MONTHLY PROGRESS REPORT #224
FOR NOVEMBER 2015

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 November to 30 November 2015.

1. SUMMARY OF REMEDIATION ACTIONS

The following is a description of Remediation Actions (RA) underway at Camp Edwards as of November 2015. 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 was operating at a flow rate of 160 gpm for the first half of the month (Extraction well EW-502 was offline for repairs through 18 November). Following completion of repairs, the facility continues to operate at a flow rate of 250 gpm, with over 2.283 billion gallons of water treated and re-injected as of 27 November 2015. The following shut downs of the Frank Perkins Road facility occurred in November:

- EW-502 was turned off on 22 October 2015 at 1050 for repairs and was restarted on 18 November 2015 at 1330.

The Pew Road Mobile Treatment Unit (MTU) continues to operate at a flow rate of 105 gpm with over 442.5 million gallons of water treated and re-injected as of 27 November 2015. No Pew Road MTU shut downs occurred in November.

The Base Boundary RA continues to operate at a flow rate of 65 gpm with over 138.1 million gallons of water treated and re-injected as of 27 November 2015. No Base Boundary MTU shut downs occurred in November.

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 27 November 2015, over 319 million gallons of water have been treated and re-injected. The following J-1 Range Southern system shut downs occurred in November:

- Shut down on 6 November 2015 at 1905 due to a power interruption and was restarted on 9 November 2015 at 1150; and
- Shut down on 22 November 2015 at 0653 due to a system alarm and was restarted on 23 November 2015 at 1012.

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 27 November 2015, over 251 million gallons of water have been treated and re-injected. The following J-1 Range Northern MTU shut downs occurred in November:

- Shut down on 19 November 2015 at 0857 for system maintenance and was restarted on 19 November 2015 at 0921.

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 27 November 2015, over 853.7 million gallons of water have been treated and re-injected. The following J-3 Range system shut downs occurred in November:

- Shut down on 6 November 2015 at 1914 due to a power interruption. EWIP1 was restarted on 9 November 2015 at 0830. EW0001 and EW0032 were restarted on 9 November 2015 at 0918;
- Shut down on 15 November 2015 at 0431 due to a system alarm and was restarted on 16 November 2015 at 0743;
- EW0001 and EW0032 were shut down on 22 November 2015 at 0653 due to a system alarm; EW0001 was restarted on 23 November 2015 at 0823 and EW0032 was restarted on 23 November 2015 at 0855; and
- EWIP1 was shut down on 22 November 2015 at 0703 due to a system alarm and was restarted on 23 November 2015 at 0921.

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 27 November 2015, over 712.5 million gallons of water have been treated and re-injected. No Northern Treatment Building shut downs occurred in November.

The Northern MTUs E and F continue to operate at a flow rate of 250 gpm. As of 27 November 2015, over 1.150 billion gallons of water have been treated and re-injected. No J-2 Range Northern MTU shut downs occurred in November.

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 27 November 2015, over 791.5 million gallons of water have been treated and re-injected. The following shut downs of MTUs H and I occurred in November:

- MTUs H and I were shut down on 16 November 2015 at 1202 for system repairs and were restarted on 16 November 2015 at 1615.

MTU J continues to operate at a flow rate of 120 gpm. As of 27 November 2015, over 350 million gallons of water have been treated and re-injected. The following shut downs of MTU J occurred in November:

- MTU J shut down on 6 November 2015 at 1904 due to a power interruption and was restarted on 9 November 2015 at 1215; and
- MTU J was shut down on 22 November 2015 at 0650 due to a system alarm and was restarted on 23 November 2015 at 1028.

MTU K continues to operate at a flow rate of 125 gpm. As of 27 November 2015, over 454 million gallons of water have been treated and re-injected. The following shut downs of MTU K occurred in November:

- MTU K was shut down on 22 November 2015 at 0651 due to a system alarm and was restarted on 23 November 2015 at 1049.

