

**MONTHLY PROGRESS REPORT #227
FOR FEBRUARY 2016**

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 February to 29 February 2016.

1. SUMMARY OF REMEDIATION ACTIONS

The following is a description of Remediation Actions (RA) underway at Camp Edwards as of February 2016. Remediation Actions may include Rapid Response Actions (RRA). An RRA is an interim action that may be conducted prior to risk assessments or remedial investigations to address a known, ongoing threat of contamination to groundwater and/or soil.

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, and the Base Boundary 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 250 gpm, with over 2.322 billion gallons of water treated and re-injected as of 26 February 2016. No shut downs of the Frank Perkins Road facility occurred in February.

The Pew Road Mobile Treatment Unit (MTU) continues to operate at a flow rate of 105 gpm with over 455.2 million gallons of water treated and re-injected as of 26 February 2016. The following Pew Road MTU shut downs occurred in February:

- Shut down on 5 February 2016 at 1641 due to a power interruption and was restarted on 9 February 2016 at 1346.

The Base Boundary RA was operating at a flow rate of 65 gpm with over 143.4 million gallons of water treated and re-injected as of 26 February 2016. The following Base Boundary MTU shut downs occurred in February:

- Shut down on 3 February 2016 at 2207 due to a system alarm and was restarted on 4 February 2016 at 0905.

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 26 February 2016, over 332 million gallons of water have been treated and re-injected. The following J-1 Range Southern system shut downs occurred in February:

- Shut down on 25 February 2016 at 0200 due to a power outage and was restarted on 26 February 2016 at 0855.

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 will continue to operate at a total system flow rate of 250 gpm. As of 26 February 2016, over 277 million gallons of water have been treated and re-injected. The following J-1 Range Northern MTU shut downs occurred in February:

- Shut down on 16 February 2016 at 1305 to change out bag filters and was restarted on 16 February 2016 at 1327.

J-3 Range Groundwater RRA

The J-3 Range Groundwater RRA consists of removal and treatment of contaminated groundwater to control further migration of explosives compounds and perchlorate. The ETR system includes three 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 continues to operate at a flow rate of 195 gpm. As of 26 February 2016, over 879.7 million gallons of water have been treated and re-injected. The following J-3 Range system shut downs occurred in February:

- EW-IP1 shut down on 6 February 2016 at 0925 due to a power interruption and was restarted on 10 February 2016 at 0927, after FS-12 treatment system was restarted;
- EW-0001 and EW-0032 shut down on 6 February 2016 at 0925 due to a power interruption and was restarted on 10 February 2016 at 1523; and
- Shut down on 21 February 2016 at 1528 due to a power outage and was restarted on 22 February 2016 at 0804.

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 26 February 2016, over 737.5 million gallons of water have been treated and re-injected. No Northern Treatment Building shut downs occurred in February.

The Northern MTUs E and F continue to operate at a flow rate of 250 gpm. As of 26 February 2016, over 1.189 billion gallons of water have been treated and re-injected. No J-2 Range Northern MTU shut downs occurred in February.

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 (shut down as of 26 February 2016). As of 26 February 2016, over 809.5 million gallons of water have been treated and re-injected. The following MTU H and I shut downs occurred in February:

- MTUs H and I shut down on 6 February 2016 at 1715 due to a power interruption and were restarted on 9 February 2016 at 1133; and
- MTUs H and I shut down on 25 February 2016 at 0152 due to a power outage and were restarted on 1 March 2016 at 0855.

MTU J continues to operate at a flow rate of 120 gpm (shut down as of 26 February 2016). As of 26 February 2016, over 359 million gallons of water have been treated and re-injected. The following shut downs of MTU J occurred in February:

- MTU J shut down on 6 February 2016 at 0920 due to a power interruption and was restarted on 9 February 2016 at 1250; and
- MTU J shut down on 25 February 2016 at 0200 due to a power outage and was restarted on 4 March 2016 at 0838.

MTU K continues to operate at a flow rate of 125 gpm. As of 26 February 2016, over 467 million gallons of water have been treated and re-injected. The following shut downs of MTU K occurred in February:

- MTU K shut down on 6 February 2016 at 1729 due to a system alarm and was restarted on 9 February 2016 at 1105; and

- MTU K shut down on 25 February 2016 at 0200 due to a power outage and was restarted on 26 February 2016 at 0843.

