

**MONTHLY PROGRESS REPORT #294
FOR SEPTEMBER 2021**

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

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

The following summary of progress is for the period from 1 to 30 September 2021.

1. SUMMARY OF REMEDIATION ACTIONS

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

Demolition Area 1 Comprehensive Groundwater RA

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

The Frank Perkins Road Treatment Facility has been optimized as part of the Environmental and System Performance Monitoring (ESPM) program at Demolition Area 1. The treatment facility continues to operate at a flow rate of 175 gallons per minute (gpm), with over 2.860 billion gallons of water treated and re-injected as of 1 October 2021. No Frank Perkins Road Treatment Facility shutdowns occurred in September.

The Base Boundary MTU continues to operate at a flow rate of 65 gpm. As of 1 October 2021, over 311 million gallons of water was treated and re-injected. The following Base Boundary MTU shutdowns occurred in September.

- 1230 on 16 September 2021 to replace a leaking camlock fitting and was restarted at 1315 on 16 September 2021.

The Leading Edge system continues to operate at a flow rate of 100 gpm. As of 1 October 2021, over 269.4 million gallons of water was treated and re-injected. The following Leading Edge system shutdowns occurred in September.

- 0513 on 02 September 2021 due to a VFD Fault and was restarted at 0925 on 02 September 2021.

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, 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 1 October 2021, over 1.874 billion gallons of water have been treated and re-injected. The following MTU E and F shutdowns occurred in September.

- 1626 on 20 September 2021 due to a power supply interruption and was restarted at 0737 on 21 September 2021.

The Northern Treatment Building G continues to operate at a flow rate of 225 gpm. As of 1 October 2021, over 1.406 billion gallons of water have been treated and re-injected. No Northern MTU G shutdowns occurred in September.

Eastern Plant

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

The MTUs H and I continue to operate at a flow rate of 250 gpm. As of 1 October 2021, over 1.521 billion gallons of water have been treated and re-injected. No MTU H and I shutdowns occurred in September.

MTU J continues to operate at a flow rate of 120 gpm. As of 1 October 2021, over 707.1 million gallons of water have been treated and re-injected. No MTU J shutdowns occurred in September.

MTU K continues to operate at a flow rate of 125 gpm. As of 1 October 2021, over 829.8 million gallons of water have been treated and re-injected. No MTU K shutdowns occurred in September.

J-3 Range Groundwater RA

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

The J-3 system is currently operating at 255 gpm. As of 1 October 2021, over 1.527 billion gallons of water have been treated and re-injected. The following J-3 Range system shutdowns occurred in September.

- 0011 on 02 September 2021 due to a "J3EWIP2 Vault Flood" alarm and was restarted at 0950 on 02 September 2021.

J-1 Range Groundwater RA

Southern Plant

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

The Southern MTU continues to operate at a flow rate of 125 gpm. As of 1 October 2021, over 685.3 million gallons of water have been treated and re-injected. The following J-1 Range Southern system shutdowns occurred in September.

- 0940 on 13 September 2021 to repair rotted flooring and was restarted at 1315 on 23 September 2021.

Northern Plant

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

The Northern MTU continues to operate at a total system flow rate of 250 gpm. As of 1 October 2021, over 1.014 billion gallons of water have been treated and re-injected. The following J-1 Range Northern MTU shutdowns occurred in September.

- 1105 on 28 September 2021 for carbon exchange and repairs and was restarted at 0740 on 30 September 2021.
- 1626 on 20 September 2021 due to a power supply interruption and was restarted at 0751 on 21 September 2021.
- 1105 on 01 September 2021 due to a "VFD Fault" and was restarted at 0852 on 02 September 2021.

Central Impact Area RA

The Central Impact Area (CIA) Groundwater treatment facility consists of removal and treatment of groundwater to minimize downgradient migration of explosives compounds and perchlorate. The ETR system includes the following components: three extraction wells, an ex-situ treatment process consisting of an ion exchange (IX) resin and granular activated carbon (GAC) media to treat explosives compounds, and three infiltration galleries to return treated water to the aquifer. The CIA systems 1, 2, and 3 continue to run at a combined total flow rate of 750 gpm. As of 1 October 2021, over 2.605 billion gallons of water have been treated and re-injected. No CIA system shutdowns occurred in September.

2. SUMMARY OF ACTIONS TAKEN

Operable Unit (OU) Activity As of 1 October 2021

CIA

- Performed intrusive investigations.
- Performed cued data collection with 3 MMs.
- Routine check of CSS cover.
- Routine processing of MD.

Demolition Area 1

- Performed repairs to bag filter effluent piping.

Demolition Area 2

- No activity.

J-1 Range

- Repaired rotted flooring at J1 South MTU.
- Performed carbon media exchange and repairs at J1 North MTU.

J-2 Range

- Down-hole video inspection of J2 North MTU F infiltration gallery.
- SPM program groundwater sampling.
- Project Note PFAS sampling.

J-3 Range

- SPM program groundwater sampling.
- Project Note PFAS sampling.

L Range

- No activity.

Small Arms Ranges

- No activity.

Northwest Corner

- No activity.

Training Areas

- No activity.

Impact Area Roads

- Performed vegetation clearance and UXO removal.
- Performed grading and gravel installation.

Other

- Collected process water samples from the Central Impact Area, Demolition Area 1, J1 Range Northern, J1 Range Southern, J2 Range Eastern, J2 Range Northern, and J3 Range treatment systems.

- Groundwater samples were collected from Demolition Area 1, J2 Range Eastern, and J2 Range Northern.

JBCC IAGWSP Tech Update Meeting Minutes for 26 August 2021

Project and Fieldwork Update

Since the last tech meeting, the treatment systems are currently all operational without interruption. The next scheduled shutdown would be for the J-1 South system floor, which should be resolved by the middle of September. The trees that have been blocking the door have been cleared. Next step is for the contractor, Carbon Filtration Services, to take out the vessel.

Dawson is on site currently, finishing up the installation of well pumps for the Demo 1 monitoring well. Those will be a priority for KGS once the pumps are installed. That will conclude Dawson's responsibilities, and KGS inherits both wells.

The LTM crews are currently in J-2 East. They are working on some well repairs (USGS well and the T Range well), as well as a couple service completions in the Grand Oaks neighborhood.

Next year's O&M contract with KGS has been completed.

Dawson finished intrusive investigations of former E Range (119 grids). All have had QA. Since the last tech update meeting one MEC item was found—a 40 mm practice grenade—that will need to be blown in place. That brings the total to 54 MEC items (29 x 3.5 inch rockets, one 4.2 inch mortar, 5 x 60 mm projectiles, 12 x 40 mm practice grenades, one fuze from a 60 mm mortar, one 75 mm projectile, 3 x 0.3 lbs supplemental charges, and 2 x 37 mm projectiles). There are 12 BIPs of 40 mm practice grenades that are scheduled for early October, when road work is finished.

The road work began after the completion at a former E Range. All the vegetation clearance was completed along the roads (8 miles) with exception of the area within the impact area. Currently crews are doing UXO clearance and instrument detection depths on Jefferson Road. After that, crews will start work on Spruce Swamp Road. No MEC has been found; just some range debris. Road work will continue until October.

Weston is still continuing to work in the CIA with three metal mappers active in areas Survey Unit 2 and Survey Unit 3, and are still working on anomalies digs on the berm, (a polygon in Survey Unit 3.) The crews are also going to do some training digs in Survey Unit 1 to confirm their data, data processing, and data analysis before they finalize their dig list. They currently have two dig teams, and a third team is arriving on site this week. EPA requested the results of the testing.

EPA and MassDEP will coordinate the selection of the verification grids for two grids within Survey Units 1, 2, and 3, and one grid Survey Unit 4 or 5.

Action Items

The action items were discussed and updated.

J-1 South Plume Shell Update

A presentation was provided on the J-1 Range South plume shell. An animation is available in EDMS. This presentation was part two of the J-1 South RDX plume shell update effort. Part one was the 2D layer-by-layer contouring presentation at the 15 July 2021 tech meeting. The previous version of the plume shell was shown in comparison to the newly updated version. It was noted that the biggest difference was on-base, where the old plume shell was not showing some of the higher concentrations, above two parts per billion (ppb) RDX, around the newest wells – MW 720 to 721. The chemistry data from the new wells helped to adjust the plume shell. The extent off-base was mostly similar, with a slightly larger extension of the 0.6 ppb RDX contour. Previous data from additional wells were reviewed.

The data from the designated five year period were used to update the flow model, and Modpath software was used to migrate the data to predict the current positions of all historical samples. The oldest data go back to November 1997. The most recent data used for the data cut off period came from the comprehensive annual sampling event in fall 2020. The defined end simulation time in the model run was 31 December 2020. A review of some of the work done by Jacobs in the mid-2000s was discussed. There had been a decay post-processing equation applied to historical data that was migrated, which reduced the data to match what was actually out in the field.

Mike Kulbersh's (USACE) work on the L Range plume shell developed an exponential, "sensitivity equation." For comparison, the old Jacobs equation would only reduce the RDX by 55%, leaving 45% left over after 20 years. A similar 20 year sample now with the plume shell that was just updated, would have decayed by approximately 98%. The next modeling step was to migrate the data into GIS with adjustments made for contour layers in the aquifer. Over 1600 total samples were migrated, most of which were non-detect (ND), which is typical. The combination of data points were used in the 3D geo-statistical interpolation. A comparison between the two post-processing equations was shown. A slide reviewing the 2D process was shown. Annual rounds of synoptic water level measurements were used to manually delineate the capture zone, which was depicted on a figure.

A significant takeaway from this update effort is that the highest concentration is estimated to be just under 15 ppb. That was based on one of the recent on-base drive points sampled in 2018. RDX source material has been largely eliminated by removal or natural attenuation by dispersion.

EPA asked if the break in the plumes (visible on the figure) was a result of the extraction wells. USACE confirmed it was a combination of the old extraction well removing mass and the intermittent release of material. The agencies asked if it would make any sense to reactivate the on-base system. USACE replied that the animation will show the plume does not wait for extraction; instead it naturally disperses.

The process for development of the 3D plume shell was reviewed. This process would be used in estimating clean up time, running annual report simulations, or performing alternative analysis to simulate different pumping schemes. The new initial RDX concentrations for the transport model were used. The 2D data points along with contour control points were retained and imported into Groundwater Desktop (GWD) software. Data were then interpolated into the J1 South MODFLOW model grid and reviewed. ND samples were deleted for the 3D model

(retained in the 2D model). The plan view, oblique view, and cross-sectional views were presented.