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 27 November 2015, over 482 million gallons of water have been treated and re-injected. The following CIA treatment facility shutdown occurred in November:

- CIA System 1 was shut down on 9 November 2015 at 1348 for maintenance and was restarted on 9 November 2015 at 1408.

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 2 and J-1 Range Northern.

Soil samples were collected at CIA and J-3 Range.

Groundwater Profile samples were collected at L Range (BH-650, BH-651).

Performed vegetation clearance and intrusive operations in MEC investigation areas at J-3 Range.

Drilled in J-3 Range (Pilot Boring BH-653), L Range (Camp Good News), and IBC Range. Prepared well pads and roads for J-3 Range, L Range, and IBC Range.

Continued intrusive investigation of Phase II area 1.

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

Collected delineation soil samples at grids in J-1 Range, J-2 Range, J-3 Range, and U Range.

Collected post-excavation soil samples at BIP and cracked item locations in CIA and J-2 Range.

Excavated, stockpiled soil and collected post-excavation samples at Small Arms Ranges (SAR).

JBCC IAGWSP Tech Update Meeting Minutes 12 November 2015

Project and Field Work Update

In the Central Impact Area, Dawson has three crews operating in Phase II Area 1. The Baltimore UXO team will return to the site next week and Metal Mapper will re-mobilize on 30 November. A set of updated CIA source status figures will be forwarded a few days before the next technical meeting.

IAGWSP stated that H&S has completed vegetation clearance at seven Small Arms Ranges. The crews are currently performing excavation work at Former D Range.

The J-3 Range meandering path has been completed and work is underway in the full clearance areas of the J-3 Range Demolition Area. Five MEC items have been found to date.

USACE noted that the drill rig is working on the two L Range wells on Camp Good News. They will them move to the IBC Range, the J-3 Range pilot boring, and the two locations at Demolition Area 2. The roads need to be cut at Demolition Area 2.

USACE had their preconstruction meeting with the contractor that will be building the CIA and Demo 1 treatment systems. The contractor is working on a schedule. They will initially provide a schedule for CIA and Demo 1 will be added once the contract option is officially awarded. It is anticipated that the easement for the off-site parcel for Demo 1 will be recorded by the end of the week.

Action Items

The action items were discussed and updated.

JBCC Cleanup Team Meeting

The JBCC Cleanup Team (JBCCCT), formerly the MMR Cleanup Team (MMRCT) is next scheduled to meet on January 13, 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 November through 30 November 2015. 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. 223 for October 2015 11/10/2015
- J-2 Range Phase 3 Confirmatory Soil Sampling in Area 2 – Project Note 11/04/2015
- Final Land Use Controls Monitoring Report 2015 11/06/2015
- Final J-1 Range Northern and J-1 Range Southern 2015 Annual Environmental Monitoring Report 11/06/2015
- Final Demolition Area 1 2015 Annual Environmental and System Performance Monitoring Report 11/10/2015

3. SCHEDULED ACTIONS

The following documents are being prepared or revised during December 2015:

- Demolition Area 2 2015 Environmental Monitoring Report;
- J-2 Range Project Note for Additional Wells to Evaluate Source Response;
- Training Areas Draft Investigation Report;
- Training Areas Draft Remedy Selection Plan;
- Corrective Action Memo for BEM;
- Western Boundary 2015 Annual Environmental Monitoring Report;
- Western Boundary Residual Risk Assessment Report;
- CIA System Performance Monitoring Report;
- CIA Environmental Monitoring Work Plan;
- J-1 Range Northern and J-1 Range Southern Environmental Monitoring Work Plan;
- Northwest Corner Annual Environmental Monitoring Report;
- J-3 Range 2015 Interim Environmental Monitoring Report; and
- J-2 Range Eastern and J-2 Range Northern 2015 Environmental Monitoring Report.

