

**MONTHLY PROGRESS REPORT #236
FOR NOVEMBER 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 November to 30 November 2016.

1. SUMMARY OF REMEDIATION ACTIONS

The following is a description of Remediation Actions (RA) underway at Camp Edwards as of November 2016.

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 325 gpm, with over 2.440 billion gallons of water treated and re-injected as of 25 November 2016. The following Frank Perkins Road facility shut down occurred in November:

- Shut down on 16 November at 1315 to perform system maintenance and was restarted on 16 November at 1336.

The Pew Road Mobile Treatment Unit (MTU) continues to operate at a flow rate of 105 gpm with over 496.2 million gallons of water treated and re-injected as of 25 November 2016. The following Pew Road MTU shut downs occurred in November:

- Shut down on 8 November at 1130 for system repairs and was restarted on 8 November at 1510; and
- Shut down on 16 November at 1315 to perform system maintenance and was restarted on 16 November at 1336.

The Base Boundary RA is operating at a flow rate of 65 gpm with over 147.1 million gallons of water treated and re-injected as of 25 November 2016. The following Base Boundary MTU shut down occurred during November:

- Shut down on 3 April at 2216 for system repairs and was restarted on 8 November at 1150.

The Leading Edge system continues to operate at a flow rate of 100 gpm with over 20.18 million gallons of water treated and re-injected as of 25 November 2016. No system 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 25 November 2016, over 370 million gallons of water have been treated and re-injected. No J-1 Range Southern system shut downs occurred in November.

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 25 November 2016, over 352 million gallons of water have been treated and re-injected. The following J-1 Range Northern MTU shut down occurred in November:

- Extraction well EW-0002 shut down on 24 November at 2303 due to a system alarm and was restarted on 28 November at 0923.

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 continues to operate at a flow rate of 255 gpm. As of 25 November 2016, over 957.2 million gallons of water have been treated and re-injected. The following J-3 Range system shut downs occurred in November:

- Extraction well EWIP1 was shut down on 13 November at 0845 due to a system alarm and was restarted on 14 November at 1000;
- Extraction well EWIP1 was shut down on 22 November at 0235 due to a system alarm and was restarted on 22 November at 1155;
- Shut down on 24 November at 0620 due to a power interruption and was restarted on 28 November at 1315; and
- Shut down on 29 November at 1831 due to a system alarm and was restarted on 30 November at 0810.

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 25 November 2016, over 813.5 million gallons of water have been treated and re-injected. No Northern Treatment Building shut down occurred in November.

The Northern MTUs E and F continue to operate at a flow rate of 250 gpm. As of 25 November 2016, over 1.304 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 25 November 2016, over 890.5 million gallons of water have been treated and re-injected. The following MTUs H and I shut down occurred in November:

- MTUs H and I shut down on 24 November at 0600 due to a power interruption and were restarted on 28 November at 1018.

MTU J continues to operate at a flow rate of 120 gpm. As of 25 November 2016, over 401 million gallons of water have been treated and re-injected. The following shut down of MTU J occurred in November:

- MTU J shut down on 24 November at 0600 due to a power interruption and were restarted on 28 November at 1150.

MTU K continues to operate at a flow rate of 125 gpm. As of 25 November 2016, over 506 million gallons of water have been treated and re-injected. The following shut downs of MTU K occurred in November:

- MTU K shut down on 22 November at 1305 due to perform system maintenance and was restarted on 23 November at 0855; and
- MTU K shut down on 24 November at 0600 due to a power interruption and were restarted on 28 November at 1130.

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 25 November 2016, over 774 million gallons of water have been treated and re-injected. No CIA treatment facility shut downs occurred in November.

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, Leading Edge, 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 Demolition Area 2 and J-1 Range Northern.

Soil samples were collected at Former B Range, Former D Range, and CIA.

Completed excavation (3rd lifts) and post-excavation sampling at ten Former B Range grids.

Completed excavation (2nd lift) at one J-2 Range grid.

Completed excavation (2nd lifts) at three U Range grids.

Completed excavation (5th lift) and post-excavation sampling at one Former D Range grid.

Completed excavation (4th lifts) at two G Range grids.

Completed excavation (5th lift) at one B Range grid.

Completed excavation (4th lift) at one D Range grid.

Began excavation of 5th lifts at three C Range grids.

Performed transportation and disposal of soil from Small Arms Ranges.

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

Continued intrusive investigation of anomalies in phase II area 2 and Metalmapper collection of cued data in Phase II area 3 at the CIA.

Commenced demolition operations at the CIA.

Continued drive point investigation at J-1 Range Southern.

JBCC IAGWSP Tech Update Meeting Minutes 10 November 2016

Advanced Classification Results Presentation

A presentation was provided on the results of the CIA Phase 2 Area 2 100% dig validation. A figure showing the two grids (40-30 and 42-48) selected by EPA was displayed and discussed. The group was reminded of the goals set in the Decision Document (remove 75-95% of UXO while maximizing removal of net explosive weight) as well as the goals of the classification (to correctly classify 95% of the targets of interest (TOI) while reducing clutter digs by greater than 70%).

A figure showing the Metal Mapper data was displayed along with the results for grid 40-30. There were 599 EM61 anomaly locations with Metal Mapper cued data collection. Of those, 246 met the dig criteria and 19 of these had multiple dig location resulting in a total of 265 likely TOI digs and a recommended dig rate of 41%. The remaining 353 anomalies were dug for QA for a total of 618 digs. Twenty-three TOI (UXO or UXO-like items) were recovered. For the classification results, no TOI were missed and 353 clutter items were correctly classified. 40% of the clutter was incorrectly classified as "likely-TOI" therefore not meeting the goal of reduction of clutter digs by 70%. This was caused by the nature of the clutter: average number of items in single clutter 'dig' was 12.4 and the average weight of munitions debris from clutter 'dig' was 6.2 pounds. It was noted that the number of items and weight of correctly classified clutter was generally much smaller and that the higher than anticipated clutter dig rate was unavoidable due to the conditions of this grid.