It was noted that back in 2010, the Jacobs plume shell estimated 1.59 lbs of RDX above 0.25 ppb, and in 2015 the plume shell estimated about 3.7 lbs of RDX. The new plume shell is estimating 0.47 lbs above 0.25 ppb remain, and 0.26 lbs above 0.6 ppb remain. The explanation for this mass reduction is the system operation since 2015 and better resolution.

The 2D vs 3D contoured plumes were shown. EPA asked if the historical data could be removed to see how much mass has been reviewed. IAGWSP pointed out that the information can also be found in the annual reports. USACE pulled up some data during the presentation and noted that almost 2 lbs were removed by January 2010. It was further noted that 0.5 lbs of RDX were removed between January 2017 and the end of 2020. MassDEP noted that decay and dispersion would then account for nearly 2 lbs from the plume shell. USACE noted that the animation depicts that near the base boundary. The mass is not being pumped out; it is dispersing.

A figure comparing historical and predicted influent concentrations at the J-1 South extraction well was shown. The model predicts no elevated concentrations going into the mass. It is estimated that concentrations will stay low at J1SEW0002. Concentrations have been below 0.6 ppb RDX since 2018. The peak was in 2011 at above 75 ppb RDX. The extraction well has done most of its useful work for mass removal.

A figure with groundwater fate & transport simulations was shown. Imported data were used to set new initial concentrations for 2021 Plume Shell, representing the RDX plume as of 1 January 2021. The 3D concentrations retained a similar extent of 0.06 ppb RDX as in the 2D plan view. The transport model run was for 29 years (2050). The factor driving time to cleanup is on-base mass migrating between the base boundary and Windsong Road. The leading edge limit of migration is near Checkerberry Lane.

Conclusions are that the driver for time to cleanup is not the leading edge downgradient of J1SEW0002 (extraction well), as it was in 2015 and 2017, but rather upgradient, between the base boundary and Windsong Road (MW-645). The maximum mass between 6 to 20 ppb is limited in one local area near the base boundary from DPJ1S-718 (became new MW-720M1,M2), which attenuates by 2022. The mass attenuates to < 2 ppb by 2023 near/upgradient of MW-645. The leading edge mass (not captured by J1SEW0002) attenuates to < 0.6 ppb by 2027 near Checkerberry Ln. No mass greater than 0.6 ppb is predicted to migrate to Route 130. Low concentrations of RDX at J1SEW0002 confirm relatively low concentration mass is currently being extracted. J1SEW0002 predicted less than 0.1 ppb through cleanup in 2036. The plume core off-base contains lower concentrations and less mass above 6 ppb and no mass above 20 ppb (Grand Oak Rd. MW-524M1 has been <20 ppb since March 2012).

The revised plume shell and model results will be incorporated into the 2021 annual Environmental Monitoring Report. The animations were reviewed with various settings. The agencies expressed concern about the 6-15 ppb RDX mass that likely won't be captured by EW1 but might naturally attenuate or be captured by EW2. The agencies think reducing or eliminating the pumping rate at EW2 will require further deliberation and discussion. MassDEP added that the leading edge seems to be inferred and asked what data will validate that leading edge. USACE clarified that the leading edge was drawn with migrated data from MW-669.

MassDEP stated there might be a need for additional wells between Checkerberry Lane and Route 130. MassDEP stressed that before conclusions can be drawn, monitoring wells need to provide validation of assumptions that have been made.

USACE noted that monitoring well installation would likely involve private land owners granting access, and there are no wells on contract right now for this year. A contract modification would be possible if the budget allows (~2 new wells).

JBCC IAGWSP Tech Update Meeting Minutes for 23 September 2021

Project and Fieldwork Update

There were two breakthroughs at treatment systems in August. The J-1 North system had RDX at 0.26 ppb and the J-2 East had perchlorate at 0.35 ppb. Change outs will be scheduled for both systems. J-1 South was taken offline on 13 September, Carbon Filtration Systems was onsite on the 14th and removed all the vessels and fixed the floor, however they found a leak after restarting the system yesterday. They are working to repair the leak before the system is brought back online. All other treatment systems are running as designed. The LTM crews are currently in J-2 East. They just completed sampling in J-2 North which included additional PFAS sampling. Data should be available in a few weeks.

The recent PFAS results were discussed. The group was reminded that several wells at the J-3 Range were sampled as a result of previous detections seen on the range just south of the melt-pour building. Data was received last Wednesday. Everything looked pretty good; there were a couple of hits seen in MW-197 near the other detections just over the state level. However, at well MW-218, there was a total detection of 2,280 ng/L in the deep screen; the PFAS 6 was 597 ng/L and the EPA number was 120 ng/L (which was just PFOA). Detections in the mid-screen were several times lower. An unusual group of compounds were seen in MW-218, not typically seen with AFFF and looked like nothing we've detected in the J-3 Range. IAGWSP, EPA, and MassDEP had discussed the data the previous Monday.

As a follow on, the USACE chemist checked the QA/QC package to see if anything was unusual. She observed that non-settled particles clogged the solid phase extraction column, and the samples that had high particulates were those that had the highest PFAS detections. She noted that the PFAS was not related to AFFF based on what she has observed at other sites. USACE also asked the sampling crew for a number of things including the logbook entries of the sampling, any observations for silt in the wells, the last time the well was under water, the well construction logs, and whether or not the wells could be redeveloped. IAGWSP also requested that particle backtracks be run to see where it might be coming from and to see if there are any wells in the area that have similar screen depths. IAGWSP has also requested the Snake Pond surface water data that was collected by Massachusetts Department of Public Health earlier this year. AFCEC provided a table of surface water sampling the USGS conducted in 2016 as well as FS-12 influent data. MassDEP asked that the IAGWSP check with AFCEC whether or not they have been seeing the short chain PFOS results in their analyses. Next steps are to resample the well as soon as possible as any additional information is gathered and reviewed.

Dawson continues with UXO clearance of roads slated for improvement this year. They have completed Jefferson Road, Spruce Camp Road, Wheelock Road, and the J-1 Range Road.

They have partially completed Tank Ally and Turpentine between Wheelock and Tank Ally. They also have a 400-ft section of Tank Ally to finish UXO clearance, the section is the CIA Survey Unit 1. They began UXO clearance of the J-2 Range Road today (23 September 2021). It is anticipated that Road Work will be complete at the end of September. Throughout the month of October, Dawson will start processing the MPPEH from former E Range, perform the BIPS and the BEM shot, and manage the soil staged at H Range for off-site disposal.

KGS will follow Dawson and begin the grading and gravel of the roads. They will begin with grading of Jefferson Road next week and will continue down Spruce Camp and across Wheelock and move to J-1 and J-2 Range Road. Gravel installation will be staggered approximately a week behind the grading. They will continue road work through the end of the year. To date, they have not found any MEC.

Weston now has seven UXO teams on site. Teams are working staggered in Survey Units 1 through 3, in the priority one areas. There are also three Metal Mappers up and running in these areas. They are 86% complete in Survey Unit 1, 70% in Survey Unit 2, and 20% complete in Survey Unit 3. They are digging at the three cracked open items this morning. Discussion was held on a proposal to swap out grids in Survey Unit 5 for the same number of grids in Survey Unit 3. Because of anomaly density and due to separation distance of the teams working, it would take beyond the end of the calendar year to get that work done. However, if Survey Unit 5 were substituted for some of the acreage in Survey Unit 3, this would allow crews to spread out more, and the crews would be more likely to complete the 10 acres by the end of the calendar year. EPA indicated that they were more comfortable sticking to the current plan but agreed with the proposal. MassDEP agreed with the change.

Action Items

The action items were discussed and updated.

JBCC Cleanup Team Meeting

The next JBCC Cleanup Team (JBCCCT) meeting is tentatively scheduled for 1 December 2021. Presentation materials from previous meetings can be found on the IAGWSP web site at <http://jbcc-iagwsp.org/community/impact/presentations/>. The Cleanup Team meeting discusses late breaking news and responses to action items, as well as updates from the IAGWSP and the Installation Restoration Program (IRP). The JBCCCT meetings provide a forum for community input regarding issues related to both the IRP and the IAGWSP.

3. SUMMARY OF DATA RECEIVED

Table 1 summarizes sampling for all media from 1 to 30 September 2021. Table 2 summarizes the validated detections of explosives compounds and perchlorate for all groundwater results received from 1 to 30 September 2021. These results are compared to the Maximum Contaminant Levels/Health Advisory (MCL/HA) values for respective analytes. Explosives and perchlorate are the primary contaminants of concern (COC) at Camp Edwards. Table 3 summarizes sampling of influent and groundwater samples for per- and polyfluoroalkyl substances (PFAS) from 1 June 2019 to present.

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

4. SUBMITTED DELIVERABLES

Deliverables submitted during the reporting period include the following:

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|--|-------------------|
| • Monthly Progress Report No. 293 for August 2021 | 11 September 2021 |
| • Final Completion of Work 2016 Report | 1 September 2021 |
| • Response to Comments for Draft Small Arms Ranges 2021 Annual Environmental Monitoring Report | 22 September 2021 |

5. SCHEDULED ACTIONS

The following actions and/or documents were being prepared or revised in September 2021 and will be in progress in October 2021.