TABLE 1

Sampling Progress: 1 November to 30 November 2015

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J3 Range	SSJ3DA01	J3DA01_A	N	11/17/2015	Soil	0	0.25
J3 Range	SSJ3DA02	J3DA02_A	N	11/17/2015	Soil	0	0.25
Central Impact Area	SSCIAMM021	DA041714CIA01_30C	FR	11/16/2015	Soil	0	0.25
Central Impact Area	SSCIAMM021	DA041714CIA01_30B	FR	11/16/2015	Soil	0	0.25
Central Impact Area	SSCIAMM021	DA041714CIA01_30A	N	11/16/2015	Soil	0	0.25
Central Impact Area	SSCIACSL02	WCSSCIASL02_B	N	11/13/2015	Soil	0	0
Central Impact Area	SSCIACSL02	WCSSCIASL02_A	N	11/13/2015	Soil	0	0
Central Impact Area	SSCIAMM080	DA052914CIA01_30A	N	11/13/2015	Soil	0	0.25
Central Impact Area	MW-349M2	MW-349M2_F15	N	11/12/2015	Ground Water	195	205
J1 Range Northern	MW-349M2	MW-349M2_F15	N	11/12/2015	Ground Water	195	205
Central Impact Area	MW-349M1	MW-349M1_F15	N	11/12/2015	Ground Water	229	239
J1 Range Northern	MW-349M1	MW-349M1_F15	N	11/12/2015	Ground Water	229	239
J1 Range Northern	MW-303M3	MW-303M3_F15	N	11/12/2015	Ground Water	139.7	149.7
J1 Range Northern	MW-303M3	MW-303M3_F15D	FD	11/12/2015	Ground Water	139.7	149.7
J1 Range Northern	MW-303M2	MW-303M2_F15	N	11/12/2015	Ground Water	235.1	245.1
J1 Range Northern	MW-303M2	MW-303M2_F15D	FD	11/12/2015	Ground Water	235.1	245.1
J1 Range Northern	MW-303M1	MW-303M1_F15	N	11/12/2015	Ground Water	299.1	309.1
L Range	BH-651	LP-B_271-276	N	11/12/2015	GW Profile	271	276
J1 Range Northern	J1N-INF1B	J1N-INF1B_F15	N	11/12/2015	Process Water	0	0
J1 Range Northern	J1N-INF1A	J1N-INF1A_F15	N	11/12/2015	Process Water	0	0
L Range	BH-651	LP-B_251-256	N	11/10/2015	GW Profile	251	256
J1 Range Northern	MW-191M2	MW-191M2_F15	N	11/10/2015	Ground Water	120	130
L Range	BH-651	LP-B_241-246	N	11/10/2015	GW Profile	241	246
J1 Range Northern	MW-346M4	MW-346M4_F15	N	11/10/2015	Ground Water	140	150
L Range	BH-651	LP-B_231-236	N	11/10/2015	GW Profile	231	236
L Range	BH-651	LP-B_231-236D	FD	11/10/2015	GW Profile	231	236
J1 Range Northern	MW-346M3	MW-346M3_F15	N	11/10/2015	Ground Water	175	185
J1 Range Northern	MW-346M2	MW-346M2_F15	N	11/10/2015	Ground Water	205.3	215.3
J1 Range Northern	MW-346M2	MW-346M2_F15D	FD	11/10/2015	Ground Water	205.3	215.3
L Range	BH-651	LP-B_221-226	N	11/10/2015	GW Profile	221	226
J1 Range Northern	MW-346M1	MW-346M1_F15	N	11/10/2015	Ground Water	245	255
J1 Range Northern	MW-346M1	MW-346M1_F15D	FD	11/10/2015	Ground Water	245	255
L Range	BH-651	LP-B_211-216	N	11/10/2015	GW Profile	211	216
L Range	BH-651	LP-B_201-206	N	11/10/2015	GW Profile	201	206
L Range	BH-651	LP-B_191-196	N	11/10/2015	GW Profile	191	196
L Range	BH-651	LP-B_181-186	N	11/09/2015	GW Profile	181	186
J1 Range Northern	MW-136S	MW-136S_F15	N	11/09/2015	Ground Water	107	117
L Range	BH-651	LP-B_171-176	N	11/09/2015	GW Profile	171	176
J1 Range Northern	MW-326M3	MW-326M3_F15	N	11/09/2015	Ground Water	165.2	175.3
J1 Range Northern	MW-326M2	MW-326M2_F15	N	11/09/2015	Ground Water	196.3	206.3
J1 Range Northern	MW-326M2	MW-326M2_F15D	FD	11/09/2015	Ground Water	196.3	206.3
J1 Range Northern	MW-326M1	MW-326M1_F15	N	11/09/2015	Ground Water	250	260
J1 Range Northern	MW-245M2	MW-245M2_F15	N	11/09/2015	Ground Water	204	214
J1 Range Northern	MW-245M2	MW-245M2_F15D	FD	11/09/2015	Ground Water	204	214
J1 Range Northern	MW-245M1	MW-245M1_F15	N	11/09/2015	Ground Water	244	254
J1 Range Northern	MW-188M1	MW-188M1_F15	N	11/05/2015	Ground Water	155	165
J1 Range Northern	MW-315M2	MW-315M2_F15	N	11/05/2015	Ground Water	195.7	205.7
J1 Range Northern	MW-315M1	MW-315M1_F15	N	11/05/2015	Ground Water	245.5	255.5
L Range	BH-650	LP-A_271-276	N	11/05/2015	GW Profile	271	276
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-86A	N	11/05/2015	Process Water	0	0
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-86A	N	11/05/2015	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-86A	N	11/05/2015	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-86A	N	11/05/2015	Process Water	0	0
J1 Range Northern	MW-265M3	MW-265M3_F15	N	11/05/2015	Ground Water	200	210
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-86A	N	11/05/2015	Process Water	0	0
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-86A	N	11/05/2015	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-86A	N	11/05/2015	Process Water	0	0