A figure showing the metal mapper data was displayed along with the results for grid 42-48. There were 545 EM61 anomaly locations with Metal Mapper cued data collection. Of those, 278 met the dig criteria and 24 of these had multiple dig location resulting in a total of 302 likely TOI digs and a recommended dig rate of 51%. The remaining 267 anomalies were dug for QA for a total of 569 digs. Ninety-four TOI were recovered. For the classification results, no TOI were missed and 267 clutter items were correctly classified. 42% of the clutter was incorrectly classified as "likely-TOI" therefore also not meeting the goal of reduction of clutter digs by 70%. This was caused by the nature of the clutter: average number of items in single clutter 'dig' was 12.1 and the average weight of munitions debris from clutter 'dig' was 8.4 pounds. Like grid 40-30, the number of items and weight of correctly classified clutter was generally much smaller and that the higher than anticipated clutter dig rate was unavoidable due to the conditions of this grid.

The combined results of all 100% dig tests (ESTCP and either ¼ acre grids) was reviewed and discussed. Only two UXO items were missed (1 partial 81mm and 1 very deep 81mm). These results far exceed the Decision Document requirements and the classification goal of 95% TOI and slightly under 70% reduction in clutter digs.

The current status of the project was reviewed. Phase I and Phase 2 Area 1 are complete. Metal Mapper collection is complete in Phase II Area 2 and intrusive work is underway. In Phase II Area 3, Metal Mapper collection is underway. EPA will be selecting additional grids for 100% intrusive investigation for ongoing validation.

Project and Fieldwork Update

Vegetation clearance for the fourteen drive point locations at the J-1 Range began today. Drilling will begin next week and will continue for approximately two to three weeks. The Development rig will mobilize to the site Monday to develop the wells that have been installed recently. Groundwater sampling crews are working in J-1 north.

The Demolition Area 1 base boundary system power line switch was installed Wednesday and the system is back up and running. Samples are being collected today. All other treatment systems are up and running.

In the CIA, the Metal Mapper team continued working in Phase II Area 3. Dawson began work on the polygons in Phase II Area 3 and Phase II Area 2 digs.

Work is ongoing in grids that were excavated from the J-2 Range as part of the post- DD soil removal actions as well as the U Range.

At the Small Arms Ranges, crews completed third lifts from ten grids at the Former B Range. Next week, they will move to the Former D Range (3rd lift at one grid), G Range (4th lift at two grids) D Range (4th lift at one grid) C Range (5th lift at three grids) and the B Range (5th lift at one grid). Soil should begin moving off-site soon.

Action Items

The action items were discussed and updated.

Northwest Corner Annual Environmental Monitoring Report Presentation

A presentation was provided on the Northwest Corner Annual Environmental Monitoring Report. It was noted that the presentation would cover annual groundwater sampling results (July 2015 through June 2016), a comparison to Decision Document criteria, recommendations and agency comments on the draft report.

A figure showing RDX and perchlorate sampling locations was displayed. Groundwater sampling results showed RDX in four of ten monitoring well samples ranging from 0.21 µg/L (MW-270D) to 1.9 µg/L (MW-441M2). Only MW-323M1 (0.74 µg/L) and MW-441M2 (1.9 µg/L) exceeded the 0.6 µg/L risk-based concentration and no samples exceeded the 2 µg/L USEPA Lifetime Health Advisory. HMX was detected in 1 of 10 monitoring well samples (MW-441M2, 0.46 µg/L).

Perchlorate was detected in 19 of 19 monitoring well samples ranging from 0.11 µg/L (MW-323S) to 1.5 µg/L (MW-344MW). No samples exceeded the Massachusetts Maximum Contaminant Level (MMCL) of 2.0 µg/L.

Figures showing RDX and perchlorate plume comparisons and trend plots were displayed, reviewed and discussed. A comparison to Decision Document criteria was presented. The DD predicted RDX would be below the health advisory (2 µg/L) in 2012, below the risk-based level (0.6 µg/L) in 2022 and below background (0.25 µg/L) in 2044. It was estimated that perchlorate would be below the MMCL in 2012 (2 µg/L) and background (0.35 µg/L) in 2019. During the reporting period, no monitoring wells exceeded 2 µg/L MMCL for Perchlorate but perchlorate concentrations are unlikely to be entirely below background by 2019. RDX concentrations below 0.6 µg/L are unlikely to be achieved by 2022. However, IAGWSP is recommending to remove the RDX plume from the Northwest Corner monitoring program and include it in Central Impact Area monitoring program based on depth of plume (likely RDX source in CIA) and that RDX monitoring as part of the Northwest Corner reporting be discontinued. For perchlorate, IAGWSP recommends removing three well screens from the sampling network. MW-277M1 is crossgradient of the plume and concentrations have been at or below 0.43 µg/L since 2010, MW- 279M1 is upgradient of the plume and concentrations have been at or below 0.3 µg/L since 2012, and MW-344S is upgradient of the plume and concentrations have been below 0.31 µg/L since 2012.

MassDEP's comment letter provided concurrence with the recommendations outlined in the report. EPA concurs with the recommendation to transfer the RDX program to the CIA monitoring program contingent upon presentation of sufficient evidence that remaining RDX mass at NWC does originate from CIA. They also requested a proposal to ensure that all appropriate lines of evidence for Monitored Natural Attenuation are collected, with the goal of distinguishing degradative losses of RDX and Perchlorate from non-destructive processes (dilution/dispersion/sorption). IAGWSP indicated that they would address the comment in their responses including a discussion of how degradation losses through chemical or biological process are thought to be insignificant.

