire Department and consulted with Huntsville. The parties concurred that moving the consolidated shot for all WP into a grid is safer than doing it in the CSS structure. USACE asked Weston to share information with the team regarding doing the WP BIPs in the field. Weston has intrusive teams in SU3-2 and SU4, which are carryovers from last years' fifteen acres. The Weston teams are performing vegetation clearance in the new ten acres. It was noted that photographs and videos of recent consolidated shot activities have been loaded into EDMS. IAGWSP and USACE are working to find a permanent location in the database to catalogue all past media.

The groundwater sampling crews are currently finishing up the CIA system performance monitoring wells and sampling the J-3 treatment plant influent and effluent monitoring wells for PFAS. Those activities should be finished this week after which the crews will move to J-1 South, followed by J-2 North and Demolition Area 2. Sampling crews completed both the CIA and J-2 Range hydraulic events this week. All treatment systems are currently up and running at normal flow rates except for the J-3 system. Beginning on 17 April, the plant was tripping due to power interruptions, attributed to extraction well J3EWIP2. It was determined that the pump and motor of that extraction well need to be replaced. They are currently being ordered as of 28 April 2022. The J-3 system is running at a reduced capacity of 195 gallons per minute.

The disposal of the 50 cubic yards of soil currently staged at H Range is still pending. The group was reminded that the soil is from the Former E Range, J-2 Range, and KD Range. Huntsville is in the process of reviewing the updated ESS. Once everyone has signed off on the ESS, disposal will be scheduled.

Discussion was held on EPA comments on the Draft Technical Memorandum for J-2 Range Northern PFAS Evaluation. IAGWSP thought it would be good to get clarification on some of the comments and discuss the path forward. The cover letter from EPA requested greater detail on where PFAS are detected including screen depth and where the detections might be coming from. The cover letter also noted that the current technical memorandum failed to account for additional potential sources near other portions of the range e.g., J-2 East. IAGWSP noted that

the IAGWSP goal was to keep this effort focused on the immediate risk to the water supply well and as such would like to document any J-2 East investigation in a separate technical memorandum. EPA noted that they did not have an objection to that but wanted the efforts performed concurrently.

#### Action Items

The action items were discussed and updated.

#### **JBCC Cleanup Team Meeting**

The next JBCC Cleanup Team (JBCCCT) has yet to be scheduled (previous meeting was 13 April 2022). Meeting details and presentation materials from previous meetings can be found on the IAGWSP web site at <http://jbcc-iagwsp.org/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 to 30 April 2022. Table 2 summarizes the validated detections of explosives compounds and perchlorate for all groundwater results received from 1 to 30 April 2022. 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 operable units (OUs) under investigation and cleanup at Camp Edwards are the Central Impact Area, Demolition Area 1, Demolition Area 2, J-1 Range, J-2 Range, J-3 Range, L Range, Northwest Corner, Small Arms Ranges, and Training Areas. 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. 300 for March 2022   | 10 April 2022 |
| • J-3 Range Draft Technical Memorandum: Confirmatory PFAS Sampling   | 08 April 2022 |
| • Response to Comments on the Draft Technical Memorandum: Central Impact Area RDX Plume Shell Development                            | 12 April 2022 |
| • Response to Comments on the Central Impact Area Draft 2021 Environmental Monitoring Report   | 14 April 2022 |
| • J-2 Range Northern Draft Technical Memorandum: PFAS Evaluation   | 14 April 2022 |
| • J-1 Range Southern Draft Technical Memorandum: Additional Monitoring Well  | 14 April 2022 |
| • J-2 Range Northern Draft Technical Memorandum: Perchlorate Plume Shell   | 18 April 2022 |
| • J-2 Range Eastern Perchlorate and RDX Plume Shell Development Draft Technical Memorandum   | 18 April 2022 |
| • Central Impact Area 2021 Final Environmental Monitoring Report   | 25 April 2022 |
| • Response to Comments Letter on the Small Arms Ranges Revised Draft Completion of Work Report                                       | 27 April 2022 |
| • Draft Final Small Arms Ranges Soil Removal Activities Completion of Work Report  | 27 April 2022 |
| • Response to Comments on the Draft Technical Memorandum: Demolition Area 1 Groundwater Extraction System Well Field Design – MW-533 | 28 April 2022 |

#### 5. SCHEDULED ACTIONS

The following actions and/or documents are being prepared in May 2022.

- J-2 Range, Phase-2, Addendum to Post-DD Confirmation Geophysical and Soil Investigation Findings Revised Technical Memorandum and Response to Comments
- Central Impact Area Final 2021 Annual Environmental Monitoring Report
- Five Year Review Report
- IRA Completion Report
- J-1 Southern Final 2021 Annual Environmental Monitoring Report
- Response to Comments on the J-2 Northern Draft 2022 Annual Environmental Monitoring Report
- J-2 Northern Revised Draft Work Plan for PFAS Sampling and Proposed New Monitoring Wells
- J-2 Northern Plume Shell Development Technical Memorandum
- KD Range Confirmatory Geophysical and Soil Investigation Completion of Work Report



- Former E Range Confirmatory Geophysical and Soil Investigation Findings Phase 2 Draft Technical Memorandum
- J-3 Range Revised Draft Work Plan for PFAS Sampling
- Response to Comments Letter on the Central Impact Area Draft Source Area Removal Report
- Central Impact Area Final Technical Memorandum: Plume Shell Update
- Demolition Area 1 Final Technical Memorandum: Proposed New Extraction Well
- Response to Comments Letter on the J-1 Southern Draft Proposed New Well Technical Memorandum
- Response to Comments Letter on the J-2 Eastern Draft 2021 Annual Environmental Monitoring Report
- Response to Comments Letter on the J-3 Draft 2021 Annual Environmental Monitoring Report
- Response to Comments Letter on the Northwest Corner Demonstration of Compliance Report

**TABLE 1**  
**Sampling Progress: 1 to 30 April 2022**

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J1 Range Southern	MW-722M1	MW-722M1_S22	N	04-28-2022	Ground Water	114.2	124.2
J1 Range Southern	MW-722M1	MW-722M1_S22D	FD	04-28-2022	Ground Water	114.2	124.2
Central Impact Area	MW-270D	MW-270D_S22	N	04-28-2022	Ground Water	132	137
J3 Range	J3-EFF	J3-EFF_2Q22	N	04-28-2022	Ground Water	0	0
J3 Range	J3-INF	J3-INF_2Q22	N	04-28-2022	Ground Water	0	0
Central Impact Area	MW-284M2	MW-284M2_S22	N	04-25-2022	Ground Water	45	55
Northwest Corner	MW-284M2	MW-284M2_S22	N	04-25-2022	Ground Water	45	55
Central Impact Area	MW-284M1	MW-284M1_S22	N	04-25-2022	Ground Water	115	125
Northwest Corner	MW-284M1	MW-284M1_S22	N	04-25-2022	Ground Water	115	125
Central Impact Area	MW-03M2	MW-03M2_S22	N	04-25-2022	Ground Water	180	185
Central Impact Area	MW-204M2	MW-204M2_S22	N	04-25-2022	Ground Water	76	86
Central Impact Area	MW-204M1	MW-204M1_S22	N	04-25-2022	Ground Water	141	151
Central Impact Area	MW-204M1	MW-204M1_S22D	FD	04-25-2022	Ground Water	141	151
Central Impact Area	MW-51M2	MW-51M2_S22	N	04-21-2022	Ground Water	203	213
Central Impact Area	MW-51M1	MW-51M1_S22	N	04-21-2022	Ground Water	234	244
Central Impact Area	MW-51D	MW-51D_S22	N	04-21-2022	Ground Water	264	274
Central Impact Area	MW-203M2	MW-203M2_S22	N	04-20-2022	Ground Water	176	186
Central Impact Area	MW-39M1	MW-39M1_S22	N	04-20-2022	Ground Water	220	230
Central Impact Area	MW-115S	MW-115S_S22	N	04-20-2022	Ground Water	116	126
Central Impact Area	MW-115M1	MW-115M1_S22	MS	04-20-2022	Ground Water	138	148
Central Impact Area	MW-115M1	MW-115M1_S22	N	04-20-2022	Ground Water	138	148
Central Impact Area	MW-115M1	MW-115M1_S22	SD	04-20-2022	Ground Water	138	148
Central Impact Area	MW-106M1	MW-106M1_S22	N	04-20-2022	Ground Water	170.5	180.5
Central Impact Area	MW-687M2	MW-687M2_S22	N	04-19-2022	Ground Water	188	198
Central Impact Area	MW-687M1	MW-687M1_S22	N	04-19-2022	Ground Water	232.6	242.6
Central Impact Area	MW-686M2	MW-686M2_S22	N	04-19-2022	Ground Water	194.3	204.3
Central Impact Area	MW-686M1	MW-686M1_S22	N	04-19-2022	Ground Water	243.2	253.2
Central Impact Area	MW-95M2	MW-95M2_S22	N	04-18-2022	Ground Water	167	177
Central Impact Area	MW-95M1	MW-95M1_S22	N	04-18-2022	Ground Water	202	212
Central Impact Area	MW-95M1	MW-95M1_S22D	FD	04-18-2022	Ground Water	202	212
Central Impact Area	MW-89M3	MW-89M3_S22	N	04-18-2022	Ground Water	174	184
Central Impact Area	MW-89M2	MW-89M2_S22	N	04-18-2022	Ground Water	214	224
Central Impact Area	MW-89M2	MW-89M2_S22D	FD	04-18-2022	Ground Water	214	224
Central Impact Area	MW-89M1	MW-89M1_S22	N	04-18-2022	Ground Water	234	244
Central Impact Area	MW-43M2	MW-43M2_S22	N	04-14-2022	Ground Water	200	210
Central Impact Area	MW-43M1	MW-43M1_S22	N	04-14-2022	Ground Water	223	233
Central Impact Area	MW-86S	MW-86S_S22	N	04-14-2022	Ground Water	143	153
Central Impact Area	MW-86M2	MW-86M2_S22	N	04-14-2022	Ground Water	158	168
Central Impact Area	MW-86M1	MW-86M1_S22	MS	04-14-2022	Ground Water	208	218
Central Impact Area	MW-86M1	MW-86M1_S22	N	04-14-2022	Ground Water	208	218
Central Impact Area	MW-86M1	MW-86M1_S22	SD	04-14-2022	Ground Water	208	218
Central Impact Area	MW-111M1	MW-111M1_S22	MS	04-13-2022	Ground Water	224	234
Central Impact Area	MW-111M1	MW-111M1_S22	N	04-13-2022	Ground Water	224	234
Central Impact Area	MW-111M1	MW-111M1_S22	SD	04-13-2022	Ground Water	224	234
Central Impact Area	MW-87M2	MW-87M2_S22	N	04-13-2022	Ground Water	169	179
Central Impact Area	MW-87M1	MW-87M1_S22	N	04-13-2022	Ground Water	194	204
Central Impact Area	MW-88M2	MW-88M2_S22	N	04-13-2022	Ground Water	213	223
Central Impact Area	MW-88M1	MW-88M1_S22	N	04-13-2022	Ground Water	233	243
Central Impact Area	MW-123M2	MW-123M2_S22	N	04-12-2022	Ground Water	236	246
Central Impact Area	MW-123M1	MW-123M1_S22	N	04-12-2022	Ground Water	291	301
Central Impact Area	MW-629M2	MW-629M2_S22	N	04-12-2022	Ground Water	186.9	196.9
Central Impact Area	MW-629M1	MW-629M1_S22	N	04-12-2022	Ground Water	216.9	226.9
Central Impact Area	MW-638M2	MW-638M2_S22	N	04-12-2022	Ground Water	204.2	214.2
Central Impact Area	MW-638M1	MW-638M1_S22	N	04-12-2022	Ground Water	261.2	271.2
Central Impact Area	MW-623M3	MW-623M3_S22	N	04-11-2022	Ground Water	275	285
Central Impact Area	MW-623M2	MW-623M2_S22	N	04-11-2022	Ground Water	291.8	301.8
Central Impact Area	MW-623M1	MW-623M1_S22	N	04-11-2022	Ground Water	340	350
Central Impact Area	MW-486M1	MW-486M1_S22	N	04-07-2022	Ground Water	185.7	195.7
Central Impact Area	MW-485M1	MW-485M1_S22	N	04-07-2022	Ground Water	125.32	135.32

N = Normal Sample  
FD = Field Duplicate

**TABLE 1**  
**Sampling Progress: 1 to 30 April 2022**

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
Central Impact Area	MW-485M1	MW-485M1_S22D	FD	04-07-2022	Ground Water	125.32	135.32
Central Impact Area	MW-27	MW-27_S22	N	04-07-2022	Ground Water	117	127
Central Impact Area	MW-477M2	MW-477M2_S22	N	04-07-2022	Ground Water	145.62	155.62
Central Impact Area	MW-477M2	MW-477M2_S22D	FD	04-07-2022	Ground Water	145.62	155.62
Central Impact Area	MW-477M1	MW-477M1_S22	N	04-07-2022	Ground Water	187.53	197.53
Central Impact Area	CIA2-EFF	CIA2-EFF-99A	N	04-07-2022	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-99A	N	04-07-2022	Process Water	0	0
Central Impact Area	CIA2-MID1	CIA2-MID1-99A	N	04-07-2022	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-99A	N	04-07-2022	Process Water	0	0
Central Impact Area	MW-107M2	MW-107M2_S22	N	04-06-2022	Ground Water	125	135
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-193A	N	04-06-2022	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-193A	N	04-06-2022	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-193A	N	04-06-2022	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-193A	N	04-06-2022	Process Water	0	0
Central Impact Area	MW-40S	MW-40S_S22	N	04-06-2022	Ground Water	115.5	126
Demolition Area 1	D1LE-EFF	D1LE-EFF-69A	N	04-06-2022	Process Water	0	0
Demolition Area 1	D1LE-MID2	D1LE-MID2-69A	N	04-06-2022	Process Water	0	0
Demolition Area 1	D1LE-MID1	D1LE-MID1-69A	N	04-06-2022	Process Water	0	0
Demolition Area 1	D1LE-INF	D1LE-INF-69A	N	04-06-2022	Process Water	0	0
Central Impact Area	MW-40M1	MW-40M1_S22	N	04-06-2022	Ground Water	132.5	142
Demolition Area 1	D1-EFF	D1-EFF-141A	N	04-06-2022	Process Water	0	0
Demolition Area 1	D1-MID-2	D1-MID-2-141A	N	04-06-2022	Process Water	0	0
Demolition Area 1	D1-MID-1	D1-MID-1-141A	N	04-06-2022	Process Water	0	0
Demolition Area 1	D1-INF	D1-INF-141A	N	04-06-2022	Process Water	0	0
Central Impact Area	MW-25	MW-25_S22	N	04-06-2022	Ground Water	108	118
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-187A	N	04-06-2022	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-187A	N	04-06-2022	Process Water	0	0
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-187A	N	04-06-2022	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-187A	N	04-06-2022	Process Water	0	0
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-187A	N	04-06-2022	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-187A	N	04-06-2022	Process Water	0	0
Central Impact Area	MW-184M1	MW-184M1_S22	N	04-06-2022	Ground Water	186	196
Central Impact Area	MW-184M1	MW-184M1_S22D	FD	04-06-2022	Ground Water	186	196
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-187A	N	04-06-2022	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-187A	N	04-06-2022	Process Water	0	0
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-187A	N	04-06-2022	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-187A	N	04-06-2022	Process Water	0	0
Central Impact Area	MW-728M1	MW-728M1_S22	N	04-05-2022	Ground Water	153.4	163.4
Central Impact Area	MW-38M4	MW-38M4_S22	N	04-05-2022	Ground Water	132	142
J1 Range Northern	J1N-EFF	J1N-EFF-102A	N	04-05-2022	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-102A	N	04-05-2022	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-102A	N	04-05-2022	Process Water	0	0
J1 Range Northern	J1N-INF2	J1N-INF2-102A	N	04-05-2022	Process Water	0	0
Central Impact Area	MW-38M3	MW-38M3_S22	N	04-05-2022	Ground Water	170	180
Central Impact Area	CIA1-EFF	CIA1-EFF-99A	N	04-05-2022	Process Water	0	0
Central Impact Area	CIA1-MID2	CIA1-MID2-99A	N	04-05-2022	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-99A	N	04-05-2022	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-99A	N	04-05-2022	Process Water	0	0
Central Impact Area	MW-725M1	MW-725M1_S22	N	04-05-2022	Ground Water	145.2	155.2
Central Impact Area	MW-725M1	MW-725M1_S22D	FD	04-05-2022	Ground Water	145.2	155.2
Central Impact Area	CIA3-EFF	CIA3-EFF-70A	N	04-05-2022	Process Water	0	0
Central Impact Area	CIA3-MID2	CIA3-MID2-70A	N	04-05-2022	Process Water	0	0
Central Impact Area	CIA3-MID1	CIA3-MID1-70A	N	04-05-2022	Process Water	0	0
Central Impact Area	CIA3-INF	CIA3-INF-70A	N	04-05-2022	Process Water	0	0
Central Impact Area	MW-85S	MW-85S_S22	N	04-05-2022	Ground Water	116	126
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-163A	N	04-04-2022	Process Water	0	0
Central Impact Area	MW-37M2	MW-37M2_S22	N	04-04-2022	Ground Water	145	155
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-163A	N	04-04-2022	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-163A	N	04-04-2022	Process Water	0	0

N = Normal Sample  
FD = Field Duplicate

**TABLE 1**  
**Sampling Progress: 1 to 30 April 2022**

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J2 Range Eastern	J2E-INF-K	J2E-INF-K-163A	N	04-04-2022	Process Water	0	0
Central Impact Area	MW-01S	MW-01S_S22	N	04-04-2022	Ground Water	114	124
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-163A	N	04-04-2022	Process Water	0	0
Central Impact Area	MW-01M2	MW-01M2_S22	N	04-04-2022	Ground Water	160	165
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-163A	N	04-04-2022	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-163A	N	04-04-2022	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-163A	N	04-04-2022	Process Water	0	0
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-163A	N	04-04-2022	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-163A	N	04-04-2022	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-163A	N	04-04-2022	Process Water	0	0
Central Impact Area	MW-90S	MW-90S_S22	N	04-04-2022	Ground Water	118	128
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-163A	N	04-04-2022	Process Water	0	0
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-163A	N	04-04-2022	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-163A	N	04-04-2022	Process Water	0	0
Central Impact Area	MW-90M1	MW-90M1_S22	N	04-04-2022	Ground Water	145	155
Central Impact Area	MW-179M1	MW-179M1_S22	N	04-04-2022	Ground Water	187	197
Central Impact Area	MW-113M2	MW-113M2_S22	N	04-01-2022	Ground Water	190	200
Central Impact Area	MW-113M1	MW-113M1_S22	N	04-01-2022	Ground Water	240	250
J1 Range Southern	J1S-EFF	J1S-EFF-173A	N	04-01-2022	Process Water	0	0
J1 Range Southern	J1S-MID	J1S-MID-173A	N	04-01-2022	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-173A	N	04-01-2022	Process Water	0	0
Central Impact Area	MW-112M2	MW-112M2_S22	N	04-01-2022	Ground Water	165	175
J3 Range	J3-EFF	J3-EFF-187A	N	04-01-2022	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-187A	N	04-01-2022	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-187A	N	04-01-2022	Process Water	0	0
J3 Range	J3-INF	J3-INF-187A	N	04-01-2022	Process Water	0	0
Central Impact Area	MW-112M1	MW-112M1_S22	N	04-01-2022	Ground Water	195	205
Central Impact Area	MW-02M2	MW-02M2_S22	N	04-01-2022	Ground Water	170	175
Central Impact Area	MW-02M1	MW-02M1_S22	N	04-01-2022	Ground Water	212	217