N = Normal Sample
FD = Field Duplicate

TABLE 1

Sampling Progress: 1 November to 30 November 2015

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-INF-J	J2E-INF-J-86A	N	11/05/2015	Process Water	0	0
J1 Range Northern	MW-265M2	MW-265M2_F15	N	11/05/2015	Ground Water	225	235
J1 Range Northern	MW-265M2	MW-265M2_F15D	FD	11/05/2015	Ground Water	225	235
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-86A	N	11/05/2015	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-86A	N	11/05/2015	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-86A	N	11/05/2015	Process Water	0	0
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-86A	N	11/05/2015	Process Water	0	0
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-86A	N	11/05/2015	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-86A	N	11/05/2015	Process Water	0	0
J1 Range Northern	MW-265M1	MW-265M1_F15	N	11/05/2015	Ground Water	265	275
J1 Range Northern	MW-369M1	MW-369M1_F15	N	11/04/2015	Ground Water	254.1	264.1
J1 Range Southern	J1S-EFF	J1S-EFF-96A	N	11/04/2015	Process Water	0	0
J1 Range Southern	J1S-MID-2	J1S-MID-2-96A	N	11/04/2015	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-96A	N	11/04/2015	Process Water	0	0
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-116A	N	11/04/2015	Process Water	0	0
J1 Range Northern	MW-220M1	MW-220M1_F15	N	11/04/2015	Ground Water	248	258
Demolition Area 1	FPR-2-GAC-MID3A	FPR-2-GAC-MID3A-116A	N	11/04/2015	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-116A	N	11/04/2015	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-116A	N	11/04/2015	Process Water	0	0
Central Impact Area	MW-253M1	MW-253M1_F15	N	11/04/2015	Ground Water	265.4	275.4
J1 Range Northern	MW-253M1	MW-253M1_F15	N	11/04/2015	Ground Water	265.4	275.4
J1 Range Northern	MW-286M2	MW-286M2_F15	N	11/04/2015	Ground Water	205	215
L Range	BH-650	LP-A_261-266	N	11/04/2015	GW Profile	261	266
L Range	BH-650	LP-A_261-266D	FD	11/04/2015	GW Profile	261	266
Demolition Area 1	PR-EFF	PR-EFF-116A	N	11/04/2015	Process Water	0	0
Demolition Area 1	PR-MID-2	PR-MID-2-116A	N	11/04/2015	Process Water	0	0
Demolition Area 1	PR-MID-1	PR-MID-1-116A	N	11/04/2015	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-116A	N	11/04/2015	Process Water	0	0
J1 Range Northern	MW-286M1	MW-286M1_F15	N	11/04/2015	Ground Water	259	269
Demolition Area 1	D1-EFF	D1-EFF-64A	N	11/04/2015	Process Water	0	0
Demolition Area 1	D1-MID-2	D1-MID-2-64A	N	11/04/2015	Process Water	0	0
Demolition Area 1	D1-MID-1	D1-MID-1-64A	N	11/04/2015	Process Water	0	0
Demolition Area 1	D1-INF	D1-INF-64A	N	11/04/2015	Process Water	0	0
L Range	BH-650	LP-A_251-256	N	11/04/2015	GW Profile	251	256
L Range	BH-650	LP-A_241-246	N	11/03/2015	GW Profile	241	246
L Range	BH-650	LP-A_231-236	N	11/03/2015	GW Profile	231	236
J3 Range	J3-EFF	J3-EFF-110A	N	11/03/2015	Process Water	0	0