JBCC Cleanup Team Meeting

The next meeting of the JBCC Cleanup Team (JBCCCT), formerly the MMR Cleanup Team (MMRCT) has not been scheduled. 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 to 30 November 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. 235 for October 2016 11/10/2016
- Draft Central Impact Area 2016 Annual Environmental Monitoring Report 11/04/2016
- Final Demolition Area 2 2016 Annual Environmental Monitoring Report 11/07/2016
- Draft Western Boundary 2016 Supplemental Environmental Monitoring Report 11/10/2016
- GA/GB Range Groundwater Monitoring Plan Project Note 11/10/2016
- CIA Northeast Plume – Proposed Borings Project Note 11/10/2016
- Demolition Area 1 Optimized Hydraulic and Chemical Monitoring Network Project Note 11/29/2016
- Final Small Arms Ranges 2016 Annual Interim Environmental Monitoring Report 11/30/2016

3. SCHEDULED ACTIONS

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

- Training Areas Draft Investigation Report;
- Training Areas Draft Remedy Selection Plan;
- CIA 2016 Annual Environmental Monitoring Report;
- CIA Draft Startup Report;
- Draft 2015 BIP Report;
- Demolition Area 1 2016 Annual Environmental Monitoring Report;
- Demolition Area 1 Startup Report;
- J-3 Range 2016 Interim Environmental Monitoring Report;
- J-3 Range Startup Report;
- Northwest Corner 2016 Annual Environmental Monitoring Report;
- J-2 Range Eastern and J-2 Range Northern 2016 Environmental Monitoring Report;
- Small Arms Ranges Environmental Monitoring Work Plan;
- Western Boundary Supplemental 2016 Environmental Monitoring Report;
- Land Use Control Monitoring Report; and
- Former A Range Demonstration of Compliance Report.

TABLE 1
Sampling Progress: 1 November to 30 November 2016

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
Demolition Area 2	MW-160S	MW-160S_F16	N	11/29/2016	Ground Water	137.5	147.5
Central Impact Area	CIA1-EFF	CIA1-EFF-35A	N	11/29/2016	Process Water	0	0
Central Impact Area	CIA1-MID2	CIA1-MID2-35A	N	11/29/2016	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-35A	N	11/29/2016	Process Water	0	0
Demolition Area 2	MW-573M2	MW-573M2_F16	N	11/29/2016	Ground Water	155.4	165.4
Demolition Area 2	MW-573M2	MW-573M2_F16D	FD	11/29/2016	Ground Water	155.4	165.4
Central Impact Area	CIA1-INF	CIA1-INF-35A	N	11/29/2016	Process Water	0	0
Demolition Area 2	MW-573M1	MW-573M1_F16	N	11/29/2016	Ground Water	176.4	186.4
J1 Range Northern	J1N-INF1B	J1N-INF1B_F16	N	11/29/2016	Process Water	0	0
J1 Range Northern	J1N-INF1A	J1N-INF1A_F16	N	11/29/2016	Process Water	0	0
J1 Range Northern	MW-187D	MW-187D_F16	N	11/29/2016	Ground Water	306	316
J1 Range Northern	MW-306D	MW-306D_F16	N	11/29/2016	Ground Water	291.7	301.7
Demolition Area 2	MW-161S	MW-161S_F16	N	11/28/2016	Ground Water	145.5	155.5
J1 Range Northern	MW-584M2	MW-584M2_F16	N	11/28/2016	Ground Water	228	238
J1 Range Northern	MW-584M1	MW-584M1_F16	N	11/28/2016	Ground Water	248	258
J1 Range Northern	MW-584M1	MW-584M1_F16D	FD	11/28/2016	Ground Water	248	258
J1 Range Northern	MW-401M3	MW-401M3_F16	N	11/28/2016	Ground Water	228.5	238.5
J1 Range Northern	MW-401M1	MW-401M1_F16	N	11/28/2016	Ground Water	256.1	266.1
J1 Range Northern	MW-136S	MW-136S_F16	N	11/22/2016	Ground Water	107	117
J1 Range Northern	MW-326M3	MW-326M3_F16	N	11/22/2016	Ground Water	165.2	175.3
J1 Range Northern	MW-326M2	MW-326M2_F16	N	11/22/2016	Ground Water	196.3	206.3
J1 Range Northern	MW-326M2	MW-326M2_F16D	FD	11/22/2016	Ground Water	196.3	206.3
J1 Range Northern	MW-326M1	MW-326M1_F16	N	11/22/2016	Ground Water	250	260
J1 Range Northern	MW-541M1	MW-541M1_F16	N	11/21/2016	Ground Water	210	220
J1 Range Northern	MW-606M2	MW-606M2_F16	N	11/21/2016	Ground Water	193.2	203.2
J1 Range Northern	MW-606M1	MW-606M1_F16	N	11/21/2016	Ground Water	233.3	243.3
J1 Range Northern	MW-430M2	MW-430M2_F16	N	11/21/2016	Ground Water	188.4	198.4
J1 Range Northern	MW-430M1	MW-430M1_F16	N	11/21/2016	Ground Water	245.2	255.2
J1 Range Northern	MW-540M1	MW-540M1_F16	N	11/21/2016	Ground Water	258	268
J1 Range Northern	MW-191M2	MW-191M2_F16	N	11/17/2016	Ground Water	120	130
J1 Range Northern	MW-369M1	MW-369M1_F16	N	11/17/2016	Ground Water	254.1	264.1
J1 Range Northern	MW-220M1	MW-220M1_F16	N	11/17/2016	Ground Water	248	258
J1 Range Northern	MW-253M1	MW-253M1_F16	N	11/17/2016	Ground Water	265.4	275.4
J1 Range Northern	MW-286M2	MW-286M2_F16	N	11/17/2016	Ground Water	205	215
J1 Range Northern	MW-286M1	MW-286M1_F16	N	11/17/2016	Ground Water	259	269
Former D Range	SSD-1AA-A	D-1AA-A_F	FR	11/17/2016	Soil	0	0.25
Former D Range	SSD-1AA-A	D-1AA-A_E	FR	11/17/2016	Soil	0	0.25
Former D Range	SSD-1AA-A	D-1AA-A_D	N	11/17/2016	Soil	0	0.25
J1 Range Northern	MW-315M2	MW-315M2_F16	N	11/16/2016	Ground Water	195.7	205.7
J1 Range Northern	MW-315M1	MW-315M1_F16	N	11/16/2016	Ground Water	245.5	255.5
J1 Range Northern	MW-265M3	MW-265M3_F16	N	11/16/2016	Ground Water	200	210
J1 Range Northern	MW-265M2	MW-265M2_F16	N	11/16/2016	Ground Water	225	235
J1 Range Northern	MW-265M2	MW-265M2_F16D	FD	11/16/2016	Ground Water	225	235
J1 Range Northern	MW-265M1	MW-265M1_F16	N	11/16/2016	Ground Water	265	275
J1 Range Northern	MW-605M2	MW-605M2_F16	N	11/15/2016	Ground Water	182.2	192.2
J1 Range Northern	MW-605M1	MW-605M1_F16	N	11/15/2016	Ground Water	220.2	230.2
J1 Range Northern	MW-657M2	MW-657M2_F16	N	11/15/2016	Ground Water	208.3	218.3
J1 Range Northern	MW-657M1	MW-657M1_F16	N	11/15/2016	Ground Water	240.3	250.3
J1 Range Northern	MW-187M1	MW-187M1_F16	N	11/15/2016	Ground Water	160	170
J1 Range Northern	MW-187D	MW-187D_F16	N	11/15/2016	Ground Water	306	316
J1 Range Northern	MW-306M2	MW-306M2_F16	N	11/14/2016	Ground Water	164.7	174.7
Central Impact Area	SSCIAMM984	DA092216CIA04_30A	N	11/14/2016	Soil	0	0.25
J1 Range Northern	MW-306M1	MW-306M1_F16	N	11/14/2016	Ground Water	184.9	194.9
J1 Range Northern	MW-306D	MW-306D_F16	N	11/14/2016	Ground Water	291.7	301.7
J1 Range Northern	MW-567M1	MW-567M1_F16	N	11/10/2016	Ground Water	215.5	225.5
J1 Range Northern	MW-567M1	MW-567M1_F16D	FD	11/10/2016	Ground Water	215.5	225.5
J1 Range Northern	MW-370M3	MW-370M3_F16	N	11/10/2016	Ground Water	175	185
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-128A	N	11/10/2016	Process Water	0	0