**TABLE 2**  
**VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS**  
**Data Received April 2022**

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
Central Impact Area	MW-209M2	MW-209M2_S22	220	230	03-15-2022	SW6850	Perchlorate	0.25		µg/L	2.0		0.086	0.20
Central Impact Area	MW-209M1	MW-209M1_S22	240	250	03-15-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.0		µg/L	0.60	X	0.037	0.20
Central Impact Area	MW-209M1	MW-209M1_S22	240	250	03-15-2022	SW6850	Perchlorate	2.9		µg/L	2.0	X	0.086	0.20
Central Impact Area	MW-209M1	MW-209M1_S22	240	250	03-15-2022	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.32		µg/L	400		0.11	0.20
Central Impact Area	MW-209M1	MW-209M1_S22D	240	250	03-15-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.0		µg/L	0.60	X	0.037	0.20
Central Impact Area	MW-209M1	MW-209M1_S22D	240	250	03-15-2022	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.35		µg/L	400		0.11	0.20
Central Impact Area	MW-209M1	MW-209M1_S22D	240	250	03-15-2022	SW6850	Perchlorate	2.6		µg/L	2.0	X	0.086	0.20
Central Impact Area	MW-608M2	MW-608M2_S22	253.4	263.4	03-15-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.26		µg/L	0.60		0.037	0.20
Central Impact Area	MW-608M1	MW-608M1_S22	267.4	277.4	03-15-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.41		µg/L	0.60		0.037	0.20
Central Impact Area	MW-615M1	MW-615M1_S22	260	270	03-10-2022	SW6850	Perchlorate	1.1		µg/L	2.0		0.086	0.20
Central Impact Area	MW-615M1	MW-615M1_S22	260	270	03-10-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.8		µg/L	0.60	X	0.037	0.20
Central Impact Area	MW-615M1	MW-615M1_S22	260	270	03-10-2022	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.22		µg/L	400		0.11	0.20
Central Impact Area	MW-615M1	MW-615M1_S22D	260	270	03-10-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.8		µg/L	0.60	X	0.037	0.20
Central Impact Area	MW-615M1	MW-615M1_S22D	260	270	03-10-2022	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.23		µg/L	400		0.11	0.20
Central Impact Area	MW-626M2	MW-626M2_S22	237.2	247.2	03-10-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.28		µg/L	0.60		0.037	0.20
Central Impact Area	MW-626M1	MW-626M1_S22	282.2	292.2	03-10-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.95		µg/L	0.60	X	0.037	0.20
Central Impact Area	MW-644M1	MW-644M1_S22	275.9	285.9	03-10-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.3		µg/L	0.60	X	0.037	0.20
Central Impact Area	MW-644M1	MW-644M1_S22	275.9	285.9	03-10-2022	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.11	J	µg/L	400		0.11	0.20
Central Impact Area	MW-644M1	MW-644M1_S22D	275.9	285.9	03-10-2022	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.11	J	µg/L	400		0.11	0.20
Central Impact Area	MW-644M1	MW-644M1_S22D	275.9	285.9	03-10-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.3		µg/L	0.60	X	0.037	0.20
Central Impact Area	MW-699M1	MW-699M1_S22	261.5	271.5	03-09-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.84		µg/L	0.60	X	0.037	0.20
Central Impact Area	MW-23M1	MW-23M1_S22	225	235	03-03-2022	SW6850	Perchlorate	0.62		µg/L	2.0		0.086	0.20
Central Impact Area	MW-23D	MW-23D_S22	272	282	03-03-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.26		µg/L	0.60		0.037	0.20
Central Impact Area	MW-176M1	MW-176M1_S22	270	280	03-02-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.83		µg/L	0.60	X	0.037	0.20
Central Impact Area	MW-609M2	MW-609M2_S22	182.4	192.4	03-02-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.060	J	µg/L	0.60		0.037	0.20
Central Impact Area	MW-609M1	MW-609M1_S22	210.4	220.4	03-02-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.8		µg/L	0.60	X	0.037	0.20
Central Impact Area	MW-609M1	MW-609M1_S22D	210.4	220.4	03-02-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.8		µg/L	0.60	X	0.037	0.20
Central Impact Area	MW-625M1	MW-625M1_S22	260	270	02-28-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.52		µg/L	0.60		0.037	0.20
Central Impact Area	MW-42M3	MW-42M3_S22	165.8	176	02-24-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.18	J	µg/L	0.60		0.062	0.20
Central Impact Area	MW-42M1	MW-42M1_S22	205.8	216	02-24-2022	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.3		µg/L	0.60	X	0.062	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
<b>PFAS 21 Cmps</b>	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
Perfluorobutanesulfonic acid	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
Perfluorodecanesulfonic acid (PFDS)	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	<b>2.20</b>	0.980 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.50 U	1.50 U	1.50 U
Perfluoroheptanesulfonic acid (PFHpS)	0.910 U	0.950 U	0.980 U	0.980 U	0.980 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.50 U	1.50 U	1.50 U
Perfluorohexane sulfonate (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	<b>1.00 J</b>	1.50 U
Perfluorooctanesulfonamide (PFOSA)	2.70 U	2.80 U	2.90 U	3.00 U	2.90 U
Perfluorooctanesulfonic acid (PFOS)	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 (PFPeA)	0.910 U	0.950 U	0.980 U	<b>0.460 J</b>	0.980 U
Perfluorotetradecanoic acid (PFTeDA)	2.70 U	2.80 U	2.90 U	3.00 U	2.90 U
Perfluorotridecanoic acid (PFTTrDA)	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	<b>1.20 J</b>	1.50 U
<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.20</b>	<b>0.00</b>
<b>§Sum of All Compounds Detected</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>4.86</b>	<b>0.00</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2019 PFAS MW&INF  
 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
<b>PFAS 21 Cmps</b>	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
Perfluorobutanesulfonic acid	0.930 U	0.960 U	0.980 U	0.920 U	0.960 U
Perfluorobutanoic acid (PFBA)	1.90 U	1.40 U	<b>0.990 J</b>	1.40 U	1.40 U
Perfluorodecanesulfonic acid (PFDS)	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
Perfluoroheptanesulfonic acid (PFHpS)	0.930 U	0.960 U	0.980 U	0.920 U	0.960 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorohexane sulfonate (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
Perfluorooctanesulfonamide (PFOSA)	<b>1.80 J</b>	2.90 U	2.90 U	2.80 U	2.90 U
Perfluorooctanesulfonic acid (PFOS)	<b>4.90</b>	2.90 U	<b>1.40 J</b>	2.80 U	2.90 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	<b>2.40</b>	1.40 U	1.40 U
Perfluoropentanoic acid (PFPeA)	0.930 U	0.960 U	0.980 U	0.920 U	0.960 U
Perfluorotetradecanoic acid (PFTeDA)	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
<b>†PFOS + PFOA (EPA)</b>	<b>4.90</b>	<b>0.00</b>	<b>3.80</b>	<b>0.00</b>	<b>0.00</b>
<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>4.90</b>	<b>0.00</b>	<b>2.40</b>	<b>0.00</b>	<b>0.00</b>
<b>§Sum of All Compounds Detected</b>	<b>6.70</b>	<b>0.00</b>	<b>4.79</b>	<b>0.00</b>	<b>0.00</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2019 PFAS MW&INF  
 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
<b>PFAS 21 Cmps</b>	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
Perfluorobutanesulfonic acid	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
Perfluorodecanesulfonic acid (PFDS)	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	<b>1.40 J</b>
Perfluorododecanoic acid (PFDoA)	1.50 U	1.40 U	1.50 U	1.30 U	1.40 U	<b>0.450 J</b>
Perfluoroheptanesulfonic acid (PFHpS)	0.970 U	0.930 U	0.980 U	0.900 U	0.960 U	0.850 U
Perfluoroheptanoic acid (PFHpA)	1.50 U	1.40 U	1.50 U	1.30 U	1.40 U	1.30 U
Perfluorohexane sulfonate (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	<b>0.880 J</b>	<b>0.730 J</b>	<b>0.650 J</b>
Perfluorooctanesulfonamide (PFOSA)	2.90 U	2.80 U	2.90 U	2.70 U	2.90 U	2.60 U
Perfluorooctanesulfonic acid (PFOS)	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 (PFPeA)	0.970 U	0.930 U	0.980 U	0.900 U	0.960 U	0.850 U
Perfluorotetradecanoic acid (PFTeDA)	2.90 U	2.80 U	2.90 U	2.70 U	2.90 U	2.60 U
Perfluorotridecanoic acid (PFTTrDA)	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	<b>4.90</b>
<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>§Sum of All Compounds Detected</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.880</b>	<b>0.730</b>	<b>7.40</b>



**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2019 PFAS MW&INF  
 J2 Range Eastern

	Location	MW-368M2	MW-667M1
	<b>Field Sample ID</b>	MW-368M2_PFAS19	MW-667M1_PFAS19
	<b>Sampling Depth</b>	202.73 - 212.73	302.30 - 312.30
	<b>Sampling Date</b>	06/18/2019	06/17/2019
	<b>SDG</b>	320514662	320514661
	<b>Sample Type</b>	<b>Normal</b>	<b>Normal</b>
<b>PFAS 21 Cmps</b>		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
Perfluorobutanesulfonic acid		0.880 U	0.900 U
Perfluorobutanoic acid (PFBA)		1.30 U	1.80 U
Perfluorodecanesulfonic acid (PFDS)		1.30 U	1.40 U
Perfluorodecanoic acid (PFDA)		<b>0.800 J</b>	<b>4.30</b>
Perfluorododecanoic acid (PFDoA)		1.30 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)		0.880 U	0.900 U
Perfluoroheptanoic acid (PFHpA)		1.30 U	1.40 U
Perfluorohexane sulfonate (PFHxS)		0.880 U	0.900 U
Perfluorohexanoic acid (PFHxA)		0.880 U	0.900 U
Perfluorononanoic acid (PFNA)		1.30 U	<b>2.80</b>
Perfluorooctanesulfonamide (PFOSA)		2.60 U	2.70 U
Perfluorooctanesulfonic acid (PFOS)		2.60 U	2.70 U
Perfluorooctanoic acid (PFOA)		1.30 U	1.40 U
Perfluoropentanoic acid (PFPeA)		0.880 U	0.900 U
Perfluorotetradecanoic acid (PFTeDA)		2.60 U	2.70 U
Perfluorotridecanoic acid (PFTrDA)		2.60 U	2.70 U
Perfluoroundecanoic acid (PFUnA)		<b>2.40</b>	<b>1.60 J</b>
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>7.10</b>
	<b>§Sum of All Compounds Detected</b>	<b>3.20</b>	<b>8.70</b>

**PFAS Summary Report – Groundwater**  
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 KGS 2019 PFAS MW&INF  
 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
<b>PFAS 21 Cmps</b>	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
Perfluorobutanesulfonic acid	0.960 U	1.00 U	0.930 U	0.930 U	0.960 U	<b>1.40 J</b>
Perfluorobutanoic acid (PFBA)	1.40 U	1.50 U	1.40 U	1.90 U	1.40 U	1.50 U
Perfluorodecanesulfonic acid (PFDS)	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
Perfluoroheptanesulfonic acid (PFHpS)	0.960 U	<b>0.370 J</b>	0.930 U	<b>0.400 J</b>	<b>0.500 J</b>	0.970 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	<b>1.00 J</b>	1.40 U	<b>0.940 J</b>	<b>1.00 J</b>	1.50 U
Perfluorohexane sulfonate (PFHxS)	0.960 U	<b>11.0</b>	0.930 U	<b>9.90</b>	<b>9.00</b>	1.90 U
Perfluorohexanoic acid (PFHxA)	0.960 U	<b>1.30 J</b>	0.930 U	<b>1.20 J</b>	<b>1.30 J</b>	<b>2.30</b>
Perfluorononanoic acid (PFNA)	1.40 U	1.50 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluorooctanesulfonamide (PFOSA)	2.90 U	3.00 U	2.80 U	2.80 U	2.90 U	2.90 U
Perfluorooctanesulfonic acid (PFOS)	2.90 U	<b>1.30 J</b>	2.80 U	2.80 U	<b>1.10 J</b>	2.90 U
Perfluorooctanoic acid (PFOA)	1.40 U	<b>1.50 J</b>	1.40 U	<b>1.70 J</b>	<b>1.50 J</b>	1.50 U
Perfluoropentanoic acid (PFPeA)	0.960 U	<b>0.910 J</b>	0.930 U	<b>0.840 J</b>	<b>1.00 J</b>	<b>1.20 J</b>
Perfluorotetradecanoic acid (PFTeDA)	2.90 U	3.00 U	2.80 U	2.80 U	2.90 U	2.90 U
Perfluorotridecanoic acid (PFTTrDA)	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
<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>2.80</b>	<b>0.00</b>	<b>1.70</b>	<b>2.60</b>	<b>0.00</b>
<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>11.0</b>	<b>0.00</b>	<b>9.90</b>	<b>9.00</b>	<b>0.00</b>
<b>§Sum of All Compounds Detected</b>	<b>0.00</b>	<b>17.4</b>	<b>0.00</b>	<b>15.0</b>	<b>15.4</b>	<b>4.90</b>

**PFAS Summary Report – Groundwater**  
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 KGS 2019 PFAS MW&INF  
 J2 Range Northern

	Location	MW-234M2	MW-313M1	MW-587M2
	<b>Field Sample ID</b>	MW-234M2_PFAS19	MW-313M1_PFAS19	MW-587M2_PFAS19
	<b>Sampling Depth</b>	110.00 - 120.00	255.40 - 265.40	220.00 - 230.00
	<b>Sampling Date</b>	06/17/2019	06/19/2019	06/19/2019
	<b>SDG</b>	320514661	320515981	320515981
	<b>Sample Type</b>	<b>Normal</b>	<b>Normal</b>	<b>Normal</b>
<b>PFAS 21 Cmps</b>		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
Perfluorobutanesulfonic acid		0.880 U	0.980 U	0.970 U
Perfluorobutanoic acid (PFBA)		1.80 U	<b>0.700 J</b>	1.50 U
Perfluorodecanesulfonic acid (PFDS)		1.30 U	1.50 U	1.50 U
Perfluorodecanoic acid (PFDA)		0.880 U	<b>1.20 J</b>	0.970 U
Perfluorododecanoic acid (PFDoA)		1.30 U	1.50 U	1.50 U
Perfluoroheptanesulfonic acid (PFHpS)		0.880 U	0.980 U	0.970 U
Perfluoroheptanoic acid (PFHpA)		1.30 U	1.50 U	1.50 U
Perfluorohexane sulfonate (PFHxS)		<b>0.600 J</b>	0.980 U	0.970 U
Perfluorohexanoic acid (PFHxA)		0.880 U	0.980 U	0.970 U
Perfluorononanoic acid (PFNA)		1.30 U	<b>1.10 J</b>	1.50 U
Perfluorooctanesulfonamide (PFOSA)		2.60 U	2.90 U	2.90 U
Perfluorooctanesulfonic acid (PFOS)		<b>1.90 J</b>	2.90 U	2.90 U
Perfluorooctanoic acid (PFOA)		<b>0.550 J</b>	1.50 U	1.50 U
Perfluoropentanoic acid (PFPeA)		0.880 U	<b>0.680 J</b>	0.970 U
Perfluorotetradecanoic acid (PFTeDA)		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	<b>1.40 J</b>	1.50 U
	<b>†PFOS + PFOA (EPA)</b>	<b>2.45</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>3.05</b>	<b>5.08</b>	<b>0.00</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2019 PFAS MW&INF  
 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
<b>PFAS 21 Cmps</b>	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
Perfluorobutanesulfonic acid	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	<b>0.560 J</b>	1.40 U
Perfluorodecanesulfonic acid (PFDS)	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)	<b>1.70 J</b>	1.40 U	1.30 U	1.30 U	1.40 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)	0.940 U	0.920 U	0.860 U	0.860 U	0.930 U	0.960 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.30 U	1.30 U	1.40 U	1.40 U
Perfluorohexane sulfonate (PFHxS)	<b>1.50 J</b>	<b>1.50 J</b>	<b>0.690 J</b>	<b>0.610 J</b>	1.90 U	<b>0.540 J</b>
Perfluorohexanoic acid (PFHxA)	0.940 U	0.920 U	<b>0.410 J</b>	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
Perfluorooctanesulfonamide (PFOSA)	2.80 U	2.80 U	2.60 U	2.60 U	2.80 U	2.90 U
Perfluorooctanesulfonic acid (PFOS)	2.80 U	2.80 U	<b>12.0</b>	<b>12.0</b>	<b>12.0</b>	2.90 U
Perfluorooctanoic acid (PFOA)	<b>0.520 J</b>	1.40 U	<b>1.70</b>	<b>1.60 J</b>	<b>1.30 J</b>	1.40 U
Perfluoropentanoic acid (PFPeA)	0.940 U	0.920 U	0.860 U	0.860 U	0.930 U	0.960 U
Perfluorotetradecanoic acid (PFTeDA)	2.80 U	2.80 U	2.60 U	2.60 U	2.80 U	2.90 U
Perfluorotridecanoic acid (PFTTrDA)	<b>1.40 J</b>	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
<b>†PFOS + PFOA (EPA)</b>	<b>0.520</b>	<b>0.00</b>	<b>13.7</b>	<b>13.6</b>	<b>13.3</b>	<b>0.00</b>
<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>13.7</b>	<b>12.0</b>	<b>12.0</b>	<b>0.00</b>
<b>§Sum of All Compounds Detected</b>	<b>5.12</b>	<b>1.50</b>	<b>14.8</b>	<b>14.2</b>	<b>13.9</b>	<b>0.540</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2019 PFAS MW&INF  
 J3 Range

<b>Location</b>	MW-250M2
<b>Field Sample ID</b>	MW-250M2_PFAS19
<b>Sampling Depth</b>	145.00 - 155.00
<b>Sampling Date</b>	06/20/2019
<b>SDG</b>	320515981
<b>Sample Type</b>	<b>Normal</b>
<b>PFAS 21 Cmps</b>	<b>Results (ng/L)</b>
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
Perfluorobutanesulfonic acid	0.970 U
Perfluorobutanoic acid (PFBA)	<b>0.710 J</b>
Perfluorodecanesulfonic acid (PFDS)	1.40 U
Perfluorodecanoic acid (PFDA)	0.970 U
Perfluorododecanoic acid (PFDoA)	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)	0.970 U
Perfluoroheptanoic acid (PFHpA)	1.40 U
Perfluorohexane sulfonate (PFHxS)	0.970 U
Perfluorohexanoic acid (PFHxA)	0.970 U
Perfluorononanoic acid (PFNA)	1.40 U
Perfluorooctanesulfonamide (PFOSA)	2.90 U
Perfluorooctanesulfonic acid (PFOS)	2.90 U
Perfluorooctanoic acid (PFOA)	1.40 U
Perfluoropentanoic acid (PFPeA)	0.970 U
Perfluorotetradecanoic acid (PFTeDA)	2.90 U
Perfluorotridecanoic acid (PFTrDA)	2.90 U
Perfluoroundecanoic acid (PFUnA)	1.40 U
<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>
<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>
<b>§Sum of All Compounds Detected</b>	<b>0.710</b>

**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
<b>PFAS 21 Cmps</b>		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	<b>15.0 J</b>	9.30 U	9.30 U	9.50 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		9.60 U	9.20 U	<b>2.90 J</b>	9.30 U	9.30 U	9.50 U
Perfluorobutanesulfonic acid		0.960 U	0.920 U	0.970 U	0.930 U	0.930 U	0.950 U
Perfluorobutanoic acid (PFBA)		<b>0.920 J</b>	<b>0.670 J</b>	1.50 U	1.40 U	<b>4.00</b>	1.40 U
Perfluorodecanesulfonic acid (PFDS)		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	<b>0.700 J</b>
Perfluorododecanoic acid (PFDoA)		1.40 U	1.40 U	1.50 U	1.40 U	1.40 U	<b>1.70 J</b>
Perfluoroheptanesulfonic acid (PFHpS)		0.960 U	0.920 U	0.970 U	0.930 U	0.930 U	0.950 U
Perfluoroheptanoic acid (PFHpA)		1.40 U	1.40 U	1.50 U	1.40 U	<b>0.700 J</b>	1.40 U
Perfluorohexane sulfonate (PFHxS)		<b>0.360 J</b>	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	<b>0.850 J</b>	0.950 U
Perfluorononanoic acid (PFNA)		1.40 U	1.40 U	1.50 U	1.40 U	1.40 U	1.40 U
Perfluorooctanesulfonamide (PFOSA)		2.90 U	2.80 U	2.90 U	2.80 U	2.80 U	2.90 U
Perfluorooctanesulfonic acid (PFOS)		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 (PFPeA)		0.960 U	0.920 U	0.970 U	0.930 U	<b>4.00</b>	<b>0.410 J</b>
Perfluorotetradecanoic acid (PFTeDA)		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	<b>2.80</b>
	<b>+PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>#PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>1.28</b>	<b>0.670</b>	<b>17.9</b>	<b>0.00</b>	<b>9.55</b>	<b>5.61</b>

