

**MONTHLY PROGRESS REPORT #257
FOR AUGUST 2018**

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 28 July to 31 August 2018.

1. SUMMARY OF REMEDIATION ACTIONS

The following is a description of Remediation Actions (RA) underway at Camp Edwards as of August 2018.

Demolition Area 1 Comprehensive Groundwater RA

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

The Frank Perkins Road Treatment Facility has been optimized as part of the Environmental and System Performance Monitoring (ESPM) program at Demolition Area 1. The treatment facility continues to operate at a flow rate of 175 gpm, with over 2.584 billion gallons of water treated and re-injected as of 31 August 2018. No shut downs occurred in August.

The Pew Road Mobile Treatment Unit (MTU) is operating at a flow rate of 100 gpm (increased from 65 gpm on 18 June 2018), with over 581.2 million gallons of water treated and re-injected as of 31 August 2018. No Pew Road MTU shut downs occurred in August.

The Base Boundary MTU is operating at a flow rate of 65 gpm with over 208.2 million gallons of water treated and re-injected as of 31 August 2018. The following Base Boundary MTU shut downs occurred in August:

- 0750 on 01 August 2018 to wire and program the new influent flow meter, and was restarted at 1125 on 01 August 2018.
- 0805 on 13 August 2018 to install the new bag filter housings, and was restarted at 0855 on 14 August 2018.
- 1322 on 16 August 2018 to repair a leaking pipe, and was restarted at 0945 on 17 August 2018.

The Leading Edge system continues to operate at a flow rate of 100 gpm. As of 31 August 2018, over 118.4 million gallons of water treated and re-injected. No Leading Edge system shut downs occurred in August.

J-2 Range Groundwater RA

Northern Plant

The J-2 Range Northern Treatment facility consists of removal and treatment of contaminated groundwater to control further migration of explosives compounds and perchlorate. The Extraction,

Treatment, and Re-infiltration system includes three extraction wells, ex-situ treatment process to remove explosives compounds and perchlorate from the groundwater, and an infiltration basin to return treated water to the aquifer.

The Northern Treatment Building continues to operate at a flow rate of 225 gpm. As of 31 August 2018, over 1.032 billion gallons of water have been treated and re-injected. The following Northern Treatment Building shutdown occurred in August:

- 0840 on 16 August 2018 to install cutouts on the power lines, and was restarted at 1215 on 16 August 2018

The Northern MTUs E and F continue to operate at a flow rate of 250 gpm. As of 31 August 2018, over 1.536 billion gallons of water have been treated and re-injected. The following J-2 Range Northern MTU E or F shut downs occurred in August:

- 0830 on 16 August 2018 to install cut outs on the power lines, and both MTUs were restarted at 1205 on 16 August 2018.

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 31 August 2018, over 1.115 billion gallons of water have been treated and re-injected. The following MTU H and I shutdowns occurred in August.

- 0900 on 9 August 2018 due to a power outage caused by thunderstorms. There were two separate utility poles that had damaged fuses on the lines that required repair. BETCO was onsite on 14 August 2018 to replace the damaged fuses as well as on motor starter. The MTUs were restarted at 0832 on 14 August 2018.
- 0910 on 14 August 2018 due to a second motor that was also damaged during the storm. The motor starter was replaced and the MTUs were restarted at 0945 on 14 August 2018.
- MTUs H and I were turned off at 1000 h on 14 August 2018 to install new bag filter housings and were restarted at 0753 on 17 August 2018.

MTU J continues to operate at a flow rate of 120 gpm. As of 31 August 2018, over 514.2 million gallons of water have been treated and re-injected. No MTU J shutdowns occurred in August.

MTU K continues to operate at a flow rate of 125 gpm. As of 31 August 2018, over 650.3 million gallons of water have been treated and re-injected. The following MTU K shutdowns occurred in August.

