

**MONTHLY PROGRESS REPORT #331
FOR OCTOBER 2024**

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 01 to 31 October 2024.

1. SUMMARY OF REMEDIATION ACTIONS

Remediation Actions (RA) Underway at Camp Edwards as of 25 October 2024:

Demolition Area 1 Comprehensive Groundwater RA

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

The Frank Perkins Road Treatment Facility has been optimized as part of the Environmental and System Performance Monitoring (ESPM) program at Demolition Area 1. The treatment facility continues to operate at a flow rate of 175 gallons per minute (gpm), with over 3.122 billion gallons of water treated and re-injected as of 25 October 2024. No Frank Perkins Road system shutdowns occurred in October.

The Base Boundary Mobile Treatment Unit (MTU) continues to operate at a flow rate of 65 gpm. As of 25 October 2024, over 415.0 million gallons of water were treated and re-injected. The following Base Boundary system shutdowns occurred in October:

- 0925 on 24 October to replace a leaking hose on the GAC#2 effluent line. A new hose was installed, and the system was restarted at 0945 on 24 October 2024

The flow rate at the Leading-Edge system was increased from 100 gpm to 125 gpm on 26 September 2024 based on regulatory agency concurrence with the 26 September 2024 Demolition Area 1 Extraction Well 5 (EW-5) Optimization presentation. As of 25 October 2024, over 427.1 million gallons of water were treated and re-injected. The following Leading Edge system shutdowns occurred in October:

- 0755 on 09 October 2024 due to a leak on the IX#1 influent line. A new hose was installed, and the system was restarted at 0820 on 09 October 2024.

The Pew Road MTU was turned off with regulatory approval 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

The J-2 Range Northern Treatment facility consists of removal and treatment of contaminated groundwater to control further migration of explosives compounds and perchlorate. The Extraction, Treatment, and Re-infiltration system includes three extraction wells, an ex-situ

treatment process to remove explosives compounds and perchlorate from the groundwater, and an infiltration basin to return treated water to the aquifer.

The Northern MTUs E and F continue to operate at a flow rate of 250 gpm. As of 25 October 2024, over 2.254 billion gallons of water have been treated and re-injected. No MTU E and F system shutdowns occurred in October.

The Northern Treatment Building G continues to operate at a flow rate of 225 gpm. As of 25 October 2024, over 1.757 billion gallons of water have been treated and re-injected. No MTU G system shutdowns occurred in October.

Eastern

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

The MTUs H and I continue to operate at a flow rate of 250 gpm. As of 25 October 2024, over 1.901 billion gallons of water have been treated and re-injected. No MTU H and I system shutdowns occurred in October.

MTU J typically operates at a flow rate of 120 gpm. As of 25 October 2024, over 890.4 million gallons of water have been treated and re-injected. No MTU J shutdowns occurred in October.

MTU K continues to operate at a flow rate of 125 gpm. As of 25 October 2024, over 1.020 billion gallons of water have been treated and re-injected. No MTU K shutdowns occurred in October.

J-3 Range Groundwater RA

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

The J-3 system is currently operating at a flow rate of 255 gpm. As of 25 October 2024, over 1.886 billion gallons of water have been treated and re-injected. No J-3 system shutdowns occurred in October.

J-1 Range Groundwater RA

Southern

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

The Southern MTU has been optimized as part of the ESPM program at J-1 Range Southern. The on-base extraction well J1SEW0001 was turned off with regulatory approval on 31 January 2017 (formerly operated at a flow of 35 gpm), and flow was increased from 90 gpm to 125 gpm at the Leading-Edge extraction well J1SEW0002. The Leading-Edge extraction well continues to operate at a flow rate of 125 gpm. As of 25 October 2024, over 826.7 million gallons of water have been treated and re-injected. The following J-1 Range Southern MTU shutdowns occurred in October:

- 0858 on 17 October 2024 at J1SEW0002 to run J1SEW0001 for sampling. J1SEW0001 started operating at 75 gpm at 0858 on 17 October 2024 and was turned off at 0945 after the samples were collected. J1SEW0002 was restarted at 0945 on 17 October 2024 after the samples were collected.