- J-3 Range 2021 Final Annual Environmental Monitoring Report
- L Range Final Annual Environmental Monitoring Report
- Small Arms Ranges Revised Completion of Work Report
- IRA Status and Completion Report
- Northwest Corner Demonstration of Compliance Report for agency feedback/approval
- J-2 Range, Phase-2, Addendum to Post-DD Confirmation Geophysical and Soil Investigation Findings Project Note
- J-3 Range Post-DD Confirmation Geophysical and Soil Investigation Findings Revised Final Project Note
- CIA 2020 Revised Draft Source Removal Annual Report
- CIA Source Area QAPP
- CIA 2021 Draft Annual Environmental Monitoring Report
- Response to Comments on J-1 Range North 2021 Draft Annual Environmental Monitoring Report
- J-1 Range South 2021 Draft Annual Environmental Monitoring Report
- Demolition Area 1 2021 Draft Annual Environmental Monitoring Report
- Demolition Area 2 2021 Draft Annual Environmental Monitoring Report
- Land Use Controls Monitoring Report

TABLE 1
Sampling Progress: 1 to 30 September 2021

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J2 Range Eastern	MW-667M2	MW-667M2_F21	N	09-29-2021	Ground Water	277.3	287.3
J2 Range Eastern	MW-667M1	MW-667M1_F21	N	09-29-2021	Ground Water	302.3	312.3
J2 Range Eastern	MW-667M1	MW-667M1_F21D	FD	09-29-2021	Ground Water	302.3	312.3
J2 Range Eastern	MW-393M2	MW-393M2_F21	N	09-29-2021	Ground Water	218.16	228.16
J2 Range Eastern	MW-393M1	MW-393M1_F21	N	09-29-2021	Ground Water	268.02	278.02
J2 Range Eastern	MW-393D	MW-393D_F21	N	09-29-2021	Ground Water	313.56	323.56
J2 Range Eastern	MW-666M3	MW-666M3_F21	N	09-28-2021	Ground Water	199.8	209.8
J2 Range Eastern	MW-666M2	MW-666M2_F21	N	09-28-2021	Ground Water	219.8	229.8
J2 Range Eastern	MW-666M1	MW-666M1_F21	N	09-28-2021	Ground Water	244.8	254.8
J2 Range Northern	MW-622M1	MW-622M1_F21	N	09-28-2021	Ground Water	245.4	255.4
J2 Range Northern	J2EW0003	J2EW0003_F21	N	09-27-2021	Ground Water	202	232
J2 Range Northern	J2EW0002	J2EW0002_F21	N	09-27-2021	Ground Water	198	233
J2 Range Northern	J2EW0002	J2EW0002_F21D	FD	09-27-2021	Ground Water	202	232
J2 Range Northern	J2EW0001	J2EW0001_F21	N	09-27-2021	Ground Water	179	234
J2 Range Northern	MW-704M2	MW-704M2_F21	N	09-23-2021	Ground Water	217.8	227.8
J2 Range Northern	MW-704M1	MW-704M1_F21	N	09-23-2021	Ground Water	244	254
J2 Range Northern	MW-340M2	MW-340M2_F21	N	09-23-2021	Ground Water	215.83	225.08
J2 Range Northern	MW-340M1	MW-340M1_F21	N	09-23-2021	Ground Water	255.85	265.85
J2 Range Northern	MW-296M2	MW-296M2_F21	N	09-21-2021	Ground Water	214.98	224.98
J2 Range Northern	MW-296M1	MW-296M1_F21	N	09-21-2021	Ground Water	255.08	265.08
J2 Range Northern	MW-289M2	MW-289M2_F21	N	09-20-2021	Ground Water	162	172
J2 Range Northern	MW-289M2	MW-289M2_F21D	FD	09-20-2021	Ground Water	162	172
J2 Range Northern	MW-289M1	MW-289M1_F21	N	09-20-2021	Ground Water	305	315
J2 Range Northern	MW-345M2	MW-345M2_F21	N	09-20-2021	Ground Water	236.62	246.62
J2 Range Northern	MW-613M2	MW-613M2_F21	N	09-17-2021	Ground Water	246.1	256.1
J2 Range Northern	MW-613M1	MW-613M1_F21	N	09-17-2021	Ground Water	267.1	277.1
J2 Range Northern	MW-330M2	MW-330M2_F21	N	09-17-2021	Ground Water	238.01	248.04
J2 Range Northern	MW-330M1	MW-330M1_F21	N	09-17-2021	Ground Water	313.1	323.1
J2 Range Northern	MW-327M2	MW-327M2_F21	N	09-16-2021	Ground Water	265.01	275.01
J2 Range Northern	MW-327M1	MW-327M1_F21	N	09-16-2021	Ground Water	296.06	306.04
J2 Range Northern	J2EW3-MW-2-B	J2EW3-MW-2-B_F21	N	09-15-2021	Ground Water	216.16	226.16
J2 Range Northern	J2EW3-MW-2-C	J2EW3-MW-2-C_F21	N	09-15-2021	Ground Water	251.13	261.13
J2 Range Northern	J2EW2-MW2-B	J2EW2-MW2-B_F21	N	09-15-2021	Ground Water	209.79	219.79
J2 Range Northern	J2EW2-MW2-C	J2EW2-MW2-C_F21	N	09-15-2021	Ground Water	243.83	253.81
J2 Range Northern	MW-612M2	MW-612M2_F21	N	09-14-2021	Ground Water	267	277
J2 Range Northern	MW-612M1	MW-612M1_F21	N	09-14-2021	Ground Water	297	307
Central Impact Area	CIA2-EFF	CIA2-EFF-92A	N	09-14-2021	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-92A	N	09-14-2021	Process Water	0	0
Central Impact Area	CIA2-MID1	CIA2-MID1-92A	N	09-14-2021	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-92A	N	09-14-2021	Process Water	0	0
J2 Range Northern	MW-305M1	MW-305M1_F21	N	09-14-2021	Ground Water	202.82	212.82
Central Impact Area	CIA1-EFF	CIA1-EFF-92A	N	09-14-2021	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-92A	N	09-14-2021	Process Water	0	0
J2 Range Northern	MW-703M2	MW-703M2_F21	N	09-14-2021	Ground Water	224.1	234.1
J2 Range Northern	MW-703M2	MW-703M2_F21D	FD	09-14-2021	Ground Water	224.1	234.1
Central Impact Area	CIA3-EFF	CIA3-EFF-63A	N	09-14-2021	Process Water	0	0
J2 Range Northern	MW-703M1	MW-703M1_F21	N	09-14-2021	Ground Water	248	258
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-186A	N	09-13-2021	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-186A	N	09-13-2021	Process Water	0	0
J2 Range Northern	MW-302M2	MW-302M2_F21	N	09-13-2021	Ground Water	194.35	204.43
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-186A	N	09-13-2021	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-186A	N	09-13-2021	Process Water	0	0
Demolition Area 1	D1LE-EFF	D1LE-EFF-62A	N	09-13-2021	Process Water	0	0
Demolition Area 1	D1LE-MID2	D1LE-MID2-62A	N	09-13-2021	Process Water	0	0
Demolition Area 1	D1LE-MID1	D1LE-MID1-62A	N	09-13-2021	Process Water	0	0
Demolition Area 1	D1LE-INF	D1LE-INF-62A	N	09-13-2021	Process Water	0	0
Demolition Area 1	D1-EFF	D1-EFF-134A	N	09-13-2021	Process Water	0	0
Demolition Area 1	D1-MID-2	D1-MID-2-134A	N	09-13-2021	Process Water	0	0
Demolition Area 1	D1-MID-1	D1-MID-1-134A	N	09-13-2021	Process Water	0	0

TABLE 1
Sampling Progress: 1 to 30 September 2021

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
Demolition Area 1	D1-INF	D1-INF-134A	N	09-13-2021	Process Water	0	0
J2 Range Northern	MW-622M2	MW-622M2_F21	N	09-13-2021	Ground Water	220.4	230.4
J2 Range Northern	MW-586M2	MW-586M2_F21	N	09-09-2021	Ground Water	211	221
J1 Range Southern	J1S-EFF	J1S-EFF-166A	N	09-09-2021	Process Water	0	0
J1 Range Southern	J1S-MID	J1S-MID-166A	N	09-09-2021	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-166A	N	09-09-2021	Process Water	0	0
J2 Range Northern	MW-586M1	MW-586M1_F21	N	09-09-2021	Ground Water	237	247
J2 Range Northern	MW-586M1	MW-586M1_F21D	FD	09-09-2021	Ground Water	237	247
J3 Range	J3-EFF	J3-EFF-180A	N	09-09-2021	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-180A	N	09-09-2021	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-180A	N	09-09-2021	Process Water	0	0
J3 Range	J3-INF	J3-INF-180A	N	09-09-2021	Process Water	0	0
J2 Range Northern	MW-589M2	MW-589M2_F21	N	09-09-2021	Ground Water	211	221
J2 Range Northern	MW-589M2	MW-589M2_F21D	FD	09-09-2021	Ground Water	211	221
J2 Range Northern	MW-589M1	MW-589M1_F21	N	09-09-2021	Ground Water	240	250
J2 Range Northern	MW-293M2	MW-293M2_F21	N	09-08-2021	Ground Water	196.42	206.42
J2 Range Northern	MW-621M2	MW-621M2_F21	N	09-08-2021	Ground Water	219.4	229.4
J2 Range Northern	MW-621M2	MW-621M2_F21D	FD	09-08-2021	Ground Water	219.4	229.4
J2 Range Northern	MW-621M1	MW-621M1_F21	N	09-08-2021	Ground Water	249.4	259.4
J2 Range Northern	MW-588M2	MW-588M2_F21	N	09-08-2021	Ground Water	198	208
J2 Range Northern	MW-588M1	MW-588M1_F21	N	09-08-2021	Ground Water	238	248
J2 Range Northern	MW-348M2	MW-348M2_F21	N	09-07-2021	Ground Water	206.54	216.54
Central Impact Area	CIA1-EFF	CIA1-EFF-92A	N	09-07-2021	Process Water	0	0
J2 Range Northern	MW-632M2	MW-632M2_F21	N	09-07-2021	Ground Water	229.5	239.5
Central Impact Area	CIA1-MID2	CIA1-MID2-92A	N	09-07-2021	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-92A	N	09-07-2021	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-92A	N	09-07-2021	Process Water	0	0
J2 Range Northern	MW-632M1	MW-632M1_F21	N	09-07-2021	Ground Water	254.5	264.5
Central Impact Area	CIA3-EFF	CIA3-EFF-63A	N	09-07-2021	Process Water	0	0
Central Impact Area	CIA3-MID2	CIA3-MID2-63A	N	09-07-2021	Process Water	0	0
J2 Range Northern	MW-640M2	MW-640M2_F21	N	09-07-2021	Ground Water	216	226
Central Impact Area	CIA3-MID1	CIA3-MID1-63A	N	09-07-2021	Process Water	0	0
Central Impact Area	CIA3-INF	CIA3-INF-63A	N	09-07-2021	Process Water	0	0
J2 Range Northern	MW-640M1	MW-640M1_F21	N	09-07-2021	Ground Water	246	256
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-156A	N	09-02-2021	Process Water	0	0
J2 Range Northern	MW-630M1	MW-630M1_F21	N	09-02-2021	Ground Water	217	227
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-156A	N	09-02-2021	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-156A	N	09-02-2021	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-156A	N	09-02-2021	Process Water	0	0
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-156A	N	09-02-2021	Process Water	0	0
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-156A	N	09-02-2021	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-156A	N	09-02-2021	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-156A	N	09-02-2021	Process Water	0	0
J2 Range Northern	MW-318M2	MW-318M2_F21	N	09-02-2021	Ground Water	205.8	215.82
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-156A	N	09-02-2021	Process Water	0	0
J2 Range Northern	MW-318M1	MW-318M1_F21	N	09-02-2021	Ground Water	305.79	315.81
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-156A	N	09-02-2021	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-156A	N	09-02-2021	Process Water	0	0
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-156A	N	09-02-2021	Process Water	0	0
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-156A	N	09-02-2021	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-156A	N	09-02-2021	Process Water	0	0
J2 Range Northern	J2EW3-MW1-B	J2EW3-MW1-B_F21	N	09-02-2021	Ground Water	210.66	220.66
J2 Range Northern	J2EW3-MW1-C	J2EW3-MW1-C_F21	N	09-02-2021	Ground Water	245.66	255.66
J2 Range Northern	J2EW2-MW3-B	J2EW2-MW3-B_F21	N	09-02-2021	Ground Water	212.65	222.65
J2 Range Northern	J2EW2-MW3-C	J2EW2-MW3-C_F21	N	09-02-2021	Ground Water	246	256
J2 Range Northern	MW-620M1	MW-620M1_F21	N	09-01-2021	Ground Water	268.6	278.6
J2 Range Northern	MW-619M2	MW-619M2_F21	N	09-01-2021	Ground Water	234.1	244.1
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-180A	N	09-01-2021	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-180A	N	09-01-2021	Process Water	0	0