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 a flow rate of 235 gpm (while J3EW0032 is running at 45 gpm instead of 65 gpm). As of 31 August 2018, over 1.145 billion gallons of water have been treated and re-injected. The following J-3 Range system shut down occurred in August:

- 0858 on 9 August 2018 due to a power interruption caused by thunderstorms, and was restarted at 1027 on 9 August 2018.
- 0820 on 27 August 2018 to install new bag filter housings, and was restarted at 0943 on 29 August 2018.

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 31 August 2018, over 497.1 million gallons of water have been treated and re-injected. No J-1 Range Southern system shut downs occurred in August.

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 31 August 2018, over 610.1 million gallons of water have been treated and re-injected. The following J-1 Range Northern MTU shut downs occurred in August.

- 0917 on 31 July 2018 to wire and program the two new influent flow meters, and was restarted at 1145 on 31 July 2018.
- 0820 on 16 August 2018 to install power line isolation cut outs, and was restarted at 1153 on 16 August 2018.
- 0820 on 16 August 2018 to install power line isolation cut outs, and was restarted at 1153 on 16 August 2018.

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 31 August 2018, over 1.472 billion gallons of water have been treated and re-injected. The following CIA treatment facility shut downs occurred in August.

- System 1 was turned off at 0927 on 30 July 2018 to wire and program the new influent flow meter, and was restarted at 1140 on 30 July 2018.
- System 1 was turned off at 1100 on 20 August 2018 to drain the IX resin Vessels #1 and 4. The resin was allowed to soak overnight and the system was restarted at 0845 on 22 August 2018.
- System 2 was turned off at 1112 on 30 July 2018 to wire the new influent flow meter, and was restarted at 1328 on 30 July 2018.
- System 2 was turned off at 0740 on 31 July 2018 to program the new influent flow meter, and was restarted at 0842 on 31 July 2018.
- System 2 was turned off at 0818 on 1 August 2018 to replace the power supply to the PLC, and was restarted at 0850 on 1 August 2018.

SUMMARY OF ACTIONS TAKEN

CIA

- Performed routine inspections of BEM cover at the CIA to ensure cover is secure and intact, and demo operations.
- Monitor well drilling and installation.
- Collected cued MetalMapper data and conducted intrusive investigation in Phase 3 Area 1.

Small Arms Ranges

Collected multi-increment surface and subsurface soil samples from sediment washout area at D Range, and post-excavation (5th lift) samples at grid DR158.

J1 Range

J1 South drive point sampling.

J2 Range

- Groundwater sampling within the J2 North SPM program.
- Hydraulic monitoring within the J2 North SPM program.
- Monitor well drilling and installation.

J3 Range

Groundwater, influent water, residential well, and surface water sampling within the J3 Range SPM program.

Training Areas

- Vegetation and MEC surface clearance, and ISM surface soil sampling from six grids, at Former E Range.
- Completed vegetation clearance, and MEC/MD removal at KD Range APC primary target, and collected ISM (3 total) for perchlorate and explosives analyses from KD Range APC primary target grid.
- Groundwater sampling within the L Range LTM program.

Other

- Groundwater sampling of the Upper Cape Regional Water Supply wells.
- Process water samples were collected from the J-3 Range.
- Environmental and system performance monitoring groundwater samples were collected from C Range, CIA, D Range, E Range, J-2 Range Northern, J-3 Range, and the KD Range.

JBCC IAGWSP Tech Update Meeting Minutes 9 August 2018

Project and Fieldwork Update

The drill rig has slowed down somewhat since the last update. Based on the profile data for MW-703 (J-2 North location that is co-located with MW-305), it was determined that two screens should be installed rather than one as originally proposed. Therefore, it took several additional days to advance the 8" casing to the required depth and install the two screens. The wells were installed between July 30th and August 1st. The drill rig then moved to MW-704 (J-2 North location 3) which was drilled between August 2nd and August 8th to a depth of 311 feet. A screen setting call for this location is scheduled for Monday August 13th. The rig moved to MW-702 (J-2 North location 1). Because of a detection at the bottom interval the team decided to drill to refusal and are currently at 286 feet. AECOM has a tentative schedule for the installation of the J-1 South drive points. Beginning August 14th they will stake the locations and hopefully begin to drill later that week. Watermark sampled Water Cooperative supply wells 1, 2 and 3 as well as their sentry wells C1 and C4. A rush turnaround time was requested for these samples however the laboratory is behind schedule and data is still pending. USACE was able to get a verbal non-detect in the sentry wells but the full data package is expected by the end of the week. MassDEP requested that they are informed as soon as the data is available.