**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
<b>PFAS 21 Cmps</b>	Results (ng/L)	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	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	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	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	9.30 U
Perfluorobutanesulfonic acid	0.890 U	1.00 U	1.00 U	0.950 U	0.970 U	0.930 U	0.930 U
Perfluorobutanoic acid (PFBA)	<b>0.920 J</b>	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorodecanesulfonic acid (PFDS)	1.30 U	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	<b>1.60 J</b>	<b>0.950 J</b>	<b>5.40</b>	<b>3.50</b>	<b>2.50</b>	<b>2.40</b>	<b>2.40</b>
Perfluorododecanoic acid (PFDoA)	1.30 U	1.50 U	<b>1.20 J</b>	<b>0.600 J</b>	1.40 U	1.40 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)	0.890 U	1.00 U	1.00 U	0.950 U	0.970 U	0.930 U	0.930 U
Perfluoroheptanoic acid (PFHpA)	1.30 U	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorohexane sulfonate (PFHxS)	0.890 U	1.00 U	1.00 U	0.950 U	0.970 U	0.930 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	0.930 U
Perfluorononanoic acid (PFNA)	<b>2.60</b>	<b>1.50 J</b>	<b>1.40 J</b>	<b>2.70</b>	<b>3.40</b>	<b>3.50</b>	<b>3.50</b>
Perfluorooctanesulfonamide (PFOSA)	2.70 U	3.00 U	3.00 U	2.90 U	2.90 U	2.80 U	2.80 U
Perfluorooctanesulfonic acid (PFOS)	2.70 U	3.00 U	3.00 U	2.90 U	2.90 U	2.80 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	1.40 U
Perfluoropentanoic acid (PFPeA)	0.890 U	<b>0.440 J</b>	1.00 U	0.950 U	<b>0.620 J</b>	<b>0.870 J</b>	<b>0.870 J</b>
Perfluorotetradecanoic acid (PFTeDA)	2.70 U	3.00 U	3.00 U	2.90 U	2.90 U	2.80 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	2.80 U
Perfluoroundecanoic acid (PFUnA)	1.30 U	<b>1.00 J</b>	<b>13.0</b>	<b>6.90</b>	<b>5.90</b>	<b>2.50</b>	<b>2.50</b>
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>2.60</b>	<b>0.00</b>	<b>5.40</b>	<b>6.20</b>	<b>5.90</b>	<b>5.90</b>
	<b>§Sum of All Compounds Detected</b>	<b>5.12</b>	<b>3.89</b>	<b>21.0</b>	<b>13.7</b>	<b>12.4</b>	<b>9.27</b>

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 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
<b>PFAS 21 Cmps</b>		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
Perfluorobutanesulfonic acid		0.980 U	0.920 U	0.930 U
Perfluorobutanoic acid (PFBA)		1.50 U	1.40 U	1.40 U
Perfluorodecanesulfonic acid (PFDS)		1.50 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)		<b>0.730 J</b>	<b>1.70 J</b>	0.930 U
Perfluorododecanoic acid (PFDoA)		1.50 U	1.40 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)		0.980 U	0.920 U	0.930 U
Perfluoroheptanoic acid (PFHpA)		1.50 U	1.40 U	1.40 U
Perfluorohexane sulfonate (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)		<b>2.20</b>	<b>0.650 J</b>	1.40 U
Perfluorooctanesulfonamide (PFOSA)		2.90 U	2.80 U	2.80 U
Perfluorooctanesulfonic acid (PFOS)		2.90 U	2.80 U	2.80 U
Perfluorooctanoic acid (PFOA)		1.50 U	1.40 U	1.40 U
Perfluoropentanoic acid (PFPeA)		<b>0.750 J</b>	<b>0.410 J</b>	0.930 U
Perfluorotetradecanoic acid (PFTeDA)		2.90 U	2.80 U	2.80 U
Perfluorotridecanoic acid (PFTrDA)		2.90 U	2.80 U	2.80 U
Perfluoroundecanoic acid (PFUnA)		<b>1.00 J</b>	<b>6.00</b>	1.40 U
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>2.20</b>	<b>0.00</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>4.68</b>	<b>8.76</b>	<b>0.00</b>



**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
<b>PFAS 21 Cmps</b>	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
Perfluorobutanesulfonic acid	0.990 U	0.950 U	0.940 U	0.970 U	<b>3.40</b>	<b>3.60</b>
Perfluorobutanoic acid (PFBA)	1.50 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorodecanesulfonic acid (PFDS)	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	<b>4.90</b>	<b>4.50</b>
Perfluorododecanoic acid (PFDoA)	1.50 U	1.40 U	1.40 U	1.50 U	<b>3.50</b>	<b>3.60</b>
Perfluoroheptanesulfonic acid (PFHpS)	0.990 U	0.950 U	0.940 U	0.970 U	0.920 U	0.950 U
Perfluoroheptanoic acid (PFHpA)	<b>0.930 J</b>	<b>0.910 J</b>	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorohexane sulfonate (PFHxS)	<b>9.80</b>	<b>9.30</b>	0.940 U	0.970 U	0.920 U	0.950 U
Perfluorohexanoic acid (PFHxA)	<b>1.10 J</b>	<b>1.10 J</b>	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	<b>2.00</b>	<b>1.50 J</b>
Perfluorooctanesulfonamide (PFOSA)	3.00 U	2.80 U	2.80 U	2.90 U	2.80 U	2.80 U
Perfluorooctanesulfonic acid (PFOS)	3.00 U	2.80 U	2.80 U	2.90 U	2.80 U	2.80 U
Perfluorooctanoic acid (PFOA)	<b>1.70 J</b>	<b>1.70 J</b>	1.40 U	1.50 U	1.40 U	1.40 U
Perfluoropentanoic acid (PFPeA)	<b>1.10 J</b>	<b>1.20 J</b>	0.940 U	0.970 U	<b>0.460 J</b>	<b>0.410 J</b>
Perfluorotetradecanoic acid (PFTeDA)	3.00 U	2.80 U	2.80 U	2.90 U	2.80 U	2.80 U
Perfluorotridecanoic acid (PFTTrDA)	3.00 U	2.80 U	2.80 U	2.90 U	<b>1.50 J</b>	<b>1.90 J</b>
Perfluoroundecanoic acid (PFUnA)	1.50 U	1.40 U	1.40 U	1.50 U	<b>25.0</b>	<b>28.0</b>
<b>†PFOS + PFOA (EPA)</b>	<b>1.70</b>	<b>1.70</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>9.80</b>	<b>9.30</b>	<b>0.00</b>	<b>0.00</b>	<b>6.90</b>	<b>4.50</b>
<b>§Sum of All Compounds Detected</b>	<b>14.6</b>	<b>14.2</b>	<b>0.00</b>	<b>0.00</b>	<b>40.8</b>	<b>43.5</b>

**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
<b>PFAS 21 Cmps</b>	Results (ng/L)	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	
Perfluorobutanesulfonic acid	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	<b>0.550 J</b>	1.40 U	1.40 U	<b>1.00 J</b>	
Perfluorodecanesulfonic acid (PFDS)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U	
Perfluorodecanoic acid (PFDA)	<b>3.10</b>	<b>3.60</b>	<b>1.50 J</b>	<b>2.80</b>	<b>2.40</b>	<b>2.50</b>	
Perfluorododecanoic acid (PFDoA)	<b>0.800 J</b>	<b>1.10 J</b>	<b>0.610 J</b>	<b>1.70 J</b>	1.40 U	<b>2.20</b>	
Perfluoroheptanesulfonic acid (PFHpS)	0.950 U	0.900 U	0.940 U	0.920 U	0.910 U	0.980 U	
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U	
Perfluorohexane sulfonate (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)	<b>3.90</b>	<b>2.30</b>	<b>0.960 J</b>	<b>1.00 J</b>	<b>1.40 J</b>	1.50 U	
Perfluorooctanesulfonamide (PFOSA)	2.90 U	2.70 U	2.80 U	2.80 U	2.70 U	2.90 U	
Perfluorooctanesulfonic acid (PFOS)	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 (PFPeA)	<b>0.580 J</b>	<b>0.430 J</b>	0.940 U	<b>1.40 J</b>	0.910 U	<b>1.20 J</b>	
Perfluorotetradecanoic acid (PFTeDA)	2.90 U	2.70 U	2.80 U	2.80 U	2.70 U	2.90 U	
Perfluorotridecanoic acid (PFTTrDA)	2.90 U	<b>0.880 J</b>	2.80 U	2.80 U	2.70 U	2.90 U	
Perfluoroundecanoic acid (PFUnA)	<b>8.50</b>	<b>9.20</b>	<b>4.80</b>	<b>22.0</b>	<b>1.40 J</b>	<b>8.10</b>	
<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	
<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>7.00</b>	<b>5.90</b>	<b>0.00</b>	<b>2.80</b>	<b>2.40</b>	<b>2.50</b>	
<b>§Sum of All Compounds Detected</b>	<b>16.9</b>	<b>17.5</b>	<b>8.42</b>	<b>28.9</b>	<b>5.20</b>	<b>15.0</b>	

**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
<b>PFAS 21 Cmps</b>	Results (ng/L)	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	
Perfluorobutanesulfonic acid	0.920 U	0.960 U	0.940 U	0.930 U	<b>3.60</b>	0.900 U	
Perfluorobutanoic acid (PFBA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	
Perfluorodecanesulfonic acid (PFDS)	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	
Perfluoroheptanesulfonic acid (PFHpS)	0.920 U	0.960 U	0.940 U	0.930 U	0.920 U	0.900 U	
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	
Perfluorohexane sulfonate (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	
Perfluorooctanesulfonamide (PFOSA)	2.80 U	2.90 U	2.80 U	2.80 U	2.80 U	2.70 U	
Perfluorooctanesulfonic acid (PFOS)	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	<b>0.600 J</b>	
Perfluoropentanoic acid (PFPeA)	<b>0.490 J</b>	<b>0.490 J</b>	0.940 U	<b>0.420 J</b>	0.920 U	<b>0.600 J</b>	
Perfluorotetradecanoic acid (PFTeDA)	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	
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.600</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>0.490</b>	<b>0.490</b>	<b>0.00</b>	<b>0.420</b>	<b>3.60</b>	<b>1.20</b>

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**Joint Base Cape Cod, IAGWSP**  
 KGS 2020 J2 Ranges SPM Fall  
 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
<b>PFAS 21 Cmps</b>	Results (ng/L)	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	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	
Perfluorobutanesulfonic acid	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	
Perfluorodecanesulfonic acid (PFDS)	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	
Perfluoroheptanesulfonic acid (PFHpS)	0.940 U	0.960 U	0.940 U	0.930 U	0.940 U	0.960 U	
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	
Perfluorohexane sulfonate (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	
Perfluorooctanesulfonamide (PFOSA)	2.80 U	2.90 U	2.80 U	2.80 U	2.80 U	2.90 U	
Perfluorooctanesulfonic acid (PFOS)	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 (PFPeA)	0.940 U	<b>0.440 J</b>	0.940 U	<b>0.400 J</b>	0.940 U	<b>0.420 J</b>	
Perfluorotetradecanoic acid (PFTeDA)	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	
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>0.00</b>	<b>0.440</b>	<b>0.00</b>	<b>0.400</b>	<b>0.00</b>	<b>0.420</b>

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 KGS 2020 J2 Ranges SPM Fall  
 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
<b>PFAS 21 Cmps</b>	Results (ng/L)	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	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	
Perfluorobutanesulfonic acid	<b>8.50</b>	0.940 U	0.900 U	0.960 U	0.940 U	0.930 U	
Perfluorobutanoic acid (PFBA)	<b>1.70 J</b>	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	
Perfluorodecanesulfonic acid (PFDS)	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	
Perfluoroheptanesulfonic acid (PFHpS)	0.920 U	0.940 U	0.900 U	0.960 U	0.940 U	0.930 U	
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	
Perfluorohexane sulfonate (PFHxS)	1.80 U	0.940 U	0.900 U	0.960 U	<b>0.360 J</b>	0.930 U	
Perfluorohexanoic acid (PFHxA)	<b>5.40</b>	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	
Perfluorooctanesulfonamide (PFOSA)	2.80 U	2.80 U	2.70 U	2.90 U	2.80 U	2.80 U	
Perfluorooctanesulfonic acid (PFOS)	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 (PFPeA)	<b>1.90</b>	<b>0.450 J</b>	0.900 U	0.960 U	<b>0.630 J</b>	0.930 U	
Perfluorotetradecanoic acid (PFTeDA)	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	
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>17.5</b>	<b>0.450</b>	<b>0.00</b>	<b>0.00</b>	<b>0.990</b>	<b>0.00</b>

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J2 Range Northern

	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
<b>PFAS 21 Cmps</b>		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
Perfluorobutanesulfonic acid		0.910 U	0.920 U	0.970 U	0.920 U
Perfluorobutanoic acid (PFBA)		1.40 U	1.40 U	<b>1.40 J</b>	1.40 U
Perfluorodecanesulfonic acid (PFDS)		1.40 U	1.40 U	1.50 U	1.40 U
Perfluorodecanoic acid (PFDA)		<b>3.20</b>	<b>1.60 J</b>	<b>1.50 J</b>	<b>1.90</b>
Perfluorododecanoic acid (PFDoA)		1.40 U	1.40 U	1.50 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)		0.910 U	0.920 U	0.970 U	0.920 U
Perfluoroheptanoic acid (PFHpA)		1.40 U	1.40 U	1.50 U	1.40 U
Perfluorohexane sulfonate (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)		<b>1.80</b>	<b>0.900 J</b>	1.50 U	<b>0.890 J</b>
Perfluorooctanesulfonamide (PFOSA)		<b>1.30 J</b>	<b>2.20 J</b>	2.90 U	2.80 U
Perfluorooctanesulfonic acid (PFOS)		2.70 U	2.70 U	2.90 U	2.80 U
Perfluorooctanoic acid (PFOA)		1.40 U	1.40 U	1.50 U	1.40 U
Perfluoropentanoic acid (PFPeA)		<b>0.650 J</b>	<b>0.830 J</b>	<b>1.10 J</b>	<b>0.400 J</b>
Perfluorotetradecanoic acid (PFTeDA)		2.70 U	2.70 U	2.90 U	2.80 U
Perfluorotridecanoic acid (PFTrDA)		2.70 U	2.70 U	2.90 U	2.80 U
Perfluoroundecanoic acid (PFUnA)		<b>0.650 J</b>	1.40 U	<b>1.00 J</b>	1.40 U
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>5.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.90</b>
	<b>§Sum of All Compounds Detected</b>	<b>7.60</b>	<b>5.53</b>	<b>5.00</b>	<b>3.19</b>

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

	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
<b>PFAS 21 Cmps</b>	Results (ng/L)	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	
Perfluorobutanesulfonic acid	<b>1.20 J</b>	<b>0.620 J</b>	0.970 U	0.980 U	0.940 U	0.960 U	
Perfluorobutanoic acid (PFBA)	1.40 U	1.40 U	<b>1.00 J</b>	<b>1.00 J</b>	1.40 U	<b>0.570 J</b>	
Perfluorodecanesulfonic acid (PFDS)	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	
Perfluoroheptanesulfonic acid (PFHpS)	0.940 U	0.950 U	0.970 U	0.980 U	0.940 U	0.960 U	
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.50 U	1.50 U	1.40 U	1.40 U	
Perfluorohexane sulfonate (PFHxS)	<b>26.0</b>	<b>4.20</b>	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	
Perfluorooctanesulfonamide (PFOSA)	2.80 U	2.80 U	2.90 U	2.90 U	2.80 U	2.90 U	
Perfluorooctanesulfonic acid (PFOS)	2.80 U	2.80 U	<b>4.90</b>	<b>5.00</b>	<b>16.0</b>	2.90 U	
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	<b>0.840 J</b>	<b>0.940 J</b>	<b>0.510 J</b>	1.40 U	
Perfluoropentanoic acid (PFPeA)	0.940 U	0.950 U	0.970 U	<b>0.460 J</b>	0.940 U	<b>0.490 J</b>	
Perfluorotetradecanoic acid (PFTeDA)	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	
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>5.74</b>	<b>5.94</b>	<b>16.5</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>26.0</b>	<b>4.20</b>	<b>4.90</b>	<b>5.00</b>	<b>16.0</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>27.2</b>	<b>4.82</b>	<b>6.74</b>	<b>7.40</b>	<b>16.5</b>	<b>1.06</b>

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

	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
<b>PFAS 21 Cmps</b>		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
Perfluorobutanesulfonic acid		<b>2.20</b>	0.920 U	0.900 U	0.940 U	<b>1.80 J</b>	0.920 U
Perfluorobutanoic acid (PFBA)		<b>1.20 J</b>	1.80 U	1.80 U	1.40 U	<b>4.90</b>	<b>1.40 J</b>
Perfluorodecanesulfonic acid (PFDS)		1.40 U	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)		0.920 U	<b>0.550 J</b>	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
Perfluoroheptanesulfonic acid (PFHpS)		0.920 U	0.920 U	0.900 U	0.940 U	0.930 U	0.920 U
Perfluoroheptanoic acid (PFHpA)		1.40 U	1.40 U	1.30 U	1.40 U	<b>4.00</b>	1.40 U
Perfluorohexane sulfonate (PFHxS)		<b>19.0</b>	<b>1.00 J</b>	0.900 U	1.90 U	<b>37.0</b>	1.80 U
Perfluorohexanoic acid (PFHxA)		<b>0.830 J</b>	<b>0.950 J</b>	<b>0.510 J</b>	0.940 U	<b>8.40</b>	<b>0.450 J</b>
Perfluorononanoic acid (PFNA)		1.40 U	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U
Perfluorooctanesulfonamide (PFOSA)		2.80 U	2.80 U	2.70 U	2.80 U	2.80 U	2.80 U
Perfluorooctanesulfonic acid (PFOS)		2.80 U	<b>1.10 J</b>	<b>3.80</b>	2.80 U	<b>10.0</b>	2.80 U
Perfluorooctanoic acid (PFOA)		1.40 U	<b>2.10</b>	<b>1.10 J</b>	<b>0.550 J</b>	<b>3.10</b>	<b>1.10 J</b>
Perfluoropentanoic acid (PFPeA)		<b>1.30 J</b>	<b>0.660 J</b>	<b>0.440 J</b>	<b>0.400 J</b>	<b>6.50</b>	<b>0.440 J</b>
Perfluorotetradecanoic acid (PFTeDA)		2.80 U	2.80 U	2.70 U	2.80 U	2.80 U	2.80 U
Perfluorotridecanoic acid (PFTrDA)		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
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>3.20</b>	<b>4.90</b>	<b>0.550</b>	<b>13.1</b>	<b>1.10</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>19.0</b>	<b>2.10</b>	<b>3.80</b>	<b>0.00</b>	<b>54.1</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>24.5</b>	<b>6.36</b>	<b>5.85</b>	<b>0.950</b>	<b>75.7</b>	<b>3.39</b>



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

	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
<b>PFAS 21 Cmps</b>	Results (ng/L)	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	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	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	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	9.50 U
Perfluorobutanesulfonic acid	0.920 U	0.950 U	0.950 U	0.950 U	0.950 U	0.950 U	0.950 U
Perfluorobutanoic acid (PFBA)	<b>1.50 J</b>	1.40 U	<b>0.740 J</b>	<b>0.740 J</b>	<b>6.50</b>	<b>2.20</b>	
Perfluorodecanesulfonic acid (PFDS)	1.40 U	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	0.950 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)	0.920 U	0.950 U	0.950 U	0.950 U	0.950 U	0.950 U	0.950 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.40 U	1.40 U	<b>1.80 J</b>	1.40 U	
Perfluorohexane sulfonate (PFHxS)	1.80 U	0.950 U	0.950 U	1.90 U	<b>4.40</b>	0.950 U	
Perfluorohexanoic acid (PFHxA)	0.920 U	0.950 U	0.950 U	0.950 U	<b>3.70</b>	0.950 U	
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorooctanesulfonamide (PFOSA)	2.80 U	2.80 U	2.90 U	2.80 U	2.80 U	2.90 U	
Perfluorooctanesulfonic acid (PFOS)	<b>1.00 J</b>	2.80 U	2.90 U	2.80 U	<b>2.30 J</b>	2.90 U	
Perfluorooctanoic acid (PFOA)	<b>0.990 J</b>	1.40 U	1.40 U	1.40 U	<b>2.30</b>	<b>0.640 J</b>	
Perfluoropentanoic acid (PFPeA)	<b>0.430 J</b>	<b>0.460 J</b>	0.950 U	0.950 U	<b>2.80</b>	<b>0.420 J</b>	
Perfluorotetradecanoic acid (PFTeDA)	2.80 U	2.80 U	2.90 U	2.80 U	2.80 U	2.90 U	
Perfluorotridecanoic acid (PFTrDA)	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	
	<b>†PFOS + PFOA (EPA)</b>	<b>1.99</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>4.60</b>	<b>0.640</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>6.70</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>3.92</b>	<b>0.460</b>	<b>0.740</b>	<b>0.740</b>	<b>23.8</b>	<b>3.26</b>