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: two 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 two infiltration galleries to return treated water to the aquifer. The CIA systems 1 and 2 continue to run at a combined total flow rate of 500 gpm. As of 26 February 2016, over 547 million gallons of water have been treated and re-injected. No CIA treatment facility shutdowns occurred in February.

SUMMARY OF ACTIONS TAKEN

Samples collected during the reporting period are summarized in Table 1.

Process water samples were collected at Frank Perkins Road, Pew Road, Base Boundary, J-1 Range Southern, J-1 Range Northern, J-2 Range Northern, J-2 Range Eastern, J-3 Range, and Central Impact Area (CIA).

Environmental and system performance monitoring groundwater samples were collected at CIA, Demolition Area 1, J-1 Range Southern, J-2 Range Northern, J-2 Range Eastern, B Range, C Range, G Range, Former B Range, Former D Range, and MP-1.

Groundwater Profile samples were collected at J-1 Range Northern (BH-657).

Drilled in J-1 Range Northern, IBC Range, Demolition Area 2, and L Range.

Completed drilling and installation and development of new extraction well at J-3 Range (J3EWIP2).

Completed construction of infiltration gallery for the Leading Edge treatment system at Demolition Area 1 and mobilized drill rig.

Completed construction of the reinjection gallery and continued construction of influent pipeline at CIA treatment system.

Performed EM-61 survey of Phase II Area 3 at the CIA.

Performed daily inspection of BEM cover at the CIA to ensure cover is secure and intact.

Performed road repair in J-1 Range Northern between Tank Alley and Wood Road.

JBCC IAGWSP Tech Update Meeting Minutes 25 February 2016

Project and Field Work Update

In the Central Impact Area (CIA), the EM-61 survey of Phase II Area 3 was completed last week. Towards the end of March, Dawson UXO and Metal Mapper teams will re-mob to the site. Metal Mapper will move to Phase II Area 2 and Dawson will resume digging in Phase II Area 1.

Soils are tentatively scheduled to go off-site next Wednesday. The agencies will be notified when the date is finalized.

Construction activities are ongoing at the CIA EW-3 groundwater treatment system. Work is currently underway on the influent pipeline, it is estimated to be completed March 18. The mobile treatment unit (MTU) will be delivered on March 21. Eversource has been unresponsive to requests for a schedule for the installation of electric power despite having been paid. USACE will send an email outlining the situation to MassDEP so they can reach out to Eversource. The extraction well is being drilled at the Demolition Area 1 off-site treatment system. The MTU is scheduled to be installed in early April. The treatment train at Demolition Area 1 Frank Perkins Road plant will be dismantled beginning next week. There will be approximately one week of down time for the system while the carbon is moved (the carbon and ion exchange vessels will be sent off-site for reuse). The Demolition Area 1 source area extraction well has been installed. Trenching for the pipeline to Frank Perkins Road is scheduled to begin in early April. The J-3 Range extraction well is being developed. The drill rig is finishing up the second J-1 North location (MW-657) and will de-mob at the end of the week.

J-2 Range Project Notes

Discussion was held on the J-2 Range eastern stagnation zone evaluation and proposed monitoring well drilling. It was noted that MW-368 may be in a stagnation zone and IAGWSP is recommending additional monitoring wells to evaluate contamination near EW-4 and determine if turning off EW-4 and shifting pumping to EW-5 would be appropriate to try and get the contamination at MW-368 to move and clean up. IAGWSP has recommended two borings upgradient of EW-4 and one upgradient of EW-6. MassDEP suggested that pulsing of the extraction wells may be appropriate.

Discussion was held on the findings of the post-DD geophysical investigations and soil sampling. Work was completed in areas 1, 2 and 4 and findings were similar to the conclusions from the munitions source appendix to the RI/FS. Areas investigated included a few anomalies in Area 1 that had not been evaluated under the RI/FS and meandering paths. IAGWSP is recommending full clearance on the grids where items were found.