TABLE 1
Sampling Progress: 1 to 30 September 2021

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-MID-1G	J2N-MID-1G-180A	N	09-01-2021	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-180A	N	09-01-2021	Process Water	0	0
J2 Range Northern	MW-619M1	MW-619M1_F21	N	09-01-2021	Ground Water	255.1	265.1
J2 Range Northern	MW-702M2	MW-702M2_F21	N	09-01-2021	Ground Water	208.1	218.1
J2 Range Northern	MW-702M1	MW-702M1_F21	N	09-01-2021	Ground Water	277.5	287.5
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-180A	N	09-01-2021	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-180A	N	09-01-2021	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-180A	N	09-01-2021	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-180A	N	09-01-2021	Process Water	0	0
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-180A	N	09-01-2021	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-180A	N	09-01-2021	Process Water	0	0
J2 Range Northern	MW-331M2	MW-331M2_F21	N	09-01-2021	Ground Water	195.27	205.27
J1 Range Northern	J1N-EFF	J1N-EFF-95A	N	09-01-2021	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-95A	N	09-01-2021	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-95A	N	09-01-2021	Process Water	0	0
J1 Range Northern	J1N-INF2	J1N-INF2-95A	N	09-01-2021	Process Water	0	0
J2 Range Northern	MW-331M1	MW-331M1_F21	N	09-01-2021	Ground Water	235.41	245.41

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received September 2021

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-732M2	MW-732M2_S21	96.2	106.2	08-31-2021	SW6850	Perchlorate	0.37		µg/L	2.0		0.086	0.20
Demolition Area 1	MW-732M1	MW-732M1_S21	156	166	08-31-2021	SW6850	Perchlorate	0.098	J	µg/L	2.0		0.086	0.20
Demolition Area 1	MW-730M3	MW-730M3_S21	115.5	125.5	08-31-2021	SW6850	Perchlorate	2.2		µg/L	2.0	X	0.086	0.20
Demolition Area 1	MW-730M2	MW-730M2_S21	165.9	175.9	08-31-2021	SW6850	Perchlorate	28.0		µg/L	2.0	X	0.43	1.0
Demolition Area 1	MW-730M2	MW-730M2_S21	165.9	175.9	08-31-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.4		µg/L	0.60	X	0.034	0.20
Demolition Area 1	MW-730M1	MW-730M1_S21	185.8	195.8	08-30-2021	SW6850	Perchlorate	2.5		µg/L	2.0	X	0.086	0.20
Demolition Area 1	MW-731M3	MW-731M3_S21	160.1	170.1	08-30-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.056	J	µg/L	400		0.036	0.20
Demolition Area 1	MW-731M3	MW-731M3_S21	160.1	170.1	08-30-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.1		µg/L	0.60	X	0.034	0.20
Demolition Area 1	MW-731M3	MW-731M3_S21	160.1	170.1	08-30-2021	SW6850	Perchlorate	2.2		µg/L	2.0	X	0.086	0.20
Demolition Area 1	MW-731M2	MW-731M2_S21	190.9	200.9	08-30-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.18	J	µg/L	0.60		0.034	0.20
Demolition Area 1	MW-731M2	MW-731M2_S21	190.9	200.9	08-30-2021	SW6850	Perchlorate	3.4		µg/L	2.0	X	0.086	0.20
Demolition Area 1	MW-731M1	MW-731M1_S21	220.8	230.8	08-30-2021	SW6850	Perchlorate	0.84		µg/L	2.0		0.086	0.20
J3 Range	MW-576M2	MW-576M2_F21	133.9	143.9	08-10-2021	SW6850	Perchlorate	0.40		µg/L	2.0		0.086	0.20
J3 Range	MW-576M2	MW-576M2_F21D	133.9	143.9	08-10-2021	SW6850	Perchlorate	0.41		µg/L	2.0		0.086	0.20
J3 Range	MW-576M1	MW-576M1_F21	173.9	183.9	08-10-2021	SW6850	Perchlorate	0.13	J	µg/L	2.0		0.086	0.20
J3 Range	90MP0059B	90MP0059B_F21	116.39	118.89	08-09-2021	SW6850	Perchlorate	0.33	J	µg/L	2.0		0.086	0.20
J3 Range	MW-198M4	MW-198M4_F21	70	75	08-05-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.11	J	µg/L	0.60		0.034	0.20
J3 Range	MW-198M4	MW-198M4_F21	70	75	08-05-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.42		µg/L	400		0.036	0.20
J3 Range	MW-198M4	MW-198M4_F21	70	75	08-05-2021	SW6850	Perchlorate	0.22		µg/L	2.0		0.086	0.20
J3 Range	MW-198M3	MW-198M3_F21	100	105	08-05-2021	SW6850	Perchlorate	0.36		µg/L	2.0		0.086	0.20
J3 Range	MW-198M2	MW-198M2_F21	120	125	08-05-2021	SW6850	Perchlorate	1.1		µg/L	2.0		0.086	0.20
J3 Range	MW-193S	MW-193S_F21	32.5	37.5	08-04-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.71	J	µg/L	0.60	X	0.034	0.20
J3 Range	MW-197M3	MW-197M3_F21	60.2	65.2	08-02-2021	SW8330	4-Amino-2,6-dinitrotoluene	0.080	J	µg/L	7.3		0.027	0.20
J3 Range	MW-197M3	MW-197M3_F21	60.2	65.2	08-02-2021	SW6850	Perchlorate	0.16	J	µg/L	2.0		0.086	0.20
J3 Range	MW-197M3	MW-197M3_F21	60.2	65.2	08-02-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.047	J	µg/L	400		0.036	0.20
J3 Range	MW-197M3	MW-197M3_F21	60.2	65.2	08-02-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.27	J	µg/L	0.60		0.034	0.20
J3 Range	MW-197M2	MW-197M2_F21	80.2	85.2	08-02-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.3		µg/L	400		0.036	0.20
J3 Range	MW-197M2	MW-197M2_F21D	80.2	85.2	08-02-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.3		µg/L	400		0.036	0.20
J3 Range	MW-636M2	MW-636M2_F21	110.5	120.5	07-29-2021	SW6850	Perchlorate	0.088	J	µg/L	2.0		0.086	0.20
J3 Range	MW-653M1	MW-653M1_F21	147.5	157.5	07-29-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.054	J	µg/L	400		0.036	0.20
J3 Range	MW-653M1	MW-653M1_F21	147.5	157.5	07-29-2021	SW6850	Perchlorate	0.12	J	µg/L	2.0		0.086	0.20
J3 Range	MW-232M2	MW-232M2_F21	61	66	07-28-2021	SW6850	Perchlorate	0.36		µg/L	2.0		0.086	0.20
J3 Range	MW-232M1	MW-232M1_F21	77.5	82.5	07-28-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.35		µg/L	0.60		0.034	0.20
J3 Range	MW-232M1	MW-232M1_F21	77.5	82.5	07-28-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.096	J	µg/L	400		0.036	0.20
J3 Range	MW-232M1	MW-232M1_F21	77.5	82.5	07-28-2021	SW6850	Perchlorate	0.23		µg/L	2.0		0.086	0.20
J3 Range	MW-232M1	MW-232M1_F21D	77.5	82.5	07-28-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.095	J	µg/L	400		0.036	0.20
J3 Range	MW-232M1	MW-232M1_F21D	77.5	82.5	07-28-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.35		µg/L	0.60		0.034	0.20
J3 Range	MW-142M2	MW-142M2_F21	140	150	07-27-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.15	J	µg/L	0.60		0.034	0.20
J3 Range	MW-143M3	MW-143M3_F21	107	112	07-26-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.4		µg/L	0.60	X	0.034	0.20
J3 Range	MW-143M1	MW-143M1_F21	144	154	07-26-2021	SW6850	Perchlorate	0.22		µg/L	2.0		0.086	0.20
J3 Range	MW-155M1	MW-155M1_F21	124	134	07-23-2021	SW6850	Perchlorate	0.23		µg/L	2.0		0.086	0.20
J3 Range	MW-329M2	MW-329M2_F21	150.05	160.05	07-23-2021	SW6850	Perchlorate	1.6		µg/L	2.0		0.086	0.20
J3 Range	MW-329M2	MW-329M2_F21D	150.05	160.05	07-23-2021	SW6850	Perchlorate	1.7		µg/L	2.0		0.086	0.20
J3 Range	MW-329M1	MW-329M1_F21	179.96	189.96	07-23-2021	SW6850	Perchlorate	0.27		µg/L	2.0		0.086	0.20

