**MONTHLY PROGRESS REPORT #300**
**FOR MARCH 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 31 March 2022.

## 1. SUMMARY OF REMEDIATION ACTIONS

**Remediation Actions (RA) Underway at Camp Edwards as of 25 March 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 2.902 billion gallons of water treated and re-injected as of 25 March 2022. The following Frank Perkins Road Treatment Facility shutdowns occurred in March.

- 1015 on 15 March 2022 to install a new electric meter and was restarted at 1029 on 15 March 2022.

The Base Boundary MTU continues to operate at a flow rate of 65 gpm. As of 25 March 2022, over 327.3 million gallons of water were treated and re-injected. No Base Boundary MTU shutdowns occurred in March.

The Leading Edge system continues to operate at a flow rate of 100 gpm. As of 25 March 2022, over 293.3 million gallons of water were treated and re-injected. The following Leading Edge system shutdowns occurred in March.

- 1655 on 17 March 2022 due to a power outage caused by a blown fuse on a power pole adjacent to the new electric meter and was restarted at 1400 on 18 March 2022.
- 0950 on 30 March 2022 to replace a flange and camlock fitting on a leaking effluent valve and was restarted at 1015 on 30 March 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 25 March 2022, over 1.935 billion gallons of water have been treated and re-injected. No MTU E and F shutdowns occurred in March.

The Northern Treatment Building G continues to operate at a flow rate of 225 gpm. As of 25 March 2022, over 1.462 billion gallons of water have been treated and re-injected. No Northern MTU G shutdowns occurred in March.

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 25 March 2022, over 1.574 billion gallons of water have been treated and re-injected. The following MTU H and I shutdowns occurred in March.

- 0800 on 24 March 2022 to locate the existing electric panel in preparation for the upgraded VFD cabinet installation and was restarted at 1248 on 24 March 2022.

MTU J continues to operate at a flow rate of 120 gpm. As of 25 March 2022, over 734.0 million gallons of water have been treated and re-injected. No MTU J shutdowns occurred in March.

MTU K continues to operate at a flow rate of 125 gpm. As of 25 March 2022, over 855.7 million gallons of water have been treated and re-injected. The following MTU K shutdowns occurred in March.

- 1145 on 01 March 2022 to replace the leaking effluent fire fighter fitting and was restarted at 1245 on 02 March 2022.

<u>J-3 Range Groundwater RA</u>

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 255 gpm. As of 25 March 2022, over 1.586 billion gallons of water have been treated and re-injected. No J-3 Range system shutdowns occurred in March.

<u>J-1 Range Groundwater RA</u>

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 25 March 2022, over 711.7 million gallons of water have been treated and re-injected. The following J-1 Range Southern system shutdowns occurred in March.

- 0850 on 25 March 2022 to upgrade wiring and install a disconnect at J1SEW0002 and was restarted at 1016 on 25 March 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 25 March 2022, over 1.075 billion gallons of water have been treated and re-injected. No J-1 Range Northern MTU shutdowns occurred in March.

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 25 March 2022, over 2.785 billion gallons of water have been treated and re-injected. The following CIA system shutdowns occurred in March.

- 0800 on 01 March 2022 to perform a carbon media exchange and to replace flange fittings, camlock fittings, and effluent valves and was restarted at 0815 on 03 March 2022.

## 2. SUMMARY OF ACTIONS TAKEN

**Operable Unit (OU) Activity as of 25 March 2022:**

CIA

- Groundwater sampling within CIA SPM
- Intrusive investigations
- Routine processing of MD
- Routine check of CSS cover

- Demolition operations
- Demobilization
- CS Structure soil maintenance

Demolition Area 1
- No activity

Demolition Area 2
- No activity

J-1 Range
- Bag filters exchanged

J-2 Range
- No activity

J-3 Range
- No activity

L Range
- No activity

Small Arms Ranges
- Surveyed MW-467S at T Range following well maintenance, range restoration, and ground surface elevation change

Northwest Corner
- Groundwater sampling within NWC SPM

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 10 March 2022**

Project and Fieldwork Update

All treatment systems are currently up and running at normal flow rates. There was carbon change out at CIA 3 on 3 March. J-2 East system K was shut down on 1 and 2 March to repair a leaking firefighting fitting. The demolition Area 1 Frank Perkins Road system was out over the weekend of 26 February due to a power interruption. It was restarted on Monday, 28 February.

The LTM crews are currently performing the annual LTM sampling in the CIA, which will be ongoing through March and April. They will move to the J-1 South. Monthly process water samples were collected on all the treatment systems last week.

The disposal of the 50 cubic yards of soil currently staged at H Range is still pending. USACE has been checking on the piles weekly to ensure they stay covered.

BEM liner was inspected on Monday; repairs were made shortly thereafter to a one foot tear near the wall and a couple of minor one inch holes. The structure has been refilled and covered.

Weston has four to five teams in the CIA; digging and performing demolition operations. BIPs are being performed on Tuesdays and Thursdays: four BIPS were performed on Tuesday, and there are two scheduled for today (10 March 2022). They plan on de-mobbing on 24 March to take a two week break and return in early April. They will address the BEM shots and the sampling of the stockpiled soil upon their return. A schedule for these activities will be provided to the agencies when it is available.

J-2 Northern Annual Groundwater Presentation

A presentation was provided on the J-2 Range Northern Annual Environmental Monitoring Report. It was noted that during the reporting period (November 2020 to October 2021), new work included samples collected from 43 monitoring wells within the J2EW0002 capture zone for PFAS in September 2021. Results at five locations were higher than the MMCL of 20 nanograms per liter (ng/L), with the highest concentration of PFAS6 measured at MW-345M1. All results were below the EPA Lifetime Health Advisory for PFOS/PFOA of 70 ng/L. A figure showing the PFAS sampling locations was displayed and discussed.

J-2 Northern treatment system operations and performance were reviewed and discussed. It was noted that there were no breakthroughs throughout the reporting period. Sampling locations, groundwater monitoring results, and trends were reviewed and discussed. Perchlorate concentrations ranged from non-detect to 1.65 µg/L (MW-587M1). There were six well locations with concentrations above 2µg/L and one with concentrations above 15 µg/L. Concentrations for RDX ranged from non-detect to 3.0 µg/L (MW-289M2) with one well above 0.6 µg/L, one well above 2 µg/L, and no wells above 20µg/L.

There was one hydraulic survey in August of 2021. Water levels ranged from 58.19 ft mean sea level (msl) at MW-55D in the north to 69.44 ft msl at MW-307M2 in the south. The horizontal gradient was approximately 0.00116 ft/ft.

The capture zone was reviewed and discussed. It was explained that the numerical model indicates the perchlorate plume is being captured and that the smaller plumelets are expected to diminish based on long term modeling. It was noted that the stagnation points downgradient of each extraction well create a disjointed plume.

Comparison to Decision Document (DD) criteria was discussed. The DD predicted perchlorate would be below 2.0 µg/L by 2027; however, the model predicts perchlorate will be below 2.0 µg/L by 2045. Perchlorate measurements indicate that the plume is reasonably well predicted, but it is likely that the expected overall cleanup time is 18 years longer than the Decision Document timeline because of the statistical mapping of contamination to lower hydraulic conductivity (K) units that may not be realistic.

Recommendations were reviewed and discussed. IAGWSP is not recommending any modifications to plant operations, sampling, or the hydraulic and groundwater monitoring programs. It is recommended that groundwater samples continue to be collected for PFAS analysis. It was noted that the plume shell for perchlorate was last updated in 2017, and it is recommended to be reevaluated in 2022.

J-2 Eastern Annual Groundwater Presentation

A presentation was provided on the J-2 Range Eastern Annual Environmental Monitoring Report. It was noted that during the reporting period (November 2020 to October 2021), no new work was conducted.

J-2 Northern treatment system operations and performance were reviewed and discussed. It was noted that there was breakthrough in October of 2021, and there was a changeout. Sampling locations, groundwater monitoring results, and trends were reviewed and discussed. Perchlorate concentrations ranged from non-detect to 43.6 µg/L (MW-368M1) with five well locations above 2 µg/L, and two with concentrations above 15 µg/L. Concentrations for RDX ranged from non-detect to 8.1 µg/L (MW368-M1) with six wells above 0.6 µg/L, two wells above 2 µg/L, and no wells above 20 µg/L.

There were two hydraulic surveys, one in January and one in September of 2021. In January, water levels ranged from 67.99 ft msl at MW-436-M2 in the north to 71.66 ft msl at MW-128M2 in the south. The horizontal gradient was approximately 0.00046 ft/ft. In September, water levels ranged from 65.40 ft msl at MW-436-M2 in the north to 69.39 ft msl at MW-128M2 in the south. The horizontal gradient was approximately 0.00050 ft/ft.

The capture zone was reviewed and discussed. It was explained that the numerical model indicates the perchlorate and RDX plumes are being captured and that like J-2 Northern, the stagnation points downgradient of each extraction well create a disjointed plume depiction.

Comparison to Decision Document criteria was discussed. The DD predicted perchlorate would be below 2.0 µg/L by 2027 and RDX would be below 0.6 µg/L by 2022. The model predicts perchlorate will be below 2.0 µg/L by 2037 and RDX below 0.6 µg/L by 2042. Again, like J-2 Northern, the perchlorate and RDX measurements indicate that the plumes are reasonably well predicted, but the expected overall cleanup time is 15 years longer than the Decision Document timeline, likely the result of the statistical mapping of contamination to lower K units that may not be realistic.

Recommendations were reviewed and discussed. IAGWSP is not recommending any modifications to plant operations, sampling, or the hydraulic and groundwater monitoring programs. It was noted that the plume shells for perchlorate and RDX were last updated in 2017, and it is recommended that they be developed in 2022 to ensure reliability.

Action Items

The action items were discussed and updated.

**JBCC Cleanup Team Meeting**

The next JBCC Cleanup Team (JBCCCT) is scheduled for 13 April 2022 at 6:00 – 8:00 PM (1800 - 2000 EDT) via Microsoft Teams. 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, which summarizes sampling for all media in a given month was unavailable in February due to a database error that was addressed. All relevant Table 1 data for February 2022 and March 2022 are included with this Monthly Progress Report. Table 2 summarizes the validated detections of explosives compounds and perchlorate for all groundwater results received from 1 to 31 March 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. 299 for February 2022 | 10 March 2022 |
| • Response to Comments Letter on the Draft J-1 Range Southern 2021 Annual Environmental Monitoring Report | 07 March 2022 |
| • Northwest Corner Discontinuation of Perchlorate Groundwater Monitoring Draft Technical Memorandum | 08 March 2022 |
| • Response to Comments on the Draft Central Impact Area 2021 Environmental Monitoring Report, | 16 March 2022 |

## 5. SCHEDULED ACTIONS

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

- IRA Completion Report
- Small Arms Ranges Revised Draft Completion of Work Report
- Northwest Corner Demonstration of Compliance Report Response to Comments
- J-2 Range, Phase-2, Addendum to Post-DD Confirmation Geophysical and Soil Investigation Findings Revised Technical Memorandum and Response to Comments
- J-1 Range Northern Draft Plume Shell Update Technical Memorandum
- Small Arms Range Draft 2022 Annual Environmental Monitoring Report
- L Range Draft 2022 Annual Environmental Monitoring Report
- J-2 Northern Draft PFAS Sampling and Proposed New Well Technical Memorandum
- Response to Comments Letter on the J-3 Draft 2021 Annual Environmental Monitoring Report
- J-1 Southern Final 2021 Annual Environmental Monitoring Report
- Response to Comments Letter on the J-2 Eastern Draft 2021 Annual Environmental Monitoring Report
- Response to Follow-on Comments Letter on the Central Impact Area 2021 Annual Environmental Monitoring Report
- Response to Comments Letter on the Central Impact Area Plume Shell Update Technical Memorandum
- Response to Comments Letter on the Central Impact Area Draft Source Area Removal Report
- J-2 Eastern Plume Shell Development Technical Memorandum
- J-2 Northern Plume Shell Development Technical Memorandum
- J-1 Southern Draft Technical Memorandum for Proposed New Well
- Response to Comments Letter on the Demolition Area 1 Technical Memorandum for Proposed New Extraction Well
- Five Year Review