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 1 November to 30 November 2016

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-128A	N	11/10/2016	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-128A	N	11/10/2016	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-128A	N	11/10/2016	Process Water	0	0
J1 Range Northern	MW-370M2	MW-370M2_F16	N	11/10/2016	Ground Water	215.5	225.5
Former B Range	SSFBR08A	FBR08A_F	FR	11/10/2016	Soil	0	0.25
Former B Range	SSFBR08A	FBR08A_E	FR	11/10/2016	Soil	0	0.25
Former B Range	SSFBR08A	FBR08A_D	N	11/10/2016	Soil	0	0.25
Former B Range	SSFBR07A	FBR07A_B	N	11/10/2016	Soil	0	0.25
Former B Range	SSFBR03A	FBR03A_B	N	11/10/2016	Soil	0	0.25
J1 Range Northern	MW-370M1	MW-370M1_F16	N	11/10/2016	Ground Water	245	255
Demolition Area 1	PR-EFF	PR-EFF-128A	N	11/10/2016	Process Water	0	0
Demolition Area 1	PR-MID-2	PR-MID-2-128A	N	11/10/2016	Process Water	0	0
Demolition Area 1	PR-MID-1	PR-MID-1-128A	N	11/10/2016	Process Water	0	0
Former B Range	SSFBR140QRA	FBR140QRA_B	N	11/10/2016	Soil	0	0.25
Demolition Area 1	PR-INF	PR-INF-128A	N	11/10/2016	Process Water	0	0
Former B Range	SSFBR09A	FBR09A_B	N	11/10/2016	Soil	0	0.25
Former B Range	SSFBR12A	FBR12A_B	N	11/10/2016	Soil	0	0.25
J1 Range Northern	MW-656M2	MW-656M2_F16	N	11/10/2016	Ground Water	222.1	232.1
Former B Range	SSFBR15A	FBR15A_B	N	11/10/2016	Soil	0	0.25
Former B Range	SSFBR16A	FBR16A_F	N	11/10/2016	Soil	0	0.25
Former B Range	SSFBR16A	FBR16A_E	FR	11/10/2016	Soil	0	0.25
Demolition Area 1	D1LE-EFF	D1LE-EFF-04A	N	11/10/2016	Process Water	0	0
Demolition Area 1	D1LE-MID2	D1LE-MID2-04A	N	11/10/2016	Process Water	0	0
Former B Range	SSFBR16A	FBR16A_D	FR	11/10/2016	Soil	0	0.25
Demolition Area 1	D1LE-MID1	D1LE-MID1-04A	N	11/10/2016	Process Water	0	0
Demolition Area 1	D1LE-INF	D1LE-INF-04A	N	11/10/2016	Process Water	0	0
J1 Range Northern	MW-656M1	MW-656M1_F16	N	11/10/2016	Ground Water	244.1	254.1
Former B Range	SSFBR18A	FBR18A_B	N	11/10/2016	Soil	0	0.25
Former B Range	SSFBR140LA	FBR140LA_F	FR	11/10/2016	Soil	0	0.25
Former B Range	SSFBR140LA	FBR140LA_E	FR	11/10/2016	Soil	0	0.25
Demolition Area 1	D1-EFF	D1-EFF-76A	N	11/10/2016	Process Water	0	0
Demolition Area 1	D1-MID-2	D1-MID-2-76A	N	11/10/2016	Process Water	0	0
Former B Range	SSFBR140LA	FBR140LA_D	N	11/10/2016	Soil	0	0.25
Demolition Area 1	D1-MID-1	D1-MID-1-76A	N	11/10/2016	Process Water	0	0
Demolition Area 1	D1-INF	D1-INF-76A	N	11/10/2016	Process Water	0	0
J1 Range Northern	MW-563M1	MW-563M1_F16	N	11/09/2016	Ground Water	215	225
J1 Range Northern	MW-564M1	MW-564M1_F16	N	11/09/2016	Ground Water	227	237
J1 Range Northern	MW-564M1	MW-564M1_F16D	FD	11/09/2016	Ground Water	227	237
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-98A	N	11/09/2016	Process Water	0	0
J1 Range Northern	MW-549M2	MW-549M2_F16	N	11/09/2016	Ground Water	187.3	197.3
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-98A	N	11/09/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-98A	N	11/09/2016	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-98A	N	11/09/2016	Process Water	0	0
J1 Range Northern	MW-549M1	MW-549M1_F16	N	11/09/2016	Ground Water	227.4	237.4
J1 Range Northern	MW-547M2	MW-547M2_F16	N	11/09/2016	Ground Water	178	188
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-98A	N	11/09/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-98A	N	11/09/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-98A	N	11/09/2016	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-98A	N	11/09/2016	Process Water	0	0
J1 Range Northern	MW-547M1	MW-547M1_F16	N	11/09/2016	Ground Water	237	247
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-98A	N	11/09/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-98A	N	11/09/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-98A	N	11/09/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-98A	N	11/09/2016	Process Water	0	0
J1 Range Northern	MW-566M1	MW-566M1_F16	N	11/09/2016	Ground Water	232	242
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-98A	N	11/09/2016	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-98A	N	11/09/2016	Process Water	0	0
J1 Range Northern	MW-346M4	MW-346M4_F16	N	11/08/2016	Ground Water	140	150