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

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received September 2021

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
J3 Range	MW-227M3	MW-227M3_F21	65	75	07-21-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.063	J	µg/L	0.60		0.034	0.20
J3 Range	MW-227M2	MW-227M2_F21	110	120	07-21-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.14	J	µg/L	400		0.036	0.20
J3 Range	MW-227M2	MW-227M2_F21	110	120	07-21-2021	SW6850	Perchlorate	0.74		µg/L	2.0		0.086	0.20
J3 Range	MW-227M2	MW-227M2_F21D	110	120	07-21-2021	SW6850	Perchlorate	0.75		µg/L	2.0		0.086	0.20
J3 Range	MW-227M1	MW-227M1_F21	130	140	07-21-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.16	J	µg/L	0.60		0.034	0.20
J3 Range	90MW0054	90MW0054_F21	107	112	07-20-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.33	J	µg/L	0.60		0.034	0.20
J3 Range	90MW0054	90MW0054_F21	107	112	07-20-2021	SW6850	Perchlorate	0.19	J	µg/L	2.0		0.086	0.20
J3 Range	90MW0054	90MW0054_F21	107	112	07-20-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2.0		µg/L	400		0.036	0.20
J3 Range	90MW0054	90MW0054_F21D	107	112	07-20-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.36	J	µg/L	0.60		0.034	0.20
J3 Range	90MW0054	90MW0054_F21D	107	112	07-20-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2.0		µg/L	400		0.036	0.20
J3 Range	MW-247M1	MW-247M1_F21	180	190	07-20-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.11	J	µg/L	0.60		0.034	0.20
J3 Range	MW-250M3	MW-250M3_F21	95	105	07-15-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.21		µg/L	0.60		0.034	0.20
J3 Range	MW-250M3	MW-250M3_F21	95	105	07-15-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.092	J	µg/L	400		0.036	0.20
J3 Range	MW-250M3	MW-250M3_F21D	95	105	07-15-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.084	J	µg/L	400		0.036	0.20
J3 Range	MW-250M3	MW-250M3_F21D	95	105	07-15-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.20		µg/L	0.60		0.034	0.20
J3 Range	MW-250M2	MW-250M2_F21	145	155	07-15-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.33		µg/L	400		0.036	0.20
J3 Range	MW-250M2	MW-250M2_F21	145	155	07-15-2021	SW6850	Perchlorate	0.85		µg/L	2.0		0.086	0.20
J3 Range	MW-250M2	MW-250M2_F21	145	155	07-15-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.11	J	µg/L	0.60		0.034	0.20
J3 Range	MW-250M2	MW-250M2_F21D	145	155	07-15-2021	SW6850	Perchlorate	0.88		µg/L	2.0		0.086	0.20
J3 Range	MW-250M2	MW-250M2_F21D	145	155	07-15-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.097	J	µg/L	0.60		0.034	0.20
J3 Range	MW-250M2	MW-250M2_F21D	145	155	07-15-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.34		µg/L	400		0.036	0.20
J3 Range	MW-250M1	MW-250M1_F21	185	195	07-15-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.039	J	µg/L	0.60		0.034	0.20
J3 Range	MW-250M1	MW-250M1_F21	185	195	07-15-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.085	J	µg/L	400		0.036	0.20
J3 Range	MW-163S	MW-163S_F21	38	48	07-14-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.12	J	µg/L	400		0.036	0.20
J3 Range	MW-163S	MW-163S_F21	38	48	07-14-2021	SW6850	Perchlorate	3.1		µg/L	2.0	X	0.086	0.20
J3 Range	MW-163S	MW-163S_F21	38	48	07-14-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.4		µg/L	0.60	X	0.034	0.20
J3 Range	MW-163S	MW-163S_F21D	38	48	07-14-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.12	J	µg/L	400		0.036	0.20
J3 Range	MW-163S	MW-163S_F21D	38	48	07-14-2021	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.4		µg/L	0.60	X	0.034	0.20
J3 Range	MW-157M3	MW-157M3_F21	70	80	07-14-2021	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.055	J	µg/L	400		0.036	0.20

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

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

Location	D1-INF	FPR-2-INF	MW-258M1	MW-663D	PR-INF
Field Sample ID	D1-INF_PFAS19	FPR-2-INF_PFAS19	MW-258M1_PFAS19	MW-663D_PFAS19	PR-INF_PFAS19
Sampling Depth	0.00 - 0.00	0.00 - 0.00	109.00 - 119.00	240.60 - 250.60	0.00 - 0.00
Sampling Date	06/24/2019	06/25/2019	06/19/2019	06/24/2019	06/25/2019
SDG	320517141	320517141	320515981	320517141	320517141
Sample Type	Normal	Normal	Normal	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	18.0 U	19.0 U	20.0 U	20.0 U	20.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.10 U	9.50 U	9.80 U	9.80 U	9.80 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.10 U	9.50 U	9.80 U	9.80 U	9.80 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.10 U	9.50 U	9.80 U	9.80 U	9.80 U
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
Perfluorooctane sulfonate (PFOS)	2.70 U	2.80 U	2.90 U	3.00 U	2.90 U
Perfluorooctanesulfonamide (PFOSA)	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 (PFTTrDA)	2.70 U	2.80 U	2.90 U	3.00 U	2.90 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.50 U	1.20 J	1.50 U
†PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.00	0.00	0.00	3.20	0.00
§Sum of All Compounds Collected	0.00	0.00	0.00	4.86	0.00

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 J1 Range Northern

Location	J1N-INF2	J1N-INF2	MW-136S	MW-564M1	MW-590M2
Field Sample ID	J1N-INF2_PFA19	J1N-INF2_PFA19R	MW-136S_PFA19	MW-564M1_PFA19	MW-590M2_PFA19
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
Perfluorooctane sulfonate (PFOS)	4.90	2.90 U	1.40 J	2.80 U	2.90 U
Perfluorooctanesulfonamide (PFOSA)	1.80 J	2.90 U	2.90 U	2.80 U	2.90 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	2.40	1.40 U	1.40 U
Perfluoropentanoic acid (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	3.80	0.00	0.00
§Sum of All Compounds Collected	6.70	0.00	4.79	0.00	0.00

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 J2 Range Eastern

Location	J2E-INF-I	J2E-INF-J	J2E-INF-K	MW-307M3	MW-307M3	MW-368M1
Field Sample ID	J2E-INF-I_PFAS19	J2E-INF-J_PFAS19	J2E-INF-K_PFAS19	MW-307M3_PFAS19	MW-307M3_PFAS19D	MW-368M1_PFAS19
Sampling Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	125.80 - 135.82	125.80 - 135.82	237.35 - 247.35
Sampling Date	06/20/2019	06/20/2019	06/20/2019	06/18/2019	06/18/2019	06/18/2019
SDG	320515981	320515981	320515981	320514662	320514662	320514662
Sample Type	Normal	Normal	Normal	Normal	Field Duplicate	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	19.0 U	19.0 U	20.0 U	18.0 U	19.0 U	17.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.70 U	9.30 U	9.80 U	9.00 U	9.60 U	8.50 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.70 U	9.30 U	9.80 U	9.00 U	9.60 U	8.50 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.70 U	9.30 U	9.80 U	9.00 U	9.60 U	8.50 U
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
Perfluorooctane sulfonate (PFOS)	2.90 U	2.80 U	2.90 U	2.70 U	2.90 U	2.60 U
Perfluorooctanesulfonamide (PFOSA)	2.90 U	2.80 U	2.90 U	2.70 U	2.90 U	2.60 U
Perfluorooctanoic acid (PFOA)	1.50 U	1.40 U	1.50 U	1.30 U	1.40 U	1.30 U
Perfluoropentanoic acid (PFPeA)	0.970 U	0.930 U	0.980 U	0.900 U	0.960 U	0.850 U
Perfluorotetradecanoic acid (PFTeDA)	2.90 U	2.80 U	2.90 U	2.70 U	2.90 U	2.60 U
Perfluorotridecanoic acid (PFTTrDA)	2.90 U	2.80 U	2.90 U	2.70 U	2.90 U	2.60 U
Perfluoroundecanoic acid (PFUnA)	1.50 U	1.40 U	1.50 U	1.30 U	1.40 U	4.90
†PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00	0.00	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.00	0.00	0.00	0.880	0.730	2.05
§Sum of All Compounds Collected	0.00	0.00	0.00	0.880	0.730	7.40

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 J2 Range Eastern

	Location	MW-368M2	MW-667M1
	Field Sample ID	MW-368M2_PFAS19	MW-667M1_PFAS19
	Sampling Depth	202.73 - 212.73	302.30 - 312.30
	Sampling Date	06/18/2019	06/17/2019
	SDG	320514662	320514661
	Sample Type	Normal	Normal
PFAS 21 Cmps		Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)		18.0 U	18.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		8.80 U	9.00 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		8.80 U	9.00 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		8.80 U	9.00 U
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
Perfluorooctane sulfonate (PFOS)		2.60 U	2.70 U
Perfluorooctanesulfonamide (PFOSA)		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)	0.800	7.10
	§Sum of All Compounds Collected	3.20	8.70

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 J2 Range Northern

Location	J2EW0001	J2EW0002	J2N-INF-E	J2N-INF-F	J2N-INF-F	J2N-INF-G
Field Sample ID	J2EW0001_PFAS19	J2EW0002_PFAS19	J2N-INF-E_PFAS19	J2N-INF-F_PFAS19	J2N-INF-F_PFAS19R	J2N-INF-G_PFAS19
Sampling Depth	179.00 - 234.00	198.00 - 233.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Sampling Date	11/20/2019	11/20/2019	06/18/2019	06/18/2019	07/30/2019	07/30/2019
SDG	320565491	320565491	320514662	320514662	320528231	320528231
Sample Type	Normal	Normal	Normal	Normal	Normal	Normal
PFAS 21 Cmps	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	19.0 U	40.0 U	19.0 U	19.0 U	19.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	19.0 U	20.0 U	9.30 U	9.30 U	9.60 U	9.70 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.60 U	10.0 U	9.30 U	9.30 U	9.60 U	9.70 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.60 U	10.0 U	9.30 U	9.30 U	9.60 U	9.70 U
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
Perfluorooctane sulfonate (PFOS)	2.90 U	1.30 J	2.80 U	2.80 U	1.10 J	2.90 U
Perfluorooctanesulfonamide (PFOSA)	2.90 U	3.00 U	2.80 U	2.80 U	2.90 U	2.90 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.50 J	1.40 U	1.70 J	1.50 J	1.50 U
Perfluoropentanoic acid (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	14.8	0.00	12.5	12.6	0.00
§Sum of All Compounds Collected	0.00	17.4	0.00	15.0	15.4	4.90