Northern

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

The Northern MTU continues to operate at a total system flow rate of 250 gpm. The flow rates at for the two extraction wells at J-1 Northern were modified on 28 October 2024 based on regulatory agency concurrence with the J-1 Range Northern Data Presentation for January 2023 to December 2023. The flow rate at J1NEW0001 was reduced from 125 gpm to 85 gpm and the flow rate at J1NEW0002 was increased from 125 gpm to 165 gpm. As of 25 October 2024, over 1.413 billion gallons of water have been treated and re-injected. No J-1 Range Northern MTU shutdowns occurred in October.

Central Impact Area RA

The Central Impact Area (CIA) Groundwater treatment system consists of removal and treatment of groundwater to minimize downgradient migration of explosives compounds and perchlorate. The ETR system includes the following components: three extraction wells, an ex-situ treatment process consisting of an ion exchange resin and granular activated carbon media to treat explosives compounds, and three infiltration galleries to return treated water to the aquifer. The CIA systems 1, 2, and 3 continue to run at a combined total flow rate of 750 gpm. As of 25 October 2024, over 3.762 billion gallons of water have been treated and re-injected. The following CIA system shutdowns occurred in October:

- 0430 on 30 September 2024 at CIA-3 due to a “floor sump” alarm, which was caused by a broken camlock on the GAC#5 influent line. A new hose was installed and CIA-3 was restarted at 0818 on 01 October 2024.

2. SUMMARY OF ACTIONS TAKEN

Operable Unit (OU) Activity as of 25 October 2024:

CIA

- Source Area investigations
 - Completed blow-in-place (BIP) demolition operations for the 2024 field season
 - Demobilized the demolition teams.
 - Conducted routine visual checks of Consolidated Shot Structure (CSS) soil cover and surface area around the perimeter of the CSS

Demolition Area 1

- No activity.

Demolition Area 2

- No activity.

J-1 Range

- Groundwater sampling within the J-1 Range Southern SPM Program
- Groundwater hydraulic monitoring within the J-1 Southern SPM Program
- At J-1 Range Northern at 0800 on 15 October 2024 the flow rate at J1NEW0001 was reduced from 125 gpm to 85 gpm and the flow rate at J1SEW0002 was increased from 125 gpm to 165 gpm to perform a 24-hour flow test. The flow rates were changed back to their previous flow rates at 0945 on 16 October 2024.
- Bag filters changed at J-1 North on 21 October 2024
- The flow rate at J1NEW0001 was reduced from 125 gpm to 85 gpm and the flow rate at J1NEW0002 was increased from 125 gpm to 165 gpm based on regulatory agency concurrence with the J-1 Range Northern Data Presentation for January 2023 to December 2023

J-2 Range

- Groundwater sampling within the J-2 Northern SPM Program.
- Bag filters changes at J-2 North Treatment Facility G on 28 October 2024.

J-3 Range

- Bag filters changed on 08 October 2024

L Range

- No activity

Small Arms Ranges

- No activity

Northwest Corner

- No activity

Training Areas

- No activity

Impact Area Roads

- No activity

Other

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

JBCC Impact Area Groundwater Study Program (IAGWSP) Tech Update Meeting Minutes for 26 September 2024

Project and Fieldwork Update

Darrin Smith (USACE) stated that KGS sampling team is conducting the annual System Performance Monitoring (SPM) event at J-1 South then crews will move to the SPM sampling at J-1 North. The October monthly treatment system sampling was conducted from 10/2/24–10/7/24.

Mr. Smith (USACE) noted that Gina Kaso (USACE) had previously forwarded the sampling results from the consolidate shot structure (CSS) and the material used to cover the detonations. The results were consistent with expectations. The IAGWSP recommends continuing to use that material for another field season. It is scheduled to be changed out after completion of that next field season.

Ms. Kaso (USACE) stated that there are no operations in the Central Impact Area(CIA) . The MEC staging area and the CSS will be checked regularly. A draft CIA Source Removal Annual Report will be sent to the agencies before the end of the year.

Document and Project Tracking

Mr. Dvorak (USACE) reviewed the list of deliverables (provided in advance of the meeting).

J-1 Range Northern Data Presentation

Chris Kilbridge (USACE) provided the J-1 Range Northern data presentation for the annual Environmental Monitoring Report (EMR). He noted that during the reporting period (January 2023 to December 2023), no new investigative work was performed.