In the CIA, there is one Metal Mapper up and running. Figures showing progress were displayed and discussed. The team is approximately 60% complete in Area C. There are two dig teams on site. One is a team working in the 100% verification grid (grid 39-35) and they are approximately 95% completed. The second team is finishing in grid 39-49 today and will move to grid 39-38 which is currently about 10% complete. To date 9 items have been found (one found during surface clearance).

In the Training Areas, Dawson is continuing with vegetation and surface clearance activities at the Former E Range. They are approximately 75% done. To date they have found nineteen 3.5" rockets, three 37mm projectiles, and one fuze from a 60mm illumination round. Once they are finished in Former E they will move to the KD Range and clear and sample under the primary target (an armored personnel carrier). The target was removed on Tuesday. Pyrotechnics sampling was conducted on July 10th and results are pending.

At the Small Arms Ranges, crews completed a 5th lift at the D Range and collected post excavation samples. Samples were collected from the outwash area of the Former D Range. There are

approximately 100 yards of soil at the Former B Range that will be taken off-site in the next couple of weeks. There is a new contract being awarded for the additional lifts at C Range and Former B Range and the transportation and disposal of the D Range and C Range stockpiled soil.

EPA noted that they have begun to draft a Decision Document Addendum for the L Range and would like the modelers to evaluate cleanup scenarios in the same manner that was done for the Demolition Area 2 Decision Document addendum. IAGWSP will provide and update at the next tech meeting.

Action Items

Action items were discussed and updated.

JBCC IAGWSP Tech Update Meeting Minutes 23 August 2018

The sonic rig has completed its work. There was a screen setting call yesterday for MW-710 after which the drill rig installed the well and finished surface completion, the rig will de-mob sometime next week. The drive point rig started Monday at location 711. They hit water at 93.75' below ground surface (bgs) and began collecting samples at 103' bgs and sampled down to a depth of 163' bgs. They are currently at location 714. They started sampling at 110'-112' bgs and are at 150'-152' bgs. The water table wells are scheduled to be installed the week after Labor Day. The sampling crews is performing long-term monitoring in J-2 North.

In the CIA, the Metal Mapper team is continuing to collect cued data in Area C. Figures showing progress were displayed and discussed. The team is approximately 84% complete in Area C and they anticipate finishing this week. There are three dig teams on site. Two are working in Area A (grids 39-44 and 39-47) and one in Area B (39-34). The verification grid (39-35) is almost complete. To date 18 items have been found, mostly 81mm mortars.

In the Training Areas, Dawson completed vegetation and surface clearance activities at the Former E Range. They found twenty-eight potential MEC items: twenty-two 3.5" rockets, five 37mm projectiles, and one fuze. A figure showing proposed sampling locations was displayed and discussed. The samples will be collected before the end of September. At the KD Range Dawson finished clearing under the former location of the primary target (an armored personnel carrier) there were no MEC items found. Pyrotechnics sampling results are pending.

At the Small Arms Ranges, results were received for the 5th lift at the D Range stockpile grid. Two of the three samples were still greater than the action level. The results from the surface and subsurface samples that were collected from the outwash area of the Former D Range were below action levels.

Action Items

Action items were discussed and updated.

JBCC Cleanup Team Meeting

The next JBCC Cleanup Team (JBCCCT) meeting has yet to be scheduled (previous meeting was 29 August 2018). 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.

SUMMARY OF DATA RECEIVED

Table 1 summarizes sampling for all media from 1 August to 31 August 2018. No validated detections of explosives compounds and perchlorate in groundwater are available for the period 1 August to 31 August 2018, so these will be discussed in the September Monthly Progress Report. 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.