For the soil sampling, work was conducted in three phases. Phase 1 included 62 grids, Phase 2 had 8 grids and Phase 3 had 4 grids. IAGWSP will submit a project note with recommendations for excavation of those areas that had actionable levels of soil contamination remaining. In addition, IAGWSP has recommended installing four shallow monitoring wells as required in the J-2 Range Decision Document.

Action Items

The action items were discussed and updated.

Old Projects

The status of old projects, e.g. WASA, Air Mag, and non-specific operable unit monitoring was discussed. EPA noted that some type of documentation was required to close these sites. They requested a letter describing the status and a memorandum of resolution (if there were unresolved comments) for the record to close the projects.

JBCC Cleanup Team Meeting

The JBCC Cleanup Team (JBCCCT), formerly the MMR Cleanup Team (MMRCT) is next scheduled to meet next on May 11, 2016. 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 2 summarizes the validated detections of explosives compounds and perchlorate for all groundwater results received from 1 February to 29 February 2016. 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.

There are currently twelve operable units (OU) 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:

- Monthly Progress Report No. 226 for January 2016 02/10/2016
- Final Northwest Corner 2015 Annual Environmental Monitoring Report 02/02/2016
- Final Western Boundary 2015 Annual Environmental Monitoring Report 02/09/2016
- Changes to Central Impact Area Chemical and Hydraulic Monitoring Well Network – Project Note 02/16/2016
- Small Arms Range Fourth Addendum to May 2014 Project Note for “Sampling, Soil Removal, and Monitoring at Small Arms Ranges” – Project Note 02/25/2016
- U Range Confirmation Soil Investigation Findings and Recommended Soil Removal – Project Note 02/25/2016
- Draft 2014-2015 BIP Summary Report 02/29/2016

3. SCHEDULED ACTIONS

The following documents are being prepared or revised during March 2016:

- J-2 Range Project Note for Additional Wells to Evaluate Source Response;
- Training Areas Draft Investigation Report;
- Training Areas Draft Remedy Selection Plan;
- Western Boundary Residual Risk Assessment Report (also known as Demonstration of Compliance Report);
- CIA Environmental Monitoring Work Plan;
- CIA Draft 2015 Source Removal Annual Report;
- J-3 Range 2015 Interim Environmental Monitoring Report;
- J-2 Range Eastern and J-2 Range Northern 2015 Environmental Monitoring Report; and
- L Range Plume Shell Update Project Note.