**TABLE 1**
**Sampling Progress: 1 to 28 February 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-249M2 | MW-249M2_S22 | N | 02-24-2022 | Ground Water | 174 | 184 |
| Central Impact Area | MW-633M2 | MW-633M2_S22 | N | 02-24-2022 | Ground Water | 197 | 207 |
| Central Impact Area | MW-633M1 | MW-633M1_S22 | N | 02-24-2022 | Ground Water | 282 | 292 |
| Central Impact Area | MW-42M3 | MW-42M3_S22 | N | 02-24-2022 | Ground Water | 165.8 | 176 |
| Central Impact Area | MW-42M2 | MW-42M2_S22 | N | 02-24-2022 | Ground Water | 185.8 | 196 |
| Central Impact Area | MW-42M1 | MW-42M1_S22 | N | 02-24-2022 | Ground Water | 205.8 | 216 |
| Former A Range | MW-42M1 | MW-42M1_S22 | N | 02-24-2022 | Ground Water | 205.8 | 216 |
| J2 Range Eastern | MW-339M1 | MW-339M1_S22 | N | 02-23-2022 | Ground Water | 0 | 0 |
| J2 Range Eastern | MW-393D | MW-393D_S22 | N | 02-23-2022 | Ground Water | 0 | 0 |
| J2 Range Eastern | MW-324M2 | MW-324M2_S22 | N | 02-23-2022 | Ground Water | 203.74 | 214.74 |
| J2 Range Eastern | MW-324M1 | MW-324M1_S22 | N | 02-23-2022 | Ground Water | 234.85 | 244.85 |
| J2 Range Eastern | MW-368M2 | MW-368M2_S22 | N | 02-22-2022 | Ground Water | 0 | 0 |
| J2 Range Eastern | MW-368M2 | MW-368M2_S22D | FD | 02-22-2022 | Ground Water | 0 | 0 |
| J2 Range Eastern | J2MW-04M2 | J2MW-04M2_S22 | N | 02-22-2022 | Ground Water | 210 | 220 |
| J2 Range Eastern | J2MW-04M1 | J2MW-04M1_S22 | N | 02-22-2022 | Ground Water | 257 | 267 |
| J1 Range Southern | J1S-EFF | J1S-EFF-171A | N | 02-22-2022 | Process Water | 0 | 0 |
| J1 Range Southern | J1S-MID | J1S-MID-171A | N | 02-22-2022 | Process Water | 0 | 0 |
| J1 Range Southern | J1S-INF-2 | J1S-INF-2-171A | N | 02-22-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-EFF-K | J2E-EFF-K-161A | N | 02-22-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-MID-2K | J2E-MID-2K-161A | N | 02-22-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-MID-1K | J2E-MID-1K-161A | N | 02-22-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-INF-K | J2E-INF-K-161A | N | 02-22-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-EFF-J | J2E-EFF-J-161A | N | 02-17-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-MID-2J | J2E-MID-2J-161A | N | 02-17-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-MID-1J | J2E-MID-1J-161A | N | 02-17-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-INF-J | J2E-INF-J-161A | N | 02-17-2022 | Process Water | 0 | 0 |
| GB Range | 03MW0122A | 03MW0122A_S22 | N | 02-17-2022 | Ground Water | 0 | 0 |
| J2 Range Eastern | J2E-EFF-IH | J2E-EFF-IH-161A | N | 02-17-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-MID-2H | J2E-MID-2H-161A | N | 02-17-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-MID-1H | J2E-MID-1H-161A | N | 02-17-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-MID-2I | J2E-MID-2I-161A | N | 02-17-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-MID-1I | J2E-MID-1I-161A | N | 02-17-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-INF-I | J2E-INF-I-161A | N | 02-17-2022 | Process Water | 0 | 0 |
| Central Impact Area | MW-123S | MW-123S_S22 | N | 02-16-2022 | Ground Water | 139 | 149 |
| GA Range | 03MW0710 | 03MW0710_S22 | N | 02-16-2022 | Ground Water | 73.6 | 83.3 |
| CS-10 (ARNG) | 03MW0709 | 03MW0709_S22 | N | 02-16-2022 | Ground Water | 0 | 0 |
| B Range | MW-490S | MW-490S_S22 | N | 02-15-2022 | Ground Water | 108.08 | 118.08 |
| B Range | MW-537M1 | MW-537M1_S22 | N | 02-15-2022 | Ground Water | 106 | 116 |
| B Range | MW-72S | MW-72S_S22 | N | 02-15-2022 | Ground Water | 106 | 116 |
| B Range | MW-72S | MW-72S_S22D | FD | 02-15-2022 | Ground Water | 106 | 116 |
| Central Impact Area | MW-72S | MW-72S_S22 | N | 02-15-2022 | Ground Water | 106 | 116 |
| Central Impact Area | MW-72S | MW-72S_S22D | FD | 02-15-2022 | Ground Water | 106 | 116 |
| GA Range | MW-690S | MW-690S_S22 | N | 02-14-2022 | Ground Water | 99.2 | 109.2 |
| Demolition Area 1 | MW-36S | MW-36S_S22 | N | 02-14-2022 | Ground Water | 73 | 83 |
| G Range | MW-470S | MW-470S_S22 | N | 02-14-2022 | Ground Water | 76.32 | 86.32 |
| G Range | MW-470S | MW-470S_S22D | FD | 02-14-2022 | Ground Water | 76.32 | 86.32 |
| Demolition Area 1 | MW-35S | MW-35S_S22 | MS | 02-14-2022 | Ground Water | 84 | 94 |
| Demolition Area 1 | MW-35S | MW-35S_S22 | N | 02-14-2022 | Ground Water | 84 | 94 |
| Demolition Area 1 | MW-35S | MW-35S_S22 | SD | 02-14-2022 | Ground Water | 84 | 94 |
| B Range | MW-455S | MW-455S_S22 | N | 02-10-2022 | Ground Water | 117.57 | 127.57 |
| Central Impact Area | MW-455S | MW-455S_S22 | N | 02-10-2022 | Ground Water | 117.57 | 127.57 |
| J3 Range | J3-EFF | J3-EFF-185A | N | 02-10-2022 | Process Water | 0 | 0 |
| J3 Range | J3-MID-2 | J3-MID-2-185A | N | 02-10-2022 | Process Water | 0 | 0 |
| J3 Range | J3-MID-1 | J3-MID-1-185A | N | 02-10-2022 | Process Water | 0 | 0 |
| J3 Range | J3-INF | J3-INF-185A | N | 02-10-2022 | Process Water | 0 | 0 |
| B Range | MW-539M1 | MW-539M1_S22 | N | 02-10-2022 | Ground Water | 113 | 123 |
| J2 Range Northern | J2N-EFF-G | J2N-EFF-G-185A | N | 02-10-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2N-MID-2G | J2N-MID-2G-185A | N | 02-10-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2N-MID-1G | J2N-MID-1G-185A | N | 02-10-2022 | Process Water | 0 | 0 |

N = Normal Sample
FD = Field Duplicate

**TABLE 1**
**Sampling Progress: 1 to 28 February 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 Northern | J2N-INF-G | J2N-INF-G-185A | N | 02-10-2022 | Process Water | 0 | 0 |
| C Range | MW-456S | MW-456S_S22 | N | 02-10-2022 | Ground Water | 150.34 | 160.34 |
| J2 Range Northern | J2N-EFF-EF | J2N-EFF-EF-185A | N | 02-10-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2N-MID-2F | J2N-MID-2F-185A | N | 02-10-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2N-MID-1F | J2N-MID-1F-185A | N | 02-10-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2N-INF-EF | J2N-INF-EF-185A | N | 02-10-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2N-MID-2E | J2N-MID-2E-185A | N | 02-10-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2N-MID-1E | J2N-MID-1E-185A | N | 02-10-2022 | Process Water | 0 | 0 |
| C Range | MW-491S | MW-491S_S22 | N | 02-10-2022 | Ground Water | 146.93 | 156.93 |
| J1 Range Northern | J1N-EFF | J1N-EFF-100A | N | 02-10-2022 | Process Water | 0 | 0 |
| J1 Range Northern | J1N-MID2 | J1N-MID2-100A | N | 02-10-2022 | Process Water | 0 | 0 |
| J1 Range Northern | J1N-MID1 | J1N-MID1-100A | N | 02-10-2022 | Process Water | 0 | 0 |
| J1 Range Northern | J1N-INF2 | J1N-INF2-100A | N | 02-10-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2EW0003 | J2EW0003_S22 | N | 02-09-2022 | Ground Water | 202 | 232 |
| J2 Range Northern | J2EW0002 | J2EW0002_S22 | N | 02-09-2022 | Ground Water | 198 | 233 |
| J2 Range Northern | J2EW0001 | J2EW0001_S22 | N | 02-09-2022 | Ground Water | 179 | 234 |
| Lima Range | MW-529M1 | MW-529M1_S22 | N | 02-09-2022 | Ground Water | 107 | 117 |
| Lima Range | MW-530S | MW-530S_S22 | N | 02-09-2022 | Ground Water | 97 | 107 |
| Lima Range | MW-242M1 | MW-242M1_S22 | N | 02-08-2022 | Ground Water | 235 | 245 |
| Lima Range | 90MW0031 | 90MW0031_S22 | N | 02-08-2022 | Ground Water | 0 | 0 |
| Central Impact Area | CIA2-EFF | CIA2-EFF-97A | N | 02-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA2-MID2 | CIA2-MID2-97A | N | 02-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA2-MID1 | CIA2-MID1-97A | N | 02-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA2-INF | CIA2-INF-97A | N | 02-08-2022 | Process Water | 0 | 0 |
| Lima Range | 90MW0034 | 90MW0034_S22 | MS | 02-08-2022 | Ground Water | 0 | 0 |
| Lima Range | 90MW0034 | 90MW0034_S22 | N | 02-08-2022 | Ground Water | 0 | 0 |
| Lima Range | 90MW0034 | 90MW0034_S22 | SD | 02-08-2022 | Ground Water | 0 | 0 |
| Central Impact Area | CIA1-EFF | CIA1-EFF-97A | N | 02-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA1-MID2 | CIA1-MID2-97A | N | 02-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA1-MID1 | CIA1-MID1-97A | N | 02-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA1-INF | CIA1-INF-97A | N | 02-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA3-EFF | CIA3-EFF-68A | N | 02-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA3-MID2 | CIA3-MID2-68A | N | 02-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA3-MID1 | CIA3-MID1-68A | N | 02-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA3-INF | CIA3-INF-68A | N | 02-08-2022 | Process Water | 0 | 0 |
| Lima Range | MW-651M1 | MW-651M1_S22 | N | 02-07-2022 | Ground Water | 242.3 | 252.3 |
| Demolition Area 1 | D1LE-EFF | D1LE-EFF-67A | N | 02-07-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | D1LE-MID2 | D1LE-MID2-67A | N | 02-07-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | D1LE-MID1 | D1LE-MID1-67A | N | 02-07-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | D1LE-INF | D1LE-INF-67A | N | 02-07-2022 | Process Water | 0 | 0 |
| Lima Range | MW-595M2 | MW-595M2_S22 | N | 02-07-2022 | Ground Water | 205.3 | 215.3 |
| Lima Range | MW-595M1 | MW-595M1_S22 | N | 02-07-2022 | Ground Water | 255.3 | 265.3 |
| Lima Range | MW-595M1 | MW-595M1_S22D | FD | 02-07-2022 | Ground Water | 255.3 | 265.3 |
| Lima Range | MW-650M1 | MW-650M1_S22 | N | 02-07-2022 | Ground Water | 260 | 270 |
| Demolition Area 1 | D1-EFF | D1-EFF-139A | N | 02-07-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | D1-MID-2 | D1-MID-2-139A | N | 02-07-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | D1-MID-1 | D1-MID-1-139A | N | 02-07-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | D1-INF | D1-INF-139A | N | 02-07-2022 | Process Water | 0 | 0 |
| Lima Range | MW-596M1 | MW-596M1_S22 | N | 02-07-2022 | Ground Water | 231.1 | 241.1 |
| Demolition Area 1 | FPR-2-EFF-A | FPR-2-EFF-A-191A | N | 02-07-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | FPR-2-GAC-MID1A | FPR-2-GAC-MID1A-191A | N | 02-07-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | FPR2-POST-IX-A | FPR2-POST-IX-A-191A | N | 02-07-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | FPR-2-INF | FPR-2-INF-191A | N | 02-07-2022 | Process Water | 0 | 0 |
| Lima Range | MW-153M1 | MW-153M1_S22 | N | 02-03-2022 | Ground Water | 199 | 209 |
| J3 Range | 90PLT01006 | 90PLT01006_S22 | N | 02-03-2022 | Process Water | 0 | 0 |
| J3 Range | J3EWIP2 | J3EWIP2_S22 | N | 02-02-2022 | Ground Water | 150.5 | 170.5 |
| J3 Range | J3EWIP2 | J3EWIP2_S22D | FD | 02-02-2022 | Ground Water | 150.5 | 170.5 |
| J3 Range | J3EWIP1 | J3EWIP1_S22 | N | 02-02-2022 | Ground Water | 153 | 193 |
| J3 Range | J3EW0032 | J3EW0032_S22 | N | 02-02-2022 | Ground Water | 102 | 152 |

N = Normal Sample
FD = Field Duplicate

**TABLE 1**
**Sampling Progress: 1 to 28 February 2022**

| Area Of Concern | Location | Field Sample ID | Sample Type | Date Sampled | Matrix | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) |
|---|---|---|---|---|---|---|---|
| J3 Range | 90EW0001 | 90EW0001_S22 | N | 02-02-2022 | Ground Water | 0 | 0 |
| J3 Range | MW-636M2 | MW-636M2_S22 | N | 02-01-2022 | Ground Water | 110.5 | 120.5 |
| J3 Range | MW-636M1 | MW-636M1_S22 | MS | 02-01-2022 | Ground Water | 141.6 | 151.6 |
| J3 Range | MW-636M1 | MW-636M1_S22 | N | 02-01-2022 | Ground Water | 141.6 | 151.6 |
| J3 Range | MW-636M1 | MW-636M1_S22 | SD | 02-01-2022 | Ground Water | 141.6 | 151.6 |
| J3 Range | MW-653M2 | MW-653M2_S22 | N | 02-01-2022 | Ground Water | 59.3 | 69.3 |
| J3 Range | MW-653M1 | MW-653M1_S22 | N | 02-01-2022 | Ground Water | 147.5 | 157.5 |