Twelve operable units (OU) are under investigation and cleanup at Camp Edwards. The OUs include: 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 Areas, 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).

2. DELIVERABLES SUBMITTED

Deliverables submitted during the reporting period include the following:

- Final L Range 2018 Annual Environmental Monitoring Report 07 Aug 18
- Monthly Progress Report No. 256 for July 2018 10 Aug 18
- Final Small Arms Ranges 2018 Annual Environmental Monitoring Report 15 Aug 18
- Draft Demolition Area 2 2018 Annual Environmental Monitoring Report 31 Aug 18

3. SCHEDULED ACTIONS

The following documents are being prepared or revised during September 2018:

Training Areas

- Draft Training Areas Decision Document

Annual Reports/ Environmental Monitoring Reports/Work Plans

- J-1 North and J-1 South Annual Monitoring Report

Central Impact Area

- 2019 Workplan

Miscellaneous

- Five Year Review report
- J-3 Geophysical and Soil Technical Memorandum
- J-2 Range geophysical completion of work report
- Technology evaluation and attenuation study reports
- Certificates of Compliance
- PFAS sampling project note

TABLE 1
Sampling Progress: 1 August to 31 August 2018

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
C Range	SDDR158	DR158_O	FR	08/06/2018	Soil	0	0.25
C Range	SDDR158	DR158_N	FR	08/06/2018	Soil	0	0.25
C Range	SDDR158	DR158_M	N	08/06/2018	Soil	0	0.25
Central Impact Area	BH-710	BH-710-GW-256-261	N	08/17/2018	Water	256	261
Central Impact Area	BH-710	BH-710-GW-246-251	N	08/17/2018	Water	246	251
Central Impact Area	BH-710	BH-710-GW-216-221D	FD	08/16/2018	Water	216	221
Central Impact Area	BH-710	BH-710-GW-216-221	N	08/16/2018	Water	216	221
Central Impact Area	BH-710	BH-710-GW-206-211	N	08/15/2018	Water	206	211
Central Impact Area	BH-710	BH-710-GW-196-201	N	08/15/2018	Water	196	201
Central Impact Area	BH-710	BH-710-GW-186-191	N	08/15/2018	Water	186	191
Central Impact Area	BH-710	BH-710-GW-176-181	N	08/15/2018	Water	176	181
Central Impact Area	BH-710	BH-710-GW-226-231	N	08/15/2018	Water	226	231
Central Impact Area	BH-710	BH-710-GW-236-241	N	08/15/2018	Water	236	241
Central Impact Area	CIA2-EFF	CIA2-EFF-55A	N	08/07/2018	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-55A	N	08/07/2018	Process Water	0	0
Central Impact Area	CIA2-MID1	CIA2-MID1-55A	N	08/07/2018	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-55A	N	08/07/2018	Process Water	0	0
Central Impact Area	CIA1-EFF	CIA1-EFF-55A	N	08/07/2018	Process Water	0	0
Central Impact Area	CIA1-MID2	CIA1-MID2-55A	N	08/07/2018	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-55A	N	08/07/2018	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-55A	N	08/07/2018	Process Water	0	0