TABLE 1
Sampling Progress: 1 February to 29 February 2016

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
Central Impact Area	MW-180M3	MW-180M3_S16	N	02/25/2016	Ground Water	171	181
Central Impact Area	MW-86S	MW-86S_S16	N	02/25/2016	Ground Water	143	153
Central Impact Area	MW-86M2	MW-86M2_S16	N	02/25/2016	Ground Water	158	168
Central Impact Area	MW-43M2	MW-43M2_S16	N	02/25/2016	Ground Water	200	210
Central Impact Area	MW-43M1	MW-43M1_S16	N	02/25/2016	Ground Water	223	233
Central Impact Area	MW-208M1	MW-208M1_S16	N	02/25/2016	Ground Water	195	205
J2 Range Eastern	MW-324M2	MW-324M2_S16	N	02/24/2016	Ground Water	203.7	214.7
J2 Range Eastern	MW-324M1	MW-324M1_S16	N	02/24/2016	Ground Water	234.9	244.9
J2 Range Eastern	MW-335M2	MW-335M2_S16	N	02/24/2016	Ground Water	215.3	225.3
J2 Range Eastern	MW-335M1	MW-335M1_S16	N	02/24/2016	Ground Water	255.2	265.2
J2 Range Eastern	MW-319M1	MW-319M1_S16	N	02/24/2016	Ground Water	200.3	210.3
J2 Range Eastern	J2MW-04M2	J2MW-04M2_S16	N	02/23/2016	Ground Water	210	220
J2 Range Eastern	J2MW-04M1	J2MW-04M1_S16	N	02/23/2016	Ground Water	257	267
J2 Range Eastern	MW-436M2	MW-436M2_S16	N	02/23/2016	Ground Water	235.5	245.5
J2 Range Eastern	MW-436M1	MW-436M1_S16	N	02/23/2016	Ground Water	295.5	305.5
Demolition Area 1	MW-648M1	MW-648M1_R2	N	02/23/2016	Ground Water	112	122
J1 Range Southern	MW-645M2	MW-645M2_R2	N	02/22/2016	Ground Water	143.5	153.5
J1 Range Southern	MW-645M1	MW-645M1_R2	N	02/22/2016	Ground Water	183.5	193.5
J1 Range Southern	MW-646M2	MW-646M2_R2	N	02/22/2016	Ground Water	166	176
J1 Range Southern	MW-646M1	MW-646M1_R2	N	02/22/2016	Ground Water	196	206
J1 Range Southern	MW-647M2	MW-647M2_R2	N	02/22/2016	Ground Water	185.8	195.8
J1 Range Southern	MW-647M1	MW-647M1_R2	N	02/22/2016	Ground Water	207.8	217.8
J2 Range Eastern	MW-307M3	MW-307M3_S16	N	02/19/2016	Ground Water	125.8	135.8
J2 Range Eastern	MW-310M1	MW-310M1_S16	N	02/19/2016	Ground Water	171.4	181.4
J2 Range Eastern	MW-368M2	MW-368M2_S16	N	02/19/2016	Ground Water	202.7	212.7
J2 Range Eastern	MW-368M2	MW-368M2_S16D	FD	02/19/2016	Ground Water	202.7	212.7
J2 Range Eastern	MW-339M1	MW-339M1_S16	N	02/19/2016	Ground Water	233	243
C Range	MW-491S	MW-491S_S16	N	02/19/2016	Ground Water	146.9	156.9
C Range	MW-456S	MW-456S_S16	N	02/18/2016	Ground Water	150.3	160.3
B Range	MW-537M1	MW-537M1_S16	N	02/18/2016	Ground Water	106	116
B Range	MW-490S	MW-490S_S16	N	02/18/2016	Ground Water	108.1	118.1
J1 Range Northern	BH-657	J1NP-2_301-306	N	02/17/2016	GW Profile	301	306
J1 Range Northern	BH-657	J1NP-2_291-296	N	02/15/2016	GW Profile	291	296
J1 Range Northern	BH-657	J1NP-2_281-286	N	02/12/2016	GW Profile	281	286
J1 Range Northern	BH-657	J1NP-2_271-276	N	02/12/2016	GW Profile	271	276
B Range	MW-539M1	MW-539M1_S16	N	02/12/2016	Ground Water	113	123
G Range	MW-470S	MW-470S_S16	N	02/11/2016	Ground Water	76.3	86.3
MP-1	MW-68S	MW-68S_S16	N	02/11/2016	Ground Water	84	94
B Range	MW-455S	MW-455S_S16	N	02/10/2016	Ground Water	117.6	127.6
Former B Range	MW-475S	MW-475S_S16	N	02/10/2016	Ground Water	50.3	60.3
Demolition Area 1	D1-EFF	D1-EFF-67A	N	02/04/2016	Process Water	0	0
Demolition Area 1	D1-MID-2	D1-MID-2-67A	N	02/04/2016	Process Water	0	0
Demolition Area 1	D1-MID-1	D1-MID-1-67A	N	02/04/2016	Process Water	0	0
Demolition Area 1	D1-INF	D1-INF-67A	N	02/04/2016	Process Water	0	0
J1 Range Northern	BH-657	J1NP-2_261-266	N	02/04/2016	GW Profile	261	266
Demolition Area 1	PR-EFF	PR-EFF-119A	N	02/04/2016	Process Water	0	0
Demolition Area 1	PR-MID-2	PR-MID-2-119A	N	02/04/2016	Process Water	0	0
Demolition Area 1	PR-MID-1	PR-MID-1-119A	N	02/04/2016	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-119A	N	02/04/2016	Process Water	0	0
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-119A	N	02/04/2016	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID3A	FPR-2-GAC-MID3A-119A	N	02/04/2016	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-119A	N	02/04/2016	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-119A	N	02/04/2016	Process Water	0	0
J1 Range Southern	J1S-EFF	J1S-EFF-99A	N	02/04/2016	Process Water	0	0
J1 Range Southern	J1S-MID-2	J1S-MID-2-99A	N	02/04/2016	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-99A	N	02/04/2016	Process Water	0	0
B Range	MW-72S	MW-72S_S16	N	02/03/2016	Ground Water	106	116