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

	Location	MW-232M2	MW-30
	<b>Field Sample ID</b>	MW-232M2_F20	MW-30_F20
	<b>Sampling Depth</b>	61.00 - 66.00	26.00 - 36.00
	<b>Sampling Date</b>	07/16/2020	07/21/2020
	<b>SDG</b>	320627321	320629171
	<b>Sample Type</b>	<b>Normal</b>	<b>Normal</b>
<b>PFAS 21 Cmps</b>		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
Perfluorobutanesulfonic acid		1.00 U	0.940 U
Perfluorobutanoic acid (PFBA)		<b>3.20</b>	1.40 U
Perfluorodecanesulfonic acid (PFDS)		1.50 U	1.40 U
Perfluorodecanoic acid (PFDA)		1.00 U	0.940 U
Perfluorododecanoic acid (PFDoA)		1.50 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)		1.00 U	0.940 U
Perfluoroheptanoic acid (PFHpA)		1.50 U	1.40 U
Perfluorohexane sulfonate (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
Perfluorooctanesulfonamide (PFOSA)		3.00 U	2.80 U
Perfluorooctanesulfonic acid (PFOS)		3.00 U	<b>15.0</b>
Perfluorooctanoic acid (PFOA)		<b>1.10 J</b>	<b>0.790 J</b>
Perfluoropentanoic acid (PFPeA)		<b>0.520 J</b>	0.940 U
Perfluorotetradecanoic acid (PFTeDA)		3.00 U	2.80 U
Perfluorotridecanoic acid (PFTrDA)		3.00 U	2.80 U
Perfluoroundecanoic acid (PFUnA)		1.50 U	1.40 U
	<b>†PFOS + PFOA (EPA)</b>	<b>1.10</b>	<b>15.8</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>15.0</b>
	<b>§Sum of All Compounds Detected</b>	<b>4.82</b>	<b>15.8</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2021 J2 North SPM Fall  
 J2 Range Northern

Location	J2EW0002	J2EW0002	J2EW2-MW2-B	J2EW2-MW2-C	MW-293M2	MW-293M2
Field Sample ID	J2EW0002_F21	J2EW0002_F21D	J2EW2-MW2-B_F21	J2EW2-MW2-C_F21	MW-293M2_F21	MW-293M2_F21D
Sampling Depth	198.00 - 233.00	198.00 - 233.00	209.79 - 219.79	243.83 - 253.81	0.00 - 0.00	0.00 - 0.00
Sampling Date	09/27/2021	09/27/2021	09/15/2021	09/15/2021	09/08/2021	09/08/2021
SDG	320796651	320796651	320791141	320791141	320787611	320787611
Sample Type	Normal	Field Duplicate	Normal	Normal	Normal	Field Duplicate
<b>PFAS 21 Cmps</b>	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)	<b>6.70 J</b>	<b>6.70 J</b>	19.0 U	20.0 U	18.0 U	18.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.40 U	9.00 U	9.50 U	10.0 U	9.20 U	8.90 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.40 U	9.00 U	9.50 U	10.0 U	9.20 U	8.90 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.40 U	9.00 U	9.50 U	10.0 U	9.20 U	8.90 U
Perfluorobutanesulfonic acid	0.940 U	0.900 U	0.950 U	1.00 U	<b>3.90</b>	<b>3.80</b>
Perfluorobutanoic acid (PFBA)	1.40 U	1.30 U	1.40 U	1.50 U	<b>0.840 J</b>	<b>1.10 J</b>
Perfluorodecanesulfonic acid (PFDS)	1.40 U	1.30 U	1.40 U	1.50 U	1.40 U	1.30 U
Perfluorodecanoic acid (PFDA)	0.940 U	0.900 U	0.950 U	1.00 U	<b>3.20</b>	<b>2.80</b>
Perfluorododecanoic acid (PFDoA)	1.40 U	1.30 U	1.40 U	1.50 U	<b>2.40</b>	<b>2.30</b>
Perfluoroheptanesulfonic acid (PFHpS)	0.940 U	0.900 U	0.950 U	1.00 U	0.920 U	0.890 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	<b>0.550 J</b>	1.40 U	1.50 U	1.40 U	1.30 U
Perfluorohexane sulfonate (PFHxS)	<b>8.10</b>	<b>7.70</b>	0.950 U	1.00 U	0.920 U	0.890 U
Perfluorohexanoic acid (PFHxA)	<b>0.820 J</b>	<b>0.770 J</b>	0.950 U	1.00 U	<b>1.30 J</b>	<b>1.10 J</b>
Perfluorononanoic acid (PFNA)	1.40 U	1.30 U	1.40 U	1.50 U	<b>1.30 J</b>	<b>1.10 J</b>
Perfluorooctanesulfonamide (PFOSA)	2.80 U	2.70 U	2.90 U	3.10 U	2.80 U	2.70 U
Perfluorooctanesulfonic acid (PFOS)	<b>1.30 J</b>	<b>1.10 J</b>	2.90 U	3.10 U	2.80 U	2.70 U
Perfluorooctanoic acid (PFOA)	<b>1.80 J</b>	<b>1.20 J</b>	1.40 U	1.50 U	1.40 U	1.30 U
Perfluoropentanoic acid (PFPeA)	<b>0.680 J</b>	<b>0.640 J</b>	0.950 U	1.00 U	<b>1.10 J</b>	<b>1.00 J</b>
Perfluorotetradecanoic acid (PFTeDA)	2.80 U	2.70 U	2.90 U	3.10 U	2.80 U	2.70 U
Perfluorotridecanoic acid (PFTTrDA)	2.80 U	2.70 U	2.90 U	3.10 U	<b>0.760 J</b>	2.70 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.30 U	1.40 U	1.50 U	<b>23.0</b>	<b>22.0</b>
<b>†PFOS + PFOA (EPA)</b>	<b>3.10</b>	<b>2.30</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>8.10</b>	<b>7.70</b>	<b>0.00</b>	<b>0.00</b>	<b>3.20</b>	<b>2.80</b>
<b>§Sum of All Compounds Detected</b>	<b>19.4</b>	<b>18.7</b>	<b>0.00</b>	<b>0.00</b>	<b>37.8</b>	<b>35.2</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2021 J2 North SPM Fall  
 J2 Range Northern

	Location	MW-300M1	MW-300M1	MW-300M2	MW-300M3	MW-302M2	MW-302M2
	Field Sample ID	MW-300M1_F21	MW-300M1_F21D	MW-300M2_F21	MW-300M3_F21	MW-302M2_F21	MW-302M2_F21D
	Sampling Depth	293.03 - 303.02	293.03 - 303.02	197.23 - 207.23	135.31 - 145.31	194.35 - 204.43	194.35 - 204.43
	Sampling Date	09/21/2021	09/21/2021	09/21/2021	09/21/2021	09/13/2021	09/13/2021
	SDG	320793351	320793351	320793351	320793351	320790821	320790821
	Sample Type	Normal	Field Duplicate	Normal	Normal	Normal	Field Duplicate
<b>PFAS 21 Cmps</b>		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)		9.70 U	9.60 U	9.30 U	9.50 U	9.60 U	9.40 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		9.70 U	9.60 U	9.30 U	9.50 U	9.60 U	9.40 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		9.70 U	9.60 U	9.30 U	9.50 U	9.60 U	9.40 U
Perfluorobutanesulfonic acid		0.970 U	0.960 U	0.930 U	0.950 U	0.960 U	0.940 U
Perfluorobutanoic acid (PFBA)		1.50 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorodecanesulfonic acid (PFDS)		1.50 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)		<b>3.40</b>	<b>3.60</b>	<b>4.00</b>	<b>1.70 J</b>	<b>2.60</b>	<b>2.50</b>
Perfluorododecanoic acid (PFDoA)		<b>0.520 J</b>	<b>0.680 J</b>	<b>1.10 J</b>	<b>0.710 J</b>	<b>2.80</b>	<b>3.00</b>
Perfluoroheptanesulfonic acid (PFHpS)		0.970 U	0.960 U	0.930 U	0.950 U	0.960 U	0.940 U
Perfluoroheptanoic acid (PFHpA)		1.50 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorohexane sulfonate (PFHxS)		0.970 U	0.960 U	0.930 U	<b>0.440 J</b>	0.960 U	0.940 U
Perfluorohexanoic acid (PFHxA)		0.970 U	0.960 U	0.930 U	0.950 U	0.960 U	0.940 U
Perfluorononanoic acid (PFNA)		<b>4.80</b>	<b>4.80</b>	<b>3.60</b>	<b>2.10</b>	1.40 U	1.40 U
Perfluorooctanesulfonamide (PFOSA)		2.90 U	2.90 U	2.80 U	2.90 U	2.90 U	2.80 U
Perfluorooctanesulfonic acid (PFOS)		2.90 U	2.90 U	2.80 U	2.90 U	2.90 U	2.80 U
Perfluorooctanoic acid (PFOA)		1.50 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluoropentanoic acid (PFPeA)		0.970 U	0.960 U	0.930 U	0.950 U	0.960 U	0.940 U
Perfluorotetradecanoic acid (PFTeDA)		2.90 U	2.90 U	2.80 U	2.90 U	2.90 U	2.80 U
Perfluorotridecanoic acid (PFTTrDA)		2.90 U	2.90 U	<b>0.700 J</b>	<b>0.840 J</b>	<b>1.10 J</b>	<b>1.20 J</b>
Perfluoroundecanoic acid (PFUnA)		<b>8.30</b>	<b>8.60</b>	<b>7.80</b>	<b>4.40</b>	<b>27.0</b>	<b>27.0</b>
	<b>+PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>#PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>8.20</b>	<b>8.40</b>	<b>7.60</b>	<b>2.10</b>	<b>2.60</b>	<b>2.50</b>
	<b>§Sum of All Compounds Detected</b>	<b>17.0</b>	<b>17.7</b>	<b>17.2</b>	<b>10.2</b>	<b>33.5</b>	<b>33.7</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2021 J2 North SPM Fall  
 J2 Range Northern

	Location	MW-305M1	MW-330M1	MW-330M2	MW-330M3	MW-340D	MW-340M1
	Field Sample ID	MW-305M1_F21	MW-330M1_F21	MW-330M2_F21	MW-330M3_F21	MW-340D_F21	MW-340M1_F21
	Sampling Depth	202.82 - 212.82	313.10 - 323.13	238.01 - 248.04	154.97 - 164.99	0.00 - 0.00	0.00 - 0.00
	Sampling Date	09/14/2021	09/17/2021	09/17/2021	09/17/2021	09/23/2021	09/23/2021
	SDG	320790821	320791141	320791141	320791141	320793861	320793861
	Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>	Results (ng/L)	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)	9.70 U	9.60 U	9.70 U	9.90 U	9.50 U	9.60 U	
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.70 U	9.60 U	9.70 U	9.90 U	9.50 U	9.60 U	
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.70 U	9.60 U	9.70 U	9.90 U	9.50 U	9.60 U	
Perfluorobutanesulfonic acid	0.970 U	0.960 U	0.970 U	0.990 U	0.950 U	0.960 U	
Perfluorobutanoic acid (PFBA)	1.50 U	<b>1.60 J</b>	<b>0.890 J</b>	1.50 U	1.40 U	1.40 U	
Perfluorodecanesulfonic acid (PFDS)	1.50 U	1.40 U	1.50 U	1.50 U	1.40 U	1.40 U	
Perfluorodecanoic acid (PFDA)	<b>3.60</b>	<b>38.0</b>	<b>8.90</b>	<b>19.0</b>	<b>18.0</b>	<b>2.30</b>	
Perfluorododecanoic acid (PFDoA)	1.50 U	<b>2.50</b>	<b>2.20</b>	<b>0.810 J</b>	<b>1.80 J</b>	1.40 U	
Perfluoroheptanesulfonic acid (PFHpS)	0.970 U	0.960 U	0.970 U	0.990 U	0.950 U	0.960 U	
Perfluoroheptanoic acid (PFHpA)	1.50 U	<b>1.10 J</b>	1.50 U	1.50 U	1.40 U	1.40 U	
Perfluorohexane sulfonate (PFHxS)	0.970 U	0.960 U	0.970 U	0.990 U	0.950 U	0.960 U	
Perfluorohexanoic acid (PFHxA)	0.970 U	<b>0.770 J</b>	0.970 U	0.990 U	0.950 U	0.960 U	
Perfluorononanoic acid (PFNA)	<b>2.20</b>	<b>16.0</b>	<b>12.0</b>	<b>25.0</b>	<b>14.0</b>	<b>1.60 J</b>	
Perfluorooctanesulfonamide (PFOSA)	2.90 U	2.90 U	2.90 U	3.00 U	2.80 U	2.90 U	
Perfluorooctanesulfonic acid (PFOS)	2.90 U	2.90 U	2.90 U	3.00 U	2.80 U	2.90 U	
Perfluorooctanoic acid (PFOA)	1.50 U	<b>0.660 J</b>	<b>0.650 J</b>	1.50 U	1.40 U	1.40 U	
Perfluoropentanoic acid (PFPeA)	0.970 U	<b>2.50</b>	<b>1.20 J</b>	0.990 U	0.950 U	0.960 U	
Perfluorotetradecanoic acid (PFTeDA)	2.90 U	<b>1.10 J</b>	2.90 U	3.00 U	<b>0.840 J</b>	2.90 U	
Perfluorotridecanoic acid (PFTTrDA)	2.90 U	<b>1.60 J</b>	<b>2.10 J</b>	3.00 U	<b>1.20 J</b>	2.90 U	
Perfluoroundecanoic acid (PFUnA)	<b>3.30</b>	<b>23.0</b>	<b>9.60</b>	<b>8.90</b>	<b>18.0</b>	<b>1.50 J</b>	
<b>+PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.660</b>	<b>0.650</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	
<b>#PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>5.80</b>	<b>54.0</b>	<b>20.9</b>	<b>44.0</b>	<b>32.0</b>	<b>2.30</b>	
<b>§Sum of All Compounds Detected</b>	<b>9.10</b>	<b>88.8</b>	<b>37.5</b>	<b>53.7</b>	<b>53.8</b>	<b>5.40</b>	

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2021 J2 North SPM Fall  
 J2 Range Northern

	Location	MW-340M2	MW-345M1	MW-345M2	MW-348M2	MW-586M1	MW-586M2
	Field Sample ID	MW-340M2_F21	MW-345M1_F21	MW-345M2_F21	MW-348M2_F21	MW-586M1_F21	MW-586M2_F21
	Sampling Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	206.54 - 216.54	237.00 - 247.00	211.00 - 221.00
	Sampling Date	09/23/2021	09/20/2021	09/20/2021	09/07/2021	09/09/2021	09/09/2021
	SDG	320793861	320793351	320793351	320787611	320787751	320787751
	Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>	Results (ng/L)	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	20.0 U	18.0 U	19.0 U	18.0 U	
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.50 U	9.20 U	9.90 U	8.90 U	9.30 U	9.10 U	
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.50 U	9.20 U	9.90 U	8.90 U	9.30 U	9.10 U	
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.50 U	9.20 U	9.90 U	8.90 U	9.30 U	9.10 U	
Perfluorobutanesulfonic acid	0.950 U	0.920 U	0.990 U	0.890 U	0.930 U	0.910 U	
Perfluorobutanoic acid (PFBA)	1.40 U	1.40 U	<b>0.790 J</b>	1.30 U	1.40 U	1.40 U	
Perfluorodecanesulfonic acid (PFDS)	1.40 U	1.40 U	1.50 U	1.30 U	1.40 U	1.40 U	
Perfluorodecanoic acid (PFDA)	<b>1.60 J</b>	<b>56.0</b>	<b>2.90</b>	<b>2.40</b>	0.930 U	0.910 U	
Perfluorododecanoic acid (PFDoA)	1.40 U	<b>3.40</b>	<b>0.760 J</b>	<b>2.40</b>	1.40 U	1.40 U	
Perfluoroheptanesulfonic acid (PFHpS)	0.950 U	0.920 U	0.990 U	0.890 U	0.930 U	0.910 U	
Perfluoroheptanoic acid (PFHpA)	1.40 U	<b>0.910 J</b>	1.50 U	1.30 U	1.40 U	1.40 U	
Perfluorohexane sulfonate (PFHxS)	0.950 U	<b>0.410 J</b>	<b>0.810 J</b>	0.890 U	0.930 U	0.910 U	
Perfluorohexanoic acid (PFHxA)	0.950 U	0.920 U	0.990 U	0.890 U	0.930 U	0.910 U	
Perfluorononanoic acid (PFNA)	<b>4.00</b>	<b>14.0</b>	<b>6.80</b>	1.30 U	1.40 U	1.40 U	
Perfluorooctanesulfonamide (PFOSA)	2.80 U	2.70 U	3.00 U	2.70 U	2.80 U	2.70 U	
Perfluorooctanesulfonic acid (PFOS)	2.80 U	2.70 U	<b>1.20 J</b>	2.70 U	2.80 U	2.70 U	
Perfluorooctanoic acid (PFOA)	1.40 U	<b>1.10 J</b>	<b>0.580 J</b>	1.30 U	1.40 U	1.40 U	
Perfluoropentanoic acid (PFPeA)	0.950 U	<b>0.480 J</b>	<b>0.960 J</b>	0.890 U	0.930 U	0.910 U	
Perfluorotetradecanoic acid (PFTeDA)	2.80 U	<b>0.930 J</b>	3.00 U	2.70 U	2.80 U	2.70 U	
Perfluorotridecanoic acid (PFTTrDA)	2.80 U	<b>1.80 J</b>	<b>0.840 J</b>	<b>0.740 J</b>	2.80 U	2.70 U	
Perfluoroundecanoic acid (PFUnA)	1.40 U	<b>32.0</b>	<b>3.60</b>	<b>8.70</b>	1.40 U	1.40 U	
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>1.10</b>	<b>1.78</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>4.00</b>	<b>70.0</b>	<b>9.70</b>	<b>2.40</b>	<b>0.00</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>5.60</b>	<b>111</b>	<b>19.2</b>	<b>14.2</b>	<b>0.00</b>	<b>0.00</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2021 J2 North SPM Fall  
 J2 Range Northern

Location	MW-587M1	MW-588M1	MW-588M2	MW-589M1	MW-589M2	MW-612M1
Field Sample ID	MW-587M1_F21	MW-588M1_F21	MW-588M2_F21	MW-589M1_F21	MW-589M2_F21	MW-612M1_F21
Sampling Depth	250.00 - 260.00	238.00 - 248.00	198.00 - 208.00	240.00 - 250.00	211.00 - 221.00	297.00 - 307.00
Sampling Date	08/24/2021	09/08/2021	09/08/2021	09/09/2021	09/09/2021	09/14/2021
SDG	320781081	320787611	320787611	320787751	320787751	320790821
Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>	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	20.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.20 U	9.30 U	9.10 U	9.40 U	9.40 U	9.80 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.20 U	9.30 U	9.10 U	9.40 U	9.40 U	9.80 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.20 U	9.30 U	9.10 U	9.40 U	9.40 U	9.80 U
Perfluorobutanesulfonic acid	0.920 U	0.930 U	<b>1.70 J</b>	0.940 U	0.940 U	0.980 U
Perfluorobutanoic acid (PFBA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluorodecanesulfonic acid (PFDS)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluorodecanoic acid (PFDA)	0.920 U	0.930 U	0.910 U	0.940 U	0.940 U	0.980 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluoroheptanesulfonic acid (PFHpS)	0.920 U	0.930 U	0.910 U	0.940 U	0.940 U	0.980 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluorohexane sulfonate (PFHxS)	0.920 U	0.930 U	0.910 U	0.940 U	0.940 U	0.980 U
Perfluorohexanoic acid (PFHxA)	0.920 U	0.930 U	0.910 U	0.940 U	0.940 U	0.980 U
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluorooctanesulfonamide (PFOSA)	2.80 U	2.80 U	2.70 U	2.80 U	2.80 U	3.00 U
Perfluorooctanesulfonic acid (PFOS)	2.80 U	2.80 U	2.70 U	2.80 U	2.80 U	3.00 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	1.40 U	<b>0.570 J</b>	1.40 U	1.50 U
Perfluoropentanoic acid (PFPeA)	0.920 U	0.930 U	0.910 U	0.940 U	0.940 U	0.980 U
Perfluorotetradecanoic acid (PFTeDA)	2.80 U	2.80 U	2.70 U	2.80 U	2.80 U	3.00 U
Perfluorotridecanoic acid (PFTTrDA)	2.80 U	2.80 U	2.70 U	2.80 U	2.80 U	3.00 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.570</b>	<b>0.00</b>	<b>0.00</b>
<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>§Sum of All Compounds Detected</b>	<b>0.00</b>	<b>0.00</b>	<b>1.70</b>	<b>0.570</b>	<b>0.00</b>	<b>0.00</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2021 J2 North SPM Fall  
 J2 Range Northern