Mr. Kilbridge (USACE) displayed figures showing the historical and current plume extents and he noted that the internal maximum concentrations have been significantly reduced due to the operation of the extraction treatment and reinjection (ETR) system with two extraction wells pumping at 125 gallons per minute (gpm) each. During the reporting period, the treatment system was operating over 99% of the time. Since system startup, the system, on average, has been operational over 97% of the time. There were no media breakthroughs or changeouts during the reporting period.

Mr. Kilbridge (USACE) reported that the blended influent concentrations ranged from 0.11-0.15 µg/L for RDX and 0.58-0.71 µg/L for perchlorate. HMX was not detected in the influent. Over 131 million gallons of groundwater was treated during the reporting period and 1.3 billion gallons have been treated since system startup.

During the 2023 reporting period, 0.15 pounds of RDX and 0.71 pounds of perchlorate were removed. Since startup, 1.05 pounds of RDX, 0.03 pounds of HMX, and 7.54 pounds of perchlorate have been removed. Mr. Kilbridge (USACE) showed trends graphs for RDX and perchlorate. Elliott Jacobs (MassDEP) commented that he is surprised by how “linear the perchlorate removal curve is.” He noted that typically there is a rapid spike during system startup that flattens out during operation. In this case, the perchlorate concentrations in the influent have been so consistent, with an almost linear curve, which is different than performance curves for other systems. Mr. Kilbridge (USACE) agreed and said that the optimization recommendations consider this information.

Mr. Kilbridge (USACE) reviewed the groundwater monitoring results for perchlorate with 62 well screens sampled (28 semi-annually). Concentrations ranged from non-detect (ND) to 12.0 µg/L (MW-346M1, Dec 2023). There were no screens greater than 15 µg/L (Lifetime Health Advisory); 9 screens were greater than 2.0 µg/L (MMCL) MW-245M2 (Jun/Dec 2023), MW-547M1 (Jun/Nov 2023). Most screens greater than 2 µg/L are less than 10 µg/L; and 6 screens were less than 5 µg/L. The Zone 1 maximum concentration was 12 µg/L (MW-346M1, Dec 2023). The Zone 2 maximum concentration was 3.9 µg/L (MW-547M1, Jun 2023).

Mr. Kilbridge (USACE) reviewed the groundwater monitoring results for RDX with 68 well screens sampled (10 semi-annually). Concentrations ranged from ND to 22.0 µg/L (MW-245M2, Dec 2023). There were 4 screens greater than 2 µg/L (Lifetime Health Advisory); 7 screens greater than 0.97 µg/L (Regional Screening Level); and 8 screens greater than 0.6 µg/L (Risk-Based Concentration) MW-245M2 (Jun/Dec 2023), MW-303M2 (Jun/Nov 2023). Most screens greater than 0.6 µg/L are less than 6.0 µg/L and 6 screens were less than 6.0 µg/L. The Zone 1 maximum concentration was 22 µg/L (MW-245M2, Dec 2023). The Zone 2 maximum concentration was 0.24 µg/L (MW-547M1, Dec 2023).

Mr. Kilbridge (USACE) noted that for Zone 1 (upgradient of J1NEW0002), the mass perchlorate and RDX at depth is migrating toward, and predicted to be captured by, extraction well J1NEW0002. The maximum perchlorate detection was 12 µg/L (MW-346M1) and the maximum RDX concentration was 22 µg/L (MW-245M2). Mass perchlorate is below the HA of 15 µg/L. For Zone 2 (J1NEW0002 to J1NEW0001 Wood Rd), there is a declining trend at depth at MW-370M1, which accelerated after the redevelopment of J1NEW0002 in July 2022. There is no perchlorate or RDX mass above the Lifetime Health Advisories (15 µg/L and 2 µg/L, respectively).

A synoptic sampling round was conducted in December 2023 with a pumping rate of 125 gpm at J1NEW0002 and J1NEW0001 and elevation ranges of 69.16 ft msl (USGS TOM 537-0107) and 67.26 ft msl (MW-479M1 Wood Road). The water levels averaged 0.6 to 0.8 feet lower than the 2022 sampling round. A small plumelet of perchlorate is predicted to not be captured but it is expected to attenuate to less than 2 µg/L by 2027.