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 1 November to 30 November 2016

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J1 Range Northern	MW-346M3	MW-346M3_F16	N	11/08/2016	Ground Water	175	185
J1 Range Northern	MW-346M2	MW-346M2_F16	N	11/07/2016	Ground Water	205.3	215.3
J1 Range Northern	MW-346M2	MW-346M2_F16D	FD	11/07/2016	Ground Water	205.3	215.3
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-122A	N	11/07/2016	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-122A	N	11/07/2016	Process Water	0	0
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-122A	N	11/07/2016	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-122A	N	11/07/2016	Process Water	0	0
J1 Range Northern	MW-346M1	MW-346M1_F16	N	11/07/2016	Ground Water	245	255
J1 Range Northern	MW-346M1	MW-346M1_F16D	FD	11/07/2016	Ground Water	245	255
J1 Range Northern	MW-245M2	MW-245M2_F16	N	11/07/2016	Ground Water	204	214
J1 Range Northern	MW-245M2	MW-245M2_F16D	FD	11/07/2016	Ground Water	204	214
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-122A	N	11/07/2016	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-122A	N	11/07/2016	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-122A	N	11/07/2016	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-122A	N	11/07/2016	Process Water	0	0
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-122A	N	11/07/2016	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-122A	N	11/07/2016	Process Water	0	0
J1 Range Northern	MW-245M1	MW-245M1_F16	N	11/07/2016	Ground Water	244	254
J1 Range Northern	J1N-EFF	J1N-EFF-37A	N	11/07/2016	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-37A	N	11/07/2016	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-37A	N	11/07/2016	Process Water	0	0
J1 Range Northern	J1N-INF2	J1N-INF2-37A	N	11/07/2016	Process Water	0	0
J1 Range Northern	MW-349M2	MW-349M2_F16	N	11/07/2016	Ground Water	195	205
J1 Range Northern	MW-349M1	MW-349M1_F16	N	11/03/2016	Ground Water	229	239
J3 Range	J3-EFF	J3-EFF-122A	N	11/03/2016	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-122A	N	11/03/2016	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-122A	N	11/03/2016	Process Water	0	0
J3 Range	J3-INF	J3-INF-122A	N	11/03/2016	Process Water	0	0
J1 Range Southern	J1S-EFF	J1S-EFF-108A	N	11/03/2016	Process Water	0	0
J1 Range Southern	J1S-MID-2	J1S-MID-2-108A	N	11/03/2016	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-108A	N	11/03/2016	Process Water	0	0
Central Impact Area	CIA2-EFF	CIA2-EFF-34A	N	11/03/2016	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-34A	N	11/03/2016	Process Water	0	0
Central Impact Area	CIA2-MID1	CIA2-MID1-34A	N	11/03/2016	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-34A	N	11/03/2016	Process Water	0	0
J1 Range Northern	MW-590M2	MW-590M2_F16	N	11/03/2016	Ground Water	238	248
Central Impact Area	CIA1-EFF	CIA1-EFF-34A	N	11/03/2016	Process Water	0	0
Central Impact Area	CIA1-MID2	CIA1-MID2-34A	N	11/03/2016	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-34A	N	11/03/2016	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-34A	N	11/03/2016	Process Water	0	0
J1 Range Northern	MW-590M1	MW-590M1_F16	N	11/03/2016	Ground Water	258	268
J1 Range Northern	MW-479M1	MW-479M1_F16	N	11/03/2016	Ground Water	240	250
Central Impact Area	CIA3-EFF	CIA3-EFF-05A	N	11/03/2016	Process Water	0	0
Central Impact Area	CIA3-MID2	CIA3-MID2-05A	N	11/03/2016	Process Water	0	0
Central Impact Area	CIA3-MID1	CIA3-MID1-05A	N	11/03/2016	Process Water	0	0
Central Impact Area	CIA3-INF	CIA3-INF-05A	N	11/03/2016	Process Water	0	0
J1 Range Northern	MW-166M3	MW-166M3_F16	N	11/02/2016	Ground Water	125	135
J1 Range Northern	MW-166M2	MW-166M2_F16	N	11/02/2016	Ground Water	150	160
J1 Range Northern	MW-166M1	MW-166M1_F16	N	11/02/2016	Ground Water	218	223
J1 Range Northern	MW-168M3	MW-168M3_F16	N	11/02/2016	Ground Water	103	113
J1 Range Northern	MW-168M2	MW-168M2_F16	N	11/02/2016	Ground Water	198	208
J1 Range Northern	MW-188M1	MW-188M1_F16	N	11/02/2016	Ground Water	155	165
J1 Range Northern	MW-164M2	MW-164M2_F16	N	11/02/2016	Ground Water	157	167
J1 Range Northern	MW-164M1	MW-164M1_F16	N	11/02/2016	Ground Water	227	237