	Location	MW-612M2	MW-613M1	MW-613M2	MW-621M1	MW-621M2	MW-622M1
	Field Sample ID	MW-612M2_F21	MW-613M1_F21	MW-613M2_F21	MW-621M1_F21	MW-621M2_F21	MW-622M1_F21
	Sampling Depth	267.00 - 277.00	267.10 - 277.10	246.10 - 256.10	249.40 - 259.40	219.40 - 229.40	245.40 - 255.40
	Sampling Date	09/14/2021	09/17/2021	09/17/2021	09/08/2021	09/08/2021	09/13/2021
	SDG	320790821	320791141	320791141	320787611	320787611	320790821
	Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>	Results (ng/L)	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	18.0 U	19.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.30 U	9.40 U	9.40 U	9.30 U	8.90 U	9.40 U	9.40 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.30 U	9.40 U	9.40 U	9.30 U	8.90 U	9.40 U	9.40 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.30 U	9.40 U	9.40 U	9.30 U	8.90 U	9.40 U	9.40 U
Perfluorobutanesulfonic acid	0.930 U	0.940 U	0.940 U	0.930 U	0.890 U	0.940 U	0.940 U
Perfluorobutanoic acid (PFBA)	1.40 U	1.40 U	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U
Perfluorodecanesulfonic acid (PFDS)	1.40 U	1.40 U	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.930 U	0.940 U	0.940 U	0.930 U	0.890 U	0.940 U	0.940 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)	0.930 U	0.940 U	0.940 U	0.930 U	0.890 U	0.940 U	0.940 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U
Perfluorohexane sulfonate (PFHxS)	0.930 U	0.940 U	0.940 U	0.930 U	0.890 U	0.940 U	0.940 U
Perfluorohexanoic acid (PFHxA)	0.930 U	0.940 U	0.940 U	0.930 U	0.890 U	0.940 U	0.940 U
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U
Perfluorooctanesulfonamide (PFOSA)	2.80 U	2.80 U	2.80 U	2.80 U	2.70 U	2.80 U	2.80 U
Perfluorooctanesulfonic acid (PFOS)	2.80 U	2.80 U	2.80 U	2.80 U	2.70 U	2.80 U	2.80 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U
Perfluoropentanoic acid (PFPeA)	0.930 U	0.940 U	0.940 U	0.930 U	0.890 U	0.940 U	0.940 U
Perfluorotetradecanoic acid (PFTeDA)	2.80 U	2.80 U	2.80 U	2.80 U	2.70 U	2.80 U	2.80 U
Perfluorotridecanoic acid (PFTTrDA)	2.80 U	2.80 U	2.80 U	2.80 U	2.70 U	2.80 U	2.80 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>



**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
KGS 2021 J2 North SPM Fall  
J2 Range Northern

	Location	MW-622M2	MW-631M1	MW-631M2	MW-632M1	MW-632M2	MW-640M1
	Field Sample ID	MW-622M2_F21	MW-631M1_F21	MW-631M2_F21	MW-632M1_F21	MW-632M2_F21	MW-640M1_F21
	Sampling Depth	220.40 - 230.40	233.10 - 243.10	200.10 - 210.10	254.50 - 264.50	229.50 - 239.50	246.00 - 256.00
	Sampling Date	09/13/2021	08/23/2021	08/23/2021	09/07/2021	09/07/2021	09/07/2021
	SDG	320790821	320781081	320781081	320787611	320787611	320787611
	Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>	Results (ng/L)	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	18.0 U	18.0 U	18.0 U	18.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.60 U	8.80 U	9.00 U	9.00 U	9.00 U	9.00 U	9.60 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.60 U	8.80 U	9.00 U	9.00 U	9.00 U	9.00 U	9.60 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.60 U	8.80 U	9.00 U	9.00 U	9.00 U	9.00 U	9.60 U
Perfluorobutanesulfonic acid	0.960 U	0.880 U	<b>12.0</b>	0.900 U	0.900 U	0.900 U	0.960 U
Perfluorobutanoic acid (PFBA)	1.40 U	1.30 U	<b>2.80</b>	1.40 U	1.30 U	1.30 U	1.40 U
Perfluorodecanesulfonic acid (PFDS)	1.40 U	1.30 U	1.40 U	1.40 U	1.30 U	1.30 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.960 U	0.880 U	0.900 U	0.900 U	0.900 U	0.900 U	0.960 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.30 U	1.40 U	1.40 U	1.30 U	1.30 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)	0.960 U	0.880 U	0.900 U	0.900 U	0.900 U	0.900 U	0.960 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.30 U	1.40 U	1.40 U	1.30 U	1.30 U	1.40 U
Perfluorohexane sulfonate (PFHxS)	0.960 U	0.880 U	0.900 U	0.900 U	0.900 U	0.900 U	0.960 U
Perfluorohexanoic acid (PFHxA)	0.960 U	0.880 U	<b>23.0</b>	0.900 U	0.900 U	0.900 U	0.960 U
Perfluorononanoic acid (PFNA)	1.40 U	1.30 U	1.40 U	1.40 U	1.30 U	1.30 U	1.40 U
Perfluorooctanesulfonamide (PFOSA)	2.90 U	2.60 U	2.70 U	2.70 U	2.70 U	2.70 U	2.90 U
Perfluorooctanesulfonic acid (PFOS)	2.90 U	2.60 U	2.70 U	2.70 U	2.70 U	2.70 U	2.90 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.30 U	1.40 U	1.40 U	1.30 U	1.30 U	1.40 U
Perfluoropentanoic acid (PFPeA)	0.960 U	0.880 U	<b>11.0</b>	0.900 U	0.900 U	0.900 U	0.960 U
Perfluorotetradecanoic acid (PFTeDA)	2.90 U	2.60 U	2.70 U	2.70 U	2.70 U	2.70 U	2.90 U
Perfluorotridecanoic acid (PFTTrDA)	2.90 U	2.60 U	2.70 U	2.70 U	2.70 U	2.70 U	2.90 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.30 U	1.40 U	1.40 U	1.30 U	1.30 U	1.40 U
	<b>‡PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>0.00</b>	<b>0.00</b>	<b>48.8</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2021 J2 North SPM Fall  
 J2 Range Northern

	Location	MW-640M2	MW-703M1	MW-703M2	MW-704M1	MW-704M2
	Field Sample ID	MW-640M2_F21	MW-703M1_F21	MW-703M2_F21	MW-704M1_F21	MW-704M2_F21
	Sampling Depth	216.00 - 226.00	248.00 - 258.00	224.10 - 234.10	244.00 - 254.00	217.80 - 227.80
	Sampling Date	09/07/2021	09/14/2021	09/14/2021	09/13/2021	09/13/2021
	SDG	320787611	320790821	320790821	320790821	320790821
	Sample Type	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>		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	19.0 U	19.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		9.10 U	9.80 U	9.70 U	9.70 U	9.40 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		9.10 U	9.80 U	9.70 U	9.70 U	9.40 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		9.10 U	9.80 U	9.70 U	9.70 U	9.40 U
Perfluorobutanesulfonic acid		0.910 U	0.980 U	0.970 U	0.970 U	0.940 U
Perfluorobutanoic acid (PFBA)		1.40 U	1.50 U	1.50 U	<b>3.30</b>	1.40 U
Perfluorodecanesulfonic acid (PFDS)		1.40 U	1.50 U	1.50 U	1.50 U	1.40 U
Perfluorodecanoic acid (PFDA)		0.910 U	<b>3.90</b>	<b>2.00</b>	<b>2.00</b>	<b>2.20</b>
Perfluorododecanoic acid (PFDoA)		1.40 U	1.50 U	1.50 U	1.50 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)		0.910 U	0.980 U	0.970 U	0.970 U	0.940 U
Perfluoroheptanoic acid (PFHpA)		1.40 U	1.50 U	1.50 U	1.50 U	1.40 U
Perfluorohexane sulfonate (PFHxS)		0.910 U	0.980 U	0.970 U	0.970 U	0.940 U
Perfluorohexanoic acid (PFHxA)		0.910 U	0.980 U	0.970 U	<b>0.900 J</b>	0.940 U
Perfluorononanoic acid (PFNA)		1.40 U	<b>1.60 J</b>	<b>0.640 J</b>	<b>1.10 J</b>	<b>0.830 J</b>
Perfluorooctanesulfonamide (PFOSA)		2.70 U	2.90 U	2.90 U	2.90 U	2.80 U
Perfluorooctanesulfonic acid (PFOS)		2.70 U	2.90 U	2.90 U	2.90 U	2.80 U
Perfluorooctanoic acid (PFOA)		1.40 U	1.50 U	1.50 U	1.50 U	1.40 U
Perfluoropentanoic acid (PFPeA)		0.910 U	<b>0.700 J</b>	0.970 U	<b>3.20</b>	0.940 U
Perfluorotetradecanoic acid (PFTeDA)		2.70 U	2.90 U	2.90 U	2.90 U	2.80 U
Perfluorotridecanoic acid (PFTrDA)		2.70 U	2.90 U	2.90 U	2.90 U	2.80 U
Perfluoroundecanoic acid (PFUnA)		1.40 U	1.50 U	1.50 U	1.50 U	1.40 U
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>3.90</b>	<b>2.00</b>	<b>2.00</b>	<b>2.20</b>
	<b>§Sum of All Compounds Detected</b>	<b>0.00</b>	<b>6.20</b>	<b>2.64</b>	<b>10.5</b>	<b>3.03</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2021 J2 Ranges SPM Spring  
 J2 Range Northern

	<b>Location</b>	J2EW0002
	<b>Field Sample ID</b>	J2EW0002_521
	<b>Sampling Depth</b>	198.00 - 233.00
	<b>Sampling Date</b>	01/13/2021
	<b>SDG</b>	320689351
	<b>Sample Type</b>	<b>Normal</b>
<b>PFAS 21 Cmps</b>		Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)		<b>7.40 J</b>
8:2 Fluorotelomer sulfonate (8:2 FTS)		9.40 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		9.40 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		9.40 U
Perfluorobutanesulfonic acid		0.940 U
Perfluorobutanoic acid (PFBA)		1.40 U
Perfluorodecanesulfonic acid (PFDS)		1.40 U
Perfluorodecanoic acid (PFDA)		0.940 U
Perfluorododecanoic acid (PFDoA)		1.40 U
Perfluoroheptanesulfonic acid (PFHpS)		<b>0.430 J</b>
Perfluoroheptanoic acid (PFHpA)		<b>0.860 J</b>
Perfluorohexane sulfonate (PFHxS)		<b>11.0</b>
Perfluorohexanoic acid (PFHxA)		<b>0.900 J</b>
Perfluorononanoic acid (PFNA)		1.40 U
Perfluorooctanesulfonamide (PFOSA)		<b>1.80 J</b>
Perfluorooctanesulfonic acid (PFOS)		<b>1.00 J</b>
Perfluorooctanoic acid (PFOA)		<b>1.80 J</b>
Perfluoropentanoic acid (PFPeA)		1.90 U
Perfluorotetradecanoic acid (PFTeDA)		2.80 U
Perfluorotridecanoic acid (PFTrDA)		2.80 U
Perfluoroundecanoic acid (PFUnA)		1.40 U
	<b>†PFOS + PFOA (EPA)</b>	<b>2.80</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>11.0</b>
	<b>§Sum of All Compounds Detected</b>	<b>25.2</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2021 J3 Range SPM Fall  
 J3 Range

	Location	90EW0001	90WT0004	J3-EFF	J3-EFF	J3-INF	J3-INF
	Field Sample ID	90EW0001_F21	90WT0004_F21	J3-EFF_4Q21	J3-EFF_F21	J3-INF_4Q21	J3-INF_F21
	Sampling Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
	Sampling Date	07/13/2021	08/10/2021	10/20/2021	07/13/2021	10/20/2021	07/13/2021
	SDG	320762631	320775331	320807451	320762631	320807451	320762631
	Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>	Results (ng/L)	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	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	9.20 U	9.60 U	9.50 U	9.70 U	9.50 U	9.50 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.20 U	9.20 U	9.60 U	9.50 U	9.70 U	9.50 U	9.50 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.20 U	9.20 U	9.60 U	9.50 U	9.70 U	9.50 U	9.50 U
Perfluorobutanesulfonic acid	0.920 U	0.920 U	0.960 U	0.950 U	0.970 U	0.950 U	0.950 U
Perfluorobutanoic acid (PFBA)	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorodecanesulfonic acid (PFDS)	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.920 U	0.920 U	0.960 U	0.950 U	0.970 U	0.950 U	0.950 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)	0.920 U	0.920 U	0.960 U	0.950 U	0.970 U	0.950 U	0.950 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorohexane sulfonate (PFHxS)	<b>0.500 J</b>	0.920 U	0.960 U	0.950 U	<b>1.00 J</b>	<b>1.20 J</b>	<b>1.20 J</b>
Perfluorohexanoic acid (PFHxA)	0.920 U	0.920 U	0.960 U	0.950 U	0.970 U	0.950 U	0.950 U
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorooctanesulfonamide (PFOSA)	2.70 U	2.80 U	2.90 U	2.90 U	2.90 U	2.80 U	2.80 U
Perfluorooctanesulfonic acid (PFOS)	2.70 U	2.80 U	2.90 U	2.90 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	1.50 U	1.40 U	1.40 U
Perfluoropentanoic acid (PFPeA)	0.920 U	0.920 U	0.960 U	0.950 U	0.970 U	0.950 U	0.950 U
Perfluorotetradecanoic acid (PFTeDA)	2.70 U	2.80 U	2.90 U	2.90 U	2.90 U	2.80 U	2.80 U
Perfluorotridecanoic acid (PFTTrDA)	2.70 U	2.80 U	2.90 U	2.90 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	1.50 U	1.40 U	1.40 U
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>0.500</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>	<b>1.20</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2021 J3 Range SPM Fall  
 J3 Range

	Location	J3EW0032	J3EWIP1	J3EWIP2	MW-142M2	MW-142S	MW-143M1
	Field Sample ID	J3EW0032_F21	J3EWIP1_F21	J3EWIP2_F21	MW-142M2_F21	MW-142S_F21	MW-143M1_F21
	Sampling Depth	102.00 - 152.00	153.00 - 193.00	150.50 - 170.50	140.00 - 150.00	42.00 - 52.00	144.00 - 154.00
	Sampling Date	07/13/2021	07/13/2021	07/13/2021	07/27/2021	07/27/2021	07/26/2021
	SDG	320762631	320762631	320762631	320769671	320769671	320769671
	Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>	Results (ng/L)	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	20.0 U	19.0 UJ	19.0 UJ	19.0 UJ	
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.80 U	9.40 U	9.80 U	9.70 UJ	9.30 UJ	9.60 UJ	
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.80 U	9.40 U	9.80 U	9.70 UJ	9.30 UJ	9.60 UJ	
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.80 U	9.40 U	9.80 U	9.70 UJ	9.30 UJ	9.60 UJ	
Perfluorobutanesulfonic acid	0.980 U	0.940 U	0.980 U	0.970 UJ	0.930 UJ	0.960 UJ	
Perfluorobutanoic acid (PFBA)	1.50 U	1.40 U	1.50 U	1.50 UJ	1.40 UJ	1.40 UJ	
Perfluorodecanesulfonic acid (PFDS)	1.50 U	1.40 U	1.50 U	1.50 UJ	1.40 UJ	1.40 UJ	
Perfluorodecanoic acid (PFDA)	0.980 U	0.940 U	0.980 U	0.970 UJ	0.930 UJ	0.960 UJ	
Perfluorododecanoic acid (PFDoA)	1.50 U	1.40 U	1.50 U	1.50 UJ	1.40 UJ	1.40 UJ	
Perfluoroheptanesulfonic acid (PFHpS)	0.980 U	0.940 U	0.980 U	0.970 UJ	0.930 UJ	0.960 UJ	
Perfluoroheptanoic acid (PFHpA)	1.50 U	1.40 U	1.50 U	1.50 UJ	1.40 UJ	1.40 UJ	
Perfluorohexane sulfonate (PFHxS)	<b>0.720 J</b>	<b>0.520 J</b>	<b>2.80</b>	<b>2.80 J</b>	0.930 UJ	0.960 UJ	
Perfluorohexanoic acid (PFHxA)	0.980 U	0.940 U	0.980 U	0.970 UJ	0.930 UJ	0.960 UJ	
Perfluorononanoic acid (PFNA)	1.50 U	1.40 U	1.50 U	1.50 UJ	1.40 UJ	1.40 UJ	
Perfluorooctanesulfonamide (PFOSA)	2.90 U	2.80 U	2.90 U	2.90 UJ	2.80 UJ	2.90 UJ	
Perfluorooctanesulfonic acid (PFOS)	2.90 U	2.80 U	2.90 U	2.90 UJ	2.80 UJ	2.90 UJ	
Perfluorooctanoic acid (PFOA)	1.50 U	1.40 U	1.50 U	1.50 UJ	<b>0.510 J</b>	1.40 UJ	
Perfluoropentanoic acid (PFPeA)	0.980 U	0.940 U	0.980 U	0.970 UJ	0.930 UJ	0.960 UJ	
Perfluorotetradecanoic acid (PFTeDA)	2.90 U	2.80 U	2.90 U	2.90 UJ	2.80 UJ	2.90 UJ	
Perfluorotridecanoic acid (PFTrDA)	2.90 U	2.80 U	2.90 U	2.90 UJ	2.80 UJ	2.90 UJ	
Perfluoroundecanoic acid (PFUnA)	1.50 U	1.40 U	1.50 U	1.50 UJ	1.40 UJ	1.40 UJ	
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.510</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>2.80</b>	<b>2.80</b>	<b>0.00</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>0.720</b>	<b>0.520</b>	<b>2.80</b>	<b>2.80</b>	<b>0.510</b>	<b>0.00</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2021 J3 Range SPM Fall  
 J3 Range

Location	MW-143M2	MW-143M2	MW-144M2	MW-144S	MW-145M1	MW-145S
Field Sample ID	MW-143M2_F21DR	MW-143M2_F21R	MW-144M2_F21	MW-144S_F21R	MW-145M1_F21	MW-145S_F21
Sampling Depth	117.00 - 122.00	117.00 - 122.00	130.00 - 140.00	26.00 - 36.00	125.00 - 135.00	30.00 - 40.00
Sampling Date	09/16/2021	09/16/2021	07/27/2021	09/16/2021	08/11/2021	08/11/2021
SDG	320791142	320791142	320769671	320791142	320776031	320776031
Sample Type	Field Duplicate	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>	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 UJ	20.0 U	19.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.50 U	9.40 U	9.40 UJ	9.90 U	9.50 U	9.40 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.50 U	9.40 U	9.40 UJ	9.90 U	9.50 U	9.40 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.50 U	9.40 U	9.40 UJ	9.90 U	9.50 U	9.40 U
Perfluorobutanesulfonic acid	<b>0.640 J</b>	<b>0.700 J</b>	0.940 UJ	0.990 U	0.950 U	0.940 U
Perfluorobutanoic acid (PFBA)	1.40 U	1.40 U	1.40 UJ	1.50 U	1.40 U	1.40 U
Perfluorodecanesulfonic acid (PFDS)	1.40 U	1.40 U	1.40 UJ	1.50 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.950 U	0.940 U	0.940 UJ	0.990 U	0.950 U	0.940 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.40 UJ	1.50 U	1.40 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)	0.950 U	0.940 U	0.940 UJ	0.990 U	0.950 U	0.940 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.40 UJ	1.50 U	1.40 U	1.40 U
Perfluorohexane sulfonate (PFHxS)	<b>4.10</b>	<b>4.00</b>	0.940 UJ	0.990 U	0.950 U	<b>1.50 J</b>
Perfluorohexanoic acid (PFHxA)	0.950 U	0.940 U	0.940 UJ	0.990 U	0.950 U	<b>0.630 J</b>
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.40 UJ	1.50 U	1.40 U	1.40 U
Perfluorooctanesulfonamide (PFOSA)	2.80 U	2.80 U	2.80 UJ	3.00 U	2.90 U	2.80 U
Perfluorooctanesulfonic acid (PFOS)	2.80 U	2.80 U	2.80 UJ	<b>3.60 J</b>	2.90 U	<b>3.90</b>
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	1.40 UJ	<b>0.570 J</b>	1.40 U	<b>0.760 J</b>
Perfluoropentanoic acid (PFPeA)	0.950 U	0.940 U	0.940 UJ	0.990 U	0.950 U	0.940 U
Perfluorotetradecanoic acid (PFTeDA)	2.80 U	2.80 U	2.80 UJ	3.00 U	2.90 U	2.80 U
Perfluorotridecanoic acid (PFTTrDA)	2.80 U	2.80 U	2.80 UJ	3.00 U	2.90 U	2.80 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.40 UJ	1.50 U	1.40 U	1.40 U
<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>4.17</b>	<b>0.00</b>	<b>4.66</b>
<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>4.10</b>	<b>4.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3.90</b>
<b>§Sum of All Compounds Detected</b>	<b>4.74</b>	<b>4.70</b>	<b>0.00</b>	<b>4.17</b>	<b>0.00</b>	<b>6.79</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2021 J3 Range SPM Fall  
 J3 Range