N = Normal Sample
FD = Field Duplicate

**TABLE 1**
**Sampling Progress: 1 to 31 March 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-323M2 | MW-323M2_S22 | N | 03-24-2022 | Ground Water | 120 | 130 |
| Central Impact Area | MW-338S | MW-338S_S22 | N | 03-24-2022 | Ground Water | 72 | 82 |
| Central Impact Area | MW-338M2 | MW-338M2_S22 | N | 03-24-2022 | Ground Water | 119 | 129 |
| Northwest Corner | MW-338M2 | MW-338M2_S22 | N | 03-24-2022 | Ground Water | 119 | 129 |
| Central Impact Area | MW-338M1 | MW-338M1_S22 | N | 03-24-2022 | Ground Water | 189 | 199 |
| Northwest Corner | MW-338M1 | MW-338M1_S22 | N | 03-24-2022 | Ground Water | 189 | 199 |
| Central Impact Area | MW-608M4 | MW-608M4_S22 | N | 03-24-2022 | Ground Water | 185.4 | 195.4 |
| Central Impact Area | MW-96M2 | MW-96M2_S22 | N | 03-23-2022 | Ground Water | 160 | 170 |
| Central Impact Area | MW-96M1 | MW-96M1_S22 | N | 03-23-2022 | Ground Water | 206 | 216 |
| Central Impact Area | MW-185M1 | MW-185M1_S22 | N | 03-23-2022 | Ground Water | 247 | 257 |
| Central Impact Area | MW-442M2 | MW-442M2_S22 | N | 03-23-2022 | Ground Water | 215.31 | 225.32 |
| Central Impact Area | MW-442M1 | MW-442M1_S22 | N | 03-23-2022 | Ground Water | 247.64 | 257.64 |
| Central Impact Area | MW-208M1 | MW-208M1_S22 | N | 03-22-2022 | Ground Water | 195 | 205 |
| Central Impact Area | MW-180M3 | MW-180M3_S22 | N | 03-22-2022 | Ground Water | 171 | 181 |
| Central Impact Area | MW-607M3 | MW-607M3_S22 | N | 03-22-2022 | Ground Water | 157.4 | 167.4 |
| Central Impact Area | MW-607M2 | MW-607M2_S22 | N | 03-22-2022 | Ground Water | 177.4 | 187.4 |
| Central Impact Area | MW-607M2 | MW-607M2_S22D | FD | 03-22-2022 | Ground Water | 177.4 | 187.4 |
| Central Impact Area | MW-607M1 | MW-607M1_S22 | N | 03-22-2022 | Ground Water | 207.4 | 217.4 |
| Central Impact Area | MW-607M1 | MW-607M1_S22D | FD | 03-22-2022 | Ground Water | 207.4 | 217.4 |
| Central Impact Area | MW-108M4 | MW-108M4_S22 | N | 03-21-2022 | Ground Water | 240 | 250 |
| Central Impact Area | MW-108M1 | MW-108M1_S22 | N | 03-21-2022 | Ground Water | 297 | 307 |
| Central Impact Area | MW-616M2 | MW-616M2_S22 | N | 03-21-2022 | Ground Water | 107.1 | 117.1 |
| Central Impact Area | MW-616M1 | MW-616M1_S22 | N | 03-21-2022 | Ground Water | 217.1 | 227.1 |
| Central Impact Area | MW-617M2 | MW-617M2_S22 | N | 03-21-2022 | Ground Water | 118.3 | 128.3 |
| Central Impact Area | MW-617M1 | MW-617M1_S22 | N | 03-21-2022 | Ground Water | 175.8 | 185.8 |
| Central Impact Area | MW-628M2 | MW-628M2_S22 | MS | 03-17-2022 | Ground Water | 120.8 | 130.8 |
| Central Impact Area | MW-628M2 | MW-628M2_S22 | N | 03-17-2022 | Ground Water | 120.8 | 130.8 |
| Central Impact Area | MW-628M2 | MW-628M2_S22 | SD | 03-17-2022 | Ground Water | 120.8 | 130.8 |
| Central Impact Area | MW-628M1 | MW-628M1_S22 | N | 03-17-2022 | Ground Water | 230.8 | 240.8 |
| Central Impact Area | MW-614M2 | MW-614M2_S22 | MS | 03-17-2022 | Ground Water | 215 | 225 |
| Central Impact Area | MW-614M2 | MW-614M2_S22 | N | 03-17-2022 | Ground Water | 215 | 225 |
| Central Impact Area | MW-614M2 | MW-614M2_S22 | SD | 03-17-2022 | Ground Water | 215 | 225 |
| Central Impact Area | MW-618M2 | MW-618M2_S22 | N | 03-17-2022 | Ground Water | 190.5 | 200.5 |
| Central Impact Area | MW-618M1 | MW-618M1_S22 | N | 03-17-2022 | Ground Water | 238.5 | 248.5 |
| Central Impact Area | MW-614M1 | MW-614M1_S22 | N | 03-16-2022 | Ground Water | 275 | 285 |
| Central Impact Area | MW-103M2 | MW-103M2_S22 | N | 03-16-2022 | Ground Water | 282 | 292 |
| Central Impact Area | MW-103M1 | MW-103M1_S22 | MS | 03-16-2022 | Ground Water | 298 | 308 |
| Central Impact Area | MW-103M1 | MW-103M1_S22 | N | 03-16-2022 | Ground Water | 298 | 308 |
| Central Impact Area | MW-103M1 | MW-103M1_S22 | SD | 03-16-2022 | Ground Water | 298 | 308 |
| Central Impact Area | MW-102M2 | MW-102M2_S22 | N | 03-16-2022 | Ground Water | 237 | 247 |
| Central Impact Area | MW-102M1 | MW-102M1_S22 | N | 03-16-2022 | Ground Water | 267 | 277 |
| Central Impact Area | MW-209M2 | MW-209M2_S22 | N | 03-15-2022 | Ground Water | 220 | 230 |
| Central Impact Area | MW-209M1 | MW-209M1_S22 | N | 03-15-2022 | Ground Water | 240 | 250 |
| Central Impact Area | MW-209M1 | MW-209M1_S22D | FD | 03-15-2022 | Ground Water | 240 | 250 |
| Central Impact Area | MW-149M1 | MW-149M1_S22 | N | 03-15-2022 | Ground Water | 237.5 | 247.5 |
| Central Impact Area | MW-608M3 | MW-608M3_S22 | N | 03-15-2022 | Ground Water | 220.4 | 230.4 |
| Central Impact Area | MW-608M2 | MW-608M2_S22 | N | 03-15-2022 | Ground Water | 253.4 | 263.4 |
| Central Impact Area | MW-608M1 | MW-608M1_S22 | N | 03-15-2022 | Ground Water | 267.4 | 277.4 |
| Central Impact Area | MW-50M1 | MW-50M1_S22 | N | 03-14-2022 | Ground Water | 207 | 217 |
| Central Impact Area | MW-323M1 | MW-323M1_S22 | N | 03-14-2022 | Ground Water | 195 | 205 |
| Central Impact Area | MW-615M2 | MW-615M2_S22 | N | 03-10-2022 | Ground Water | 200 | 210 |
| Central Impact Area | MW-615M1 | MW-615M1_S22 | N | 03-10-2022 | Ground Water | 260 | 270 |
| Central Impact Area | MW-615M1 | MW-615M1_S22D | FD | 03-10-2022 | Ground Water | 260 | 270 |
| Central Impact Area | MW-626M2 | MW-626M2_S22 | N | 03-10-2022 | Ground Water | 237.2 | 247.2 |
| Central Impact Area | MW-626M1 | MW-626M1_S22 | N | 03-10-2022 | Ground Water | 282.2 | 292.2 |
| Central Impact Area | MW-644M2 | MW-644M2_S22 | N | 03-10-2022 | Ground Water | 230.9 | 240.9 |
| Central Impact Area | MW-644M1 | MW-644M1_S22 | N | 03-10-2022 | Ground Water | 275.9 | 285.9 |
| Central Impact Area | MW-644M1 | MW-644M1_S22D | FD | 03-10-2022 | Ground Water | 275.9 | 285.9 |
| Central Impact Area | MW-350M2 | MW-350M2_S22 | N | 03-09-2022 | Ground Water | 126 | 136 |

N = Normal Sample
FD = Field Duplicate

**TABLE 1**
**Sampling Progress: 1 to 31 March 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-710M1 | MW-710M1_S22 | N | 03-09-2022 | Ground Water | 247.5 | 257.5 |
| Central Impact Area | MW-699M2 | MW-699M2_S22 | N | 03-09-2022 | Ground Water | 221 | 231 |
| Central Impact Area | MW-699M1 | MW-699M1_S22 | N | 03-09-2022 | Ground Water | 261.5 | 271.5 |
| Central Impact Area | MW-441M2 | MW-441M2_S22 | N | 03-09-2022 | Ground Water | 109.45 | 119.45 |
| Central Impact Area | MW-441M1 | MW-441M1_S22 | N | 03-09-2022 | Ground Water | 204.63 | 214.63 |
| Central Impact Area | CIA2-EFF | CIA2-EFF-98A | N | 03-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA2-MID2 | CIA2-MID2-98A | N | 03-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA2-MID1 | CIA2-MID1-98A | N | 03-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA2-INF | CIA2-INF-98A | N | 03-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA1-EFF | CIA1-EFF-98A | N | 03-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA1-MID2 | CIA1-MID2-98A | N | 03-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA1-MID1 | CIA1-MID1-98A | N | 03-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA1-INF | CIA1-INF-98A | N | 03-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA3-EFF | CIA3-EFF-69A | N | 03-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA3-MID2 | CIA3-MID2-69A | N | 03-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA3-MID1 | CIA3-MID1-69A | N | 03-08-2022 | Process Water | 0 | 0 |
| Central Impact Area | CIA3-INF | CIA3-INF-69A | N | 03-08-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-EFF-K | J2E-EFF-K-162A | N | 03-07-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-MID-2K | J2E-MID-2K-162A | N | 03-07-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-MID-1K | J2E-MID-1K-162A | N | 03-07-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-INF-K | J2E-INF-K-162A | N | 03-07-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-EFF-J | J2E-EFF-J-162A | N | 03-07-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-MID-2J | J2E-MID-2J-162A | N | 03-07-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-MID-1J | J2E-MID-1J-162A | N | 03-07-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-INF-J | J2E-INF-J-162A | N | 03-07-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-EFF-IH | J2E-EFF-IH-162A | N | 03-07-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-MID-2H | J2E-MID-2H-162A | N | 03-07-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-MID-1H | J2E-MID-1H-162A | N | 03-07-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-MID-2I | J2E-MID-2I-162A | N | 03-07-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-MID-1I | J2E-MID-1I-162A | N | 03-07-2022 | Process Water | 0 | 0 |
| J2 Range Eastern | J2E-INF-I | J2E-INF-I-162A | N | 03-07-2022 | Process Water | 0 | 0 |
| J1 Range Southern | J1S-EFF | J1S-EFF-172A | N | 03-03-2022 | Process Water | 0 | 0 |
| J1 Range Southern | J1S-MID | J1S-MID-172A | N | 03-03-2022 | Process Water | 0 | 0 |
| J1 Range Southern | J1S-INF-2 | J1S-INF-2-172A | N | 03-03-2022 | Process Water | 0 | 0 |
| J3 Range | J3-EFF | J3-EFF-186A | N | 03-03-2022 | Process Water | 0 | 0 |
| J3 Range | J3-MID-2 | J3-MID-2-186A | N | 03-03-2022 | Process Water | 0 | 0 |
| J3 Range | J3-MID-1 | J3-MID-1-186A | N | 03-03-2022 | Process Water | 0 | 0 |
| J3 Range | J3-INF | J3-INF-186A | N | 03-03-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | FPR-2-EFF-A | FPR-2-EFF-A-192A | N | 03-03-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | FPR-2-GAC-MID1A | FPR-2-GAC-MID1A-192A | N | 03-03-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | FPR2-POST-IX-A | FPR2-POST-IX-A-192A | N | 03-03-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | FPR-2-INF | FPR-2-INF-192A | N | 03-03-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | D1LE-EFF | D1LE-EFF-68A | N | 03-03-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | D1LE-MID2 | D1LE-MID2-68A | N | 03-03-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | D1LE-MID1 | D1LE-MID1-68A | N | 03-03-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | D1LE-INF | D1LE-INF-68A | N | 03-03-2022 | Process Water | 0 | 0 |
| Central Impact Area | MW-23M1 | MW-23M1_S22 | N | 03-03-2022 | Ground Water | 225 | 235 |
| Demolition Area 1 | D1-EFF | D1-EFF-140A | N | 03-03-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | D1-MID-2 | D1-MID-2-140A | N | 03-03-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | D1-MID-1 | D1-MID-1-140A | N | 03-03-2022 | Process Water | 0 | 0 |
| Demolition Area 1 | D1-INF | D1-INF-140A | N | 03-03-2022 | Process Water | 0 | 0 |
| Central Impact Area | MW-23D | MW-23D_S22 | N | 03-03-2022 | Ground Water | 272 | 282 |
| Central Impact Area | MW-124M1 | MW-124M1_S22 | MS | 03-02-2022 | Ground Water | 234 | 244 |
| Central Impact Area | MW-124M1 | MW-124M1_S22 | N | 03-02-2022 | Ground Water | 234 | 244 |
| Central Impact Area | MW-124M1 | MW-124M1_S22 | SD | 03-02-2022 | Ground Water | 234 | 244 |
| Central Impact Area | MW-207M1 | MW-207M1_S22 | N | 03-02-2022 | Ground Water | 254 | 264 |
| Central Impact Area | MW-176M2 | MW-176M2_S22 | N | 03-02-2022 | Ground Water | 229 | 239 |
| Central Impact Area | MW-176M1 | MW-176M1_S22 | N | 03-02-2022 | Ground Water | 270 | 280 |
| Central Impact Area | MW-609M2 | MW-609M2_S22 | N | 03-02-2022 | Ground Water | 182.4 | 192.4 |

N = Normal Sample
FD = Field Duplicate

**TABLE 1**
**Sampling Progress: 1 to 31 March 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-609M1 | MW-609M1_S22 | N | 03-02-2022 | Ground Water | 210.4 | 220.4 |
| Central Impact Area | MW-609M1 | MW-609M1_S22D | FD | 03-02-2022 | Ground Water | 210.4 | 220.4 |
| Central Impact Area | MW-178M1 | MW-178M1_S22 | N | 03-01-2022 | Ground Water | 257 | 267 |
| J1 Range Northern | J1N-EFF | J1N-EFF-101A | N | 03-01-2022 | Process Water | 0 | 0 |
| J1 Range Northern | J1N-MID2 | J1N-MID2-101A | N | 03-01-2022 | Process Water | 0 | 0 |
| J1 Range Northern | J1N-MID1 | J1N-MID1-101A | N | 03-01-2022 | Process Water | 0 | 0 |
| J1 Range Northern | J1N-INF2 | J1N-INF2-101A | N | 03-01-2022 | Process Water | 0 | 0 |
| Central Impact Area | MW-212M1 | MW-212M1_S22 | N | 03-01-2022 | Ground Water | 333 | 343 |
| J2 Range Northern | J2N-EFF-EF | J2N-EFF-EF-186A | N | 03-01-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2N-MID-2F | J2N-MID-2F-186A | N | 03-01-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2N-MID-1F | J2N-MID-1F-186A | N | 03-01-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2N-INF-EF | J2N-INF-EF-186A | N | 03-01-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2N-MID-2E | J2N-MID-2E-186A | N | 03-01-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2N-MID-1E | J2N-MID-1E-186A | N | 03-01-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2N-EFF-G | J2N-EFF-G-186A | N | 03-01-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2N-MID-2G | J2N-MID-2G-186A | N | 03-01-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2N-MID-1G | J2N-MID-1G-186A | N | 03-01-2022 | Process Water | 0 | 0 |
| J2 Range Northern | J2N-INF-G | J2N-INF-G-186A | N | 03-01-2022 | Process Water | 0 | 0 |
| Central Impact Area | MW-223M2 | MW-223M2_S22 | N | 03-01-2022 | Ground Water | 185 | 195 |
| Central Impact Area | MW-223M1 | MW-223M1_S22 | N | 03-01-2022 | Ground Water | 211 | 221 |
| Central Impact Area | MW-223D | MW-223D_S22 | N | 03-01-2022 | Ground Water | 260 | 270 |