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 J2 Range Northern

	Location	MW-234M2	MW-313M1	MW-587M2
	Field Sample ID	MW-234M2_PFAS19	MW-313M1_PFAS19	MW-587M2_PFAS19
	Sampling Depth	110.00 - 120.00	255.40 - 265.40	220.00 - 230.00
	Sampling Date	06/17/2019	06/19/2019	06/19/2019
	SDG	320514661	320515981	320515981
	Sample Type	Normal	Normal	Normal
PFAS 21 Cmps		Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)		18.0 U	20.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		8.80 U	9.80 U	9.70 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		8.80 U	9.80 U	9.70 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		8.80 U	9.80 U	9.70 U
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
Perfluorooctane sulfonate (PFOS)		1.90 J	2.90 U	2.90 U
Perfluorooctanesulfonamide (PFOSA)		2.60 U	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)	3.05	2.30	0.00
	§Sum of All Compounds Collected	3.05	5.08	0.00

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 J3 Range

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

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 J3 Range

Location	MW-250M2
Field Sample ID	MW-250M2_PFAS19
Sampling Depth	145.00 - 155.00
Sampling Date	06/20/2019
SDG	320515981
Sample Type	Normal
PFAS 21 Cmps	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.70 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.70 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.70 U
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
Perfluorooctane sulfonate (PFOS)	2.90 U
Perfluorooctanesulfonamide (PFOSA)	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 Collected	0.710

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 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
Perfluorooctane sulfonate (PFOS)		2.90 U	2.80 U	2.90 U	2.80 U	2.80 U	2.90 U
Perfluorooctanesulfonamide (PFOSA)		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 (PFTTrDA)		2.90 U	2.80 U	2.90 U	2.80 U	2.80 U	2.90 U
Perfluoroundecanoic acid (PFUnA)		1.40 U	1.40 U	1.50 U	1.40 U	1.40 U	2.80
	†PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00	0.00	0.00
	‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.360	0.00	0.00	0.00	0.700	0.700
	§Sum of All Compounds Collected	1.28	0.670	17.9	0.00	9.55	5.61

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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)	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	
Perfluorooctane sulfonate (PFOS)	2.70 U	3.00 U	3.00 U	2.90 U	2.90 U	2.80 U	
Perfluorooctanesulfonamide (PFOSA)	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 (PFTTrDA)	2.70 U	3.00 U	3.00 U	2.90 U	2.90 U	2.80 U	
Perfluoroundecanoic acid (PFUnA)	1.30 U	1.00 J	13.0	6.90	5.90	2.50	
†PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00	0.00	0.00	
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	4.20	2.45	6.80	6.20	5.90	5.90	
§Sum of All Compounds Collected	5.12	3.89	21.0	13.7	12.4	9.27	

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 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
Perfluorooctane sulfonate (PFOS)		2.90 U	2.80 U	2.80 U
Perfluorooctanesulfonamide (PFOSA)		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)	2.93	2.35	0.00
	§Sum of All Compounds Collected	4.68	8.76	0.00

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 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
Perfluorooctane sulfonate (PFOS)	3.00 U	2.80 U	2.80 U	2.90 U	2.80 U	2.80 U
Perfluorooctanesulfonamide (PFOSA)	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 (PFTTrDA)	3.00 U	2.80 U	2.80 U	2.90 U	1.50 J	1.90 J
Perfluoroundecanoic acid (PFUnA)	1.50 U	1.40 U	1.40 U	1.50 U	25.0	28.0
†PFOS + PFOA (EPA)	1.70	1.70	0.00	0.00	0.00	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	12.4	11.9	0.00	0.00	6.90	6.00
§Sum of All Compounds Collected	14.6	14.2	0.00	0.00	40.8	43.5

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 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)	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	
Perfluorooctane sulfonate (PFOS)	2.90 U	2.70 U	2.80 U	2.80 U	2.70 U	2.90 U	
Perfluorooctanesulfonamide (PFOSA)	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 (PFTTrDA)	2.90 U	0.880 J	2.80 U	2.80 U	2.70 U	2.90 U	
Perfluoroundecanoic acid (PFUnA)	8.50	9.20	4.80	22.0	1.40 J	8.10	
	‡PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00	0.00	0.00
	‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	7.00	5.90	2.46	3.80	3.80	2.50
	§Sum of All Compounds Collected	16.9	17.5	8.42	28.9	5.20	15.0

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	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)	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	
Perfluorooctane sulfonate (PFOS)	2.80 U	2.90 U	2.80 U	2.80 U	2.80 U	2.70 U	
Perfluorooctanesulfonamide (PFOSA)	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 (PFTTrDA)	2.80 U	2.90 U	2.80 U	2.80 U	2.80 U	2.70 U	
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	
	†PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00	0.00	0.600
	‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.00	0.00	0.00	0.00	0.00	0.600
	§Sum of All Compounds Collected	0.490	0.490	0.00	0.420	3.60	1.20

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	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)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	19.0 U	19.0 U	19.0 U	19.0 U	19.0 U	19.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.40 U	9.60 U	9.40 U	9.30 U	9.40 U	9.60 U	
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.40 U	9.60 U	9.40 U	9.30 U	9.40 U	9.60 U	
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.40 U	9.60 U	9.40 U	9.30 U	9.40 U	9.60 U	
Perfluorobutanesulfonic acid (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	
Perfluorooctane sulfonate (PFOS)	2.80 U	2.90 U	2.80 U	2.80 U	2.80 U	2.90 U	
Perfluorooctanesulfonamide (PFOSA)	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 (PFTTrDA)	2.80 U	2.90 U	2.80 U	2.80 U	2.80 U	2.90 U	
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	
	†PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00	0.00	0.00
	‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.00	0.00	0.00	0.00	0.00	0.00
	§Sum of All Compounds Collected	0.00	0.440	0.00	0.400	0.00	0.420

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	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
Perfluorooctane sulfonate (PFOS)		2.80 U	2.80 U	2.70 U	2.90 U	2.80 U	2.80 U
Perfluorooctanesulfonamide (PFOSA)		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 (PFTTrDA)		2.80 U	2.80 U	2.70 U	2.90 U	2.80 U	2.80 U
Perfluoroundecanoic acid (PFUnA)		1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
	†PFOS + PFOA (EPA)	0.00	0.00	0.00	0.00	0.00	0.00
	‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.00	0.00	0.00	0.00	0.360	0.00
	§Sum of All Compounds Collected	17.5	0.450	0.00	0.00	0.990	0.00

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 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
Perfluorooctane sulfonate (PFOS)		2.70 U	2.70 U	2.90 U	2.80 U
Perfluorooctanesulfonamide (PFOSA)		1.30 J	2.20 J	2.90 U	2.80 U
Perfluorooctanoic acid (PFOA)		1.40 U	1.40 U	1.50 U	1.40 U
Perfluoropentanoic acid (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	2.50	1.50	2.79
	§Sum of All Compounds Collected	7.60	5.53	5.00	3.19

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 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)	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	
Perfluorooctane sulfonate (PFOS)	2.80 U	2.80 U	4.90	5.00	16.0	2.90 U	
Perfluorooctanesulfonamide (PFOSA)	2.80 U	2.80 U	2.90 U	2.90 U	2.80 U	2.90 U	
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	0.840 J	0.940 J	0.510 J	1.40 U	
Perfluoropentanoic acid (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 (PFTTrDA)	2.80 U	2.80 U	2.90 U	2.90 U	2.80 U	2.90 U	
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.50 U	1.50 U	1.40 U	1.40 U	
	†PFOS + PFOA (EPA)	0.00	0.00	5.74	5.94	16.5	0.00
	‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	26.0	4.20	5.74	5.94	16.5	0.00
	§Sum of All Compounds Collected	27.2	4.82	6.74	7.40	16.5	1.06

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	Location	MW-193S	MW-196M1	MW-196S	MW-197M1	MW-197M2	MW-197M3
	Field Sample ID	MW-193S_F20	MW-196M1_F20	MW-196S_F20	MW-197M1_F20	MW-197M2_F20	MW-197M3_F20D
	Sampling Depth	32.50 - 37.50	45.00 - 50.00	32.00 - 37.00	120.00 - 125.00	80.20 - 85.20	60.20 - 65.20
	Sampling Date	07/16/2020	07/23/2020	07/23/2020	07/20/2020	07/20/2020	07/20/2020
	SDG	320627321	320630121	320630121	320629171	320629171	320629171
	Sample Type	Normal	Normal	Normal	Normal	Normal	Field Duplicate
PFAS 21 Cmps		Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)		18.0 U	18.0 U	18.0 U	19.0 U	19.0 U	18.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		9.20 U	9.20 U	9.00 U	9.40 U	9.30 U	9.20 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		9.20 U	9.20 U	9.00 U	9.40 U	9.30 U	9.20 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		9.20 U	9.20 U	9.00 U	9.40 U	9.30 U	9.20 U
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
Perfluorooctane sulfonate (PFOS)		2.80 U	1.10 J	3.80	2.80 U	10.0	2.80 U
Perfluorooctanesulfonamide (PFOSA)		2.80 U	2.80 U	2.70 U	2.80 U	2.80 U	2.80 U
Perfluorooctanoic acid (PFOA)		1.40 U	2.10	1.10 J	0.550 J	3.10	1.10 J
Perfluoropentanoic acid (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 (PFTTrDA)		2.80 U	2.80 U	2.70 U	2.80 U	2.80 U	2.80 U
Perfluoroundecanoic acid (PFUnA)		1.40 U	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U
	†PFOS + PFOA (EPA)	0.00	3.20	4.90	0.550	13.1	1.10
	‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	19.0	4.75	4.90	0.550	54.1	1.10
	§Sum of All Compounds Collected	24.5	6.36	5.85	0.950	75.7	3.39

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

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	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
Perfluorooctane sulfonate (PFOS)		3.00 U	15.0
Perfluorooctanesulfonamide (PFOSA)		3.00 U	2.80 U
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)	1.10	15.8
	§Sum of All Compounds Collected	4.82	15.8

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 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
Perfluorooctane sulfonate (PFOS)		1.00 J
Perfluorooctanesulfonamide (PFOSA)		1.80 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)	14.7
	§Sum of All Compounds Collected	25.2

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 KGS 2021 J3 Range SPM Fall
 J3 Range