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received November 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
Central Impact Area	MW-625M1	MW-625M1_F16	260	270	10/12/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.42		ug/L	0.60		0.025	0.20
Central Impact Area	MW-616M1	MW-616M1_F16	217.1	227.1	10/12/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.3		ug/L	0.60	X	0.025	0.20
Central Impact Area	MW-617M1	MW-617M1_F16	175.8	185.8	10/12/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.53		ug/L	0.60		0.025	0.20
Central Impact Area	MW-623M3	MW-623M3_F16	275	285	10/11/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.28		ug/L	400		0.019	0.20
Central Impact Area	MW-623M3	MW-623M3_F16	275	285	10/11/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.0		ug/L	0.60	X	0.025	0.20
J2 Range Eastern	MW-321M2	MW-321M2_F16	155.7	165.7	10/11/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.87		ug/L	400		0.019	0.20
J2 Range Eastern	MW-321M2	MW-321M2_F16	155.7	165.7	10/11/2016	SW6850	Perchlorate	1.8		ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-321M2	MW-321M2_F16D	155.7	165.7	10/11/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.86		ug/L	400		0.019	0.20
J2 Range Eastern	MW-321M1	MW-321M1_F16	174.6	184.6	10/11/2016	SW6850	Perchlorate	0.15	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-388M2	MW-388M2_F16	144.8	154.8	10/11/2016	SW6850	Perchlorate	0.14	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-388M1	MW-388M1_F16	175.2	185.2	10/11/2016	SW6850	Perchlorate	0.026	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-307M3	MW-307M3_F16	125.8	135.8	10/10/2016	SW6850	Perchlorate	0.93		ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-319M2	MW-319M2_F16	165.2	175.2	10/10/2016	SW6850	Perchlorate	0.23		ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-319M1	MW-319M1_F16	200.3	210.3	10/10/2016	SW6850	Perchlorate	0.12	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-399M1	MW-399M1_F16	238.2	248.2	10/07/2016	SW6850	Perchlorate	0.047	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	J2MW-05M2	J2MW-05M2_F16	185	195	10/07/2016	SW6850	Perchlorate	0.039	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	J2MW-05M1	J2MW-05M1_F16	225	235	10/07/2016	SW6850	Perchlorate	0.056	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-215M2	MW-215M2_F16	205	215	10/07/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.87		ug/L	400		0.019	0.20
J2 Range Eastern	MW-215M2	MW-215M2_F16	205	215	10/07/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.2		ug/L	0.60	X	0.025	0.20
J2 Range Eastern	MW-215M2	MW-215M2_F16	205	215	10/07/2016	SW6850	Perchlorate	4.3		ug/L	2.0	X	0.019	0.20
J2 Range Eastern	MW-215M2	MW-215M2_F16D	205	215	10/07/2016	SW6850	Perchlorate	4.1		ug/L	2.0	X	0.019	0.20
J2 Range Eastern	MW-215M1	MW-215M1_F16	240	250	10/07/2016	SW6850	Perchlorate	0.17	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	J2MW-02PZ	J2MW-02PZ_F16	191	201	10/06/2016	SW6850	Perchlorate	0.035	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	J2MW-01M2	J2MW-01M2_F16	245	255	10/05/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.46		ug/L	0.60		0.025	0.20
J2 Range Eastern	J2MW-01M2	J2MW-01M2_F16	245	255	10/05/2016	SW6850	Perchlorate	7.5		ug/L	2.0	X	0.019	0.20
J2 Range Eastern	J2MW-01M2	J2MW-01M2_F16D	245	255	10/05/2016	SW6850	Perchlorate	7.4		ug/L	2.0	X	0.019	0.20
J2 Range Eastern	MW-335M2	MW-335M2_F16	215.3	225.3	10/05/2016	SW6850	Perchlorate	0.038	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-335M1	MW-335M1_F16	255.2	265.2	10/05/2016	SW6850	Perchlorate	0.050	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-324M2	MW-324M2_F16	203.7	214.7	10/05/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.45		ug/L	0.60		0.025	0.20
J2 Range Eastern	MW-324M2	MW-324M2_F16	203.7	214.7	10/05/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.8		ug/L	400		0.019	0.20
J2 Range Eastern	MW-324M2	MW-324M2_F16	203.7	214.7	10/05/2016	SW6850	Perchlorate	7.7		ug/L	2.0	X	0.019	0.20
J2 Range Eastern	MW-324M2	MW-324M2_F16D	203.7	214.7	10/05/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.44		ug/L	0.60		0.025	0.20
J2 Range Eastern	MW-324M2	MW-324M2_F16D	203.7	214.7	10/05/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.7		ug/L	400		0.019	0.20
J2 Range Eastern	MW-324M2	MW-324M2_F16D	203.7	214.7	10/05/2016	SW6850	Perchlorate	7.5		ug/L	2.0	X	0.019	0.20
J2 Range Eastern	MW-324M1	MW-324M1_F16	234.9	244.9	10/05/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.43		ug/L	0.60		0.025	0.20
J2 Range Eastern	MW-324M1	MW-324M1_F16	234.9	244.9	10/05/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.9		ug/L	400		0.019	0.20
J2 Range Eastern	MW-324M1	MW-324M1_F16	234.9	244.9	10/05/2016	SW6850	Perchlorate	4.9		ug/L	2.0	X	0.019	0.20
J2 Range Eastern	MW-324M1	MW-324M1_F16D	234.9	244.9	10/05/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.39		ug/L	0.60		0.025	0.20
J2 Range Eastern	MW-324M1	MW-324M1_F16D	234.9	244.9	10/05/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.7		ug/L	400		0.019	0.20
J2 Range Eastern	J2MW-02M2	J2MW-02M2_F16	236	246	10/04/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.30		ug/L	0.60		0.025	0.20
J2 Range Eastern	J2MW-02M2	J2MW-02M2_F16	236	246	10/04/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.1		ug/L	400		0.019	0.20
J2 Range Eastern	J2MW-02M2	J2MW-02M2_F16	236	246	10/04/2016	SW6850	Perchlorate	3.6		ug/L	2.0	X	0.019	0.20
J2 Range Eastern	J2MW-04M1	J2MW-04M1_F16	257	267	10/04/2016	SW6850	Perchlorate	0.10	J	ug/L	2.0		0.019	0.20