N = Normal Sample
FD = Field Duplicate

**TABLE 2**
**VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS**
**Data Received March 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J2 Range Eastern | MW-339M1 | MW-339M1_S22 | 0 | 0 | 02-23-2022 | SW6850 | Perchlorate | 0.17 | J | µg/L | 2.0 | | 0.086 | 0.20 |
| J2 Range Eastern | MW-324M2 | MW-324M2_S22 | 203.74 | 214.74 | 02-23-2022 | SW6850 | Perchlorate | 0.91 | | µg/L | 2.0 | | 0.086 | 0.20 |
| J2 Range Eastern | MW-324M2 | MW-324M2_S22 | 203.74 | 214.74 | 02-23-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.12 | J | µg/L | 0.60 | | 0.062 | 0.20 |
| J2 Range Eastern | MW-324M2 | MW-324M2_S22 | 203.74 | 214.74 | 02-23-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 0.24 | | µg/L | 400 | | 0.037 | 0.20 |
| J2 Range Eastern | MW-324M1 | MW-324M1_S22 | 234.85 | 244.85 | 02-23-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 0.13 | J | µg/L | 400 | | 0.037 | 0.20 |
| J2 Range Eastern | MW-324M1 | MW-324M1_S22 | 234.85 | 244.85 | 02-23-2022 | SW6850 | Perchlorate | 0.17 | J | µg/L | 2.0 | | 0.086 | 0.20 |
| J2 Range Eastern | MW-368M2 | MW-368M2_S22 | 0 | 0 | 02-22-2022 | SW6850 | Perchlorate | 6.7 | | µg/L | 2.0 | X | 0.086 | 0.20 |
| J2 Range Eastern | MW-368M2 | MW-368M2_S22 | 0 | 0 | 02-22-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 4.8 | | µg/L | 400 | | 0.037 | 0.20 |
| J2 Range Eastern | MW-368M2 | MW-368M2_S22 | 0 | 0 | 02-22-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 3.5 | | µg/L | 0.60 | X | 0.062 | 0.20 |
| J2 Range Eastern | MW-368M2 | MW-368M2_S22D | 0 | 0 | 02-22-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 3.4 | | µg/L | 0.60 | X | 0.062 | 0.20 |
| J2 Range Eastern | MW-368M2 | MW-368M2_S22D | 0 | 0 | 02-22-2022 | SW6850 | Perchlorate | 6.5 | | µg/L | 2.0 | X | 0.086 | 0.20 |
| J2 Range Eastern | MW-368M2 | MW-368M2_S22D | 0 | 0 | 02-22-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 4.9 | | µg/L | 400 | | 0.037 | 0.20 |
| J2 Range Eastern | J2MW-04M1 | J2MW-04M1_S22 | 257 | 267 | 02-22-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 0.058 | J | µg/L | 400 | | 0.037 | 0.20 |
| J2 Range Northern | J2EW0003 | J2EW0003_S22 | 202 | 232 | 02-09-2022 | SW6850 | Perchlorate | 0.22 | | µg/L | 2.0 | | 0.086 | 0.20 |
| J2 Range Northern | J2EW0002 | J2EW0002_S22 | 198 | 233 | 02-09-2022 | SW6850 | Perchlorate | 3.9 | | µg/L | 2.0 | X | 0.086 | 0.20 |
| J2 Range Northern | J2EW0001 | J2EW0001_S22 | 179 | 234 | 02-09-2022 | SW6850 | Perchlorate | 0.51 | | µg/L | 2.0 | | 0.086 | 0.20 |
| Lima Range | MW-242M1 | MW-242M1_S22 | 235 | 245 | 02-08-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.17 | J | µg/L | 0.60 | | 0.062 | 0.20 |
| Lima Range | 90MW0031 | 90MW0031_S22 | 0 | 0 | 02-08-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.12 | J | µg/L | 0.60 | | 0.062 | 0.20 |
| Lima Range | MW-651M1 | MW-651M1_S22 | 242.3 | 252.3 | 02-07-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.99 | | µg/L | 0.60 | X | 0.062 | 0.20 |
| Lima Range | MW-595M1 | MW-595M1_S22 | 255.3 | 265.3 | 02-07-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.65 | | µg/L | 0.60 | X | 0.062 | 0.20 |
| Lima Range | MW-595M1 | MW-595M1_S22D | 255.3 | 265.3 | 02-07-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.72 | | µg/L | 0.60 | X | 0.062 | 0.20 |
| Lima Range | MW-650M1 | MW-650M1_S22 | 260 | 270 | 02-07-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.90 | J | µg/L | 0.60 | X | 0.062 | 0.20 |
| J3 Range | J3EWIP2 | J3EWIP2_S22 | 150.5 | 170.5 | 02-02-2022 | SW6850 | Perchlorate | 1.2 | | µg/L | 2.0 | | 0.086 | 0.20 |
| J3 Range | J3EWIP2 | J3EWIP2_S22 | 150.5 | 170.5 | 02-02-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.22 | | µg/L | 0.60 | | 0.062 | 0.20 |
| J3 Range | J3EWIP2 | J3EWIP2_S22 | 150.5 | 170.5 | 02-02-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 0.18 | J | µg/L | 400 | | 0.037 | 0.20 |
| J3 Range | J3EWIP2 | J3EWIP2_S22D | 150.5 | 170.5 | 02-02-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 0.19 | J | µg/L | 400 | | 0.037 | 0.20 |
| J3 Range | J3EWIP2 | J3EWIP2_S22D | 150.5 | 170.5 | 02-02-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.22 | | µg/L | 0.60 | | 0.062 | 0.20 |
| J3 Range | J3EWIP1 | J3EWIP1_S22 | 153 | 193 | 02-02-2022 | SW6850 | Perchlorate | 0.16 | J | µg/L | 2.0 | | 0.086 | 0.20 |
| J3 Range | J3EW0032 | J3EW0032_S22 | 102 | 152 | 02-02-2022 | SW6850 | Perchlorate | 0.84 | | µg/L | 2.0 | | 0.086 | 0.20 |
| J3 Range | J3EW0032 | J3EW0032_S22 | 102 | 152 | 02-02-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 0.24 | | µg/L | 400 | | 0.037 | 0.20 |
| J3 Range | J3EW0032 | J3EW0032_S22 | 102 | 152 | 02-02-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.36 | | µg/L | 0.60 | | 0.062 | 0.20 |
| J3 Range | 90EW0001 | 90EW0001_S22 | 0 | 0 | 02-02-2022 | SW6850 | Perchlorate | 0.11 | J | µg/L | 2.0 | | 0.086 | 0.20 |
| J3 Range | MW-653M1 | MW-653M1_S22 | 147.5 | 157.5 | 02-01-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 0.27 | | µg/L | 400 | | 0.037 | 0.20 |
| J3 Range | MW-653M1 | MW-653M1_S22 | 147.5 | 157.5 | 02-01-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.29 | J | µg/L | 0.60 | | 0.062 | 0.20 |
| J3 Range | MW-637M2 | MW-637M2_S22 | 214.1 | 224.1 | 01-27-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.16 | J | µg/L | 0.60 | | 0.062 | 0.20 |
| J3 Range | MW-637M2 | MW-637M2_S22 | 214.1 | 224.1 | 01-27-2022 | SW6850 | Perchlorate | 2.0 | | µg/L | 2.0 | | 0.086 | 0.20 |
| J3 Range | MW-637M2 | MW-637M2_S22D | 214.1 | 224.1 | 01-27-2022 | SW6850 | Perchlorate | 1.9 | | µg/L | 2.0 | | 0.086 | 0.20 |
| Demolition Area 1 | MW-732M2 | MW-732M2_R2 | 96.2 | 106.2 | 01-26-2022 | SW6850 | Perchlorate | 0.17 | J | µg/L | 2.0 | | 0.086 | 0.20 |
| Demolition Area 1 | MW-732M1 | MW-732M1_R2 | 156 | 166 | 01-26-2022 | SW6850 | Perchlorate | 0.13 | J | µg/L | 2.0 | | 0.086 | 0.20 |
| Demolition Area 1 | MW-730M3 | MW-730M3_R2 | 115.46 | 125.46 | 01-26-2022 | SW6850 | Perchlorate | 3.3 | | µg/L | 2.0 | X | 0.086 | 0.20 |
| Demolition Area 1 | MW-730M2 | MW-730M2_R2 | 165.87 | 175.87 | 01-26-2022 | SW6850 | Perchlorate | 29.1 | | µg/L | 2.0 | X | 0.86 | 2.0 |
| Demolition Area 1 | MW-730M2 | MW-730M2_R2 | 165.87 | 175.87 | 01-26-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 2.3 | | µg/L | 0.60 | X | 0.062 | 0.20 |
| Demolition Area 1 | MW-730M2 | MW-730M2_R2D | 165.87 | 175.87 | 01-26-2022 | SW6850 | Perchlorate | 28.8 | | µg/L | 2.0 | X | 0.86 | 2.0 |
| Demolition Area 1 | MW-730M2 | MW-730M2_R2D | 165.87 | 175.87 | 01-26-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 2.3 | | µg/L | 0.60 | X | 0.062 | 0.20 |

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



MCL/HA= Either the MCL or Lowest Health Advisory Limit
April 08, 2022

**TABLE 2**
**VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS**
**Data Received March 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Demolition Area 1 | MW-730M1 | MW-730M1_R2 | 185.82 | 195.82 | 01-25-2022 | SW6850 | Perchlorate | 2.4 | | µg/L | 2.0 | X | 0.086 | 0.20 |
| Demolition Area 1 | MW-731M3 | MW-731M3_R2 | 160.1 | 170.1 | 01-25-2022 | SW6850 | Perchlorate | 1.9 | | µg/L | 2.0 | | 0.086 | 0.20 |
| Demolition Area 1 | MW-731M3 | MW-731M3_R2 | 160.1 | 170.1 | 01-25-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 1.1 | | µg/L | 0.60 | X | 0.062 | 0.20 |
| Demolition Area 1 | MW-731M3 | MW-731M3_R2 | 160.1 | 170.1 | 01-25-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 0.072 | J | µg/L | 400 | | 0.037 | 0.20 |
| Demolition Area 1 | MW-731M2 | MW-731M2_R2 | 190.9 | 200.9 | 01-25-2022 | SW6850 | Perchlorate | 4.0 | | µg/L | 2.0 | X | 0.086 | 0.20 |
| Demolition Area 1 | MW-731M2 | MW-731M2_R2 | 190.9 | 200.9 | 01-25-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.26 | | µg/L | 0.60 | | 0.062 | 0.20 |
| Demolition Area 1 | MW-731M1 | MW-731M1_R2 | 220.8 | 230.8 | 01-25-2022 | SW6850 | Perchlorate | 0.55 | | µg/L | 2.0 | | 0.086 | 0.20 |
| Demolition Area 1 | MW-533M1 | MW-533M1_F21 | 160 | 170 | 01-24-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 1.5 | | µg/L | 0.60 | X | 0.062 | 0.20 |
| Demolition Area 1 | MW-533M1 | MW-533M1_F21 | 160 | 170 | 01-24-2022 | SW6850 | Perchlorate | 24.3 | | µg/L | 2.0 | X | 0.86 | 2.0 |
| Demolition Area 1 | MW-533M1 | MW-533M1_F21D | 160 | 170 | 01-24-2022 | SW6850 | Perchlorate | 23.6 | | µg/L | 2.0 | X | 0.86 | 2.0 |
| Demolition Area 1 | MW-659M1 | MW-659M1_F21 | 120 | 130 | 01-24-2022 | SW6850 | Perchlorate | 0.20 | | µg/L | 2.0 | | 0.086 | 0.20 |
| Demolition Area 1 | MW-431 | MW-431_F21 | 88 | 188 | 01-24-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.12 | J | µg/L | 0.60 | | 0.062 | 0.20 |
| Demolition Area 1 | MW-431 | MW-431_F21 | 88 | 188 | 01-24-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 0.080 | J | µg/L | 400 | | 0.037 | 0.20 |
| Demolition Area 1 | EW-658 | EW-658_F21 | 96 | 136 | 01-24-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.13 | J | µg/L | 0.60 | | 0.062 | 0.20 |
| Demolition Area 1 | EW-658 | EW-658_F21 | 96 | 136 | 01-24-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 0.044 | J | µg/L | 400 | | 0.037 | 0.20 |
| Demolition Area 1 | MW-544M2 | MW-544M2_F21 | 112 | 122 | 01-20-2022 | SW6850 | Perchlorate | 0.23 | | µg/L | 2.0 | | 0.086 | 0.20 |
| Demolition Area 1 | MW-544M2 | MW-544M2_F21 | 112 | 122 | 01-20-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.22 | | µg/L | 0.60 | | 0.062 | 0.20 |
| Demolition Area 1 | MW-544M1 | MW-544M1_F21 | 162 | 172 | 01-20-2022 | SW6850 | Perchlorate | 6.7 | | µg/L | 2.0 | X | 0.086 | 0.20 |
| Demolition Area 1 | MW-544M1 | MW-544M1_F21 | 162 | 172 | 01-20-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.60 | | µg/L | 0.60 | | 0.062 | 0.20 |
| Demolition Area 1 | MW-545M4 | MW-545M4_F21 | 72 | 82 | 01-19-2022 | SW6850 | Perchlorate | 0.23 | | µg/L | 2.0 | | 0.086 | 0.20 |
| Demolition Area 1 | MW-545M3 | MW-545M3_F21 | 101.5 | 111.5 | 01-19-2022 | SW6850 | Perchlorate | 0.51 | | µg/L | 2.0 | | 0.086 | 0.20 |
| Demolition Area 1 | MW-545M2 | MW-545M2_F21 | 142 | 152 | 01-19-2022 | SW6850 | Perchlorate | 3.7 | | µg/L | 2.0 | X | 0.086 | 0.20 |
| Demolition Area 1 | MW-545M1 | MW-545M1_F21 | 162 | 172 | 01-19-2022 | SW6850 | Perchlorate | 0.87 | | µg/L | 2.0 | | 0.086 | 0.20 |
| Demolition Area 1 | XX9514 | XX9514_F21 | 102 | 112 | 01-19-2022 | SW6850 | Perchlorate | 2.9 | | µg/L | 2.0 | X | 0.086 | 0.20 |
| Demolition Area 1 | MW-31S | MW-31S_F21 | 98 | 103 | 01-18-2022 | SW8330 | 1,3,5-Trinitrobenzene | 0.11 | J | µg/L | 1090 | | 0.065 | 0.20 |
| Demolition Area 1 | MW-31S | MW-31S_F21 | 98 | 103 | 01-18-2022 | SW8330 | 4-Amino-2,6-dinitrotoluene | 0.12 | J | µg/L | 7.3 | | 0.072 | 0.20 |
| Demolition Area 1 | MW-31S | MW-31S_F21 | 98 | 103 | 01-18-2022 | SW8330 | 2,4,6-Trinitrotoluene | 0.59 | | µg/L | 2.0 | | 0.12 | 0.20 |
| Demolition Area 1 | MW-31S | MW-31S_F21 | 98 | 103 | 01-18-2022 | SW8330 | 2-Amino-4,6-dinitrotoluene | 0.19 | J | µg/L | 7.3 | | 0.072 | 0.20 |
| Demolition Area 1 | MW-31S | MW-31S_F21 | 98 | 103 | 01-18-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.99 | | µg/L | 0.60 | X | 0.062 | 0.20 |
| Demolition Area 1 | MW-31S | MW-31S_F21 | 98 | 103 | 01-18-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 0.26 | | µg/L | 400 | | 0.037 | 0.20 |
| Demolition Area 1 | MW-31S | MW-31S_F21D | 98 | 103 | 01-18-2022 | SW8330 | 1,3,5-Trinitrobenzene | 0.10 | J | µg/L | 1090 | | 0.065 | 0.20 |
| Demolition Area 1 | MW-31S | MW-31S_F21D | 98 | 103 | 01-18-2022 | SW8330 | 2,4,6-Trinitrotoluene | 0.58 | | µg/L | 2.0 | | 0.12 | 0.20 |
| Demolition Area 1 | MW-31S | MW-31S_F21D | 98 | 103 | 01-18-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.97 | | µg/L | 0.60 | X | 0.062 | 0.20 |
| Demolition Area 1 | MW-31S | MW-31S_F21D | 98 | 103 | 01-18-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 0.26 | | µg/L | 400 | | 0.037 | 0.20 |
| Demolition Area 1 | MW-31S | MW-31S_F21D | 98 | 103 | 01-18-2022 | SW8330 | 4-Amino-2,6-dinitrotoluene | 0.096 | J | µg/L | 7.3 | | 0.072 | 0.20 |
| Demolition Area 1 | MW-31S | MW-31S_F21D | 98 | 103 | 01-18-2022 | SW8330 | 2-Amino-4,6-dinitrotoluene | 0.15 | J | µg/L | 7.3 | | 0.072 | 0.20 |
| Demolition Area 1 | MW-19S | MW-19S_F21 | 52.7 | 62.7 | 01-18-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 0.70 | | µg/L | 400 | | 0.037 | 0.20 |
| Demolition Area 1 | MW-19S | MW-19S_F21 | 52.7 | 62.7 | 01-18-2022 | SW8330 | 4-Amino-2,6-dinitrotoluene | 0.097 | J | µg/L | 7.3 | | 0.072 | 0.20 |
| Demolition Area 1 | MW-19S | MW-19S_F21 | 52.7 | 62.7 | 01-18-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 2.6 | | µg/L | 0.60 | X | 0.062 | 0.20 |
| Demolition Area 1 | MW-19S | MW-19S_F21D | 52.7 | 62.7 | 01-18-2022 | SW8330 | 4-Amino-2,6-dinitrotoluene | 0.082 | J | µg/L | 7.3 | | 0.072 | 0.20 |
| Demolition Area 1 | MW-19S | MW-19S_F21D | 52.7 | 62.7 | 01-18-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 0.71 | | µg/L | 400 | | 0.037 | 0.20 |
| Demolition Area 1 | MW-19S | MW-19S_F21D | 52.7 | 62.7 | 01-18-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 2.6 | | µg/L | 0.60 | X | 0.062 | 0.20 |
| Demolition Area 1 | MW-77M2 | MW-77M2_F21 | 120 | 130 | 01-14-2022 | SW8330 | 2-Amino-4,6-dinitrotoluene | 0.16 | J | µg/L | 7.3 | | 0.072 | 0.20 |
| Demolition Area 1 | MW-77M2 | MW-77M2_F21 | 120 | 130 | 01-14-2022 | SW8330 | 4-Amino-2,6-dinitrotoluene | 0.086 | J | µg/L | 7.3 | | 0.072 | 0.20 |