	Location	90EW0001	90WT0004	J3-EFF	J3EW0032	J3EWIP1	J3-INF
	Field Sample ID	90EW0001_F21	90WT0004_F21	J3-EFF_F21	J3EW0032_F21	J3EWIP1_F21	J3-INF_F21
	Sampling Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	102.00 - 152.00	153.00 - 193.00	0.00 - 0.00
	Sampling Date	07/13/2021	08/10/2021	07/13/2021	07/13/2021	07/13/2021	07/13/2021
	SDG	320762631	320775331	320762631	320762631	320762631	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)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	18.0 U	18.0 U	19.0 U	20.0 U	19.0 U	19.0 U	
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.20 U	9.20 U	9.50 U	9.80 U	9.40 U	9.50 U	
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.20 U	9.20 U	9.50 U	9.80 U	9.40 U	9.50 U	
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.20 U	9.20 U	9.50 U	9.80 U	9.40 U	9.50 U	
Perfluorobutanesulfonic acid (PFBS)	0.920 U	0.920 U	0.950 U	0.980 U	0.940 U	0.950 U	
Perfluorobutanoic acid (PFBA)	1.40 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U	
Perfluorodecanesulfonic acid (PFDS)	1.40 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U	
Perfluorodecanoic acid (PFDA)	0.920 U	0.920 U	0.950 U	0.980 U	0.940 U	0.950 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)	0.920 U	0.920 U	0.950 U	0.980 U	0.940 U	0.950 U	
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U	
Perfluorohexane sulfonate (PFHxS)	0.500 J	0.920 U	0.950 U	0.720 J	0.520 J	1.20 J	
Perfluorohexanoic acid (PFHxA)	0.920 U	0.920 U	0.950 U	0.980 U	0.940 U	0.950 U	
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U	
Perfluorooctane sulfonate (PFOS)	2.70 U	2.80 U	2.90 U	2.90 U	2.80 U	2.80 U	
Perfluorooctanesulfonamide (PFOSA)	2.70 U	2.80 U	2.90 U	2.90 U	2.80 U	2.80 U	
Perfluorooctanoic acid (PFOA)	1.40 U	1.40 U	1.40 U	1.50 U	1.40 U	1.40 U	
Perfluoropentanoic acid (PFPeA)	0.920 U	0.920 U	0.950 U	0.980 U	0.940 U	0.950 U	
Perfluorotetradecanoic acid (PFTeDA)	2.70 U	2.80 U	2.90 U	2.90 U	2.80 U	2.80 U	
Perfluorotridecanoic acid (PFTTrDA)	2.70 U	2.80 U	2.90 U	2.90 U	2.80 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	0.00	0.00	0.00	
	‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.500	0.00	0.00	0.720	0.520	
	§Sum of All Compounds Collected	0.500	0.00	0.00	0.720	0.520	

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	Location	J3EWIP2	MW-142M2	MW-142S	MW-143M1	MW-144M2	MW-145M1
	Field Sample ID	J3EWIP2_F21	MW-142M2_F21	MW-142S_F21	MW-143M1_F21	MW-144M2_F21	MW-145M1_F21
	Sampling Depth	150.50 - 170.50	140.00 - 150.00	42.00 - 52.00	144.00 - 154.00	130.00 - 140.00	125.00 - 135.00
	Sampling Date	07/13/2021	07/27/2021	07/27/2021	07/26/2021	07/27/2021	08/11/2021
	SDG	320762631	320769671	320769671	320769671	320769671	320776031
	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)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)	20.0 U	19.0 UJ	19.0 UJ	19.0 UJ	19.0 UJ	19.0 UJ	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.80 U	9.70 UJ	9.30 UJ	9.60 UJ	9.40 UJ	9.50 UJ	9.50 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.80 U	9.70 UJ	9.30 UJ	9.60 UJ	9.40 UJ	9.50 UJ	9.50 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.80 U	9.70 UJ	9.30 UJ	9.60 UJ	9.40 UJ	9.50 UJ	9.50 U
Perfluorobutanesulfonic acid (PFBS)	0.980 U	0.970 UJ	0.930 UJ	0.960 UJ	0.940 UJ	0.950 UJ	0.950 U
Perfluorobutanoic acid (PFBA)	1.50 U	1.50 UJ	1.40 UJ	1.40 UJ	1.40 UJ	1.40 UJ	1.40 U
Perfluorodecanesulfonic acid (PFDS)	1.50 U	1.50 UJ	1.40 UJ	1.40 UJ	1.40 UJ	1.40 UJ	1.40 U
Perfluorodecanoic acid (PFDA)	0.980 U	0.970 UJ	0.930 UJ	0.960 UJ	0.940 UJ	0.950 UJ	0.950 U
Perfluorododecanoic acid (PFDoA)	1.50 U	1.50 UJ	1.40 UJ	1.40 UJ	1.40 UJ	1.40 UJ	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)	0.980 U	0.970 UJ	0.930 UJ	0.960 UJ	0.940 UJ	0.950 UJ	0.950 U
Perfluoroheptanoic acid (PFHpA)	1.50 U	1.50 UJ	1.40 UJ	1.40 UJ	1.40 UJ	1.40 UJ	1.40 U
Perfluorohexane sulfonate (PFHxS)	2.80	2.80 J	0.930 UJ	0.960 UJ	0.940 UJ	0.950 UJ	0.950 U
Perfluorohexanoic acid (PFHxA)	0.980 U	0.970 UJ	0.930 UJ	0.960 UJ	0.940 UJ	0.950 UJ	0.950 U
Perfluorononanoic acid (PFNA)	1.50 U	1.50 UJ	1.40 UJ	1.40 UJ	1.40 UJ	1.40 UJ	1.40 U
Perfluorooctane sulfonate (PFOS)	2.90 U	2.90 UJ	2.80 UJ	2.90 UJ	2.80 UJ	2.90 UJ	2.90 U
Perfluorooctanesulfonamide (PFOSA)	2.90 U	2.90 UJ	2.80 UJ	2.90 UJ	2.80 UJ	2.90 UJ	2.90 U
Perfluorooctanoic acid (PFOA)	1.50 U	1.50 UJ	0.510 J	1.40 UJ	1.40 UJ	1.40 UJ	1.40 U
Perfluoropentanoic acid (PFPeA)	0.980 U	0.970 UJ	0.930 UJ	0.960 UJ	0.940 UJ	0.950 UJ	0.950 U
Perfluorotetradecanoic acid (PFTeDA)	2.90 U	2.90 UJ	2.80 UJ	2.90 UJ	2.80 UJ	2.90 UJ	2.90 U
Perfluorotridecanoic acid (PFTrDA)	2.90 U	2.90 UJ	2.80 UJ	2.90 UJ	2.80 UJ	2.90 UJ	2.90 U
Perfluoroundecanoic acid (PFUnA)	1.50 U	1.50 UJ	1.40 UJ	1.40 UJ	1.40 UJ	1.40 UJ	1.40 U
	†PFOS + PFOA (EPA)	0.00	0.00	0.510	0.00	0.00	0.00
	‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	2.80	2.80	0.510	0.00	0.00	0.00
	§Sum of All Compounds Collected	2.80	2.80	0.510	0.00	0.00	0.00

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	Location	MW-145S	MW-157M1	MW-157M2	MW-157M3	MW-163S	MW-181S
	Field Sample ID	MW-145S_F21	MW-157M1_F21	MW-157M2_F21	MW-157M3_F21	MW-163S_F21	MW-181S_F21D
	Sampling Depth	30.00 - 40.00	154.00 - 164.00	110.00 - 120.00	70.00 - 80.00	38.00 - 48.00	32.25 - 42.25
	Sampling Date	08/11/2021	07/14/2021	07/14/2021	07/14/2021	07/14/2021	08/02/2021
	SDG	320776031	320763871	320763871	320763871	320763871	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)	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	9.30 U	9.70 U	10.0 U	9.40 U	9.00 U	
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.40 U	9.30 U	9.70 U	10.0 U	9.40 U	9.00 U	
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.40 U	9.30 U	9.70 U	10.0 U	9.40 U	9.00 U	
Perfluorobutanesulfonic acid (PFBS)	0.940 U	0.930 U	9.40	1.00 U	0.940 U	0.900 U	
Perfluorobutanoic acid (PFBA)	1.40 U	1.40 U	1.50 U	1.50 U	1.40 U	1.40 U	
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	0.930 U	0.970 U	1.00 U	0.940 U	0.900 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	0.930 U	0.970 U	1.00 U	0.940 U	0.900 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)	1.50 J	0.930 U	0.720 J	1.50 J	0.450 J	0.900 U	
Perfluorohexanoic acid (PFHxA)	0.630 J	0.930 U	0.970 U	1.00 U	0.940 U	0.900 U	
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.50 U	1.50 U	1.40 U	1.40 U	
Perfluorooctane sulfonate (PFOS)	3.90	2.80 U	2.90 U	3.00 U	4.80	15.0	
Perfluorooctanesulfonamide (PFOSA)	2.80 U	2.80 U	2.90 U	3.00 U	2.80 U	2.70 U	
Perfluorooctanoic acid (PFOA)	0.760 J	1.40 U	1.50 U	0.730 J	1.10 J	1.40 U	
Perfluoropentanoic acid (PFPeA)	0.940 U	0.930 U	0.970 U	1.00 U	0.940 U	0.900 U	
Perfluorotetradecanoic acid (PFTeDA)	2.80 U	2.80 U	2.90 U	3.00 U	2.80 U	2.70 U	
Perfluorotridecanoic acid (PFTTrDA)	2.80 U	2.80 U	2.90 U	3.00 U	2.80 U	2.70 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)	4.66	0.00	0.00	0.730	5.90	15.0
	‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	6.16	0.00	0.720	2.23	6.35	15.0
	§Sum of All Compounds Collected	6.79	0.00	10.1	2.23	6.35	15.0