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

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received November 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
J2 Range Eastern	J2MW-04M1	J2MW-04M1_F16	257	267	10/04/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.25		ug/L	0.60		0.025	0.20
J2 Range Eastern	J2MW-04M1	J2MW-04M1_F16	257	267	10/04/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.60		ug/L	400		0.019	0.20
J2 Range Eastern	MW-436M1	MW-436M1_F16	295.5	305.5	10/04/2016	SW6850	Perchlorate	0.13	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-357M1	MW-357M1_F16	274.5	284.5	10/03/2016	SW6850	Perchlorate	0.20		ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-170M1	MW-170M1_F16	265	275	10/03/2016	SW6850	Perchlorate	0.41		ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-170M2	MW-170M2_F16	198	208	10/03/2016	SW6850	Perchlorate	0.067	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-354M2	MW-354M2_F16	234.8	244.8	10/03/2016	SW6850	Perchlorate	0.029	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-354M1	MW-354M1_F16	274.5	284.5	10/03/2016	SW6850	Perchlorate	0.037	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-351M1	MW-351M1_F16	278.6	288.6	09/30/2016	SW6850	Perchlorate	0.069	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-393M2	MW-393M2_F16	218.2	228.2	09/30/2016	SW6850	Perchlorate	0.039	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-393M1	MW-393M1_F16	268	278	09/30/2016	SW6850	Perchlorate	0.027	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-627M1	MW-627M1_F16	269.5	279.5	09/29/2016	SW6850	Perchlorate	0.27		ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-372M1	MW-372M1_F16	273.1	283.1	09/29/2016	SW6850	Perchlorate	0.10	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-334M1	MW-334M1_F16	285	295	09/29/2016	SW6850	Perchlorate	0.12	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-365M2	MW-365M2_F16	205.5	215.5	09/29/2016	SW6850	Perchlorate	0.044	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-57D	MW-57D_F16	213	223	09/29/2016	SW6850	Perchlorate	0.26		ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-366M2	MW-366M2_F16	175	185	09/28/2016	SW6850	Perchlorate	0.075	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-366M1	MW-366M1_F16	215	225	09/28/2016	SW6850	Perchlorate	1.4		ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-339M2	MW-339M2_F16	213	223	09/28/2016	SW6850	Perchlorate	0.10	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-339M1	MW-339M1_F16	233	243	09/28/2016	SW6850	Perchlorate	0.78		ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-310M1	MW-310M1_F16	171.4	181.4	09/27/2016	SW6850	Perchlorate	0.052	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-368M2	MW-368M2_F16	202.7	212.7	09/27/2016	SW6850	Perchlorate	28.5		ug/L	2.0	X	0.038	0.40
J2 Range Eastern	MW-368M2	MW-368M2_F16	202.7	212.7	09/27/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	4.2		ug/L	400		0.019	0.20
J2 Range Eastern	MW-368M2	MW-368M2_F16	202.7	212.7	09/27/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	7.8		ug/L	0.60	X	0.025	0.20
J2 Range Eastern	MW-368M2	MW-368M2_F16D	202.7	212.7	09/27/2016	SW6850	Perchlorate	28.7		ug/L	2.0	X	0.038	0.40
J2 Range Eastern	MW-368M2	MW-368M2_F16D	202.7	212.7	09/27/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	4.3		ug/L	400		0.019	0.20
J2 Range Eastern	MW-368M2	MW-368M2_F16D	202.7	212.7	09/27/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	7.7		ug/L	0.60	X	0.025	0.20
J2 Range Eastern	MW-368M1	MW-368M1_F16	237.4	247.4	09/27/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	11.0		ug/L	0.60	X	0.025	0.20
J2 Range Eastern	MW-368M1	MW-368M1_F16	237.4	247.4	09/27/2016	SW6850	Perchlorate	72.9		ug/L	2.0	X	0.095	1.0
J2 Range Eastern	MW-368M1	MW-368M1_F16D	237.4	247.4	09/27/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	11.3		ug/L	0.60	X	0.025	0.20
J2 Range Eastern	MW-368M1	MW-368M1_F16D	237.4	247.4	09/27/2016	SW6850	Perchlorate	69.7		ug/L	2.0	X	0.095	1.0
Western Boundary	4036000-04G	4036000-04G_16Q3	55	65	09/27/2016	SW6850	Perchlorate	0.22		ug/L	2.0		0.019	0.20
Western Boundary	4036000-03G	4036000-03G_16Q3	50	60	09/27/2016	SW6850	Perchlorate	0.13	J	ug/L	2.0		0.019	0.20
Western Boundary	4036000-06G	4036000-06G_16Q3	108	128	09/27/2016	SW6850	Perchlorate	0.092	J	ug/L	2.0		0.019	0.20
Western Boundary	4036000-01G	4036000-01G_16Q3	38	70	09/27/2016	SW6850	Perchlorate	0.13	J	ug/L	2.0		0.019	0.20
J2 Range Northern	MW-586M2	MW-586M2_F16	211	221	09/26/2016	SW6850	Perchlorate	0.47		ug/L	2.0		0.019	0.20
J2 Range Northern	MW-586M1	MW-586M1_F16	237	247	09/26/2016	SW6850	Perchlorate	2.5		ug/L	2.0	X	0.019	0.20
J2 Range Northern	MW-289S	MW-289S_F16	105	115	09/26/2016	SW6850	Perchlorate	0.039	J	ug/L	2.0		0.019	0.20
J2 Range Northern	MW-289M2	MW-289M2_F16	162	172	09/26/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.6		ug/L	0.60	X	0.025	0.20
J2 Range Northern	MW-289M2	MW-289M2_F16	162	172	09/26/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.7		ug/L	400		0.019	0.20
J2 Range Northern	MW-289M2	MW-289M2_F16	162	172	09/26/2016	SW6850	Perchlorate	2.2		ug/L	2.0	X	0.019	0.20
J2 Range Northern	MW-289M2	MW-289M2_F16D	162	172	09/26/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.6		ug/L	0.60	X	0.025	0.20
J2 Range Northern	MW-289M2	MW-289M2_F16D	162	172	09/26/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.7		ug/L	400		0.019	0.20