TABLE 1
Sampling Progress: 1 February to 29 February 2016

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
B Range	MW-72S	MW-72S_S16D	FD	02/03/2016	Ground Water	106	116
J3 Range	J3-EFF	J3-EFF-113A	N	02/03/2016	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-113A	N	02/03/2016	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-113A	N	02/03/2016	Process Water	0	0
J3 Range	J3-INF	J3-INF-113A	N	02/03/2016	Process Water	0	0
J1 Range Northern	BH-657	J1NP-2_251-256	N	02/03/2016	GW Profile	251	256
Central Impact Area	CIA2-EFF	CIA2-EFF-25A	N	02/03/2016	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-25A	N	02/03/2016	Process Water	0	0
Central Impact Area	CIA2-MID1	CIA2-MID1-25A	N	02/03/2016	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-25A	N	02/03/2016	Process Water	0	0
Central Impact Area	CIA1-EFF	CIA1-EFF-25A	N	02/03/2016	Process Water	0	0
Central Impact Area	CIA1-MID2	CIA1-MID2-25A	N	02/03/2016	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-25A	N	02/03/2016	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-25A	N	02/03/2016	Process Water	0	0
J1 Range Northern	BH-657	J1NP-2_241-246	N	02/02/2016	GW Profile	241	246
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-89A	N	02/02/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-89A	N	02/02/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-89A	N	02/02/2016	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-89A	N	02/02/2016	Process Water	0	0
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-89A	N	02/02/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-89A	N	02/02/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-89A	N	02/02/2016	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-89A	N	02/02/2016	Process Water	0	0
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-89A	N	02/02/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-89A	N	02/02/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-89A	N	02/02/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-89A	N	02/02/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-89A	N	02/02/2016	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-89A	N	02/02/2016	Process Water	0	0
J1 Range Northern	BH-657	J1NP-2_231-236	N	02/02/2016	GW Profile	231	236
Former B Range	MW-476S	MW-476S_S16	N	02/01/2016	Ground Water	59.9	69.8
J1 Range Northern	BH-657	J1NP-2_221-226	N	02/01/2016	GW Profile	221	226
J1 Range Northern	BH-657	J1NP-2_211-216	N	02/01/2016	GW Profile	211	216
J1 Range Northern	BH-657	J1NP-2_211-216D	FD	02/01/2016	GW Profile	211	216
Former D Range	MW-174S	MW-174S_S16	N	02/01/2016	Ground Water	190	200
J1 Range Northern	BH-657	J1NP-2_201-206	N	02/01/2016	GW Profile	201	206
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-113A	N	02/01/2016	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-113A	N	02/01/2016	Process Water	0	0
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-113A	N	02/01/2016	Process Water	0	0
J1 Range Northern	BH-657	J1NP-2_191-196	N	02/01/2016	GW Profile	191	196
J2 Range Northern	J2N-INF-G	J2N-INF-G-113A	N	02/01/2016	Process Water	0	0
J2 Range Northern	MW-635M1	MW-635M1_S16	N	02/01/2016	Ground Water	265.4	275.4
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-113A	N	02/01/2016	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-113A	N	02/01/2016	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-113A	N	02/01/2016	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-113A	N	02/01/2016	Process Water	0	0
J1 Range Northern	BH-657	J1NP-2_181-186	N	02/01/2016	GW Profile	181	186
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-113A	N	02/01/2016	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-113A	N	02/01/2016	Process Water	0	0
J2 Range Northern	MW-337M1	MW-337M1_S16	N	02/01/2016	Ground Water	243.7	253.7
J1 Range Northern	J1N-EFF	J1N-EFF-28A	N	02/01/2016	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-28A	N	02/01/2016	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-28A	N	02/01/2016	Process Water	0	0
J1 Range Northern	BH-657	J1NP-2_171-176	N	02/01/2016	GW Profile	171	176
J1 Range Northern	J1N-INF2	J1N-INF2-28A	N	02/01/2016	Process Water	0	0