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	Location	MW-181S	MW-193S	MW-193S	MW-196M1	MW-196S	MW-197M2
	Field Sample ID	MW-181S_F21	MW-193S_F21	MW-193S_F21D	MW-196M1_F21	MW-196S_F21	MW-197M2_F21D
	Sampling Depth	32.25 - 42.25	32.50 - 37.50	32.50 - 37.50	45.00 - 50.00	32.00 - 37.00	80.20 - 85.20
	Sampling Date	08/02/2021	08/04/2021	08/04/2021	08/11/2021	08/11/2021	08/02/2021
	SDG	320772471	320772871	320772871	320776031	320776031	320772471
	Sample Type	Normal	Normal	Field Duplicate	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	20.0 U	18.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		9.50 U	9.40 U	9.40 U	9.60 U	10.0 U	9.20 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		9.50 U	9.40 U	9.40 U	9.60 U	10.0 U	9.20 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		9.50 U	9.40 U	9.40 U	9.60 U	10.0 U	9.20 U
Perfluorobutanesulfonic acid (PFBS)		0.950 U	0.940 U	0.940 U	0.960 U	1.00 U	0.460 J
Perfluorobutanoic acid (PFBA)		1.40 U	1.40 U	1.40 U	0.900 J	1.50 U	2.60
Perfluorodecanesulfonic acid (PFDS)		1.40 U	1.40 U	1.40 U	1.40 U	1.50 U	1.40 U
Perfluorodecanoic acid (PFDA)		0.950 U	0.940 U	0.940 U	0.960 U	1.00 U	0.920 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)		0.950 U	0.940 U	0.940 U	0.960 U	1.00 U	0.920 U
Perfluoroheptanoic acid (PFHpA)		1.40 U	1.40 U	1.40 U	1.40 U	1.50 U	3.00
Perfluorohexane sulfonate (PFHxS)		0.950 U	2.80	2.60	0.960 U	0.440 J	15.0
Perfluorohexanoic acid (PFHxA)		0.950 U	0.940 U	0.940 U	0.760 J	0.480 J	5.50
Perfluorononanoic acid (PFNA)		1.40 U	1.40 U	1.40 U	1.40 U	1.50 U	1.40 U
Perfluorooctane sulfonate (PFOS)		15.0	2.80 U	2.80 U	2.90 U	5.30 J	4.80
Perfluorooctanesulfonamide (PFOSA)		2.80 U	2.80 U	2.80 U	2.90 U	3.00 U	2.80 U
Perfluorooctanoic acid (PFOA)		1.40 U	1.40 U	1.40 U	1.40 J	0.700 J	2.90
Perfluoropentanoic acid (PFPeA)		0.950 U	0.940 U	0.940 U	0.960 U	1.00 U	4.20
Perfluorotetradecanoic acid (PFTeDA)		2.80 U	2.80 U	2.80 U	2.90 U	3.00 U	2.80 U
Perfluorotridecanoic acid (PFTTrDA)		2.80 U	2.80 U	2.80 U	2.90 U	3.00 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)	15.0	0.00	0.00	1.40	6.00	7.70
	‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	15.0	2.80	2.60	1.40	6.44	25.7
	§Sum of All Compounds Collected	15.0	2.80	2.60	3.06	6.92	38.5

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Location	MW-197M2	MW-197M3	MW-198M4	MW-218M1	MW-218M2	MW-218M3
Field Sample ID	MW-197M2_F21	MW-197M3_F21	MW-198M4_F21	MW-218M1_F21	MW-218M2_F21	MW-218M3_F21
Sampling Depth	80.20 - 85.20	60.20 - 65.20	70.00 - 75.00	128.00 - 133.00	98.00 - 103.00	78.00 - 83.00
Sampling Date	08/02/2021	08/02/2021	08/05/2021	08/16/2021	08/16/2021	08/16/2021
SDG	320772471	320772471	320773351	320778561	320778561	320778561
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	18.0 U	19.0 U	18.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.60 U	9.40 U	9.30 U	9.10 U	9.40 U	9.10 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.60 U	9.40 U	9.30 U	9.10 U	9.40 U	9.10 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.60 U	9.40 U	9.30 U	9.10 U	9.40 U	9.10 U
Perfluorobutanesulfonic acid (PFBS)	0.450 J	0.940 U	0.930 U	0.420 J	0.940 U	0.910 U
Perfluorobutanoic acid (PFBA)	2.60	1.30 J	1.40 J	400	64.0	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)	0.960 U	0.940 U	0.930 U	42.0	10.0	0.910 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.40 U	1.40 U	32.0	2.30	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)	0.960 U	0.940 U	0.930 U	0.910 U	0.940 U	0.910 U
Perfluoroheptanoic acid (PFHpA)	3.00	1.40 U	1.40 U	360	100	1.40 U
Perfluorohexane sulfonate (PFHxS)	15.0	2.40	8.50	0.910 U	0.940 U	0.910 U
Perfluorohexanoic acid (PFHxA)	5.00	0.590 J	0.930 U	350	57.0	0.910 U
Perfluorononanoic acid (PFNA)	1.40 U	1.40 U	1.40 U	75.0	35.0	1.40 U
Perfluorooctane sulfonate (PFOS)	4.90	2.80 U	1.70 J	2.70 U	2.80 U	2.70 U
Perfluorooctanesulfonamide (PFOSA)	2.90 U	2.80 U	2.80 U	2.70 U	2.80 U	2.70 U
Perfluorooctanoic acid (PFOA)	2.70	1.00 J	0.870 J	120	49.0	1.40 U
Perfluoropentanoic acid (PFPeA)	4.20	0.940 U	0.930 U	770	110	0.910 U
Perfluorotetradecanoic acid (PFTeDA)	2.90 U	2.80 U	2.80 U	35.0	2.00 J	2.70 U
Perfluorotridecanoic acid (PFTrDA)	2.90 U	2.80 U	2.80 U	49.0	2.60 J	2.70 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.40 U	1.40 U	48.0	6.80	1.40 U
†PFOS + PFOA (EPA)	7.60	1.00	2.57	120	49.0	0.00
‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	25.6	3.40	11.1	597	194	0.00
§Sum of All Compounds Collected	37.9	5.29	12.5	2280	439	0.00

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	Location	MW-250M1	MW-250M3	MW-30	MW-576M2	MW-636M1	MW-636M2
	Field Sample ID	MW-250M1_F21	MW-250M3_F21	MW-30_F21	MW-576M2_F21	MW-636M1_F21	MW-636M2_F21
	Sampling Depth	185.00 - 195.00	95.00 - 105.00	26.00 - 36.00	133.90 - 143.90	141.60 - 151.60	110.50 - 120.50
	Sampling Date	07/15/2021	07/15/2021	08/02/2021	08/10/2021	07/29/2021	07/29/2021
	SDG	320763871	320763871	320772471	320775331	320769861	320769861
	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)	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	19.0 U	19.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)	9.00 U	9.00 U	9.00 U	9.40 U	9.50 U	9.30 U	9.30 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	9.00 U	9.00 U	9.00 U	9.40 U	9.50 U	9.30 U	9.30 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	9.00 U	9.00 U	9.00 U	9.40 U	9.50 U	9.30 U	9.30 U
Perfluorobutanesulfonic acid (PFBS)	0.900 U	0.900 U	0.900 U	0.940 U	0.950 U	1.20 J	1.20 J
Perfluorobutanoic acid (PFBA)	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorodecanesulfonic acid (PFDS)	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorodecanoic acid (PFDA)	0.900 U	0.900 U	0.900 U	0.940 U	0.950 U	0.930 U	0.930 U
Perfluorododecanoic acid (PFDoA)	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)	0.900 U	0.900 U	0.900 U	0.940 U	0.950 U	0.930 U	0.930 U
Perfluoroheptanoic acid (PFHpA)	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorohexane sulfonate (PFHxS)	0.550 J	1.90	0.900 U	0.470 J	0.950 U	4.80	4.80
Perfluorohexanoic acid (PFHxA)	0.900 U	0.900 U	0.900 U	0.940 U	0.460 J	0.570 J	0.570 J
Perfluorononanoic acid (PFNA)	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluorooctane sulfonate (PFOS)	2.70 U	1.00 J	7.00	2.80 U	2.90 U	1.60 J	1.60 J
Perfluorooctanesulfonamide (PFOSA)	2.70 U	2.70 U	2.70 U	2.80 U	2.90 U	2.80 U	2.80 U
Perfluorooctanoic acid (PFOA)	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
Perfluoropentanoic acid (PFPeA)	0.900 U	0.900 U	0.900 U	0.940 U	0.950 U	0.930 U	0.930 U
Perfluorotetradecanoic acid (PFTeDA)	2.70 U	2.70 U	2.70 U	2.80 U	2.90 U	2.80 U	2.80 U
Perfluorotridecanoic acid (PFTTrDA)	2.70 U	2.70 U	2.70 U	2.80 U	2.90 U	2.80 U	2.80 U
Perfluoroundecanoic acid (PFUnA)	1.40 U	1.30 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U
	†PFOS + PFOA (EPA)	0.00	1.00	7.00	0.00	0.00	1.60
	‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	0.550	2.90	7.00	0.470	0.00	6.40
	§Sum of All Compounds Collected	0.550	2.90	7.00	0.470	0.460	8.17

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	Location	MW-653M1	MW-653M2
	Field Sample ID	MW-653M1_F21	MW-653M2_F21
	Sampling Depth	147.50 - 157.50	59.30 - 69.30
	Sampling Date	07/29/2021	07/29/2021
	SDG	320769861	320769861
	Sample Type	Normal	Normal
PFAS 21 Cmps		Results (ng/L)	Results (ng/L)
6:2 Fluorotelomer sulfonate (6:2 FTS)		20.0 U	18.0 U
8:2 Fluorotelomer sulfonate (8:2 FTS)		9.80 U	9.10 U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		9.80 U	9.10 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		9.80 U	9.10 U
Perfluorobutanesulfonic acid (PFBS)		3.50	0.910 U
Perfluorobutanoic acid (PFBA)		1.20 J	1.40 U
Perfluorodecanesulfonic acid (PFDS)		1.50 U	1.40 U
Perfluorodecanoic acid (PFDA)		0.980 U	0.910 U
Perfluorododecanoic acid (PFDoA)		1.50 U	1.40 U
Perfluoroheptanesulfonic acid (PFHpS)		0.980 U	0.910 U
Perfluoroheptanoic acid (PFHpA)		2.50	1.40 U
Perfluorohexane sulfonate (PFHxS)		83.0	0.910 U
Perfluorohexanoic acid (PFHxA)		5.80	0.910 U
Perfluorononanoic acid (PFNA)		1.50 U	1.40 U
Perfluorooctane sulfonate (PFOS)		5.30	2.70 U
Perfluorooctanesulfonamide (PFOSA)		2.90 U	2.70 U
Perfluorooctanoic acid (PFOA)		1.80 J	1.40 U
Perfluoropentanoic acid (PFPeA)		3.30	0.910 U
Perfluorotetradecanoic acid (PFTeDA)		2.90 U	2.70 U
Perfluorotridecanoic acid (PFTrDA)		2.90 U	2.70 U
Perfluoroundecanoic acid (PFUnA)		1.50 U	1.40 U
	†PFOS + PFOA (EPA)	7.10	0.00
	‡PFOS + PFOA + PFDA + PFHpA + PFHxS + PFNA (MassDEP)	92.6	0.00
	§Sum of All Compounds Collected	106	0.00

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Notes:

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

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

Bolded results indicate detections of PFAS

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

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

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

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

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