J1 Range Northern	MW-567M1	MW-567M1_F15	N	11/03/2015	Ground Water	215.5	225.5
J1 Range Northern	MW-567M1	MW-567M1_F15D	FD	11/03/2015	Ground Water	215.5	225.5
J3 Range	J3-MID-2	J3-MID-2-110A	N	11/03/2015	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-110A	N	11/03/2015	Process Water	0	0
J3 Range	J3-INF	J3-INF-110A	N	11/03/2015	Process Water	0	0
L Range	BH-650	LP-A_221-226	N	11/03/2015	GW Profile	221	226
J1 Range Northern	MW-605M2	MW-605M2_F15	N	11/03/2015	Ground Water	182.2	192.2
L Range	BH-650	LP-A_211-216	N	11/03/2015	GW Profile	211	216
J1 Range Northern	MW-605M1	MW-605M1_F15	N	11/03/2015	Ground Water	220.2	230.2
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-110A	N	11/03/2015	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-110A	N	11/03/2015	Process Water	0	0
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-110A	N	11/03/2015	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-110A	N	11/03/2015	Process Water	0	0
J1 Range Northern	MW-370M3	MW-370M3_F15	N	11/03/2015	Ground Water	175	185
L Range	BH-650	LP-A_201-206	N	11/03/2015	GW Profile	201	206
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-110A	N	11/03/2015	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-110A	N	11/03/2015	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-110A	N	11/03/2015	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-110A	N	11/03/2015	Process Water	0	0
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-110A	N	11/03/2015	Process Water	0	0

N = Normal Sample
FD = Field Duplicate

TABLE 1

Sampling Progress: 1 November to 30 November 2015

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-1E	J2N-MID-1E-110A	N	11/03/2015	Process Water	0	0
J1 Range Northern	MW-370M2	MW-370M2_F15	N	11/03/2015	Ground Water	215.5	225.5
J1 Range Northern	J1N-EFF	J1N-EFF-25A	N	11/03/2015	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-25A	N	11/03/2015	Process Water	0	0
Central Impact Area	MW-370M1	MW-370M1_F15	N	11/03/2015	Ground Water	245	255
J1 Range Northern	J1N-MID1	J1N-MID1-25A	N	11/03/2015	Process Water	0	0
J1 Range Northern	MW-370M1	MW-370M1_F15	N	11/03/2015	Ground Water	245	255
L Range	BH-650	LP-A_191-196	N	11/03/2015	GW Profile	191	196
J1 Range Northern	J1N-INF2	J1N-INF2-25A	N	11/03/2015	Process Water	0	0
Central Impact Area	CIA2-EFF	CIA2-EFF-22A	N	11/02/2015	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-22A	N	11/02/2015	Process Water	0	0
Central Impact Area	CIA2-MID1	CIA2-MID1-22A	N	11/02/2015	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-22A	N	11/02/2015	Process Water	0	0
L Range	BH-650	LP-A_181-186	N	11/02/2015	GW Profile	181	186
Central Impact Area	CIA1-EFF	CIA1-EFF-22A	N	11/02/2015	Process Water	0	0
Central Impact Area	CIA1-MID2	CIA1-MID2-22A	N	11/02/2015	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-22A	N	11/02/2015	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-22A	N	11/02/2015	Process Water	0	0