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received February 2016

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
Northwest Corner	MW-441M2	MW-441M2_F15	109.5	119.5	12/29/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.34		UG/L	0.60		0.025	0.20
Western Boundary	4036000-04G	4036000-04G_15Q4	55	65	12/22/2015	SW6850	Perchlorate	0.20		UG/L	2.0		0.015	0.20
Western Boundary	4036000-03G	4036000-03G_15Q4	50	60	12/22/2015	SW6850	Perchlorate	0.12	J	UG/L	2.0		0.015	0.20
Western Boundary	4036000-06G	4036000-06G_15Q4	108	128	12/22/2015	SW6850	Perchlorate	0.084	J	UG/L	2.0		0.015	0.20
Western Boundary	4036000-01G	4036000-01G_15Q4	38	70	12/22/2015	SW6850	Perchlorate	0.15	J	UG/L	2.0		0.015	0.20
Demolition Area 1	MW-432	MW-432_F15	88	188	12/21/2015	SW6850	Perchlorate	0.32		UG/L	2.0		0.015	0.20
Demolition Area 1	MW-431	MW-431_F15	88	188	12/21/2015	SW6850	Perchlorate	0.11	J	UG/L	2.0		0.015	0.20
Demolition Area 1	MW-431	MW-431_F15	88	188	12/21/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.24		UG/L	0.60		0.025	0.20
Demolition Area 1	MW-431	MW-431_F15	88	188	12/21/2015	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.25		UG/L	400		0.019	0.20
Demolition Area 1	MW-31S	MW-31S_F15	98	103	12/21/2015	SW8330	4-Amino-2,6-dinitrotoluene	0.33		UG/L	7.3		0.023	0.20
Demolition Area 1	MW-31S	MW-31S_F15	98	103	12/21/2015	SW8330	2-Amino-4,6-dinitrotoluene	0.44		UG/L	7.3		0.023	0.20
Demolition Area 1	MW-31S	MW-31S_F15	98	103	12/21/2015	SW8330	2,4,6-Trinitrotoluene	0.80		UG/L	2.0		0.028	0.20
Demolition Area 1	MW-31S	MW-31S_F15	98	103	12/21/2015	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.84		UG/L	400		0.019	0.20
Demolition Area 1	MW-31S	MW-31S_F15	98	103	12/21/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.4		UG/L	0.60	X	0.025	0.20
Demolition Area 1	MW-31S	MW-31S_F15D	98	103	12/21/2015	SW8330	4-Amino-2,6-dinitrotoluene	0.32		UG/L	7.3		0.023	0.20
Demolition Area 1	MW-31S	MW-31S_F15D	98	103	12/21/2015	SW8330	2-Amino-4,6-dinitrotoluene	0.46		UG/L	7.3		0.023	0.20
Demolition Area 1	MW-31S	MW-31S_F15D	98	103	12/21/2015	SW8330	2,4,6-Trinitrotoluene	0.82		UG/L	2.0		0.028	0.20
Demolition Area 1	MW-31S	MW-31S_F15D	98	103	12/21/2015	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.86		UG/L	400		0.019	0.20
Demolition Area 1	MW-31S	MW-31S_F15D	98	103	12/21/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.5		UG/L	0.60	X	0.025	0.20
Demolition Area 1	MW-31M	MW-31M_F15	113	123	12/21/2015	SW8330	2-Amino-4,6-dinitrotoluene	0.20		UG/L	7.3		0.023	0.20
Demolition Area 1	MW-31M	MW-31M_F15	113	123	12/21/2015	SW8330	4-Amino-2,6-dinitrotoluene	0.20		UG/L	7.3		0.023	0.20
Demolition Area 1	MW-31M	MW-31M_F15	113	123	12/21/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.3		UG/L	0.60	X	0.025	0.20
Demolition Area 1	MW-31M	MW-31M_F15	113	123	12/21/2015	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.6		UG/L	400		0.019	0.20
Demolition Area 1	MW-598M2	MW-598M2_F15	88	98	12/21/2015	SW6850	Perchlorate	1.3		UG/L	2.0		0.015	0.20
Demolition Area 1	MW-598M1	MW-598M1_F15	122	132	12/21/2015	SW6850	Perchlorate	2.2		UG/L	2.0	X	0.015	0.20
Demolition Area 1	MW-76M2	MW-76M2_F15	105	115	12/16/2015	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.48		UG/L	400		0.019	0.20
Demolition Area 1	MW-76M2	MW-76M2_F15	105	115	12/16/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.3		UG/L	0.60	X	0.025	0.20
Demolition Area 1	MW-77M2	MW-77M2_F15	120	130	12/16/2015	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.31		UG/L	400		0.019	0.20
Demolition Area 1	MW-77M2	MW-77M2_F15	120	130	12/16/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.57		UG/L	0.60		0.025	0.20
Demolition Area 1	MW-544M3	MW-544M3_F15	77.5	87.5	12/16/2015	SW6850	Perchlorate	0.052	J	UG/L	2.0		0.015	0.20
Demolition Area 1	MW-544M2	MW-544M2_F15	112	122	12/16/2015	SW6850	Perchlorate	0.40		UG/L	2.0		0.015	0.20
Demolition Area 1	MW-544M1	MW-544M1_F15	162	172	12/16/2015	SW6850	Perchlorate	2.3		UG/L	2.0	X	0.015	0.20
Demolition Area 1	XX9514	XX9514_F15	102	112	12/16/2015	SW6850	Perchlorate	3.8		UG/L	2.0	X	0.015	0.20
Demolition Area 1	MW-554M2	MW-554M2_F15	89.1	99.1	12/15/2015	SW6850	Perchlorate	0.14	J	UG/L	2.0		0.015	0.20
Demolition Area 1	MW-554M1	MW-554M1_F15	120	130	12/15/2015	SW6850	Perchlorate	0.29		UG/L	2.0		0.015	0.20
Demolition Area 1	MW-642M2	MW-642M2_F15	77.3	87.3	12/15/2015	SW6850	Perchlorate	0.17	J	UG/L	2.0		0.015	0.20
Demolition Area 1	MW-642M1	MW-642M1_F15	104.3	114.3	12/15/2015	SW6850	Perchlorate	0.16	J	UG/L	2.0		0.015	0.20
Demolition Area 1	MW-641M2	MW-641M2_F15	86.2	96.2	12/15/2015	SW6850	Perchlorate	0.48		UG/L	2.0		0.015	0.20
Demolition Area 1	MW-641M1	MW-641M1_F15	113.2	123.2	12/15/2015	SW6850	Perchlorate	1.7		UG/L	2.0		0.015	0.20
Demolition Area 1	MW-610M2	MW-610M2_F15	85	95	12/09/2015	SW6850	Perchlorate	1.0		UG/L	2.0		0.015	0.20
Demolition Area 1	MW-610M1	MW-610M1_F15	110	120	12/09/2015	SW6850	Perchlorate	1.5		UG/L	2.0		0.015	0.20