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



MCL/HA= Either the MCL or Lowest Health Advisory Limit
April 08, 2022

**TABLE 2**
**VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS**
**Data Received March 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Demolition Area 1 | MW-341M3 | MW-341M3_F21 | 209.5 | 219.5 | 01-14-2022 | SW6850 | Perchlorate | 0.26 | | µg/L | 2.0 | | 0.086 | 0.20 |
| Demolition Area 1 | MW-341M2 | MW-341M2_F21 | 264.5 | 269.5 | 01-14-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.27 | | µg/L | 0.60 | | 0.062 | 0.20 |
| Demolition Area 1 | MW-341M2 | MW-341M2_F21 | 264.5 | 269.5 | 01-14-2022 | SW6850 | Perchlorate | 0.23 | | µg/L | 2.0 | | 0.086 | 0.20 |
| Demolition Area 1 | MW-663D | MW-663D_F21 | 240.6 | 250.6 | 01-14-2022 | SW6850 | Perchlorate | 4.3 | | µg/L | 2.0 | X | 0.086 | 0.20 |
| Demolition Area 1 | MW-663D | MW-663D_F21 | 240.6 | 250.6 | 01-14-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.99 | | µg/L | 0.60 | X | 0.062 | 0.20 |
| Demolition Area 1 | MW-663D | MW-663D_F21 | 240.6 | 250.6 | 01-14-2022 | SW8330 | Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | 0.045 | J | µg/L | 400 | | 0.037 | 0.20 |
| Demolition Area 1 | MW-231M1 | MW-231M1_F21 | 210.5 | 220.5 | 01-14-2022 | SW6850 | Perchlorate | 0.25 | J | µg/L | 2.0 | | 0.086 | 0.20 |
| Demolition Area 1 | MW-231M1 | MW-231M1_F21 | 210.5 | 220.5 | 01-14-2022 | SW8330 | Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 0.14 | J | µg/L | 0.60 | | 0.062 | 0.20 |

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



MCL/HA= Either the MCL or Lowest Health Advisory Limit
April 08, 2022

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

| Location | D1-INF | FPR-2-INF | MW-258M1 | MW-663D | PR-INF |
|---|---|---|---|---|---|
| **Field Sample ID** | D1-INF_PFAS19 | FPR-2-INF_PFAS19 | MW-258M1_PFAS19 | MW-663D_PFAS19 | PR-INF_PFAS19 |
| **Sampling Depth** | 0.00 - 0.00 | 0.00 - 0.00 | 109.00 - 119.00 | 240.60 - 250.60 | 0.00 - 0.00 |
| **Sampling Date** | 06/24/2019 | 06/25/2019 | 06/19/2019 | 06/24/2019 | 06/25/2019 |
| **SDG** | 320517141 | 320517141 | 320515981 | 320517141 | 320517141 |
| **Sample Type** | **Normal** | **Normal** | **Normal** | **Normal** | **Normal** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 18.0 U | 19.0 U | 20.0 U | 20.0 U | 20.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 9.10 U | 9.50 U | 9.80 U | 9.80 U | 9.80 U |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.10 U | 9.50 U | 9.80 U | 9.80 U | 9.80 U |
| N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 9.10 U | 9.50 U | 9.80 U | 9.80 U | 9.80 U |
| Perfluorobutanesulfonic acid (PFBS) | 0.910 U | 0.950 U | 0.980 U | 0.980 U | 0.980 U |
| Perfluorobutanoic acid (PFBA) | 1.40 U | 1.40 U | 1.50 U | 1.50 U | 1.50 U |
| 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 | **2.20** | 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 | **1.00 J** | 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 | **0.460 J** | 0.980 U |
| Perfluorotetradecanoic acid (PFTeDA) | 2.70 U | 2.80 U | 2.90 U | 3.00 U | 2.90 U |
| Perfluorotridecanoic acid (PFTrDA) | 2.70 U | 2.80 U | 2.90 U | 3.00 U | 2.90 U |
| Perfluoroundecanoic acid (PFUnA) | 1.40 U | 1.40 U | 1.50 U | **1.20 J** | 1.50 U |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **0.00** | **2.20** | **0.00** |
| **§Sum of All Compounds Detected** | **0.00** | **0.00** | **0.00** | **4.86** | **0.00** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 19.0 U | 19.0 U | 20.0 U | 18.0 U | 19.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 9.30 U | 9.60 U | 9.80 U | 9.20 U | 9.60 U |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.30 U | 9.60 U | 9.80 U | 9.20 U | 9.60 U |
| N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 9.30 U | 9.60 U | 9.80 U | 9.20 U | 9.60 U |
| Perfluorobutanesulfonic acid (PFBS) | 0.930 U | 0.960 U | 0.980 U | 0.920 U | 0.960 U |
| Perfluorobutanoic acid (PFBA) | 1.90 U | 1.40 U | **0.990 J** | 1.40 U | 1.40 U |
| 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) | **1.80 J** | 2.90 U | 2.90 U | 2.80 U | 2.90 U |
| Perfluorooctanesulfonic acid (PFOS) | **4.90** | 2.90 U | **1.40 J** | 2.80 U | 2.90 U |
| Perfluorooctanoic acid (PFOA) | 1.40 U | 1.40 U | **2.40** | 1.40 U | 1.40 U |
| Perfluoropentanoic acid (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 |
| **†PFOS + PFOA (EPA)** | **4.90** | **0.00** | **3.80** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **4.90** | **0.00** | **2.40** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **6.70** | **0.00** | **4.79** | **0.00** | **0.00** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 19.0 U | 19.0 U | 20.0 U | 18.0 U | 19.0 U | 17.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 9.70 U | 9.30 U | 9.80 U | 9.00 U | 9.60 U | 8.50 U |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.70 U | 9.30 U | 9.80 U | 9.00 U | 9.60 U | 8.50 U |
| N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 9.70 U | 9.30 U | 9.80 U | 9.00 U | 9.60 U | 8.50 U |
| Perfluorobutanesulfonic acid (PFBS) | 0.970 U | 0.930 U | 0.980 U | 0.900 U | 0.960 U | 0.850 U |
| Perfluorobutanoic acid (PFBA) | 1.50 U | 1.40 U | 1.50 U | 1.80 U | 1.90 U | 1.70 U |
| 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 | **1.40 J** |
| Perfluorododecanoic acid (PFDoA) | 1.50 U | 1.40 U | 1.50 U | 1.30 U | 1.40 U | **0.450 J** |
| 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 | **0.880 J** | **0.730 J** | **0.650 J** |
| 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 (PFTrDA) | 2.90 U | 2.80 U | 2.90 U | 2.70 U | 2.90 U | 2.60 U |
| Perfluoroundecanoic acid (PFUnA) | 1.50 U | 1.40 U | 1.50 U | 1.30 U | 1.40 U | **4.90** |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **0.00** | **0.00** | **0.00** | **0.880** | **0.730** | **7.40** |

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

| | | |
|---|---|---|
| **Location** | MW-368M2 | MW-667M1 |
| **Field Sample ID** | MW-368M2_PFAS19 | MW-667M1_PFAS19 |
| **Sampling Depth** | 202.73 - 212.73 | 302.30 - 312.30 |
| **Sampling Date** | 06/18/2019 | 06/17/2019 |
| **SDG** | 320514662 | 320514661 |
| **Sample Type** | **Normal** | **Normal** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 18.0 U | 18.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 8.80 U | 9.00 U |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 8.80 U | 9.00 U |
| N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 8.80 U | 9.00 U |
| Perfluorobutanesulfonic acid (PFBS) | 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) | **0.800 J** | **4.30** |
| 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 | **2.80** |
| 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) | **2.40** | **1.60 J** |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **7.10** |
| **§Sum of All Compounds Detected** | **3.20** | **8.70** |

**PFAS Summary Report – Groundwater**
**Joint Base Cape Cod, IAGWSP**
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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 19.0 U | 40.0 U | 19.0 U | 19.0 U | 19.0 U | 19.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 19.0 U | 20.0 U | 9.30 U | 9.30 U | 9.60 U | 9.70 U |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.60 U | 10.0 U | 9.30 U | 9.30 U | 9.60 U | 9.70 U |
| N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 9.60 U | 10.0 U | 9.30 U | 9.30 U | 9.60 U | 9.70 U |
| Perfluorobutanesulfonic acid (PFBS) | 0.960 U | 1.00 U | 0.930 U | 0.930 U | 0.960 U | **1.40 J** |
| Perfluorobutanoic acid (PFBA) | 1.40 U | 1.50 U | 1.40 U | 1.90 U | 1.40 U | 1.50 U |
| 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 | **0.370 J** | 0.930 U | **0.400 J** | **0.500 J** | 0.970 U |
| Perfluoroheptanoic acid (PFHpA) | 1.40 U | **1.00 J** | 1.40 U | **0.940 J** | **1.00 J** | 1.50 U |
| Perfluorohexane sulfonate (PFHxS) | 0.960 U | **11.0** | 0.930 U | **9.90** | **9.00** | 1.90 U |
| Perfluorohexanoic acid (PFHxA) | 0.960 U | **1.30 J** | 0.930 U | **1.20 J** | **1.30 J** | **2.30** |
| Perfluorononanoic acid (PFNA) | 1.40 U | 1.50 U | 1.40 U | 1.40 U | 1.40 U | 1.50 U |
| 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 | **1.30 J** | 2.80 U | 2.80 U | **1.10 J** | 2.90 U |
| Perfluorooctanoic acid (PFOA) | 1.40 U | **1.50 J** | 1.40 U | **1.70 J** | **1.50 J** | 1.50 U |
| Perfluoropentanoic acid (PFPeA) | 0.960 U | **0.910 J** | 0.930 U | **0.840 J** | **1.00 J** | **1.20 J** |
| Perfluorotetradecanoic acid (PFTeDA) | 2.90 U | 3.00 U | 2.80 U | 2.80 U | 2.90 U | 2.90 U |
| Perfluorotridecanoic acid (PFTrDA) | 2.90 U | 3.00 U | 2.80 U | 2.80 U | 2.90 U | 2.90 U |
| Perfluoroundecanoic acid (PFUnA) | 1.40 U | 1.50 U | 1.40 U | 1.40 U | 1.40 U | 1.50 U |
| **†PFOS + PFOA (EPA)** | **0.00** | **2.80** | **0.00** | **1.70** | **2.60** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **11.0** | **0.00** | **9.90** | **9.00** | **0.00** |
| **§Sum of All Compounds Detected** | **0.00** | **17.4** | **0.00** | **15.0** | **15.4** | **4.90** |

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

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

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 19.0 U | 18.0 U | 17.0 U | 17.0 U | 19.0 U | 19.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 9.40 U | 9.20 U | 8.60 U | 8.60 U | 9.30 U | 9.60 U |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.40 U | 9.20 U | 8.60 U | 8.60 U | 9.30 U | 9.60 U |
| N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 9.40 U | 9.20 U | 8.60 U | 8.60 U | 9.30 U | 9.60 U |
| Perfluorobutanesulfonic acid (PFBS) | 0.940 U | 0.920 U | 0.860 U | 0.860 U | 0.930 U | 0.960 U |
| Perfluorobutanoic acid (PFBA) | 1.90 U | 1.80 U | 1.70 U | 1.70 U | **0.560 J** | 1.40 U |
| 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) | **1.70 J** | 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) | **1.50 J** | **1.50 J** | **0.690 J** | **0.610 J** | 1.90 U | **0.540 J** |
| Perfluorohexanoic acid (PFHxA) | 0.940 U | 0.920 U | **0.410 J** | 0.860 U | 0.930 U | 0.960 U |
| Perfluorononanoic acid (PFNA) | 1.40 U | 1.40 U | 1.30 U | 1.30 U | 1.40 U | 1.40 U |
| 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 | **12.0** | **12.0** | **12.0** | 2.90 U |
| Perfluorooctanoic acid (PFOA) | **0.520 J** | 1.40 U | **1.70** | **1.60 J** | **1.30 J** | 1.40 U |
| Perfluoropentanoic acid (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 (PFTrDA) | **1.40 J** | 2.80 U | 2.60 U | 2.60 U | 2.80 U | 2.90 U |
| Perfluoroundecanoic acid (PFUnA) | 1.40 U | 1.40 U | 1.30 U | 1.30 U | 1.40 U | 1.40 U |
| **†PFOS + PFOA (EPA)** | **0.520** | **0.00** | **13.7** | **13.6** | **13.3** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **13.7** | **12.0** | **12.0** | **0.00** |
| **§Sum of All Compounds Detected** | **5.12** | **1.50** | **14.8** | **14.2** | **13.9** | **0.540** |

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

| | |
|---|---|
| **Location** | MW-250M2 |
| **Field Sample ID** | MW-250M2_PFAS19 |
| **Sampling Depth** | 145.00 - 155.00 |
| **Sampling Date** | 06/20/2019 |
| **SDG** | 320515981 |
| **Sample Type** | **Normal** |
| **PFAS 21 Cmps** | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 19.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 9.70 U |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.70 U |
| N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 9.70 U |
| Perfluorobutanesulfonic acid (PFBS) | 0.970 U |
| Perfluorobutanoic acid (PFBA) | **0.710 J** |
| 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 |
| **†PFOS + PFOA (EPA)** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** |
| **§Sum of All Compounds Detected** | **0.710** |

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

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

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

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

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

| Location | MW-346M3 | MW-346M4 | MW-58S |
|---|---|---|---|
| **Field Sample ID** | MW-346M3_F20 | MW-346M4_F20 | MW-58S_F20 |
| **Sampling Depth** | 0.00 - 0.00 | 0.00 - 0.00 | 100.00 - 110.00 |
| **Sampling Date** | 12/02/2020 | 12/02/2020 | 12/07/2020 |
| **SDG** | 320675551 | 320675551 | 320677691 |
| **Sample Type** | **Normal** | **Normal** | **Normal** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 20.0 U | 18.0 U | 19.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 9.80 U | 9.20 U | 9.30 U |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.80 U | 9.20 U | 9.30 U |
| N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 9.80 U | 9.20 U | 9.30 U |
| Perfluorobutanesulfonic acid (PFBS) | 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) | **0.730 J** | **1.70 J** | 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) | **2.20** | **0.650 J** | 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) | **0.750 J** | **0.410 J** | 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) | **1.00 J** | **6.00** | 1.40 U |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **2.20** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **4.68** | **8.76** | **0.00** |