	Location	MW-157M1	MW-157M2	MW-157M3	MW-163S	MW-181S	MW-181S
	Field Sample ID	MW-157M1_F21	MW-157M2_F21	MW-157M3_F21	MW-163S_F21	MW-181S_F21	MW-181S_F21D
	Sampling Depth	154.00 - 164.00	110.00 - 120.00	70.00 - 80.00	38.00 - 48.00	32.25 - 42.25	32.25 - 42.25
	Sampling Date	07/14/2021	07/14/2021	07/14/2021	07/14/2021	08/02/2021	08/02/2021
	SDG	320763871	320763871	320763871	320763871	320772471	320772471
	Sample Type	Normal	Normal	Normal	Normal	Normal	Field Duplicate
<b>PFAS 21 Cmps</b>	Results (ng/L)	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	19.0 U	19.0 U	18.0 U	
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.30 U	9.70 U	10.0 U	9.40 U	9.50 U	9.00 U	
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.30 U	9.70 U	10.0 U	9.40 U	9.50 U	9.00 U	
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.30 U	9.70 U	10.0 U	9.40 U	9.50 U	9.00 U	
Perfluorobutanesulfonic acid	0.930 U	<b>9.40</b>	1.00 U	0.940 U	0.950 U	0.900 U	
Perfluorobutanoic acid (PFBA)	1.40 U	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	
Perfluorodecanesulfonic acid (PFDS)	1.40 U	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	
Perfluorodecanoic acid (PFDA)	0.930 U	0.970 U	1.00 U	0.940 U	0.950 U	0.900 U	
Perfluorododecanoic acid (PFDoA)	1.40 U	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	
Perfluoroheptanesulfonic acid (PFHpS)	0.930 U	0.970 U	1.00 U	0.940 U	0.950 U	0.900 U	
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	
Perfluorohexane sulfonate (PFHxS)	0.930 U	<b>0.720 J</b>	<b>1.50 J</b>	<b>0.450 J</b>	0.950 U	0.900 U	
Perfluorohexanoic acid (PFHxA)	0.930 U	0.970 U	1.00 U	0.940 U	0.950 U	0.900 U	
Perfluorononanoic acid (PFNA)	1.40 U	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	
Perfluorooctanesulfonamide (PFOSA)	2.80 U	2.90 U	3.00 U	2.80 U	2.80 U	2.70 U	
Perfluorooctanesulfonic acid (PFOS)	2.80 U	2.90 U	3.00 U	<b>4.80</b>	<b>15.0</b>	<b>15.0</b>	
Perfluorooctanoic acid (PFOA)	1.40 U	1.50 U	<b>0.730 J</b>	<b>1.10 J</b>	1.40 U	1.40 U	
Perfluoropentanoic acid (PFPeA)	0.930 U	0.970 U	1.00 U	0.940 U	0.950 U	0.900 U	
Perfluorotetradecanoic acid (PFTeDA)	2.80 U	2.90 U	3.00 U	2.80 U	2.80 U	2.70 U	
Perfluorotridecanoic acid (PFTTrDA)	2.80 U	2.90 U	3.00 U	2.80 U	2.80 U	2.70 U	
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	
	<b>+PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.730</b>	<b>5.90</b>	<b>15.0</b>	<b>15.0</b>
	<b>#PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>4.80</b>	<b>15.0</b>	<b>15.0</b>
	<b>§Sum of All Compounds Detected</b>	<b>0.00</b>	<b>10.1</b>	<b>2.23</b>	<b>6.35</b>	<b>15.0</b>	<b>15.0</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2021 J3 Range SPM Fall  
 J3 Range

	Location	MW-193S	MW-193S	MW-196M1	MW-196S	MW-197M2	MW-197M2
	Field Sample ID	MW-193S_F21	MW-193S_F21D	MW-196M1_F21	MW-196S_F21	MW-197M2_F21	MW-197M2_F21D
	Sampling Depth	32.50 - 37.50	32.50 - 37.50	45.00 - 50.00	32.00 - 37.00	80.20 - 85.20	80.20 - 85.20
	Sampling Date	08/04/2021	08/04/2021	08/11/2021	08/11/2021	08/02/2021	08/02/2021
	SDG	320772871	320772871	320776031	320776031	320772471	320772471
	Sample Type	Normal	Field Duplicate	Normal	Normal	Normal	Field Duplicate
<b>PFAS 21 Cmps</b>		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	18.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		9.40 U	9.40 U	9.60 U	10.0 U	9.60 U	9.20 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		9.40 U	9.40 U	9.60 U	10.0 U	9.60 U	9.20 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		9.40 U	9.40 U	9.60 U	10.0 U	9.60 U	9.20 U
Perfluorobutanesulfonic acid		0.940 U	0.940 U	0.960 U	1.00 U	<b>0.450 J</b>	<b>0.460 J</b>
Perfluorobutanoic acid (PFBA)		1.40 U	1.40 U	<b>0.900 J</b>	1.50 U	<b>2.60</b>	<b>2.60</b>
Perfluorodecanesulfonic acid (PFDS)		1.40 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)		0.940 U	0.940 U	0.960 U	1.00 U	0.960 U	0.920 U
Perfluorododecanoic acid (PFDoA)		1.40 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)		0.940 U	0.940 U	0.960 U	1.00 U	0.960 U	0.920 U
Perfluoroheptanoic acid (PFHpA)		1.40 U	1.40 U	1.40 U	1.50 U	<b>3.00</b>	<b>3.00</b>
Perfluorohexane sulfonate (PFHxS)		<b>2.80</b>	<b>2.60</b>	0.960 U	<b>0.440 J</b>	<b>15.0</b>	<b>15.0</b>
Perfluorohexanoic acid (PFHxA)		0.940 U	0.940 U	<b>0.760 J</b>	<b>0.480 J</b>	<b>5.00</b>	<b>5.50</b>
Perfluorononanoic acid (PFNA)		1.40 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorooctanesulfonamide (PFOSA)		2.80 U	2.80 U	2.90 U	3.00 U	2.90 U	2.80 U
Perfluorooctanesulfonic acid (PFOS)		2.80 U	2.80 U	2.90 U	<b>5.30 J</b>	<b>4.90</b>	<b>4.80</b>
Perfluorooctanoic acid (PFOA)		1.40 U	1.40 U	<b>1.40 J</b>	<b>0.700 J</b>	<b>2.70</b>	<b>2.90</b>
Perfluoropentanoic acid (PFPeA)		0.940 U	0.940 U	0.960 U	1.00 U	<b>4.20</b>	<b>4.20</b>
Perfluorotetradecanoic acid (PFTeDA)		2.80 U	2.80 U	2.90 U	3.00 U	2.90 U	2.80 U
Perfluorotridecanoic acid (PFTrDA)		2.80 U	2.80 U	2.90 U	3.00 U	2.90 U	2.80 U
Perfluoroundecanoic acid (PFUnA)		1.40 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>1.40</b>	<b>6.00</b>	<b>7.60</b>	<b>7.70</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>2.80</b>	<b>2.60</b>	<b>0.00</b>	<b>5.30</b>	<b>25.6</b>	<b>25.7</b>
	<b>§Sum of All Compounds Detected</b>	<b>2.80</b>	<b>2.60</b>	<b>3.06</b>	<b>6.92</b>	<b>37.9</b>	<b>38.5</b>



**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2021 J3 Range SPM Fall  
 J3 Range

	Location	MW-197M3	MW-198M4	MW-218M1	MW-218M1	MW-218M2	MW-218M2
	Field Sample ID	MW-197M3_F21	MW-198M4_F21	MW-218M1_F21	MW-218M1_F21R	MW-218M2_F21	MW-218M2_F21R
	Sampling Depth	60.20 - 65.20	70.00 - 75.00	128.00 - 133.00	128.00 - 133.00	98.00 - 103.00	98.00 - 103.00
	Sampling Date	08/02/2021	08/05/2021	08/16/2021	09/30/2021	08/16/2021	09/30/2021
	SDG	320772471	320773351	320778561	320797671	320778561	320797671
	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	18.0 U	19.0 U	19.0 U	20.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		9.40 U	9.30 U	9.10 U	9.50 U	9.40 U	10.0 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		9.40 U	9.30 U	9.10 U	9.50 U	9.40 U	10.0 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		9.40 U	9.30 U	9.10 U	9.50 U	9.40 U	10.0 U
Perfluorobutanesulfonic acid		0.940 U	0.930 U	<b>0.420 J</b>	0.950 U	0.940 U	1.00 U
Perfluorobutanoic acid (PFBA)		<b>1.30 J</b>	<b>1.40 J</b>	<b>400</b>	1.40 U	<b>64.0</b>	<b>3.00</b>
Perfluorodecanesulfonic acid (PFDS)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluorodecanoic acid (PFDA)		0.940 U	0.930 U	<b>42.0</b>	<b>5.60</b>	<b>10.0</b>	<b>5.10</b>
Perfluorododecanoic acid (PFDoA)		1.40 U	1.40 U	<b>32.0</b>	1.40 U	<b>2.30</b>	<b>0.600 J</b>
Perfluoroheptanesulfonic acid (PFHpS)		0.940 U	0.930 U	0.910 U	0.950 U	0.940 U	1.00 U
Perfluoroheptanoic acid (PFHpA)		1.40 U	1.40 U	<b>360</b>	1.40 U	<b>100</b>	<b>2.10</b>
Perfluorohexane sulfonate (PFHxS)		<b>2.40</b>	<b>8.50</b>	0.910 U	0.950 U	0.940 U	1.00 U
Perfluorohexanoic acid (PFHxA)		<b>0.590 J</b>	0.930 U	<b>350</b>	0.950 U	<b>57.0</b>	<b>1.90 J</b>
Perfluorononanoic acid (PFNA)		1.40 U	1.40 U	<b>75.0</b>	<b>6.20</b>	<b>35.0</b>	<b>6.20</b>
Perfluorooctanesulfonamide (PFOSA)		2.80 U	2.80 U	2.70 U	2.80 U	2.80 U	3.00 U
Perfluorooctanesulfonic acid (PFOS)		2.80 U	<b>1.70 J</b>	2.70 U	2.80 U	2.80 U	3.00 U
Perfluorooctanoic acid (PFOA)		<b>1.00 J</b>	<b>0.870 J</b>	<b>120</b>	<b>5.70</b>	<b>49.0</b>	<b>2.10</b>
Perfluoropentanoic acid (PFPeA)		0.940 U	0.930 U	<b>770</b>	0.950 U	<b>110</b>	<b>5.00</b>
Perfluorotetradecanoic acid (PFTeDA)		2.80 U	2.80 U	<b>35.0</b>	2.80 U	<b>2.00 J</b>	3.00 U
Perfluorotridecanoic acid (PFTTrDA)		2.80 U	2.80 U	<b>49.0</b>	2.80 U	<b>2.60 J</b>	3.00 U
Perfluoroundecanoic acid (PFUnA)		1.40 U	1.40 U	<b>48.0</b>	<b>3.60</b>	<b>6.80</b>	<b>3.50</b>
	<b>+PFOS + PFOA (EPA)</b>	<b>1.00</b>	<b>2.57</b>	<b>120</b>	<b>5.70</b>	<b>49.0</b>	<b>2.10</b>
	<b>#PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>2.40</b>	<b>8.50</b>	<b>597</b>	<b>17.5</b>	<b>194</b>	<b>15.5</b>
	<b>§Sum of All Compounds Detected</b>	<b>5.29</b>	<b>12.5</b>	<b>2280</b>	<b>21.1</b>	<b>439</b>	<b>29.5</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2021 J3 Range SPM Fall  
 J3 Range

	Location	MW-218M3	MW-218M3	MW-250M1	MW-250M3	MW-30	MW-576M2
	Field Sample ID	MW-218M3_F21	MW-218M3_F21R	MW-250M1_F21	MW-250M3_F21	MW-30_F21	MW-576M2_F21
	Sampling Depth	78.00 - 83.00	78.00 - 83.00	185.00 - 195.00	95.00 - 105.00	26.00 - 36.00	133.90 - 143.90
	Sampling Date	08/16/2021	09/30/2021	07/15/2021	07/15/2021	08/02/2021	08/10/2021
	SDG	320778561	320797671	320763871	320763871	320772471	320775331
	Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>	Results (ng/L)	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	18.0 U	18.0 U	19.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.10 U	9.30 U	9.00 U	9.00 U	9.00 U	9.40 U	9.40 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.10 U	9.30 U	9.00 U	9.00 U	9.00 U	9.40 U	9.40 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.10 U	9.30 U	9.00 U	9.00 U	9.00 U	9.40 U	9.40 U
Perfluorobutanesulfonic acid	0.910 U	0.930 U	0.900 U	0.900 U	0.900 U	0.940 U	0.940 U
Perfluorobutanoic acid (PFBA)	1.40 U	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U
Perfluorodecanesulfonic acid (PFDS)	1.40 U	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.910 U	0.930 U	0.900 U	0.900 U	0.900 U	0.940 U	0.940 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)	0.910 U	0.930 U	0.900 U	0.900 U	0.900 U	0.940 U	0.940 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U
Perfluorohexane sulfonate (PFHxS)	0.910 U	0.930 U	<b>0.550 J</b>	<b>1.90</b>	0.900 U	<b>0.470 J</b>	<b>0.470 J</b>
Perfluorohexanoic acid (PFHxA)	0.910 U	0.930 U	0.900 U	0.900 U	0.900 U	0.940 U	0.940 U
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U
Perfluorooctanesulfonamide (PFOSA)	2.70 U	2.80 U	2.70 U	2.70 U	2.70 U	2.80 U	2.80 U
Perfluorooctanesulfonic acid (PFOS)	2.70 U	2.80 U	2.70 U	<b>1.00 J</b>	<b>7.00</b>	2.80 U	2.80 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U
Perfluoropentanoic acid (PFPeA)	0.910 U	0.930 U	0.900 U	0.900 U	0.900 U	0.940 U	0.940 U
Perfluorotetradecanoic acid (PFTeDA)	2.70 U	2.80 U	2.70 U	2.70 U	2.70 U	2.80 U	2.80 U
Perfluorotridecanoic acid (PFTrDA)	2.70 U	2.80 U	2.70 U	2.70 U	2.70 U	2.80 U	2.80 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>	<b>7.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.90</b>	<b>7.00</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>0.00</b>	<b>0.00</b>	<b>0.550</b>	<b>2.90</b>	<b>7.00</b>	<b>0.470</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2021 J3 Range SPM Fall  
 J3 Range

	Location	MW-636M1	MW-636M2	MW-653M1	MW-653M2
	Field Sample ID	MW-636M1_F21	MW-636M2_F21	MW-653M1_F21	MW-653M2_F21
	Sampling Depth	141.60 - 151.60	110.50 - 120.50	147.50 - 157.50	59.30 - 69.30
	Sampling Date	07/29/2021	07/29/2021	07/29/2021	07/29/2021
	SDG	320769861	320769861	320769861	320769861
	Sample Type	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>		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
8:2 Fluorotelomer sulfonate (8:2 FTS)		9.50 U	9.30 U	9.80 U	9.10 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		9.50 U	9.30 U	9.80 U	9.10 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		9.50 U	9.30 U	9.80 U	9.10 U
Perfluorobutanesulfonic acid		0.950 U	<b>1.20 J</b>	<b>3.50</b>	0.910 U
Perfluorobutanoic acid (PFBA)		1.40 U	1.40 U	<b>1.20 J</b>	1.40 U
Perfluorodecanesulfonic acid (PFDS)		1.40 U	1.40 U	1.50 U	1.40 U
Perfluorodecanoic acid (PFDA)		0.950 U	0.930 U	0.980 U	0.910 U
Perfluorododecanoic acid (PFDoA)		1.40 U	1.40 U	1.50 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)		0.950 U	0.930 U	0.980 U	0.910 U
Perfluoroheptanoic acid (PFHpA)		1.40 U	1.40 U	<b>2.50</b>	1.40 U
Perfluorohexane sulfonate (PFHxS)		0.950 U	<b>4.80</b>	<b>83.0</b>	0.910 U
Perfluorohexanoic acid (PFHxA)		<b>0.460 J</b>	<b>0.570 J</b>	<b>5.80</b>	0.910 U
Perfluorononanoic acid (PFNA)		1.40 U	1.40 U	1.50 U	1.40 U
Perfluorooctanesulfonamide (PFOSA)		2.90 U	2.80 U	2.90 U	2.70 U
Perfluorooctanesulfonic acid (PFOS)		2.90 U	<b>1.60 J</b>	<b>5.30</b>	2.70 U
Perfluorooctanoic acid (PFOA)		1.40 U	1.40 U	<b>1.80 J</b>	1.40 U
Perfluoropentanoic acid (PFPeA)		0.950 U	0.930 U	<b>3.30</b>	0.910 U
Perfluorotetradecanoic acid (PFTeDA)		2.90 U	2.80 U	2.90 U	2.70 U
Perfluorotridecanoic acid (PFTrDA)		2.90 U	2.80 U	2.90 U	2.70 U
Perfluoroundecanoic acid (PFUnA)		1.40 U	1.40 U	1.50 U	1.40 U
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>1.60</b>	<b>7.10</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>4.80</b>	<b>90.8</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>0.460</b>	<b>8.17</b>	<b>106</b>	<b>0.00</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2022 J2 North PFAS Spring  
 J2 Range Eastern

	Location	MW-128S	MW-18D	MW-18S	MW-48D	MW-48M2	MW-48S
	Field Sample ID	MW-128S_S22	MW-18D_S22	MW-18S_S22	MW-48D_S22	MW-48M2_S22	MW-48S_S22
	Sampling Depth	87.00 - 97.00	265.00 - 275.00	35.00 - 45.00	221.00 - 231.00	161.00 - 171.00	99.00 - 109.00
	Sampling Date	01/11/2022	12/27/2021	12/27/2021	01/04/2022	01/04/2022	01/05/2022
	SDG	320838001	320834481	320834481	320836321	320836321	320837121
	Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>		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)		0.960 U	1.00 U	0.980 U	0.950 U	0.990 U	1.00 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		1.40 U	1.50 U	1.50 U	1.40 U	1.50 U	1.50 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		0.960 U	1.00 U	0.980 U	0.950 U	0.990 U	1.00 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		0.960 U	1.00 U	0.980 U	0.950 U	0.990 U	1.00 U
Perfluorobutanesulfonic acid		0.960 U	1.00 U	0.980 U	0.950 U	0.990 U	1.00 U
Perfluorobutanoic acid (PFBA)		0.480 U	0.500 U	0.490 U	0.470 U	0.490 U	0.500 U
Perfluorodecanesulfonic acid (PFDS)		1.40 U	1.50 U	1.50 U	1.40 U	1.50 U	1.50 U
Perfluorodecanoic acid (PFDA)		0.960 U	1.00 U	0.980 U	0.950 U	0.990 U	1.00 U
Perfluorododecanoic acid (PFDoA)		0.960 U	1.00 U	0.980 U	0.950 U	0.990 U	1.00 U
Perfluoroheptanesulfonic acid (PFHpS)		1.40 U	1.50 U	1.50 U	1.40 U	1.50 U	1.50 U
Perfluoroheptanoic acid (PFHpA)		0.960 U	1.00 U	0.980 U	0.950 U	0.990 U	1.00 U
Perfluorohexane sulfonate (PFHxS)		<b>4.30</b>	1.00 U	0.980 U	0.950 U	0.990 U	<b>0.600 J</b>
Perfluorohexanoic acid (PFHxA)		1.40 U	1.50 U	1.50 U	1.40 U	1.50 U	1.50 U
Perfluorononanoic acid (PFNA)		1.40 U	1.50 U	1.50 U	1.40 U	1.50 U	1.50 U
Perfluorooctanesulfonamide (PFOSA)		1.40 U	1.50 U	1.50 U	1.40 U	1.50 U	1.50 U
Perfluorooctanesulfonic acid (PFOS)		1.40 U	1.50 U	1.50 U	1.40 U	1.50 U	1.50 U
Perfluorooctanoic acid (PFOA)		1.40 U	1.50 U	1.50 U	1.40 U	1.50 U	1.50 U
Perfluoropentanoic acid (PFPeA)		0.480 U	0.500 U	0.490 U	0.470 U	0.490 U	0.500 U
Perfluorotetradecanoic acid (PFTeDA)		1.40 U	1.50 U	1.50 U	1.40 U	1.50 U	1.50 U
Perfluorotridecanoic acid (PFTrDA)		1.40 U	1.50 U	1.50 U	1.40 U	1.50 U	1.50 U
Perfluoroundecanoic acid (PFUnA)		1.40 U	1.50 U	1.50 U	1.40 U	1.50 U	1.50 U
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>4.30</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>4.30</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.600</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2022 J2 North PFAS Spring  
 J2 Range Eastern