Mr. Kilbridge (USACE) displayed figures showing model-predicted capture zones vs the observed capture zones. The model predictions were made using the January 2022 plume shell and compared with measured groundwater concentrations from the 2023 reporting period. Mr. Kilbridge (USACE) noted that the model predicted a maximum concentration of 25.6 µg/L in the Zone 1 area, upgradient of J1NEW0002 at the end of 2023, which is considerably higher than the actual concentration of 12 µg/L in Zone 1. This indicates a declining perchlorate mass (less than 15 µg/L) in Zone 1 and migration within the capture zone of J1NEW0002.

The RDX results are similar. The model predictions were made using the January 2022 RDX plume shell and compared with measured groundwater concentrations from the 2023 reporting period. Mr. Kilbridge (USACE) noted that the model predicted a maximum concentration of 16.4 µg/L in the area between J1NEW0002 and MW-265. The actual maximum concentration was 22 µg/L at MW-245M1 but more notable is that the downgradient maximum concentrations of RDX were less than what the model predicted without any exceedances over 0.6 µg/L in 2023. There is minimal RDX mass in Zone 2 migrating toward Wood Rd.

Mr. Kilbridge (USACE) stated that the predicted cleanup for perchlorate and RDX is mostly achieved by the dates in the Decision Document. The predicted small quantities of mass migrating toward J1NEW0002, at depth in the lower permeability layers of the aquifer, will eventually attenuate below cleanup levels.

A plume shell update is planned for 2027. The IAGWSP recommends no recommended changes at the MTUs and optimization of pumping rates using the capabilities of existing well pumps and MTU. This is intended to focus extraction on Zone 2, upgradient of J1NEW0002. A 24-hour performance test was conducted in the field from 10/15–10/16 to confirm the well pumping capability of J1NEW0002. Minimal plume mass remains in Zone 2, downgradient of J1NEW0002 to Wood Road. IAGWSP proposes a decrease of the pumping rate of J1NEW0001 to 85 gpm and an increase of the pumping rate of J1NEW0002 to 165 gpm. The total system extraction would remain at 250 gpm. Optimizing the extraction rates is expected to have a positive impact by accelerating the declining trends upgradient of J1NEW0002. There are no proposed changes to the Hydraulic Monitoring Program.

Mr. Kilbridge (USACE) explained that the existing Chemical Monitoring Program is 68 screens and two extraction wells (70 screens total). IAGWSP is proposing a change frequency in frequency of 24 screens from annual to semi-annual or biennial and discontinuation of sampling at nine screens. The optimized monitoring network would include 59 screens and two extraction wells (61 screens total). These recommended changes are based on chemical trend plot reviews of measured concentrations and are in locations relative to the current plume transport. The well screens proposed for removal are in the outermost well network ring that was originally associated with an old plume extent and/or those that are too shallow or above plume depth. These proposed change in sampling frequency and/or parameters are based on over 5-years of sampling results at ND or below the reporting limit. The wells that are proposed to be “removed” from sampling network are not proposed to be abandoned.

Mr. Kilbridge (USACE) ended the presentation with a figure showing the progress of the perchlorate and RDX cleanup efforts at J-1 North. He showed the maximum concentrations in 2010 and noted that there were extensive subsurface investigations between 2010-2013 to

support wellfield design of the remedy. He also showed depictions of the maximum concentrations from 2023, ten years later, which are considerably lower and fewer in number.

Mr. Jacobs (MassDEP) asked if the optimization modeling included any influent concentrations to see if there was any significant change. Mr. Kilbridge (USACE) said that was not done but it could be. He added that he was looking for reduction in cleanup time and increased capture. He suggested that Mr. Jacobs (MassDEP) include that in his comments on the EMR.

Bob Lim (EPA) suggested that, based on what was just presented, an email regarding the proposed optimization could be sent to the agencies for consideration and he anticipated there could be a quick reply with consent for the changes. Dave Hill (IAGWSP) proposed that the parameters could be additionally formalized in a Project Note for official documentation. Len Pinaud (MassDEP) agreed with that approach. Mr. Kilbridge (USACE) summarized the process by stating that IAGWSP will send an email to the agencies requesting approval of the proposed optimization changes with a short suspense and then for efficiency, the IAGWSP can document the optimization in the annual EMR, which will be submitted next month. Bob Lim (EPA) gave his approval for that process and will share the proposal with Tim Barbeau at EPA since the J-1 North plume falls under his area of responsibility. Len Pinaud (MassDEP) also gave his approval for that review process.