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

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

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

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

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

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

**PFAS Summary Report – Groundwater**
**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 19.0 U | 19.0 U | 19.0 U | 19.0 U | 19.0 U | 19.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 9.40 U | 9.60 U | 9.40 U | 9.30 U | 9.40 U | 9.60 U |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.40 U | 9.60 U | 9.40 U | 9.30 U | 9.40 U | 9.60 U |
| N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 9.40 U | 9.60 U | 9.40 U | 9.30 U | 9.40 U | 9.60 U |
| Perfluorobutanesulfonic acid (PFBS) | 0.940 U | 0.960 U | 0.940 U | 0.930 U | 0.940 U | 0.960 U |
| Perfluorobutanoic acid (PFBA) | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.40 U |
| 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 | **0.440 J** | 0.940 U | **0.400 J** | 0.940 U | **0.420 J** |
| Perfluorotetradecanoic acid (PFTeDA) | 2.80 U | 2.90 U | 2.80 U | 2.80 U | 2.80 U | 2.90 U |
| Perfluorotridecanoic acid (PFTrDA) | 2.80 U | 2.90 U | 2.80 U | 2.80 U | 2.80 U | 2.90 U |
| Perfluoroundecanoic acid (PFUnA) | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.40 U |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **0.00** | **0.440** | **0.00** | **0.400** | **0.00** | **0.420** |

**PFAS Summary Report – Groundwater**
**Joint Base Cape Cod, IAGWSP**
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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 18.0 U | 19.0 U | 18.0 U | 19.0 U | 19.0 U | 19.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 9.20 U | 9.40 U | 9.00 U | 9.60 U | 9.40 U | 9.30 U |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.20 U | 9.40 U | 9.00 U | 9.60 U | 9.40 U | 9.30 U |
| N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 9.20 U | 9.40 U | 9.00 U | 9.60 U | 9.40 U | 9.30 U |
| Perfluorobutanesulfonic acid (PFBS) | **8.50** | 0.940 U | 0.900 U | 0.960 U | 0.940 U | 0.930 U |
| Perfluorobutanoic acid (PFBA) | **1.70 J** | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.40 U |
| 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 | **0.360 J** | 0.930 U |
| Perfluorohexanoic acid (PFHxA) | **5.40** | 0.940 U | 0.900 U | 0.960 U | 0.940 U | 0.930 U |
| Perfluorononanoic acid (PFNA) | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.40 U |
| 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) | **1.90** | **0.450 J** | 0.900 U | 0.960 U | **0.630 J** | 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 (PFTrDA) | 2.80 U | 2.80 U | 2.70 U | 2.90 U | 2.80 U | 2.80 U |
| Perfluoroundecanoic acid (PFUnA) | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.40 U |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **17.5** | **0.450** | **0.00** | **0.00** | **0.990** | **0.00** |

**PFAS Summary Report – Groundwater**
**Joint Base Cape Cod, IAGWSP**
KGS 2020 J2 Ranges SPM Fall
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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 18.0 U | 18.0 U | 19.0 U | 18.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 9.10 U | 9.20 U | 9.70 U | 9.20 U |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.10 U | 9.20 U | 9.70 U | 9.20 U |
| N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 9.10 U | 9.20 U | 9.70 U | 9.20 U |
| Perfluorobutanesulfonic acid (PFBS) | 0.910 U | 0.920 U | 0.970 U | 0.920 U |
| Perfluorobutanoic acid (PFBA) | 1.40 U | 1.40 U | **1.40 J** | 1.40 U |
| Perfluorodecanesulfonic acid (PFDS) | 1.40 U | 1.40 U | 1.50 U | 1.40 U |
| Perfluorodecanoic acid (PFDA) | **3.20** | **1.60 J** | **1.50 J** | **1.90** |
| Perfluorododecanoic acid (PFDoA) | 1.40 U | 1.40 U | 1.50 U | 1.40 U |
| 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) | **1.80** | **0.900 J** | 1.50 U | **0.890 J** |
| Perfluorooctanesulfonamide (PFOSA) | **1.30 J** | **2.20 J** | 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) | **0.650 J** | **0.830 J** | **1.10 J** | **0.400 J** |
| 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) | **0.650 J** | 1.40 U | **1.00 J** | 1.40 U |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **5.00** | **0.00** | **0.00** | **1.90** |
| **§Sum of All Compounds Detected** | **7.60** | **5.53** | **5.00** | **3.19** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 19.0 U | 19.0 U | 19.0 U | 20.0 U | 19.0 U | 19.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 9.40 U | 9.50 U | 9.70 U | 9.80 U | 9.40 U | 9.60 U |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.40 U | 9.50 U | 9.70 U | 9.80 U | 9.40 U | 9.60 U |
| N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 9.40 U | 9.50 U | 9.70 U | 9.80 U | 9.40 U | 9.60 U |
| Perfluorobutanesulfonic acid (PFBS) | **1.20 J** | **0.620 J** | 0.970 U | 0.980 U | 0.940 U | 0.960 U |
| Perfluorobutanoic acid (PFBA) | 1.40 U | 1.40 U | **1.00 J** | **1.00 J** | 1.40 U | **0.570 J** |
| 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) | **26.0** | **4.20** | 1.90 U | 2.00 U | 1.90 U | 1.90 U |
| Perfluorohexanoic acid (PFHxA) | 0.940 U | 0.950 U | 0.970 U | 0.980 U | 0.940 U | 0.960 U |
| Perfluorononanoic acid (PFNA) | 1.40 U | 1.40 U | 1.50 U | 1.50 U | 1.40 U | 1.40 U |
| 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 | **4.90** | **5.00** | **16.0** | 2.90 U |
| Perfluorooctanoic acid (PFOA) | 1.40 U | 1.40 U | **0.840 J** | **0.940 J** | **0.510 J** | 1.40 U |
| Perfluoropentanoic acid (PFPeA) | 0.940 U | 0.950 U | 0.970 U | **0.460 J** | 0.940 U | **0.490 J** |
| Perfluorotetradecanoic acid (PFTeDA) | 2.80 U | 2.80 U | 2.90 U | 2.90 U | 2.80 U | 2.90 U |
| Perfluorotridecanoic acid (PFTrDA) | 2.80 U | 2.80 U | 2.90 U | 2.90 U | 2.80 U | 2.90 U |
| Perfluoroundecanoic acid (PFUnA) | 1.40 U | 1.40 U | 1.50 U | 1.50 U | 1.40 U | 1.40 U |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **5.74** | **5.94** | **16.5** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **26.0** | **4.20** | **4.90** | **5.00** | **16.0** | **0.00** |
| **§Sum of All Compounds Detected** | **27.2** | **4.82** | **6.74** | **7.40** | **16.5** | **1.06** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 18.0 U | 18.0 U | 18.0 U | 19.0 U | 19.0 U | 18.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 9.20 U | 9.20 U | 9.00 U | 9.40 U | 9.30 U | 9.20 U |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.20 U | 9.20 U | 9.00 U | 9.40 U | 9.30 U | 9.20 U |
| N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 9.20 U | 9.20 U | 9.00 U | 9.40 U | 9.30 U | 9.20 U |
| Perfluorobutanesulfonic acid (PFBS) | **2.20** | 0.920 U | 0.900 U | 0.940 U | **1.80 J** | 0.920 U |
| Perfluorobutanoic acid (PFBA) | **1.20 J** | 1.80 U | 1.80 U | 1.40 U | **4.90** | **1.40 J** |
| 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 | **0.550 J** | 0.900 U | 0.940 U | 0.930 U | 0.920 U |
| Perfluorododecanoic acid (PFDoA) | 1.40 U | 1.40 U | 1.30 U | 1.40 U | 1.40 U | 1.40 U |
| 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 | **4.00** | 1.40 U |
| Perfluorohexane sulfonate (PFHxS) | **19.0** | **1.00 J** | 0.900 U | 1.90 U | **37.0** | 1.80 U |
| Perfluorohexanoic acid (PFHxA) | **0.830 J** | **0.950 J** | **0.510 J** | 0.940 U | **8.40** | **0.450 J** |
| Perfluorononanoic acid (PFNA) | 1.40 U | 1.40 U | 1.30 U | 1.40 U | 1.40 U | 1.40 U |
| 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 | **1.10 J** | **3.80** | 2.80 U | **10.0** | 2.80 U |
| Perfluorooctanoic acid (PFOA) | 1.40 U | **2.10** | **1.10 J** | **0.550 J** | **3.10** | **1.10 J** |
| Perfluoropentanoic acid (PFPeA) | **1.30 J** | **0.660 J** | **0.440 J** | **0.400 J** | **6.50** | **0.440 J** |
| 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 |
| **†PFOS + PFOA (EPA)** | **0.00** | **3.20** | **4.90** | **0.550** | **13.1** | **1.10** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **19.0** | **2.10** | **3.80** | **0.00** | **54.1** | **0.00** |
| **§Sum of All Compounds Detected** | **24.5** | **6.36** | **5.85** | **0.950** | **75.7** | **3.39** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 18.0 U | 19.0 U | 19.0 U | 19.0 U | 19.0 U | 19.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 9.20 U | 9.50 U | 9.50 U | 9.50 U | 9.50 U | 9.50 U |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.20 U | 9.50 U | 9.50 U | 9.50 U | 9.50 U | 9.50 U |
| N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 9.20 U | 9.50 U | 9.50 U | 9.50 U | 9.50 U | 9.50 U |
| Perfluorobutanesulfonic acid (PFBS) | 0.920 U | 0.950 U | 0.950 U | 0.950 U | 0.950 U | 0.950 U |
| Perfluorobutanoic acid (PFBA) | **1.50 J** | 1.40 U | **0.740 J** | **0.740 J** | **6.50** | **2.20** |
| 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 | 0.950 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 |
| Perfluoroheptanesulfonic acid (PFHpS) | 0.920 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 | **1.80 J** | 1.40 U |
| Perfluorohexane sulfonate (PFHxS) | 1.80 U | 0.950 U | 0.950 U | 1.90 U | **4.40** | 0.950 U |
| Perfluorohexanoic acid (PFHxA) | 0.920 U | 0.950 U | 0.950 U | 0.950 U | **3.70** | 0.950 U |
| Perfluorononanoic acid (PFNA) | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.40 U |
| Perfluorooctanesulfonamide (PFOSA) | 2.80 U | 2.80 U | 2.90 U | 2.80 U | 2.80 U | 2.90 U |
| Perfluorooctanesulfonic acid (PFOS) | **1.00 J** | 2.80 U | 2.90 U | 2.80 U | **2.30 J** | 2.90 U |
| Perfluorooctanoic acid (PFOA) | **0.990 J** | 1.40 U | 1.40 U | 1.40 U | **2.30** | **0.640 J** |
| Perfluoropentanoic acid (PFPeA) | **0.430 J** | **0.460 J** | 0.950 U | 0.950 U | **2.80** | **0.420 J** |
| 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 |
| **†PFOS + PFOA (EPA)** | **1.99** | **0.00** | **0.00** | **0.00** | **4.60** | **0.640** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **0.00** | **0.00** | **6.70** | **0.00** |
| **§Sum of All Compounds Detected** | **3.92** | **0.460** | **0.740** | **0.740** | **23.8** | **3.26** |

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

| | | |
|---|---|---|
| **Location** | MW-232M2 | MW-30 |
| **Field Sample ID** | MW-232M2_F20 | MW-30_F20 |
| **Sampling Depth** | 61.00 - 66.00 | 26.00 - 36.00 |
| **Sampling Date** | 07/16/2020 | 07/21/2020 |
| **SDG** | 320627321 | 320629171 |
| **Sample Type** | **Normal** | **Normal** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 20.0 U | 19.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 10.0 U | 9.40 U |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 10.0 U | 9.40 U |
| N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 10.0 U | 9.40 U |
| Perfluorobutanesulfonic acid (PFBS) | 1.00 U | 0.940 U |
| Perfluorobutanoic acid (PFBA) | **3.20** | 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 | **15.0** |
| Perfluorooctanoic acid (PFOA) | **1.10 J** | **0.790 J** |
| Perfluoropentanoic acid (PFPeA) | **0.520 J** | 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 |
| **†PFOS + PFOA (EPA)** | **1.10** | **15.8** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **15.0** |
| **§Sum of All Compounds Detected** | **4.82** | **15.8** |