	Location	MW-49D	MW-49M1	MW-49M2	MW-49M3	MW-49S
	Field Sample ID	MW-49D_S22	MW-49M1_S22	MW-49M2_S22	MW-49M3_S22	MW-49S_S22
	Sampling Depth	185.00 - 195.00	160.00 - 170.00	130.00 - 140.00	100.50 - 110.50	68.50 - 78.00
	Sampling Date	01/03/2022	01/03/2022	01/03/2022	01/03/2022	01/03/2022
	SDG	320836321	320836321	320836321	320836321	320836321
	Sample Type	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>		Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)		1.00 U	0.960 U	0.980 U	0.960 U	0.960 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		1.50 U	1.40 U	1.50 U	1.40 U	1.40 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		1.00 U	0.960 U	0.980 U	0.960 U	0.960 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		1.00 U	0.960 U	0.980 U	0.960 U	0.960 U
Perfluorobutanesulfonic acid		1.00 U	0.960 U	0.980 U	0.960 U	0.960 U
Perfluorobutanoic acid (PFBA)		0.500 U	0.480 U	0.490 U	0.480 U	0.480 U
Perfluorodecanesulfonic acid (PFDS)		1.50 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)		1.00 U	0.960 U	0.980 U	0.960 U	0.960 U
Perfluorododecanoic acid (PFDoA)		1.00 U	0.960 U	0.980 U	0.960 U	0.960 U
Perfluoroheptanesulfonic acid (PFHpS)		1.50 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluoroheptanoic acid (PFHpA)		1.00 U	0.960 U	0.980 U	0.960 U	0.960 U
Perfluorohexane sulfonate (PFHxS)		1.00 U	0.960 U	0.980 U	0.960 U	0.960 U
Perfluorohexanoic acid (PFHxA)		1.50 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorononanoic acid (PFNA)		1.50 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorooctanesulfonamide (PFOSA)		1.50 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorooctanesulfonic acid (PFOS)		1.50 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorooctanoic acid (PFOA)		1.50 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluoropentanoic acid (PFPeA)		0.500 U	0.480 U	0.490 U	0.480 U	0.480 U
Perfluorotetradecanoic acid (PFTeDA)		1.50 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluorotridecanoic acid (PFTrDA)		1.50 U	1.40 U	1.50 U	1.40 U	1.40 U
Perfluoroundecanoic acid (PFUnA)		1.50 U	1.40 U	1.50 U	1.40 U	1.40 U
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2022 J2 North PFAS Spring  
 J2 Range Northern

	Location	C-4D	C-4D	C-4M	C-4S	C-7D	C-7M
	Field Sample ID	C-4D_S22	C-4D_S22D	C-4M_S22	C-4S_S22	C-7D_S22	C-7M_S22
	Sampling Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
	Sampling Date	01/13/2022	01/13/2022	01/13/2022	01/13/2022	01/12/2022	01/12/2022
	SDG	320838831	320838831	320838831	320838831	320838831	320838831
	Sample Type	Normal	Field Duplicate	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>		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)		0.960 U	0.950 U	0.920 U	0.950 U	0.930 U	0.950 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		0.960 U	0.950 U	0.920 U	0.950 U	0.930 U	0.950 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		0.960 U	0.950 U	0.920 U	0.950 U	0.930 U	0.950 U
Perfluorobutanesulfonic acid		0.960 U	0.950 U	0.920 U	0.950 U	0.930 U	0.950 U
Perfluorobutanoic acid (PFBA)		0.480 U	0.470 U	0.460 U	0.480 U	0.470 U	0.480 U
Perfluorodecanesulfonic acid (PFDS)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)		<b>4.30</b>	<b>4.50</b>	<b>5.90</b>	<b>5.30</b>	<b>4.80</b>	<b>4.20</b>
Perfluorododecanoic acid (PFDoA)		<b>0.760 J</b>	<b>1.00 J</b>	<b>1.60 J</b>	<b>1.10 J</b>	<b>1.70 J</b>	<b>0.960 J</b>
Perfluoroheptanesulfonic acid (PFHpS)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluoroheptanoic acid (PFHpA)		0.960 U	0.950 U	0.920 U	0.950 U	0.930 U	0.950 U
Perfluorohexane sulfonate (PFHxS)		0.960 U	0.950 U	0.920 U	0.950 U	0.930 U	0.950 U
Perfluorohexanoic acid (PFHxA)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorononanoic acid (PFNA)		<b>0.900 J</b>	<b>0.930 J</b>	<b>1.30 J</b>	<b>1.90</b>	1.40 U	1.40 U
Perfluorooctanesulfonamide (PFOSA)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorooctanesulfonic acid (PFOS)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorooctanoic acid (PFOA)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluoropentanoic acid (PFPeA)		0.480 U	0.470 U	0.460 U	0.480 U	0.470 U	0.480 U
Perfluorotetradecanoic acid (PFTeDA)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorotridecanoic acid (PFTrDA)		1.40 U	1.40 U	1.40 U	<b>0.970 J</b>	<b>0.940 J</b>	1.40 U
Perfluoroundecanoic acid (PFUnA)		<b>4.60</b>	<b>4.30</b>	<b>13.0</b>	<b>14.0</b>	<b>12.0</b>	<b>5.80</b>
	<b>+PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>#PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>4.30</b>	<b>4.50</b>	<b>5.90</b>	<b>7.20</b>	<b>4.80</b>	<b>4.20</b>
	<b>§Sum of All Compounds Detected</b>	<b>10.6</b>	<b>10.7</b>	<b>21.8</b>	<b>23.3</b>	<b>19.4</b>	<b>11.0</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2022 J2 North PFAS Spring  
 J2 Range Northern

	Location	C-7S	J2EW3-MW1-A	J2EW3-MW1-B	J2EW3-MW-2-A	J2EW3-MW-2-B	J2EW3-MW-2-C
	Field Sample ID	C-7S_S22	J2EW3-MW1-A_S22	J2EW3-MW1-B_S22	J2EW3-MW-2-A_S22	J2EW3-MW-2-B_S22	J2EW3-MW-2-C_S22
	Sampling Depth	0.00 - 0.00	145.66 - 155.66	210.66 - 220.66	151.16 - 161.16	216.16 - 226.16	251.13 - 261.13
	Sampling Date	01/12/2022	01/05/2022	01/05/2022	01/06/2022	01/06/2022	01/06/2022
	SDG	320838831	320837121	320837121	320836691	320836691	320836691
	Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>	Results (ng/L)	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)	0.990 U	0.990 U	0.990 U	1.00 U	1.00 U	0.950 U	
8:2 Fluorotelomer sulfonate (8:2 FTS)	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.40 U	
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.990 U	0.990 U	0.990 U	1.00 U	1.00 U	0.950 U	
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.990 U	0.990 U	0.990 U	1.00 U	1.00 U	0.950 U	
Perfluorobutanesulfonic acid	0.990 U	0.990 U	0.990 U	1.00 U	1.00 U	<b>1.30 J</b>	
Perfluorobutanoic acid (PFBA)	0.490 U	0.490 U	0.490 U	0.500 U	0.510 U	<b>0.380 J</b>	
Perfluorodecanesulfonic acid (PFDS)	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.40 U	
Perfluorodecanoic acid (PFDA)	<b>2.20</b>	0.990 U	0.990 U	1.00 U	1.00 U	0.950 U	
Perfluorododecanoic acid (PFDoA)	<b>1.70 J</b>	0.990 U	0.990 U	1.00 U	1.00 U	0.950 U	
Perfluoroheptanesulfonic acid (PFHpS)	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.40 U	
Perfluoroheptanoic acid (PFHpA)	0.990 U	0.990 U	0.990 U	1.00 U	1.00 U	0.950 U	
Perfluorohexane sulfonate (PFHxS)	0.990 U	0.990 U	0.990 U	1.00 U	1.00 U	<b>1.20 J</b>	
Perfluorohexanoic acid (PFHxA)	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	<b>1.70 J</b>	
Perfluorononanoic acid (PFNA)	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.40 U	
Perfluorooctanesulfonamide (PFOSA)	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.40 U	
Perfluorooctanesulfonic acid (PFOS)	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.40 U	
Perfluorooctanoic acid (PFOA)	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.40 U	
Perfluoropentanoic acid (PFPeA)	0.490 U	0.490 U	0.490 U	0.500 U	0.510 U	<b>0.900 J</b>	
Perfluorotetradecanoic acid (PFTeDA)	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.40 U	
Perfluorotridecanoic acid (PFTTrDA)	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.40 U	
Perfluoroundecanoic acid (PFUnA)	<b>13.0</b>	1.50 U	1.50 U	1.50 U	1.50 U	1.40 U	
<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	
<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>2.20</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	
<b>§Sum of All Compounds Detected</b>	<b>16.9</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>5.48</b>	

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2022 J2 North PFAS Spring  
 J2 Range Northern

Location	J2EW3-MW1-C	J2N-EFF-E	J2N-EFF-F	J2N-EFF-G	MW-130D	MW-18M1
Field Sample ID	J2EW3-MW1-C_S22	J2N-EFF-E_S22	J2N-EFF-F_S22	J2N-EFF-G_S22	MW-130D_S22	MW-18M1_S22
Sampling Depth	245.66 - 255.66	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	320.00 - 330.00	171.00 - 176.00
Sampling Date	01/05/2022	01/10/2022	01/10/2022	01/10/2022	12/29/2021	12/27/2021
SDG	320837121	320838001	320838001	320838001	320835011	320834481
Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>	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)	0.930 U	0.970 U	<b>1.20 J</b>	0.950 U	1.00 U	0.990 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	1.40 U	1.50 U	1.40 U	1.40 U	1.50 U	1.50 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.930 U	0.970 U	0.960 U	0.950 U	1.00 U	0.990 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.930 U	0.970 U	0.960 U	0.950 U	1.00 U	0.990 U
Perfluorobutanesulfonic acid	0.930 U	0.970 U	0.960 U	0.950 U	1.00 U	0.990 U
Perfluorobutanoic acid (PFBA)	0.460 U	0.490 U	<b>0.250 J</b>	<b>0.290 J</b>	0.510 U	0.500 U
Perfluorodecanesulfonic acid (PFDS)	1.40 U	1.50 U	1.40 U	1.40 U	1.50 U	1.50 U
Perfluorodecanoic acid (PFDA)	0.930 U	0.970 U	0.960 U	0.950 U	1.00 U	0.990 U
Perfluorododecanoic acid (PFDoA)	0.930 U	0.970 U	0.960 U	0.950 U	1.00 U	0.990 U
Perfluoroheptanesulfonic acid (PFHpS)	1.40 U	1.50 U	1.40 U	1.40 U	1.50 U	1.50 U
Perfluoroheptanoic acid (PFHpA)	0.930 U	0.970 U	0.960 U	0.950 U	1.00 U	0.990 U
Perfluorohexane sulfonate (PFHxS)	0.930 U	0.970 U	0.960 U	0.950 U	1.00 U	0.990 U
Perfluorohexanoic acid (PFHxA)	1.40 U	1.50 U	<b>1.00 J</b>	<b>1.60 J</b>	1.50 U	1.50 U
Perfluorononanoic acid (PFNA)	1.40 U	1.50 U	1.40 U	1.40 U	1.50 U	1.50 U
Perfluorooctanesulfonamide (PFOSA)	1.40 U	1.50 U	1.40 U	1.40 U	1.50 U	1.50 U
Perfluorooctanesulfonic acid (PFOS)	1.40 U	1.50 U	1.40 U	1.40 U	<b>1.00 J</b>	1.50 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.50 U	1.40 U	1.40 U	1.50 U	1.50 U
Perfluoropentanoic acid (PFPeA)	0.460 U	0.490 U	<b>0.620 J</b>	<b>0.510 J</b>	0.510 U	0.500 U
Perfluorotetradecanoic acid (PFTeDA)	1.40 U	1.50 U	1.40 U	1.40 U	1.50 U	1.50 U
Perfluorotridecanoic acid (PFTrDA)	1.40 U	1.50 U	1.40 U	1.40 U	1.50 U	1.50 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.50 U	1.40 U	1.40 U	1.50 U	1.50 U
<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.00</b>	<b>0.00</b>
<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>§Sum of All Compounds Detected</b>	<b>0.00</b>	<b>0.00</b>	<b>3.07</b>	<b>2.40</b>	<b>1.00</b>	<b>0.00</b>



**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2022 J2 North PFAS Spring  
 J2 Range Northern

	Location	MW-18M2	MW-289M1	MW-293M1	MW-296M1	MW-296M2	MW-318M1
	Field Sample ID	MW-18M2_S22	MW-289M1_S22	MW-293M1_S22	MW-296M1_S22	MW-296M2_S22	MW-318M1_S22
	Sampling Depth	107.00 - 112.00	0.00 - 0.00	0.00 - 0.00	255.08 - 265.08	214.98 - 224.98	305.79 - 315.81
	Sampling Date	12/27/2021	12/22/2021	01/11/2022	01/10/2022	01/10/2022	12/22/2021
	SDG	320834481	320833751	320838001	320838001	320838001	320833751
	Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>	Results (ng/L)	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)	1.00 U	0.970 U	0.960 U	0.940 U	0.930 U	<b>5.30</b>	
8:2 Fluorotelomer sulfonate (8:2 FTS)	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	1.40 U	
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.00 U	0.970 U	0.960 U	0.940 U	0.930 U	0.950 U	
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.00 U	0.970 U	<b>0.590 J</b>	0.940 U	0.930 U	0.950 U	
Perfluorobutanesulfonic acid	1.00 U	0.970 U	0.960 U	0.940 U	0.930 U	0.950 U	
Perfluorobutanoic acid (PFBA)	0.500 U	1.90 U	0.480 U	<b>0.310 J</b>	0.460 U	1.90 U	
Perfluorodecanesulfonic acid (PFDS)	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	1.40 U	
Perfluorodecanoic acid (PFDA)	1.00 U	<b>2.00</b>	<b>14.0</b>	0.940 U	<b>1.20 J</b>	<b>3.50</b>	
Perfluorododecanoic acid (PFDoA)	1.00 U	<b>1.10 J</b>	<b>1.30 J</b>	<b>0.780 J</b>	<b>0.490 J</b>	0.950 U	
Perfluoroheptanesulfonic acid (PFHpS)	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	1.40 U	
Perfluoroheptanoic acid (PFHpA)	1.00 U	0.970 U	0.960 U	0.940 U	0.930 U	0.950 U	
Perfluorohexane sulfonate (PFHxS)	1.00 U	<b>0.700 J</b>	0.960 U	0.940 U	0.930 U	0.950 U	
Perfluorohexanoic acid (PFHxA)	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	1.40 U	
Perfluorononanoic acid (PFNA)	1.50 U	1.50 U	<b>20.0</b>	<b>0.570 J</b>	<b>1.10 J</b>	<b>1.70 J</b>	
Perfluorooctanesulfonamide (PFOSA)	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	1.40 U	
Perfluorooctanesulfonic acid (PFOS)	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	1.40 U	
Perfluorooctanoic acid (PFOA)	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	1.40 U	
Perfluoropentanoic acid (PFPeA)	0.500 U	0.490 U	0.480 U	0.470 U	0.460 U	0.480 U	
Perfluorotetradecanoic acid (PFTeDA)	1.50 U	1.50 U	1.40 U	1.40 U	1.40 U	1.40 U	
Perfluorotridecanoic acid (PFTTrDA)	1.50 U	1.50 U	<b>0.990 J</b>	1.40 U	1.40 U	1.40 U	
Perfluoroundecanoic acid (PFUnA)	1.50 U	<b>10.0</b>	<b>15.0</b>	<b>3.20</b>	<b>1.20 J</b>	<b>6.50</b>	
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>2.00</b>	<b>34.0</b>	<b>0.00</b>	<b>0.00</b>	<b>3.50</b>
	<b>§Sum of All Compounds Detected</b>	<b>0.00</b>	<b>13.8</b>	<b>51.9</b>	<b>4.86</b>	<b>3.99</b>	<b>17.0</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2022 J2 North PFAS Spring  
 J2 Range Northern

	Location	MW-318M2	MW-318M2	MW-327M1	MW-327M2	MW-327M3	MW-330M1
	Field Sample ID	MW-318M2_S22	MW-318M2_S22D	MW-327M1_S22	MW-327M2_S22	MW-327M3_S22	MW-330M1_S22D
	Sampling Depth	205.80 - 215.82	205.80 - 215.82	296.06 - 306.04	265.01 - 275.01	220.16 - 230.15	313.10 - 323.13
	Sampling Date	12/22/2021	12/22/2021	12/28/2021	12/28/2021	12/28/2021	12/16/2021
	SDG	320833751	320833751	320834481	320834481	320834481	320831661
	Sample Type	Normal	Field Duplicate	Normal	Normal	Normal	Field Duplicate
<b>PFAS 21 Cmps</b>		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)		0.920 U	0.960 U	0.910 U	0.950 U	0.960 U	0.970 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		0.920 U	0.960 U	0.910 U	0.950 U	0.960 U	0.970 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		0.920 U	0.960 U	0.910 U	0.950 U	0.960 U	0.970 U
Perfluorobutanesulfonic acid		0.920 U	0.960 U	0.910 U	<b>0.450 J</b>	0.960 U	0.970 U
Perfluorobutanoic acid (PFBA)		1.80 U	1.90 U	0.460 U	<b>1.80 J</b>	0.480 U	<b>1.30 J</b>
Perfluorodecanesulfonic acid (PFDS)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluorodecanoic acid (PFDA)		<b>1.60 J</b>	<b>1.40 J</b>	<b>2.00</b>	<b>1.40 J</b>	<b>2.10</b>	<b>18.0</b>
Perfluorododecanoic acid (PFDoA)		0.920 U	0.960 U	<b>3.20</b>	<b>8.80</b>	<b>0.820 J</b>	<b>0.800 J</b>
Perfluoroheptanesulfonic acid (PFHpS)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluoroheptanoic acid (PFHpA)		0.920 U	0.960 U	0.910 U	<b>0.470 J</b>	0.960 U	<b>0.870 J</b>
Perfluorohexane sulfonate (PFHxS)		0.920 U	0.960 U	0.910 U	0.950 U	0.960 U	0.970 U
Perfluorohexanoic acid (PFHxA)		<b>1.30 J</b>	<b>1.20 J</b>	1.40 U	<b>0.560 J</b>	1.40 U	<b>0.580 J</b>
Perfluorononanoic acid (PFNA)		<b>0.560 J</b>	<b>0.630 J</b>	1.40 U	1.40 U	1.40 U	<b>3.50</b>
Perfluorooctanesulfonamide (PFOSA)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluorooctanesulfonic acid (PFOS)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluorooctanoic acid (PFOA)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluoropentanoic acid (PFPeA)		<b>1.10 J</b>	<b>1.00 J</b>	<b>0.240 J</b>	<b>0.900 J</b>	0.480 U	<b>1.60 J</b>
Perfluorotetradecanoic acid (PFTeDA)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.50 U
Perfluorotridecanoic acid (PFTrDA)		1.40 U	1.40 U	<b>0.650 J</b>	<b>1.70 J</b>	1.40 U	1.50 U
Perfluoroundecanoic acid (PFUnA)		<b>5.80</b>	<b>5.80</b>	<b>17.0</b>	<b>17.0</b>	<b>4.70</b>	<b>16.0</b>
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>2.00</b>	<b>0.00</b>	<b>2.10</b>	<b>21.5</b>
	<b>§Sum of All Compounds Detected</b>	<b>10.4</b>	<b>10.0</b>	<b>23.1</b>	<b>33.1</b>	<b>7.62</b>	<b>42.7</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2022 J2 North PFAS Spring  
 J2 Range Northern