JBCC Cleanup Team Meeting

The next JBCC Cleanup Team (JBCCCT) will be held on 13 November 2024. Meeting details and presentation materials from previous meetings can be found on the IAGWSP web site at <http://jbcc-iagwsp.org/community/impact/presentations/>. The Cleanup Team meeting discusses late breaking news and responses to action items, as well as updates from the IAGWSP and the Installation Restoration Program (IRP). The JBCCCT meetings provide a forum for community input regarding issues related to both the IRP and the IAGWSP.

3. SUMMARY OF DATA RECEIVED

Table 1 summarizes sampling for all media from 01 to 31 October 2024. Table 2 summarizes the validated detections of explosives compounds and perchlorate for all groundwater results received from 01 to 31 October 2024. There were no groundwater results validated in October 2024, therefore, Table 2 is not included. 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 the validated detections of per- and polyfluoroalkyl substances (PFAS) for influent and groundwater results analyzed by EPA draft Method 1633 and received from 01 to 31 October 2024. Table 3 PFAS results are compared to the Regional Screening Levels (RSLs) published by EPA in November 2023. No PFAS validation was completed during October 2024, therefore, Table 3 is not included.

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

4. SUBMITTED DELIVERABLES

Deliverables submitted during the reporting period include the following:

- Monthly Progress Report No. 330 for September 2024 10 October 2024
- Final 2023 Source Removal Annual Report for the Central Impact Area 11 October 2024

5. SCHEDULED ACTIONS

The following actions and/or documents are being prepared in September 2024.

- Response to Comments on the Five-Year Review
- Final J-1 Range North Environmental Monitoring Report for January 2021 through December 2022 with Plume Shell Technical Memorandum
- Draft L Range Environmental Monitoring Report for March 2023 through February 2024
- IAGWSP Comprehensive PFAS Report
- Draft Small Arms Range Environmental Monitoring Report for July 2023 through June 2024
- Draft Central Impact Area Environmental Monitoring Report for July 2023 through June 2024
- Draft Demolition Area 1 Environmental Monitoring Report for July 2023 through June 2024