**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** |
| **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) | **6.70 J** | **6.70 J** | 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 (PFBS) | 0.940 U | 0.900 U | 0.950 U | 1.00 U | **3.90** | **3.80** |
| Perfluorobutanoic acid (PFBA) | 1.40 U | 1.30 U | 1.40 U | 1.50 U | **0.840 J** | **1.10 J** |
| 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 | **3.20** | **2.80** |
| Perfluorododecanoic acid (PFDoA) | 1.40 U | 1.30 U | 1.40 U | 1.50 U | **2.40** | **2.30** |
| 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 | **0.550 J** | 1.40 U | 1.50 U | 1.40 U | 1.30 U |
| Perfluorohexane sulfonate (PFHxS) | **8.10** | **7.70** | 0.950 U | 1.00 U | 0.920 U | 0.890 U |
| Perfluorohexanoic acid (PFHxA) | **0.820 J** | **0.770 J** | 0.950 U | 1.00 U | **1.30 J** | **1.10 J** |
| Perfluorononanoic acid (PFNA) | 1.40 U | 1.30 U | 1.40 U | 1.50 U | **1.30 J** | **1.10 J** |
| Perfluorooctanesulfonamide (PFOSA) | 2.80 U | 2.70 U | 2.90 U | 3.10 U | 2.80 U | 2.70 U |
| Perfluorooctanesulfonic acid (PFOS) | **1.30 J** | **1.10 J** | 2.90 U | 3.10 U | 2.80 U | 2.70 U |
| Perfluorooctanoic acid (PFOA) | **1.80 J** | **1.20 J** | 1.40 U | 1.50 U | 1.40 U | 1.30 U |
| Perfluoropentanoic acid (PFPeA) | **0.680 J** | **0.640 J** | 0.950 U | 1.00 U | **1.10 J** | **1.00 J** |
| Perfluorotetradecanoic acid (PFTeDA) | 2.80 U | 2.70 U | 2.90 U | 3.10 U | 2.80 U | 2.70 U |
| Perfluorotridecanoic acid (PFTrDA) | 2.80 U | 2.70 U | 2.90 U | 3.10 U | **0.760 J** | 2.70 U |
| Perfluoroundecanoic acid (PFUnA) | 1.40 U | 1.30 U | 1.40 U | 1.50 U | **23.0** | **22.0** |
| **†PFOS + PFOA (EPA)** | **3.10** | **2.30** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **8.10** | **7.70** | **0.00** | **0.00** | **3.20** | **2.80** |
| **§Sum of All Compounds Detected** | **19.4** | **18.7** | **0.00** | **0.00** | **37.8** | **35.2** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 19.0 U | 19.0 U | 19.0 U | 19.0 U | 19.0 U | 19.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 9.70 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 (PFBS) | 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) | **3.40** | **3.60** | **4.00** | **1.70 J** | **2.60** | **2.50** |
| Perfluorododecanoic acid (PFDoA) | **0.520 J** | **0.680 J** | **1.10 J** | **0.710 J** | **2.80** | **3.00** |
| 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 | **0.440 J** | 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) | **4.80** | **4.80** | **3.60** | **2.10** | 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 (PFTrDA) | 2.90 U | 2.90 U | **0.700 J** | **0.840 J** | **1.10 J** | **1.20 J** |
| Perfluoroundecanoic acid (PFUnA) | **8.30** | **8.60** | **7.80** | **4.40** | **27.0** | **27.0** |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **8.20** | **8.40** | **7.60** | **2.10** | **2.60** | **2.50** |
| **§Sum of All Compounds Detected** | **17.0** | **17.7** | **17.2** | **10.2** | **33.5** | **33.7** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 19.0 U | 19.0 U | 19.0 U | 20.0 U | 19.0 U | 19.0 U |
| 8:2 Fluorotelomer sulfonate (8:2 FTS) | 9.70 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 (PFBS) | 0.970 U | 0.960 U | 0.970 U | 0.990 U | 0.950 U | 0.960 U |
| Perfluorobutanoic acid (PFBA) | 1.50 U | **1.60 J** | **0.890 J** | 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) | **3.60** | **38.0** | **8.90** | **19.0** | **18.0** | **2.30** |
| Perfluorododecanoic acid (PFDoA) | 1.50 U | **2.50** | **2.20** | **0.810 J** | **1.80 J** | 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 | **1.10 J** | 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 | **0.770 J** | 0.970 U | 0.990 U | 0.950 U | 0.960 U |
| Perfluorononanoic acid (PFNA) | **2.20** | **16.0** | **12.0** | **25.0** | **14.0** | **1.60 J** |
| 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 | **0.660 J** | **0.650 J** | 1.50 U | 1.40 U | 1.40 U |
| Perfluoropentanoic acid (PFPeA) | 0.970 U | **2.50** | **1.20 J** | 0.990 U | 0.950 U | 0.960 U |
| Perfluorotetradecanoic acid (PFTeDA) | 2.90 U | **1.10 J** | 2.90 U | 3.00 U | **0.840 J** | 2.90 U |
| Perfluorotridecanoic acid (PFTrDA) | 2.90 U | **1.60 J** | **2.10 J** | 3.00 U | **1.20 J** | 2.90 U |
| Perfluoroundecanoic acid (PFUnA) | **3.30** | **23.0** | **9.60** | **8.90** | **18.0** | **1.50 J** |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.660** | **0.650** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **5.80** | **54.0** | **20.9** | **44.0** | **32.0** | **2.30** |
| **§Sum of All Compounds Detected** | **9.10** | **88.8** | **37.5** | **53.7** | **53.8** | **5.40** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 19.0 U | 18.0 U | 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 (PFBS) | 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 | **0.790 J** | 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) | **1.60 J** | **56.0** | **2.90** | **2.40** | 0.930 U | 0.910 U |
| Perfluorododecanoic acid (PFDoA) | 1.40 U | **3.40** | **0.760 J** | **2.40** | 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 | **0.910 J** | 1.50 U | 1.30 U | 1.40 U | 1.40 U |
| Perfluorohexane sulfonate (PFHxS) | 0.950 U | **0.410 J** | **0.810 J** | 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) | **4.00** | **14.0** | **6.80** | 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 | **1.20 J** | 2.70 U | 2.80 U | 2.70 U |
| Perfluorooctanoic acid (PFOA) | 1.40 U | **1.10 J** | **0.580 J** | 1.30 U | 1.40 U | 1.40 U |
| Perfluoropentanoic acid (PFPeA) | 0.950 U | **0.480 J** | **0.960 J** | 0.890 U | 0.930 U | 0.910 U |
| Perfluorotetradecanoic acid (PFTeDA) | 2.80 U | **0.930 J** | 3.00 U | 2.70 U | 2.80 U | 2.70 U |
| Perfluorotridecanoic acid (PFTrDA) | 2.80 U | **1.80 J** | **0.840 J** | **0.740 J** | 2.80 U | 2.70 U |
| Perfluoroundecanoic acid (PFUnA) | 1.40 U | **32.0** | **3.60** | **8.70** | 1.40 U | 1.40 U |
| **†PFOS + PFOA (EPA)** | **0.00** | **1.10** | **1.78** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **4.00** | **70.0** | **9.70** | **2.40** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **5.60** | **111** | **19.2** | **14.2** | **0.00** | **0.00** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 18.0 U | 19.0 U | 18.0 U | 19.0 U | 19.0 U | 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 (PFBS) | 0.920 U | 0.930 U | **1.70 J** | 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 | **0.570 J** | 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 (PFTrDA) | 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 |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.570** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **0.00** | **0.00** | **1.70** | **0.570** | **0.00** | **0.00** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 19.0 U | 19.0 U | 19.0 U | 19.0 U | 18.0 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 |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.30 U | 9.40 U | 9.40 U | 9.30 U | 8.90 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 |
| Perfluorobutanesulfonic acid (PFBS) | 0.930 U | 0.940 U | 0.940 U | 0.930 U | 0.890 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 |
| Perfluorodecanesulfonic acid (PFDS) | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.30 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 |
| Perfluorododecanoic acid (PFDoA) | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.30 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 |
| Perfluoroheptanoic acid (PFHpA) | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.30 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 |
| Perfluorohexanoic acid (PFHxA) | 0.930 U | 0.940 U | 0.940 U | 0.930 U | 0.890 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 |
| Perfluorooctanesulfonamide (PFOSA) | 2.80 U | 2.80 U | 2.80 U | 2.80 U | 2.70 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 |
| Perfluorooctanoic acid (PFOA) | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.30 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 |
| Perfluorotetradecanoic acid (PFTeDA) | 2.80 U | 2.80 U | 2.80 U | 2.80 U | 2.70 U | 2.80 U |
| Perfluorotridecanoic acid (PFTrDA) | 2.80 U | 2.80 U | 2.80 U | 2.80 U | 2.70 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 |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 19.0 U | 18.0 U | 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 | 9.60 U |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.60 U | 8.80 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 | 9.60 U |
| Perfluorobutanesulfonic acid (PFBS) | 0.960 U | 0.880 U | **12.0** | 0.900 U | 0.900 U | 0.960 U |
| Perfluorobutanoic acid (PFBA) | 1.40 U | 1.30 U | **2.80** | 1.40 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 | 1.40 U |
| Perfluorodecanoic acid (PFDA) | 0.960 U | 0.880 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 | 1.40 U |
| Perfluoroheptanesulfonic acid (PFHpS) | 0.960 U | 0.880 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 | 1.40 U |
| Perfluorohexane sulfonate (PFHxS) | 0.960 U | 0.880 U | 0.900 U | 0.900 U | 0.900 U | 0.960 U |
| Perfluorohexanoic acid (PFHxA) | 0.960 U | 0.880 U | **23.0** | 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 | 1.40 U |
| Perfluorooctanesulfonamide (PFOSA) | 2.90 U | 2.60 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 | 2.90 U |
| Perfluorooctanoic acid (PFOA) | 1.40 U | 1.30 U | 1.40 U | 1.40 U | 1.30 U | 1.40 U |
| Perfluoropentanoic acid (PFPeA) | 0.960 U | 0.880 U | **11.0** | 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 | 2.90 U |
| Perfluorotridecanoic acid (PFTrDA) | 2.90 U | 2.60 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 | 1.40 U |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **0.00** | **0.00** | **48.8** | **0.00** | **0.00** | **0.00** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 18.0 U | 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 (PFBS) | 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 | **3.30** | 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 | **3.90** | **2.00** | **2.00** | **2.20** |
| 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 | **0.900 J** | 0.940 U |
| Perfluorononanoic acid (PFNA) | 1.40 U | **1.60 J** | **0.640 J** | **1.10 J** | **0.830 J** |
| 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 | **0.700 J** | 0.970 U | **3.20** | 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 |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **3.90** | **2.00** | **2.00** | **2.20** |
| **§Sum of All Compounds Detected** | **0.00** | **6.20** | **2.64** | **10.5** | **3.03** |

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

| | |
|---|---|
| **Location** | J2EW0002 |
| **Field Sample ID** | J2EW0002_521 |
| **Sampling Depth** | 198.00 - 233.00 |
| **Sampling Date** | 01/13/2021 |
| **SDG** | 320689351 |
| **Sample Type** | **Normal** |
| **PFAS 21 Cmps** | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | **7.40 J** |
| 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 (PFBS) | 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) | **0.430 J** |
| Perfluoroheptanoic acid (PFHpA) | **0.860 J** |
| Perfluorohexane sulfonate (PFHxS) | **11.0** |
| Perfluorohexanoic acid (PFHxA) | **0.900 J** |
| Perfluorononanoic acid (PFNA) | 1.40 U |
| Perfluorooctanesulfonamide (PFOSA) | **1.80 J** |
| Perfluorooctanesulfonic acid (PFOS) | **1.00 J** |
| Perfluorooctanoic acid (PFOA) | **1.80 J** |
| Perfluoropentanoic acid (PFPeA) | 1.90 U |
| Perfluorotetradecanoic acid (PFTeDA) | 2.80 U |
| Perfluorotridecanoic acid (PFTrDA) | 2.80 U |
| Perfluoroundecanoic acid (PFUnA) | 1.40 U |
| **†PFOS + PFOA (EPA)** | **2.80** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **11.0** |
| **§Sum of All Compounds Detected** | **25.2** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 18.0 U | 18.0 U | 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 |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.20 U | 9.20 U | 9.60 U | 9.50 U | 9.70 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 |
| Perfluorobutanesulfonic acid (PFBS) | 0.920 U | 0.920 U | 0.960 U | 0.950 U | 0.970 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 |
| Perfluorodecanesulfonic acid (PFDS) | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.50 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 |
| Perfluorododecanoic acid (PFDoA) | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.50 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 |
| Perfluoroheptanoic acid (PFHpA) | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.50 U | 1.40 U |
| Perfluorohexane sulfonate (PFHxS) | **0.500 J** | 0.920 U | 0.960 U | 0.950 U | **1.00 J** | **1.20 J** |
| Perfluorohexanoic acid (PFHxA) | 0.920 U | 0.920 U | 0.960 U | 0.950 U | 0.970 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 |
| Perfluorooctanesulfonamide (PFOSA) | 2.70 U | 2.80 U | 2.90 U | 2.90 U | 2.90 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 |
| Perfluorooctanoic acid (PFOA) | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.50 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 |
| Perfluorotetradecanoic acid (PFTeDA) | 2.70 U | 2.80 U | 2.90 U | 2.90 U | 2.90 U | 2.80 U |
| Perfluorotridecanoic acid (PFTrDA) | 2.70 U | 2.80 U | 2.90 U | 2.90 U | 2.90 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 |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **0.500** | **0.00** | **0.00** | **0.00** | **1.00** | **1.20** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 20.0 U | 19.0 U | 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 (PFBS) | 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) | **0.720 J** | **0.520 J** | **2.80** | **2.80 J** | 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 | **0.510 J** | 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 |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.510** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **2.80** | **2.80** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **0.720** | **0.520** | **2.80** | **2.80** | **0.510** | **0.00** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 19.0 U | 19.0 U | 19.0 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 (PFBS) | **0.640 J** | **0.700 J** | 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) | **4.10** | **4.00** | 0.940 UJ | 0.990 U | 0.950 U | **1.50 J** |
| Perfluorohexanoic acid (PFHxA) | 0.950 U | 0.940 U | 0.940 UJ | 0.990 U | 0.950 U | **0.630 J** |
| 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 | **3.60 J** | 2.90 U | **3.90** |
| Perfluorooctanoic acid (PFOA) | 1.40 U | 1.40 U | 1.40 UJ | **0.570 J** | 1.40 U | **0.760 J** |
| 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 (PFTrDA) | 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 |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **4.17** | **0.00** | **4.66** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **4.10** | **4.00** | **0.00** | **0.00** | **0.00** | **3.90** |
| **§Sum of All Compounds Detected** | **4.74** | **4.70** | **0.00** | **4.17** | **0.00** | **6.79** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 19.0 U | 19.0 U | 20.0 U | 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 (PFBS) | 0.930 U | **9.40** | 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 | **0.720 J** | **1.50 J** | **0.450 J** | 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 | **4.80** | **15.0** | **15.0** |
| Perfluorooctanoic acid (PFOA) | 1.40 U | 1.50 U | **0.730 J** | **1.10 J** | 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 (PFTrDA) | 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 |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.730** | **5.90** | **15.0** | **15.0** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **0.00** | **4.80** | **15.0** | **15.0** |
| **§Sum of All Compounds Detected** | **0.00** | **10.1** | **2.23** | **6.35** | **15.0** | **15.0** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 19.0 U | 19.0 U | 19.0 U | 20.0 U | 19.0 U | 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 (PFBS) | 0.940 U | 0.940 U | 0.960 U | 1.00 U | **0.450 J** | **0.460 J** |
| Perfluorobutanoic acid (PFBA) | 1.40 U | 1.40 U | **0.900 J** | 1.50 U | **2.60** | **2.60** |
| 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 | **3.00** | **3.00** |
| Perfluorohexane sulfonate (PFHxS) | **2.80** | **2.60** | 0.960 U | **0.440 J** | **15.0** | **15.0** |
| Perfluorohexanoic acid (PFHxA) | 0.940 U | 0.940 U | **0.760 J** | **0.480 J** | **5.00** | **5.50** |
| 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 | **5.30 J** | **4.90** | **4.80** |
| Perfluorooctanoic acid (PFOA) | 1.40 U | 1.40 U | **1.40 J** | **0.700 J** | **2.70** | **2.90** |
| Perfluoropentanoic acid (PFPeA) | 0.940 U | 0.940 U | 0.960 U | 1.00 U | **4.20** | **4.20** |
| 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 |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **1.40** | **6.00** | **7.60** | **7.70** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **2.80** | **2.60** | **0.00** | **5.30** | **25.6** | **25.7** |
| **§Sum of All Compounds Detected** | **2.80** | **2.60** | **3.06** | **6.92** | **37.9** | **38.5** |