Central Impact Area	CIA3-EFF	CIA3-EFF-26A	N	08/07/2018	Process Water	0	0
Central Impact Area	CIA3-MID2	CIA3-MID2-26A	N	08/07/2018	Process Water	0	0
Central Impact Area	CIA3-MID1	CIA3-MID1-26A	N	08/07/2018	Process Water	0	0
Central Impact Area	CIA3-INF	CIA3-INF-26A	N	08/07/2018	Process Water	0	0
D Range	SDDRNG02	DRNG02_C	N	08/02/2018	Soil	0.5	0.75
D Range	SDDRNG02	DRNG02_B	N	08/02/2018	Soil	0	0.25
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-149A	N	08/09/2018	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-149A	N	08/09/2018	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-149A	N	08/09/2018	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-149A	N	08/09/2018	Process Water	0	0
Demolition Area 1	PR-EFF	PR-EFF-149A	N	08/09/2018	Process Water	0	0
Demolition Area 1	PR-MID-2	PR-MID-2-149A	N	08/09/2018	Process Water	0	0
Demolition Area 1	PR-MID-1	PR-MID-1-149A	N	08/09/2018	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-149A	N	08/09/2018	Process Water	0	0
Demolition Area 1	D1LE-EFF	D1LE-EFF-25A	N	08/09/2018	Process Water	0	0
Demolition Area 1	D1LE-MID2	D1LE-MID2-25A	N	08/09/2018	Process Water	0	0
Demolition Area 1	D1LE-MID1	D1LE-MID1-25A	N	08/09/2018	Process Water	0	0
Demolition Area 1	D1LE-INF	D1LE-INF-25A	N	08/09/2018	Process Water	0	0
Demolition Area 1	D1-EFF	D1-EFF-97A	N	08/09/2018	Process Water	0	0
Demolition Area 1	D1-MID-2	D1-MID-2-97A	N	08/09/2018	Process Water	0	0
Demolition Area 1	D1-MID-1	D1-MID-1-97A	N	08/09/2018	Process Water	0	0
Demolition Area 1	D1-INF	D1-INF-97A	N	08/09/2018	Process Water	0	0
E Range	SSED16	E_D16_A	N	08/30/2018	Soil	0	0.25
E Range	SSEH17	E_H17_A	N	08/30/2018	Soil	0	0.25
E Range	SSEE11	E_E11_A	N	08/30/2018	Soil	0	0.25
E Range	SSEE8	E_E8_A	N	08/30/2018	Soil	0	0.25
E Range	SSEF5	E_F5_A	N	08/30/2018	Soil	0	0.25
E Range	SSEG4	E_G4_A	N	08/30/2018	Soil	0	0.25
J1 Range Northern	J1N-EFF	J1N-EFF-58A	N	08/06/2018	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-58A	N	08/06/2018	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-58A	N	08/06/2018	Process Water	0	0
J1 Range Northern	J1N-INF2	J1N-INF2-58A	N	08/06/2018	Process Water	0	0
J1 Range Southern	J1S-EFF	J1S-EFF-129A	N	08/07/2018	Process Water	0	0
J1 Range Southern	J1S-MID	J1S-MID-129A	N	08/07/2018	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-129A	N	08/07/2018	Process Water	0	0
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-119A	N	08/08/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-119A	N	08/08/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-119A	N	08/08/2018	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-119A	N	08/08/2018	Process Water	0	0