TABLE 1
Sampling Progress: 01 to 31 October 2024

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J1 Range Southern	MW-488PZ	MW-488PZ_F24	N	10/30/2024	Ground Water	119.28	129.28
J1 Range Southern	MW-488M1	MW-488M1_F24	N	10/30/2024	Ground Water	149.62	159.62
J1 Range Southern	MW-131S	MW-131S_F24	N	10/29/2024	Ground Water	96	106
J1 Range Southern	MW-720M2	MW-720M2_F24	N	10/29/2024	Ground Water	126.2	136.2
J1 Range Southern	MW-720M1	MW-720M1_F24	N	10/29/2024	Ground Water	146.6	156.6
J1 Range Southern	MW-721M2	MW-721M2_F24	N	10/29/2024	Ground Water	138.5	148.5
J1 Range Southern	MW-721M1	MW-721M1_F24	N	10/29/2024	Ground Water	168.1	178.1
J1 Range Southern	MW-483M1	MW-483M1_F24	N	10/28/2024	Ground Water	139.52	149.52
J1 Range Southern	MW-722M2	MW-722M2_F24	N	10/28/2024	Ground Water	93.9	103.9
J1 Range Southern	MW-722M1	MW-722M1_F24	N	10/28/2024	Ground Water	114.2	124.2
J1 Range Southern	MW-722M1	MW-722M1_F24D	FD	10/28/2024	Ground Water	114.2	124.2
J1 Range Southern	MW-647M2	MW-647M2_F24	N	10/28/2024	Ground Water	189.3	199.3
J1 Range Southern	MW-647M1	MW-647M1_F24	N	10/28/2024	Ground Water	211.3	221.3
J1 Range Southern	MW-403M2	MW-403M2_F24	N	10/24/2024	Ground Water	127.26	137.36
J1 Range Southern	MW-403M1	MW-403M1_F24	N	10/24/2024	Ground Water	159.9	169.89
J1 Range Southern	MW-669M2	MW-669M2_F24	N	10/24/2024	Ground Water	201.7	211.7
J1 Range Southern	MW-669M1	MW-669M1_F24	N	10/24/2024	Ground Water	223.7	233.7
J1 Range Southern	MW-669M1	MW-669M1_F24D	FD	10/24/2024	Ground Water	223.7	233.7
J1 Range Southern	MW-523M1	MW-523M1_F24	N	10/22/2024	Ground Water	158	168
J1 Range Southern	MW-591M2	MW-591M2_F24	MS	10/22/2024	Ground Water	165	175
J1 Range Southern	MW-591M2	MW-591M2_F24	N	10/22/2024	Ground Water	165	175
J1 Range Southern	MW-591M2	MW-591M2_F24	SD	10/22/2024	Ground Water	165	175
J1 Range Southern	MW-591M1	MW-591M1_F24	N	10/22/2024	Ground Water	200	210
J1 Range Southern	MW-646M2	MW-646M2_F24	N	10/22/2024	Ground Water	168	178
J1 Range Southern	MW-646M1	MW-646M1_F24	N	10/22/2024	Ground Water	198	208
J1 Range Southern	MW-526M1	MW-526M1_F24	N	10/21/2024	Ground Water	164	174
J1 Range Southern	MW-592M2	MW-592M2_F24	N	10/21/2024	Ground Water	158	168
J1 Range Southern	MW-592M1	MW-592M1_F24	N	10/21/2024	Ground Water	201	211
J1 Range Southern	MW-481M2	MW-481M2_F24	N	10/21/2024	Ground Water	146.28	156.28
J1 Range Southern	MW-481M1	MW-481M1_F24	N	10/21/2024	Ground Water	189.74	199.74
J1 Range Southern	MW-398M2	MW-398M2_F24	N	10/17/2024	Ground Water	131.53	141.53
J1 Range Southern	MW-398M1	MW-398M1_F24	N	10/17/2024	Ground Water	172.15	182.15
J1 Range Southern	J1S-EW1-INF	J1S-EW1-INF_F24	N	10/17/2024	Process Water	0	0
J1 Range Southern	J1S-EW2-INF	J1S-EW2-INF_F24	N	10/17/2024	Process Water	0	0
J1 Range Southern	MW-480M2	MW-480M2_F24	N	10/16/2024	Ground Water	143.57	153.57
J1 Range Southern	MW-482M3	MW-482M3_F24	N	10/16/2024	Ground Water	98.18	108.18
J1 Range Southern	MW-482M2	MW-482M2_F24	N	10/16/2024	Ground Water	172.64	182.64
J1 Range Southern	MW-482M2	MW-482M2_F24D	FD	10/16/2024	Ground Water	172.64	182.64
J1 Range Southern	MW-645M2	MW-645M2_F24	N	10/16/2024	Ground Water	143.5	153.5
J1 Range Southern	MW-645M1	MW-645M1_F24	N	10/16/2024	Ground Water	183.5	193.5
J1 Range Southern	MW-521M1	MW-521M1_F24	N	10/15/2024	Ground Water	158	168
J1 Range Southern	MW-522M2	MW-522M2_F24	MS	10/15/2024	Ground Water	165	175
J1 Range Southern	MW-522M2	MW-522M2_F24	N	10/15/2024	Ground Water	165	175
J1 Range Southern	MW-522M2	MW-522M2_F24	SD	10/15/2024	Ground Water	165	175
J1 Range Southern	MW-522M1	MW-522M1_F24	N	10/15/2024	Ground Water	198	208
J1 Range Southern	MW-733M2	MW-733M2_F24	N	10/15/2024	Ground Water	190	200
J1 Range Southern	MW-733M1	MW-733M1_F24	N	10/15/2024	Ground Water	212	222
J1 Range Southern	MW-527M1	MW-527M1_F24	N	10/10/2024	Ground Water	165	175
J1 Range Southern	MW-525M2	MW-525M2_F24	N	10/10/2024	Ground Water	148	158
J1 Range Southern	MW-525M1	MW-525M1_F24	N	10/10/2024	Ground Water	172	182
J1 Range Southern	MW-670M2	MW-670M2_F24	N	10/10/2024	Ground Water	198.5	208.5
J1 Range Southern	MW-670M1	MW-670M1_F24	N	10/10/2024	Ground Water	220.5	230.5
J1 Range Southern	MW-524M1	MW-524M1_F24	N	10/09/2024	Ground Water	148	158
J1 Range Southern	MW-524M1	MW-524M1_F24D	FD	10/09/2024	Ground Water	148	158
J1 Range Southern	MW-402M2	MW-402M2_F24	N	10/09/2024	Ground Water	155.24	165.27
J1 Range Southern	MW-402M1	MW-402M1_F24	N	10/09/2024	Ground Water	190.14	200.13
J1 Range Southern	MW-400M2	MW-400M2_F24	N	10/09/2024	Ground Water	138.9	148.9
J1 Range Southern	MW-400M1	MW-400M1_F24	N	10/09/2024	Ground Water	192.76	202.75
J2 Range Northern	J2EW2-MW2-B	J2EW2-MW2-B_F24	N	10/08/2024	Ground Water	209.79	219.79