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

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received February 2016

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-545M4	MW-545M4_F15	72	82	12/09/2015	SW6850	Perchlorate	0.45		UG/L	2.0		0.015	0.20
Demolition Area 1	MW-545M3	MW-545M3_F15	101.5	111.5	12/09/2015	SW6850	Perchlorate	0.19	J	UG/L	2.0		0.015	0.20
Demolition Area 1	MW-545M2	MW-545M2_F15	142	152	12/09/2015	SW6850	Perchlorate	1.0		UG/L	2.0		0.015	0.20
Demolition Area 1	MW-545M1	MW-545M1_F15	162	172	12/09/2015	SW6850	Perchlorate	1.8		UG/L	2.0		0.015	0.20
U Range	MW-62S	MW-62S_F15	108	118	12/08/2015	SW6850	Perchlorate	0.032	J	UG/L	2.0		0.015	0.20
KD Range	MW-61S	MW-61S_F15	98	108	12/08/2015	SW6850	Perchlorate	0.041	J	UG/L	2.0		0.015	0.20
KD Range	MW-60S	MW-60S_F15	90.7	100.7	12/08/2015	SW6850	Perchlorate	0.23		UG/L	2.0		0.015	0.20
KD Range	MW-109S	MW-109S_F15	89	99	12/08/2015	SW6010C	Copper	4.3	J	UG/L		X	1.7	25.0

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