N = Normal Sample
 FD = Field Duplicate

TABLE 1
Sampling Progress: 1 August to 31 August 2018

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-119A	N	08/08/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-119A	N	08/08/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-119A	N	08/08/2018	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-119A	N	08/08/2018	Process Water	0	0
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-119A	N	08/08/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-119A	N	08/08/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-119A	N	08/08/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-119A	N	08/08/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-119A	N	08/08/2018	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-119A	N	08/08/2018	Process Water	0	0
J2 Range Northern	J2EW3-MW-2-B	J2EW3-MW-2-B_F18	N	08/23/2018	Ground Water	216.16	226.16
J2 Range Northern	J2EW3-MW-2-C	J2EW3-MW-2-C_F18	N	08/23/2018	Ground Water	251.1	261.1
J2 Range Northern	J2EW2-MW2-B	J2EW2-MW2-B_F18	N	08/23/2018	Ground Water	209.8	219.8
J2 Range Northern	J2EW2-MW2-C	J2EW2-MW2-C_F18	N	08/23/2018	Ground Water	243.8	253.8
J2 Range Northern	MW-289S	MW-289S_F18	N	08/22/2018	Ground Water	105	115
J2 Range Northern	MW-289M2	MW-289M2_F18	N	08/22/2018	Ground Water	162	172
J2 Range Northern	MW-289M2	MW-289M2_F18D	FD	08/22/2018	Ground Water	162	172
J2 Range Northern	MW-289M1	MW-289M1_F18	N	08/22/2018	Ground Water	305	315
J2 Range Northern	MW-634M3	MW-634M3_F18	N	08/22/2018	Ground Water	170.6	180.6
J2 Range Northern	MW-634M2	MW-634M2_F18	N	08/22/2018	Ground Water	200.6	210.6
J2 Range Northern	MW-634M1	MW-634M1_F18	N	08/22/2018	Ground Water	305.6	315.6
J2 Range Northern	MW-588M2	MW-588M2_F18	N	08/21/2018	Ground Water	198	208
J2 Range Northern	MW-588M2	MW-588M2_F18D	FD	08/21/2018	Ground Water	198	208
J2 Range Northern	MW-588M1	MW-588M1_F18	N	08/21/2018	Ground Water	238	248
J2 Range Northern	MW-585M3	MW-585M3_F18	N	08/21/2018	Ground Water	198.5	208.5
J2 Range Northern	MW-585M3	MW-585M3_F18D	FD	08/21/2018	Ground Water	198.5	208.5
J2 Range Northern	MW-585M2	MW-585M2_F18	N	08/21/2018	Ground Water	218.5	228.5
J2 Range Northern	MW-585M2	MW-585M2_F18D	FD	08/21/2018	Ground Water	218.5	228.5
J2 Range Northern	MW-585M1	MW-585M1_F18	N	08/21/2018	Ground Water	240	250
J2 Range Northern	BH-702	BH-702-GW-331-336	N	08/09/2018	Water	331	336
J2 Range Northern	BH-702	BH-702-GW-321-326	N	08/09/2018	Water	321	326
J2 Range Northern	BH-702	BH-702-GW-311-316	N	08/09/2018	Water	311	316
J2 Range Northern	BH-702	BH-702-GW-301-306	N	08/09/2018	Water	301	306
J2 Range Northern	BH-702	BH-702-GW-291-296	N	08/09/2018	Water	291	296
J2 Range Northern	BH-702	BH-702-GW-291-296D	FD	08/09/2018	Water	291	296
J2 Range Northern	BH-704	BH-704-GW-306-311	N	08/08/2018	Water	306	311
J2 Range Northern	BH-704	BH-704-GW-296-301	N	08/08/2018	Water	296	301
J2 Range Northern	BH-704	BH-704-GW-286-291	N	08/06/2018	Water	286	291
J2 Range Northern	BH-704	BH-704-GW-276-281	N	08/06/2018	Water	276	281
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-143A	N	08/06/2018	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-143A	N	08/06/2018	Process Water	0	0
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-143A	N	08/06/2018	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-143A	N	08/06/2018	Process Water	0	0
J2 Range Northern	BH-704	BH-704-GW-266-271	N	08/06/2018	Water	266	271
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-143A	N	08/06/2018	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-143A	N	08/06/2018	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-143A	N	08/06/2018	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-143A	N	08/06/2018	Process Water	0	0
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-143A	N	08/06/2018	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-143A	N	08/06/2018	Process Water	0	0
J2 Range Northern	BH-704	BH-704-GW-256-261	N	08/06/2018	Water	256	261
J2 Range Northern	BH-704	BH-704-GW-246-251D	FD	08/03/2018	Water	246	251
J2 Range Northern	BH-704	BH-704-GW-246-251	N	08/03/2018	Water	246	251
J2 Range Northern	BH-704	BH-704-GW-236-241	N	08/03/2018	Water	236	241
J2 Range Northern	BH-704	BH-704-GW-226-231	N	08/03/2018	Water	226	231
J2 Range Northern	BH-704	BH-704-GW-216-221	N	08/03/2018	Water	216	221
J2 Range Northern	C4-A	C-4S_F18	N	08/01/2018	Ground Water	200	250
J2 Range Northern	MW-345M2	MW-345M2_F18	N	08/01/2018	Ground Water	236.6	246.6
J2 Range Northern	MW-330M2	MW-330M2_F18	N	08/01/2018	Ground Water	238	248
J3 Range	MW-227M3	MW-227M3_F18	N	08/20/2018	Ground Water	65	75