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 01 to 31 October 2024

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	J2EW2-MW2-C	J2EW2-MW2-C_F24	N	10/08/2024	Ground Water	243.83	253.81
J2 Range Northern	J2EW3-MW-2-B	J2EW3-MW-2-B_F24	N	10/08/2024	Ground Water	216.16	226.16
J1 Range Southern	J1S-EFF	J1S-EFF-203A	N	10/07/2024	Process Water	0	0
J1 Range Southern	J1S-MID	J1S-MID-203A	N	10/07/2024	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-203A	N	10/07/2024	Process Water	0	0
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-223A	N	10/07/2024	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-223A	N	10/07/2024	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-223A	N	10/07/2024	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-223A	N	10/07/2024	Process Water	0	0
J2 Range Northern	J2EW3-MW-2-C	J2EW3-MW-2-C_F24	N	10/07/2024	Ground Water	251.13	261.13
Demolition Area 1	D1LE-EFF	D1LE-EFF-99A	N	10/07/2024	Process Water	0	0
Demolition Area 1	D1LE-MID2	D1LE-MID2-99A	N	10/07/2024	Process Water	0	0
Demolition Area 1	D1LE-MID1	D1LE-MID1-99A	N	10/07/2024	Process Water	0	0
Demolition Area 1	D1LE-INF	D1LE-INF-99A	N	10/07/2024	Process Water	0	0
J2 Range Northern	MW-302M2	MW-302M2_F24	N	10/07/2024	Ground Water	194.35	204.43
Demolition Area 1	D1-EFF	D1-EFF-171A	N	10/07/2024	Process Water	0	0
Demolition Area 1	D1-MID-2	D1-MID-2-171A	N	10/07/2024	Process Water	0	0
Demolition Area 1	D1-MID-1	D1-MID-1-171A	N	10/07/2024	Process Water	0	0
Demolition Area 1	D1-INF	D1-INF-171A	N	10/07/2024	Process Water	0	0
J2 Range Northern	MW-293M2	MW-293M2_F24	N	10/03/2024	Ground Water	196.42	206.42
J2 Range Northern	MW-296M2	MW-296M2_F24	MS	10/03/2024	Ground Water	214.98	224.98
J2 Range Northern	MW-296M2	MW-296M2_F24	N	10/03/2024	Ground Water	214.98	224.98
J2 Range Northern	MW-296M2	MW-296M2_F24	SD	10/03/2024	Ground Water	214.98	224.98
J2 Range Northern	MW-296M1	MW-296M1_F24	N	10/03/2024	Ground Water	255.08	265.08
Central Impact Area	CIA2-EFF	CIA2-EFF-129A	N	10/03/2024	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-129A	N	10/03/2024	Process Water	0	0
Central Impact Area	CIA2-MID1	CIA2-MID1-129A	N	10/03/2024	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-129A	N	10/03/2024	Process Water	0	0
Central Impact Area	CIA1-EFF	CIA1-EFF-129A	N	10/03/2024	Process Water	0	0
J2 Range Northern	MW-340M2	MW-340M2_F24	N	10/03/2024	Ground Water	215.83	225.08
Central Impact Area	CIA1-MID2	CIA1-MID2-129A	N	10/03/2024	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-129A	N	10/03/2024	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-129A	N	10/03/2024	Process Water	0	0
J2 Range Northern	MW-340M1	MW-340M1_F24	N	10/03/2024	Ground Water	255.85	265.85
Central Impact Area	CIA3-EFF	CIA3-EFF-100A	N	10/03/2024	Process Water	0	0
Central Impact Area	CIA3-MID2	CIA3-MID2-100A	N	10/03/2024	Process Water	0	0
Central Impact Area	CIA3-MID1	CIA3-MID1-100A	N	10/03/2024	Process Water	0	0
Central Impact Area	CIA3-INF	CIA3-INF-100A	N	10/03/2024	Process Water	0	0
J2 Range Northern	MW-345M2	MW-345M2_F24	N	10/02/2024	Ground Water	236.62	246.62
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-193A	N	10/02/2024	Process Water	0	0
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-193A	N	10/02/2024	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-193A	N	10/02/2024	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-193A	N	10/02/2024	Process Water	0	0
J2 Range Northern	MW-613M2	MW-613M2_F24	N	10/02/2024	Ground Water	246.1	256.1
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-193A	N	10/02/2024	Process Water	0	0
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-193A	N	10/02/2024	Process Water	0	0
J2 Range Northern	MW-613M1	MW-613M1_F24	N	10/02/2024	Ground Water	267.1	277.1
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-193A	N	10/02/2024	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-193A	N	10/02/2024	Process Water	0	0
J2 Range Northern	MW-330M2	MW-330M2_F24	N	10/02/2024	Ground Water	238.01	248.04
J2 Range Northern	MW-330M1	MW-330M1_F24	N	10/02/2024	Ground Water	313.1	323.13
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-193A	N	10/02/2024	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-193A	N	10/02/2024	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-193A	N	10/02/2024	Process Water	0	0
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-193A	N	10/02/2024	Process Water	0	0
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-193A	N	10/02/2024	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-193A	N	10/02/2024	Process Water	0	0
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-217A	N	10/01/2024	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-217A	N	10/01/2024	Process Water	0	0