	Location	MW-330M1	MW-330M2	MW-330M3	MW-330M3	MW-337D	MW-337M1
	Field Sample ID	MW-330M1_S22	MW-330M2_S22	MW-330M3_S22	MW-330M3_S22D	MW-337D_S22	MW-337M1_S22
	Sampling Depth	313.10 - 323.13	238.01 - 248.04	154.97 - 164.99	154.97 - 164.99	0.00 - 0.00	0.00 - 0.00
	Sampling Date	12/16/2021	12/16/2021	12/16/2021	12/16/2021	12/20/2021	12/20/2021
	SDG	320831661	320831661	320831661	320831661	320833421	320833421
	Sample Type	Normal	Normal	Normal	Field Duplicate	Normal	Normal
<b>PFAS 21 Cmps</b>	Results (ng/L)	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)	0.990 U	0.970 U	1.00 U	0.980 U	1.00 U	1.00 U	
8:2 Fluorotelomer sulfonate (8:2 FTS)	1.50 U	1.50 U	1.50 U	1.50 U	1.60 U	1.50 U	
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.990 U	0.970 U	1.00 U	0.980 U	1.00 U	1.00 U	
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.990 U	0.970 U	1.00 U	0.980 U	1.00 U	1.00 U	
Perfluorobutanesulfonic acid	0.990 U	0.970 U	1.00 U	0.980 U	1.00 U	1.00 U	
Perfluorobutanoic acid (PFBA)	<b>1.40 J</b>	<b>0.400 J</b>	<b>0.510 J</b>	0.490 U	2.10 U	2.10 U	
Perfluorodecanesulfonic acid (PFDS)	1.50 U	1.50 U	1.50 U	1.50 U	1.60 U	1.50 U	
Perfluorodecanoic acid (PFDA)	<b>23.0</b>	<b>5.10</b>	<b>14.0</b>	<b>11.0</b>	<b>23.0</b>	<b>1.00 J</b>	
Perfluorododecanoic acid (PFDoA)	<b>1.40 J</b>	<b>0.650 J</b>	<b>0.560 J</b>	0.980 U	<b>0.640 J</b>	1.00 U	
Perfluoroheptanesulfonic acid (PFHpS)	1.50 U	1.50 U	1.50 U	1.50 U	1.60 U	1.50 U	
Perfluoroheptanoic acid (PFHpA)	<b>0.910 J</b>	0.970 U	1.00 U	0.980 U	1.00 U	1.00 U	
Perfluorohexane sulfonate (PFHxS)	0.990 U	0.970 U	1.00 U	0.980 U	1.00 U	1.00 U	
Perfluorohexanoic acid (PFHxA)	<b>0.680 J</b>	1.50 U	1.50 U	1.50 U	1.60 U	1.50 U	
Perfluorononanoic acid (PFNA)	<b>4.20</b>	<b>4.70</b>	<b>6.50</b>	<b>6.00</b>	<b>19.0</b>	<b>5.80</b>	
Perfluorooctanesulfonamide (PFOSA)	1.50 U	1.50 U	1.50 U	1.50 U	1.60 U	1.50 U	
Perfluorooctanesulfonic acid (PFOS)	1.50 U	1.50 U	1.50 U	1.50 U	1.60 U	1.50 U	
Perfluorooctanoic acid (PFOA)	1.50 U	1.50 U	1.50 U	1.50 U	1.60 U	1.50 U	
Perfluoropentanoic acid (PFPeA)	<b>1.70 J</b>	<b>0.250 J</b>	0.500 U	0.490 U	0.520 U	0.510 U	
Perfluorotetradecanoic acid (PFTeDA)	1.50 U	1.50 U	1.50 U	1.50 U	<b>0.530 J</b>	1.50 U	
Perfluorotridecanoic acid (PFTrDA)	<b>0.880 J</b>	<b>0.820 J</b>	1.50 U	1.50 U	1.60 U	1.50 U	
Perfluoroundecanoic acid (PFUnA)	<b>18.0</b>	<b>5.20</b>	<b>6.50</b>	<b>5.70</b>	<b>16.0</b>	<b>1.90 J</b>	
<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	
<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>27.2</b>	<b>9.80</b>	<b>20.5</b>	<b>17.0</b>	<b>42.0</b>	<b>5.80</b>	
<b>§Sum of All Compounds Detected</b>	<b>52.2</b>	<b>17.1</b>	<b>28.1</b>	<b>22.7</b>	<b>59.2</b>	<b>8.70</b>	

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2022 J2 North PFAS Spring  
 J2 Range Northern

	Location	MW-340D	MW-340D	MW-345M1	MW-345M1	MW-48M1	MW-48M3
	Field Sample ID	MW-340D_S22	MW-340D_S22D	MW-345M1_S22	MW-345M1_S22D	MW-48M1_S22	MW-48M3_S22
	Sampling Depth	329.60 - 339.60	329.60 - 339.60	0.00 - 0.00	0.00 - 0.00	191.00 - 201.00	131.50 - 142.00
	Sampling Date	12/29/2021	12/29/2021	12/16/2021	12/16/2021	01/04/2022	01/04/2022
	SDG	320835011	320835011	320831661	320831661	320836321	320836321
	Sample Type	Normal	Field Duplicate	Normal	Field Duplicate	Normal	Normal
<b>PFAS 21 Cmps</b>		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)		6.50 J	0.970 U	0.970 U	0.990 U	0.980 U	0.990 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		1.00 U	0.970 U	0.970 U	0.990 U	0.980 U	0.990 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		1.00 U	0.970 U	0.970 U	0.990 U	0.980 U	0.990 U
Perfluorobutanesulfonic acid		1.00 U	0.970 U	0.970 U	0.990 U	0.980 U	0.990 U
Perfluorobutanoic acid (PFBA)		0.310 J	0.490 U	0.440 J	0.280 J	0.490 U	0.490 U
Perfluorodecanesulfonic acid (PFDS)		1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U
Perfluorodecanoic acid (PFDA)		13.0	14.0	21.0	28.0	0.980 U	0.990 U
Perfluorododecanoic acid (PFDoA)		0.830 J	0.990 J	0.960 J	1.70 J	0.980 U	0.990 U
Perfluoroheptanesulfonic acid (PFHpS)		1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U
Perfluoroheptanoic acid (PFHpA)		1.00 U	0.970 U	0.970 U	0.990 U	0.980 U	0.990 U
Perfluorohexane sulfonate (PFHxS)		1.00 U	0.970 U	0.970 U	0.990 U	0.980 U	0.990 U
Perfluorohexanoic acid (PFHxA)		1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U
Perfluorononanoic acid (PFNA)		3.50	3.60	3.00	4.50	1.50 U	1.50 U
Perfluorooctanesulfonamide (PFOSA)		1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U
Perfluorooctanesulfonic acid (PFOS)		1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U
Perfluorooctanoic acid (PFOA)		1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U
Perfluoropentanoic acid (PFPeA)		0.500 U	0.490 U	0.490 U	0.490 U	0.490 U	0.490 U
Perfluorotetradecanoic acid (PFTeDA)		1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U
Perfluorotridecanoic acid (PFTrDA)		1.50 U	1.50 U	1.50 U	1.30 J	1.50 U	1.50 U
Perfluoroundecanoic acid (PFUnA)		19.0	20.0	20.0	23.0	1.50 U	1.50 U
	<b>+PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>#PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>16.5</b>	<b>17.6</b>	<b>24.0</b>	<b>32.5</b>	<b>0.00</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>43.1</b>	<b>38.6</b>	<b>45.4</b>	<b>58.8</b>	<b>0.00</b>	<b>0.00</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2022 J2 North PFAS Spring  
 J2 Range Northern

	Location	MW-55D	MW-55M1	MW-55M2	MW-55M3	MW-619M1	MW-619M2
	Field Sample ID	MW-55D_S22	MW-55M1_S22	MW-55M2_S22	MW-55M3_S22	MW-619M1_S22	MW-619M2_S22
	Sampling Depth	255.00 - 265.00	225.00 - 235.00	195.00 - 205.00	164.50 - 174.00	255.10 - 265.10	234.10 - 244.10
	Sampling Date	12/21/2021	12/21/2021	12/21/2021	12/21/2021	12/20/2021	12/20/2021
	SDG	320833421	320833421	320833421	320833421	320833421	320833421
	Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>	Results (ng/L)	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)	0.970 U	0.950 U	0.950 U	1.00 U	0.950 U	0.970 U	
8:2 Fluorotelomer sulfonate (8:2 FTS)	1.50 U	1.40 U	1.40 U	1.50 U	1.40 U	1.50 U	
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.970 U	0.950 U	0.950 U	1.00 U	0.950 U	0.970 U	
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.970 U	0.950 U	0.950 U	1.00 U	0.950 U	0.970 U	
Perfluorobutanesulfonic acid	0.970 U	0.950 U	0.950 U	1.00 U	0.950 U	0.970 U	
Perfluorobutanoic acid (PFBA)	1.90 U	1.90 U	1.90 U	2.00 U	1.90 U	1.90 U	
Perfluorodecanesulfonic acid (PFDS)	1.50 U	1.40 U	1.40 U	1.50 U	1.40 U	1.50 U	
Perfluorodecanoic acid (PFDA)	0.970 U	0.950 U	0.950 U	1.00 U	0.950 U	0.970 U	
Perfluorododecanoic acid (PFDoA)	0.970 U	0.950 U	0.950 U	1.00 U	0.950 U	0.970 U	
Perfluoroheptanesulfonic acid (PFHpS)	1.50 U	1.40 U	1.40 U	1.50 U	1.40 U	1.50 U	
Perfluoroheptanoic acid (PFHpA)	0.970 U	0.950 U	0.950 U	1.00 U	0.950 U	0.970 U	
Perfluorohexane sulfonate (PFHxS)	0.970 U	0.950 U	0.950 U	1.00 U	0.950 U	0.970 U	
Perfluorohexanoic acid (PFHxA)	1.50 U	1.40 U	1.40 U	1.50 U	1.40 U	1.50 U	
Perfluorononanoic acid (PFNA)	1.50 U	1.40 U	1.40 U	1.50 U	1.40 U	1.50 U	
Perfluorooctanesulfonamide (PFOSA)	<b>0.590 J</b>	1.40 U	1.40 U	1.50 U	1.40 U	1.50 U	
Perfluorooctanesulfonic acid (PFOS)	1.50 U	1.40 U	1.40 U	1.50 U	1.40 U	1.50 U	
Perfluorooctanoic acid (PFOA)	1.50 U	1.40 U	1.40 U	1.50 U	1.40 U	1.50 U	
Perfluoropentanoic acid (PFPeA)	0.480 U	0.480 U	0.470 U	0.500 U	0.480 U	0.480 U	
Perfluorotetradecanoic acid (PFTeDA)	<b>0.620 J</b>	<b>0.540 J</b>	1.40 U	1.50 U	1.40 U	<b>0.620 J</b>	
Perfluorotridecanoic acid (PFTTrDA)	1.50 U	1.40 U	1.40 U	1.50 U	1.40 U	1.50 U	
Perfluoroundecanoic acid (PFUnA)	1.50 U	1.40 U	1.40 U	1.50 U	1.40 U	1.50 U	
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	
	<b>§Sum of All Compounds Detected</b>	<b>1.21</b>	<b>0.540</b>	<b>0.00</b>	<b>0.00</b>	<b>0.620</b>	

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2022 J2 North PFAS Spring  
 J2 Range Northern

	Location	MW-620M1	MW-634M1	MW-63D	MW-63M1	MW-63M2	MW-63M3
	Field Sample ID	MW-620M1_S22	MW-634M1_S22	MW-63D_S22	MW-63M1_S22	MW-63M2_S22	MW-63M3_S22
	Sampling Depth	268.60 - 278.60	305.60 - 315.60	375.00 - 380.00	244.00 - 254.00	214.00 - 224.00	182.00 - 192.00
	Sampling Date	12/20/2021	12/22/2021	12/15/2021	12/15/2021	12/15/2021	12/15/2021
	SDG	320833421	320833751	320831661	320831661	320831661	320831661
	Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
<b>PFAS 21 Cmps</b>	Results (ng/L)	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)	0.960 U	0.980 U	0.990 U	0.980 U	1.00 U	0.970 U	
8:2 Fluorotelomer sulfonate (8:2 FTS)	1.40 U	1.50 U	1.50 U	1.50 U	1.60 U	1.50 U	
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.960 U	0.980 U	0.990 U	0.980 U	1.00 U	0.970 U	
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.960 U	0.980 U	0.990 U	0.980 U	1.00 U	0.970 U	
Perfluorobutanesulfonic acid	0.960 U	0.980 U	0.990 U	0.980 U	1.00 U	0.970 U	
Perfluorobutanoic acid (PFBA)	0.480 U	2.00 U	2.00 U	0.490 U	<b>0.290 J</b>	0.490 U	
Perfluorodecanesulfonic acid (PFDS)	1.40 U	1.50 U	1.50 U	1.50 U	1.60 U	1.50 U	
Perfluorodecanoic acid (PFDA)	0.960 U	0.980 U	0.990 U	0.980 U	<b>2.20</b>	0.970 U	
Perfluorododecanoic acid (PFDoA)	0.960 U	0.980 U	0.990 U	0.980 U	1.00 U	0.970 U	
Perfluoroheptanesulfonic acid (PFHpS)	1.40 U	1.50 U	1.50 U	1.50 U	1.60 U	1.50 U	
Perfluoroheptanoic acid (PFHpA)	0.960 U	0.980 U	0.990 U	0.980 U	1.00 U	0.970 U	
Perfluorohexane sulfonate (PFHxS)	0.960 U	0.980 U	0.990 U	0.980 U	1.00 U	0.970 U	
Perfluorohexanoic acid (PFHxA)	1.40 U	1.50 U	1.50 U	1.50 U	1.60 U	1.50 U	
Perfluorononanoic acid (PFNA)	1.40 U	1.50 U	1.50 U	1.50 U	<b>1.20 J</b>	1.50 U	
Perfluorooctanesulfonamide (PFOSA)	1.40 U	1.50 U	1.50 U	1.50 U	1.60 U	1.50 U	
Perfluorooctanesulfonic acid (PFOS)	1.40 U	1.50 U	<b>0.790 J</b>	<b>0.590 J</b>	1.60 U	1.50 U	
Perfluorooctanoic acid (PFOA)	1.40 U	1.50 U	1.50 U	1.50 U	1.60 U	1.50 U	
Perfluoropentanoic acid (PFPeA)	0.480 U	0.490 U	0.490 U	0.490 U	0.520 U	0.490 U	
Perfluorotetradecanoic acid (PFTeDA)	<b>0.610 J</b>	1.50 U	1.50 U	1.50 U	1.60 U	1.50 U	
Perfluorotridecanoic acid (PFTrDA)	1.40 U	1.50 U	1.50 U	1.50 U	1.60 U	1.50 U	
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.50 U	1.50 U	1.50 U	<b>1.40 J</b>	1.50 U	
	<b>‡PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.790</b>	<b>0.590</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.20</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>0.610</b>	<b>0.00</b>	<b>0.790</b>	<b>0.590</b>	<b>5.09</b>	<b>0.00</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2022 J2 North PFAS Spring  
 J2 Range Northern

	<b>Location</b>	MW-63S
	<b>Field Sample ID</b>	MW-63S_S22
	<b>Sampling Depth</b>	153.00 - 163.00
	<b>Sampling Date</b>	12/15/2021
	<b>SDG</b>	320831661
	<b>Sample Type</b>	<b>Normal</b>
<b>PFAS 21 Cmps</b>		Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)		0.950 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		1.40 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		0.950 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		0.950 U
Perfluorobutanesulfonic acid		0.950 U
Perfluorobutanoic acid (PFBA)		0.470 U
Perfluorodecanesulfonic acid (PFDS)		1.40 U
Perfluorodecanoic acid (PFDA)		0.950 U
Perfluorododecanoic acid (PFDoA)		0.950 U
Perfluoroheptanesulfonic acid (PFHpS)		1.40 U
Perfluoroheptanoic acid (PFHpA)		0.950 U
Perfluorohexane sulfonate (PFHxS)		0.950 U
Perfluorohexanoic acid (PFHxA)		1.40 U
Perfluorononanoic acid (PFNA)		1.40 U
Perfluorooctanesulfonamide (PFOSA)		1.40 U
Perfluorooctanesulfonic acid (PFOS)		1.40 U
Perfluorooctanoic acid (PFOA)		1.40 U
Perfluoropentanoic acid (PFPeA)		0.470 U
Perfluorotetradecanoic acid (PFTeDA)		1.40 U
Perfluorotridecanoic acid (PFTrDA)		1.40 U
Perfluoroundecanoic acid (PFUnA)		1.40 U
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>0.00</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2022 J2 North PFAS Spring  
 J3 Range

	<b>Location</b>	MW-237S
	<b>Field Sample ID</b>	MW-237S_S22
	<b>Sampling Depth</b>	49.00 - 59.00
	<b>Sampling Date</b>	12/29/2021
	<b>SDG</b>	320835011
	<b>Sample Type</b>	<b>Normal</b>
<b>PFAS 21 Cmps</b>		Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)		0.990 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		1.50 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		0.990 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		0.990 U
Perfluorobutanesulfonic acid		0.990 U
Perfluorobutanoic acid (PFBA)		0.500 U
Perfluorodecanesulfonic acid (PFDS)		1.50 U
Perfluorodecanoic acid (PFDA)		0.990 U
Perfluorododecanoic acid (PFDoA)		0.990 U
Perfluoroheptanesulfonic acid (PFHpS)		1.50 U
Perfluoroheptanoic acid (PFHpA)		0.990 U
Perfluorohexane sulfonate (PFHxS)		0.990 U
Perfluorohexanoic acid (PFHxA)		1.50 U
Perfluorononanoic acid (PFNA)		1.50 U
Perfluorooctanesulfonamide (PFOSA)		1.50 U
Perfluorooctanesulfonic acid (PFOS)		1.50 U
Perfluorooctanoic acid (PFOA)		1.50 U
Perfluoropentanoic acid (PFPeA)		0.500 U
Perfluorotetradecanoic acid (PFTeDA)		1.50 U
Perfluorotridecanoic acid (PFTrDA)		1.50 U
Perfluoroundecanoic acid (PFUnA)		1.50 U
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>0.00</b>



**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2022 J2 North PFAS Spring  
 Lima Range

	<b>Location</b>	MW-236S
	<b>Field Sample ID</b>	MW-236S_S22
	<b>Sampling Depth</b>	96.00 - 106.00
	<b>Sampling Date</b>	01/11/2022
	<b>SDG</b>	320838001
	<b>Sample Type</b>	<b>Normal</b>
<b>PFAS 21 Cmps</b>		Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)		0.960 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		1.40 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		0.960 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		0.960 U
Perfluorobutanesulfonic acid		0.960 U
Perfluorobutanoic acid (PFBA)		<b>1.50 J</b>
Perfluorodecanesulfonic acid (PFDS)		1.40 U
Perfluorodecanoic acid (PFDA)		0.960 U
Perfluorododecanoic acid (PFDoA)		0.960 U
Perfluoroheptanesulfonic acid (PFHpS)		1.40 U
Perfluoroheptanoic acid (PFHpA)		<b>1.20 J</b>
Perfluorohexane sulfonate (PFHxS)		0.960 U
Perfluorohexanoic acid (PFHxA)		<b>1.20 J</b>
Perfluorononanoic acid (PFNA)		1.40 U
Perfluorooctanesulfonamide (PFOSA)		1.40 U
Perfluorooctanesulfonic acid (PFOS)		<b>2.30</b>
Perfluorooctanoic acid (PFOA)		<b>1.30 J</b>
Perfluoropentanoic acid (PFPeA)		<b>0.640 J</b>
Perfluorotetradecanoic acid (PFTeDA)		1.40 U
Perfluorotridecanoic acid (PFTrDA)		1.40 U
Perfluoroundecanoic acid (PFUnA)		1.40 U
	<b>†PFOS + PFOA (EPA)</b>	<b>3.60</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>2.30</b>
	<b>§Sum of All Compounds Detected</b>	<b>8.14</b>

**PFAS Summary Report – Groundwater**  
**Joint Base Cape Cod, IAGWSP**  
 KGS 2022 J3 Range SPM Spring  
 J3 Range

	Location	J3-EFF	J3-INF
	<b>Field Sample ID</b>	J3-EFF_1Q22	J3-INF_1Q22
	<b>Sampling Depth</b>	0.00 - 0.00	0.00 - 0.00
	<b>Sampling Date</b>	01/24/2022	01/24/2022
	<b>SDG</b>	320842111	320842111
	<b>Sample Type</b>	<b>Normal</b>	<b>Normal</b>
<b>PFAS 21 Cmps</b>		Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)		0.940 U	0.950 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		1.40 U	1.40 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		0.940 U	0.950 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		0.940 U	0.950 U
Perfluorobutanesulfonic acid		0.940 U	0.950 U
Perfluorobutanoic acid (PFBA)		<b>0.240 J</b>	<b>0.250 J</b>
Perfluorodecanesulfonic acid (PFDS)		1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)		0.940 U	0.950 U
Perfluorododecanoic acid (PFDoA)		0.940 U	0.950 U
Perfluoroheptanesulfonic acid (PFHpS)		1.40 U	1.40 U
Perfluoroheptanoic acid (PFHpA)		0.940 U	0.950 U
Perfluorohexane sulfonate (PFHxS)		0.940 U	<b>1.10 J</b>
Perfluorohexanoic acid (PFHxA)		1.40 U	1.40 U
Perfluorononanoic acid (PFNA)		1.40 U	1.40 U
Perfluorooctanesulfonamide (PFOSA)		1.40 U	1.40 U
Perfluorooctanesulfonic acid (PFOS)		1.40 U	1.40 U
Perfluorooctanoic acid (PFOA)		1.40 U	1.40 U
Perfluoropentanoic acid (PFPeA)		0.470 U	0.470 U
Perfluorotetradecanoic acid (PFTeDA)		1.40 U	1.40 U
Perfluorotridecanoic acid (PFTrDA)		1.40 U	1.40 U
Perfluoroundecanoic acid (PFUnA)		1.40 U	1.40 U
	<b>†PFOS + PFOA (EPA)</b>	<b>0.00</b>	<b>0.00</b>
	<b>‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)</b>	<b>0.00</b>	<b>0.00</b>
	<b>§Sum of All Compounds Detected</b>	<b>0.240</b>	<b>1.35</b>

## PFAS Summary Report – Groundwater Joint Base Cape Cod, IAGWSP

### Notes:

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

Non detects are calculated as zero in the summations.

### **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

The PFOS and PFOA summation includes all detections at and above the DL.

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

The MassDEP PFAS summation includes all quantifiable results reported at and above the LOQ.

§ Sum of All Compounds Detected includes all detections at and above the DL.