**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 (PFBS) | 0.940 U | 0.930 U | **0.420 J** | 0.950 U | 0.940 U | 1.00 U |
| Perfluorobutanoic acid (PFBA) | **1.30 J** | **1.40 J** | **400** | 1.40 U | **64.0** | **3.00** |
| 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 | **42.0** | **5.60** | **10.0** | **5.10** |
| Perfluorododecanoic acid (PFDoA) | 1.40 U | 1.40 U | **32.0** | 1.40 U | **2.30** | **0.600 J** |
| 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 | **360** | 1.40 U | **100** | **2.10** |
| Perfluorohexane sulfonate (PFHxS) | **2.40** | **8.50** | 0.910 U | 0.950 U | 0.940 U | 1.00 U |
| Perfluorohexanoic acid (PFHxA) | **0.590 J** | 0.930 U | **350** | 0.950 U | **57.0** | **1.90 J** |
| Perfluorononanoic acid (PFNA) | 1.40 U | 1.40 U | **75.0** | **6.20** | **35.0** | **6.20** |
| 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 | **1.70 J** | 2.70 U | 2.80 U | 2.80 U | 3.00 U |
| Perfluorooctanoic acid (PFOA) | **1.00 J** | **0.870 J** | **120** | **5.70** | **49.0** | **2.10** |
| Perfluoropentanoic acid (PFPeA) | 0.940 U | 0.930 U | **770** | 0.950 U | **110** | **5.00** |
| Perfluorotetradecanoic acid (PFTeDA) | 2.80 U | 2.80 U | **35.0** | 2.80 U | **2.00 J** | 3.00 U |
| Perfluorotridecanoic acid (PFTrDA) | 2.80 U | 2.80 U | **49.0** | 2.80 U | **2.60 J** | 3.00 U |
| Perfluoroundecanoic acid (PFUnA) | 1.40 U | 1.40 U | **48.0** | **3.60** | **6.80** | **3.50** |
| **†PFOS + PFOA (EPA)** | **1.00** | **2.57** | **120** | **5.70** | **49.0** | **2.10** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **2.40** | **8.50** | **597** | **17.5** | **194** | **15.5** |
| **§Sum of All Compounds Detected** | **5.29** | **12.5** | **2280** | **21.1** | **439** | **29.5** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 18.0 U | 19.0 U | 18.0 U | 18.0 U | 18.0 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 |
| N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 9.10 U | 9.30 U | 9.00 U | 9.00 U | 9.00 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 |
| Perfluorobutanesulfonic acid (PFBS) | 0.910 U | 0.930 U | 0.900 U | 0.900 U | 0.900 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 |
| Perfluorodecanesulfonic acid (PFDS) | 1.40 U | 1.40 U | 1.40 U | 1.30 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 |
| Perfluorododecanoic acid (PFDoA) | 1.40 U | 1.40 U | 1.40 U | 1.30 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 |
| Perfluoroheptanoic acid (PFHpA) | 1.40 U | 1.40 U | 1.40 U | 1.30 U | 1.40 U | 1.40 U |
| Perfluorohexane sulfonate (PFHxS) | 0.910 U | 0.930 U | **0.550 J** | **1.90** | 0.900 U | **0.470 J** |
| Perfluorohexanoic acid (PFHxA) | 0.910 U | 0.930 U | 0.900 U | 0.900 U | 0.900 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 |
| Perfluorooctanesulfonamide (PFOSA) | 2.70 U | 2.80 U | 2.70 U | 2.70 U | 2.70 U | 2.80 U |
| Perfluorooctanesulfonic acid (PFOS) | 2.70 U | 2.80 U | 2.70 U | **1.00 J** | **7.00** | 2.80 U |
| Perfluorooctanoic acid (PFOA) | 1.40 U | 1.40 U | 1.40 U | 1.30 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 |
| Perfluorotetradecanoic acid (PFTeDA) | 2.70 U | 2.80 U | 2.70 U | 2.70 U | 2.70 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 |
| Perfluoroundecanoic acid (PFUnA) | 1.40 U | 1.40 U | 1.40 U | 1.30 U | 1.40 U | 1.40 U |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **1.00** | **7.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **0.00** | **1.90** | **7.00** | **0.00** |
| **§Sum of All Compounds Detected** | **0.00** | **0.00** | **0.550** | **2.90** | **7.00** | **0.470** |

**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** |
| **PFAS 21 Cmps** | 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 (PFBS) | 0.950 U | **1.20 J** | **3.50** | 0.910 U |
| Perfluorobutanoic acid (PFBA) | 1.40 U | 1.40 U | **1.20 J** | 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 | **2.50** | 1.40 U |
| Perfluorohexane sulfonate (PFHxS) | 0.950 U | **4.80** | **83.0** | 0.910 U |
| Perfluorohexanoic acid (PFHxA) | **0.460 J** | **0.570 J** | **5.80** | 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 | **1.60 J** | **5.30** | 2.70 U |
| Perfluorooctanoic acid (PFOA) | 1.40 U | 1.40 U | **1.80 J** | 1.40 U |
| Perfluoropentanoic acid (PFPeA) | 0.950 U | 0.930 U | **3.30** | 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 |
| **†PFOS + PFOA (EPA)** | **0.00** | **1.60** | **7.10** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **4.80** | **90.8** | **0.00** |
| **§Sum of All Compounds Detected** | **0.460** | **8.17** | **106** | **0.00** |

**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** |
| **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) | 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 (PFBS) | 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) | **4.30** | 1.00 U | 0.980 U | 0.950 U | 0.990 U | **0.600 J** |
| 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 |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **4.30** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **4.30** | **0.00** | **0.00** | **0.00** | **0.00** | **0.600** |

**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** |
| **PFAS 21 Cmps** | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) | Results (ng/L) |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | 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 (PFBS) | 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 |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**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** |
| **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) | 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 (PFBS) | 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) | **4.30** | **4.50** | **5.90** | **5.30** | **4.80** | **4.20** |
| Perfluorododecanoic acid (PFDoA) | **0.760 J** | **1.00 J** | **1.60 J** | **1.10 J** | **1.70 J** | **0.960 J** |
| 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) | **0.900 J** | **0.930 J** | **1.30 J** | **1.90** | 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 | **0.970 J** | **0.940 J** | 1.40 U |
| Perfluoroundecanoic acid (PFUnA) | **4.60** | **4.30** | **13.0** | **14.0** | **12.0** | **5.80** |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **4.30** | **4.50** | **5.90** | **7.20** | **4.80** | **4.20** |
| **§Sum of All Compounds Detected** | **10.6** | **10.7** | **21.8** | **23.3** | **19.4** | **11.0** |

**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** |
| **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) | 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 (PFBS) | 0.990 U | 0.990 U | 0.990 U | 1.00 U | 1.00 U | **1.30 J** |
| Perfluorobutanoic acid (PFBA) | 0.490 U | 0.490 U | 0.490 U | 0.500 U | 0.510 U | **0.380 J** |
| Perfluorodecanesulfonic acid (PFDS) | 1.50 U | 1.50 U | 1.50 U | 1.50 U | 1.50 U | 1.40 U |
| Perfluorodecanoic acid (PFDA) | **2.20** | 0.990 U | 0.990 U | 1.00 U | 1.00 U | 0.950 U |
| Perfluorododecanoic acid (PFDoA) | **1.70 J** | 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 | **1.20 J** |
| Perfluorohexanoic acid (PFHxA) | 1.50 U | 1.50 U | 1.50 U | 1.50 U | 1.50 U | **1.70 J** |
| 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 | **0.900 J** |
| Perfluorotetradecanoic acid (PFTeDA) | 1.50 U | 1.50 U | 1.50 U | 1.50 U | 1.50 U | 1.40 U |
| Perfluorotridecanoic acid (PFTrDA) | 1.50 U | 1.50 U | 1.50 U | 1.50 U | 1.50 U | 1.40 U |
| Perfluoroundecanoic acid (PFUnA) | **13.0** | 1.50 U | 1.50 U | 1.50 U | 1.50 U | 1.40 U |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **2.20** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **16.9** | **0.00** | **0.00** | **0.00** | **0.00** | **5.48** |

**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** |
| **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) | 0.930 U | 0.970 U | **1.20 J** | 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 (PFBS) | 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 | **0.250 J** | **0.290 J** | 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 | **1.00 J** | **1.60 J** | 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 | **1.00 J** | 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 | **0.620 J** | **0.510 J** | 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 |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **1.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **0.00** | **0.00** | **3.07** | **2.40** | **1.00** | **0.00** |

**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** |
| **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) | 1.00 U | 0.970 U | 0.960 U | 0.940 U | 0.930 U | **5.30** |
| 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 | **0.590 J** | 0.940 U | 0.930 U | 0.950 U |
| Perfluorobutanesulfonic acid (PFBS) | 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 | **0.310 J** | 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 | **2.00** | **14.0** | 0.940 U | **1.20 J** | **3.50** |
| Perfluorododecanoic acid (PFDoA) | 1.00 U | **1.10 J** | **1.30 J** | **0.780 J** | **0.490 J** | 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 | **0.700 J** | 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 | **20.0** | **0.570 J** | **1.10 J** | **1.70 J** |
| 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 (PFTrDA) | 1.50 U | 1.50 U | **0.990 J** | 1.40 U | 1.40 U | 1.40 U |
| Perfluoroundecanoic acid (PFUnA) | 1.50 U | **10.0** | **15.0** | **3.20** | **1.20 J** | **6.50** |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **2.00** | **34.0** | **0.00** | **0.00** | **3.50** |
| **§Sum of All Compounds Detected** | **0.00** | **13.8** | **51.9** | **4.86** | **3.99** | **17.0** |

**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** |
| **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) | 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 (PFBS) | 0.920 U | 0.960 U | 0.910 U | **0.450 J** | 0.960 U | 0.970 U |
| Perfluorobutanoic acid (PFBA) | 1.80 U | 1.90 U | 0.460 U | **1.80 J** | 0.480 U | **1.30 J** |
| Perfluorodecanesulfonic acid (PFDS) | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.40 U | 1.50 U |
| Perfluorodecanoic acid (PFDA) | **1.60 J** | **1.40 J** | **2.00** | **1.40 J** | **2.10** | **18.0** |
| Perfluorododecanoic acid (PFDoA) | 0.920 U | 0.960 U | **3.20** | **8.80** | **0.820 J** | **0.800 J** |
| 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 | **0.470 J** | 0.960 U | **0.870 J** |
| Perfluorohexane sulfonate (PFHxS) | 0.920 U | 0.960 U | 0.910 U | 0.950 U | 0.960 U | 0.970 U |
| Perfluorohexanoic acid (PFHxA) | **1.30 J** | **1.20 J** | 1.40 U | **0.560 J** | 1.40 U | **0.580 J** |
| Perfluorononanoic acid (PFNA) | **0.560 J** | **0.630 J** | 1.40 U | 1.40 U | 1.40 U | **3.50** |
| 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) | **1.10 J** | **1.00 J** | **0.240 J** | **0.900 J** | 0.480 U | **1.60 J** |
| 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 | **0.650 J** | **1.70 J** | 1.40 U | 1.50 U |
| Perfluoroundecanoic acid (PFUnA) | **5.80** | **5.80** | **17.0** | **17.0** | **4.70** | **16.0** |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **2.00** | **0.00** | **2.10** | **21.5** |
| **§Sum of All Compounds Detected** | **10.4** | **10.0** | **23.1** | **33.1** | **7.62** | **42.7** |

**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** |
| **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) | 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 (PFBS) | 0.990 U | 0.970 U | 1.00 U | 0.980 U | 1.00 U | 1.00 U |
| Perfluorobutanoic acid (PFBA) | **1.40 J** | **0.400 J** | **0.510 J** | 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) | **23.0** | **5.10** | **14.0** | **11.0** | **23.0** | **1.00 J** |
| Perfluorododecanoic acid (PFDoA) | **1.40 J** | **0.650 J** | **0.560 J** | 0.980 U | **0.640 J** | 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) | **0.910 J** | 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) | **0.680 J** | 1.50 U | 1.50 U | 1.50 U | 1.60 U | 1.50 U |
| Perfluorononanoic acid (PFNA) | **4.20** | **4.70** | **6.50** | **6.00** | **19.0** | **5.80** |
| 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) | **1.70 J** | **0.250 J** | 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 | **0.530 J** | 1.50 U |
| Perfluorotridecanoic acid (PFTrDA) | **0.880 J** | **0.820 J** | 1.50 U | 1.50 U | 1.60 U | 1.50 U |
| Perfluoroundecanoic acid (PFUnA) | **18.0** | **5.20** | **6.50** | **5.70** | **16.0** | **1.90 J** |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **27.2** | **9.80** | **20.5** | **17.0** | **42.0** | **5.80** |
| **§Sum of All Compounds Detected** | **52.2** | **17.1** | **28.1** | **22.7** | **59.2** | **8.70** |

**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** |
| **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) | **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 (PFBS) | 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 |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **16.5** | **17.6** | **24.0** | **32.5** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **43.1** | **38.6** | **45.4** | **58.8** | **0.00** | **0.00** |

**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** |
| **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) | 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 (PFBS) | 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) | **0.590 J** | 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) | **0.620 J** | **0.540 J** | 1.40 U | 1.50 U | 1.40 U | **0.620 J** |
| Perfluorotridecanoic acid (PFTrDA) | 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 |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| **§Sum of All Compounds Detected** | **1.21** | **0.540** | **0.00** | **0.00** | **0.00** | **0.620** |

**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** |
| **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) | 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 (PFBS) | 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 | **0.290 J** | 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 | **2.20** | 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 | **1.20 J** | 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 | **0.790 J** | **0.590 J** | 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) | **0.610 J** | 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 | **1.40 J** | 1.50 U |
| **†PFOS + PFOA (EPA)** | **0.00** | **0.00** | **0.790** | **0.590** | **0.00** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** | **0.00** | **0.00** | **2.20** | **0.00** |
| **§Sum of All Compounds Detected** | **0.610** | **0.00** | **0.790** | **0.590** | **5.09** | **0.00** |

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

| | |
|---|---|
| **Location** | MW-63S |
| **Field Sample ID** | MW-63S_S22 |
| **Sampling Depth** | 153.00 - 163.00 |
| **Sampling Date** | 12/15/2021 |
| **SDG** | 320831661 |
| **Sample Type** | **Normal** |
| **PFAS 21 Cmps** | 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 (PFBS) | 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 |
| **†PFOS + PFOA (EPA)** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** |
| **§Sum of All Compounds Detected** | **0.00** |

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

| | |
|---|---|
| **Location** | MW-237S |
| **Field Sample ID** | MW-237S_S22 |
| **Sampling Depth** | 49.00 - 59.00 |
| **Sampling Date** | 12/29/2021 |
| **SDG** | 320835011 |
| **Sample Type** | **Normal** |
| **PFAS 21 Cmps** | 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 (PFBS) | 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 |
| **†PFOS + PFOA (EPA)** | **0.00** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** |
| **§Sum of All Compounds Detected** | **0.00** |

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

| | |
|---|---|
| **Location** | MW-236S |
| **Field Sample ID** | MW-236S_S22 |
| **Sampling Depth** | 96.00 - 106.00 |
| **Sampling Date** | 01/11/2022 |
| **SDG** | 320838001 |
| **Sample Type** | **Normal** |
| **PFAS 21 Cmps** | 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 (PFBS) | 0.960 U |
| Perfluorobutanoic acid (PFBA) | **1.50 J** |
| 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) | **1.20 J** |
| Perfluorohexane sulfonate (PFHxS) | 0.960 U |
| Perfluorohexanoic acid (PFHxA) | **1.20 J** |
| Perfluorononanoic acid (PFNA) | 1.40 U |
| Perfluorooctanesulfonamide (PFOSA) | 1.40 U |
| Perfluorooctanesulfonic acid (PFOS) | **2.30** |
| Perfluorooctanoic acid (PFOA) | **1.30 J** |
| Perfluoropentanoic acid (PFPeA) | **0.640 J** |
| Perfluorotetradecanoic acid (PFTeDA) | 1.40 U |
| Perfluorotridecanoic acid (PFTrDA) | 1.40 U |
| Perfluoroundecanoic acid (PFUnA) | 1.40 U |
| **†PFOS + PFOA (EPA)** | **3.60** |
| **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **2.30** |
| **§Sum of All Compounds Detected** | **8.14** |

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

| | Location | J3-EFF | J3-INF |
|---|---|---|---|
| | **Field Sample ID** | J3-EFF_1Q22 | J3-INF_1Q22 |
| | **Sampling Depth** | 0.00 - 0.00 | 0.00 - 0.00 |
| | **Sampling Date** | 01/24/2022 | 01/24/2022 |
| | **SDG** | 320842111 | 320842111 |
| | **Sample Type** | **Normal** | **Normal** |
| **PFAS 21 Cmps** | | 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 (PFBS) | | 0.940 U | 0.950 U |
| Perfluorobutanoic acid (PFBA) | | **0.240 J** | **0.250 J** |
| 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 | **1.10 J** |
| 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 |
| | **†PFOS + PFOA (EPA)** | **0.00** | **0.00** |
| | **‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)** | **0.00** | **0.00** |
| | **§Sum of All Compounds Detected** | **0.240** | **1.35** |

**Notes:**

ng/L = nanograms per liter; ug/kg = 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.