N = Normal Sample
FD = Field Duplicate

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received November 2015

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
J1 Range Southern	MW-524M1	MW-524M1_F15	148	158	10/08/2015	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.51		UG/L	400		0.019	0.20
J1 Range Southern	MW-524M1	MW-524M1_F15	148	158	10/08/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.1		UG/L	0.60	X	0.025	0.20
J1 Range Southern	MW-524M1	MW-524M1_F15D	148	158	10/08/2015	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.51		UG/L	400		0.019	0.20
J1 Range Southern	MW-524M1	MW-524M1_F15D	148	158	10/08/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.1		UG/L	0.60	X	0.025	0.20
J1 Range Southern	MW-482M2	MW-482M2_F15	172.6	182.6	10/08/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.2		UG/L	0.60	X	0.025	0.20
J1 Range Southern	MW-482M2	MW-482M2_F15D	172.6	182.6	10/08/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.2		UG/L	0.60	X	0.025	0.20
J1 Range Southern	MW-592M1	MW-592M1_F15	201	211	09/30/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.0		UG/L	0.60	X	0.025	0.20
J1 Range Southern	MW-360M2	MW-360M2_F15	102	112	09/28/2015	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2.8		UG/L	400		0.019	0.20
J1 Range Southern	MW-360M2	MW-360M2_F15	102	112	09/28/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	9.9		UG/L	0.60	X	0.025	0.20
J1 Range Southern	MW-360M2	MW-360M2_F15D	102	112	09/28/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	10.1		UG/L	0.60	X	0.025	0.20
J1 Range Southern	MW-360M2	MW-360M2_F15D	102	112	09/28/2015	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2.9		UG/L	400		0.019	0.20
Central Impact Area	MW-89M2	MW-89M2_F15	214	224	09/28/2015	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.2		UG/L	400		0.019	0.20
Central Impact Area	MW-89M2	MW-89M2_F15	214	224	09/28/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	15.5		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-89M2	MW-89M2_F15D	214	224	09/28/2015	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.1		UG/L	400		0.019	0.20
Central Impact Area	MW-89M2	MW-89M2_F15D	214	224	09/28/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	14.4		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-23M1	MW-23M1_F15	225	235	09/28/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.36		UG/L	0.60		0.025	0.20
Central Impact Area	MW-223M2	MW-223M2_F15	185	195	09/28/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.20		UG/L	0.60		0.025	0.20
Central Impact Area	MW-223M1	MW-223M1_F15	211	221	09/28/2015	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.20		UG/L	0.60		0.025	0.20
Western Boundary	4036000-04G	4036000-04G_15Q3	55	65	09/24/2015	SW6850	Perchlorate	0.23		UG/L	2.0		0.015	0.20
Western Boundary	4036000-03G	4036000-03G_15Q3	50	60	09/24/2015	SW6850	Perchlorate	0.13	J	UG/L	2.0		0.015	0.20
Western Boundary	4036000-06G	4036000-06G_15Q3	108	128	09/24/2015	SW6850	Perchlorate	0.11	J	UG/L	2.0		0.015	0.20
Western Boundary	4036000-01G	4036000-01G_15Q3	38	70	09/24/2015	SW6850	Perchlorate	0.15	J	UG/L	2.0		0.015	0.20

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

MCL/HA= Either the MCL or Lowest Health Advisory Limit