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 01 to 31 October 2024

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-217A	N	10/01/2024	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-217A	N	10/01/2024	Process Water	0	0
J2 Range Northern	MW-612M2	MW-612M2_F24	N	10/01/2024	Ground Water	267	277
J2 Range Northern	MW-612M1	MW-612M1_F24	N	10/01/2024	Ground Water	297	307
J1 Range Northern	J1N-EFF	J1N-EFF-132A	N	10/01/2024	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-132A	N	10/01/2024	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-132A	N	10/01/2024	Process Water	0	0
J1 Range Northern	J1N-INF2	J1N-INF2-132A	N	10/01/2024	Process Water	0	0
J2 Range Northern	J2EW0003	J2EW0003_F24	N	10/01/2024	Process Water	202	232
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-217A	N	10/01/2024	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-217A	N	10/01/2024	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-217A	N	10/01/2024	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-217A	N	10/01/2024	Process Water	0	0
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-217A	N	10/01/2024	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-217A	N	10/01/2024	Process Water	0	0
J2 Range Northern	J2EW0002	J2EW0002_F24	N	10/01/2024	Process Water	198	233
J2 Range Northern	J2EW0002	J2EW0002_F24D	FD	10/01/2024	Process Water	198	233
J3 Range	J3-EFF	J3-EFF-217A	N	10/01/2024	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-217A	N	10/01/2024	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-217A	N	10/01/2024	Process Water	0	0
J3 Range	J3-INF	J3-INF-217A	N	10/01/2024	Process Water	0	0
J2 Range Northern	J2N-EFF-F	J2N-EFF-F_OCT24	N	10/01/2024	Process Water	0	0
J2 Range Northern	J2N-INF-F	J2N-INF-F_OCT24-D	FD	10/01/2024	Process Water	0	0
J2 Range Northern	J2N-INF-F	J2N-INF-F_OCT24	N	10/01/2024	Process Water	0	0
J2 Range Northern	J2EW0001	J2EW0001_F24	N	10/01/2024	Process Water	179	234
J3 Range	J3-EFF	J3-EFF_OCT24	N	10/01/2024	Process Water	0	0
J3 Range	J3-INF	J3-INF_OCT24	N	10/01/2024	Process Water	0	0