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 1 August to 31 August 2018

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J3 Range	MW-227M2	MW-227M2_F18	N	08/20/2018	Ground Water	110	120
J3 Range	MW-227M2	MW-227M2_F18D	FD	08/20/2018	Ground Water	110	120
J3 Range	MW-227M1	MW-227M1_F18	N	08/20/2018	Ground Water	130	140
J3 Range	90MW0054	90MW0054_F18	N	08/16/2018	Ground Water	107	112
J3 Range	MW-217M2	MW-217M2_F18	N	08/16/2018	Ground Water	138	143
J3 Range	MW-217M3	MW-217M3_F18	N	08/16/2018	Ground Water	101	106
J3 Range	MW-247M3	MW-247M3_F18	N	08/15/2018	Ground Water	95	105
J3 Range	MW-247M2	MW-247M2_F18	N	08/15/2018	Ground Water	125	135
J3 Range	MW-247M1	MW-247M1_F18	N	08/15/2018	Ground Water	180	190
J3 Range	MW-193S	MW-193S_F18	N	08/15/2018	Ground Water	32.5	37.5
J3 Range	MW-193M1	MW-193M1_F18	N	08/15/2018	Ground Water	57.5	62.5
J3 Range	MW-250M3	MW-250M3_F18	N	08/14/2018	Ground Water	95	105
J3 Range	MW-250M3	MW-250M3_F18D	FD	08/14/2018	Ground Water	95	105
J3 Range	MW-250M2	MW-250M2_F18	N	08/14/2018	Ground Water	145	155
J3 Range	MW-250M2	MW-250M2_F18D	FD	08/14/2018	Ground Water	145	155
J3 Range	MW-250M1	MW-250M1_F18	N	08/14/2018	Ground Water	185	195
J3 Range	MW-157M3	MW-157M3_F18	N	08/14/2018	Ground Water	70	80
J3 Range	MW-157M2	MW-157M2_F18	N	08/14/2018	Ground Water	110	120
J3 Range	MW-157M1	MW-157M1_F18	N	08/14/2018	Ground Water	154	164
J3 Range	MW-142M2	MW-142M2_F18	N	08/13/2018	Ground Water	140	150
J3 Range	SP3-91M	SP3-91M_F18	N	08/13/2018	Ground Water	50	70
J3 Range	RS0011OSNK	RS0011OSNK_F18	N	08/08/2018	Ground Water	0	0
J3 Range	MW-171M2	MW-171M2_F18	N	08/08/2018	Ground Water	81	86
J3 Range	90PZ0211	90PZ0211_F18	N	08/07/2018	Ground Water	80	110
J3 Range	90PZ0204	90PZ0204_F18	N	08/06/2018	Ground Water	80	85
J3 Range	J3-EFF	J3-EFF-143A	N	08/06/2018	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-143A	N	08/06/2018	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-143A	N	08/06/2018	Process Water	0	0
J3 Range	J3-INF	J3-INF-143A	N	08/06/2018	Process Water	0	0
J3 Range	MW-329M2	MW-329M2_F18	N	08/02/2018	Ground Water	150.05	160.05
J3 Range	MW-329M1	MW-329M1_F18	N	08/02/2018	Ground Water	179.96	189.96
J3 Range	J3-MW-1-B	J3-MW-1-B_F18	N	08/02/2018	Ground Water	175.61	185.61
J3 Range	J3-MW-1-C	J3-MW-1-C_F18	N	08/02/2018	Ground Water	203.61	213.61
J3 Range	90PLT01006	90PLT01006_F18	N	08/02/2018	Process Water	0	0
KD Range	SSKD0004	KD0004_30C	FD	08/23/2018	Soil	0	0.25
KD Range	SSKD0004	KD0004_30B	FD	08/23/2018	Soil	0	0.25
KD Range	SSKD0004	KD0004_30A	N	08/23/2018	Soil	0	0.25

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