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TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received November 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
J2 Range Northern	MW-289M1	MW-289M1_F16	305	315	09/26/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.32		ug/L	0.60		0.025	0.20
J2 Range Northern	MW-289M1	MW-289M1_F16	305	315	09/26/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.34		ug/L	400		0.019	0.20
J2 Range Northern	MW-289M1	MW-289M1_F16	305	315	09/26/2016	SW6850	Perchlorate	0.38		ug/L	2.0		0.019	0.20
J2 Range Northern	J2EW0002	J2EW0002_F16	198	233	09/26/2016	SW6850	Perchlorate	4.3		ug/L	2.0	X	0.019	0.20
J2 Range Northern	J2EW0001	J2EW0001_F16	179	234	09/26/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.24		ug/L	0.60		0.025	0.20
J2 Range Northern	J2EW0001	J2EW0001_F16	179	234	09/26/2016	SW6850	Perchlorate	2.9		ug/L	2.0	X	0.019	0.20
J2 Range Northern	J2EW2-MW2-B	J2EW2-MW2-B_F16	209.8	219.8	09/23/2016	SW6850	Perchlorate	0.038	J	ug/L	2.0		0.019	0.20
J2 Range Northern	J2EW2-MW2-C	J2EW2-MW2-C_F16	243.8	253.8	09/23/2016	SW6850	Perchlorate	0.056	J	ug/L	2.0		0.019	0.20
J2 Range Northern	J2EW0003	J2EW0003_F16	202	232	09/21/2016	SW6850	Perchlorate	0.59		ug/L	2.0		0.019	0.20
J2 Range Northern	MW-589M2	MW-589M2_F16	211	221	09/20/2016	SW6850	Perchlorate	6.9		ug/L	2.0	X	0.019	0.20
J2 Range Northern	MW-589M2	MW-589M2_F16D	211	221	09/20/2016	SW6850	Perchlorate	6.8		ug/L	2.0	X	0.019	0.20
J2 Range Northern	MW-589M1	MW-589M1_F16	240	250	09/20/2016	SW6850	Perchlorate	0.031	J	ug/L	2.0		0.019	0.20
J2 Range Northern	J2EW1-MW1-A	J2EW1-MW1-A_F16	140.8	150.8	09/20/2016	SW6850	Perchlorate	0.031	J	ug/L	2.0		0.019	0.20
J2 Range Northern	J2EW1-MW1-B	J2EW1-MW1-B_F16	205.8	215.8	09/20/2016	SW6850	Perchlorate	0.29		ug/L	2.0		0.019	0.20
J2 Range Northern	J2EW1-MW1-C	J2EW1-MW1-C_F16	240.8	250.8	09/20/2016	SW6850	Perchlorate	1.6		ug/L	2.0		0.019	0.20
J2 Range Northern	MW-622M2	MW-622M2_F16	220.4	230.4	09/19/2016	SW6850	Perchlorate	1.4		ug/L	2.0		0.019	0.20
J2 Range Northern	MW-622M1	MW-622M1_F16	245.4	255.4	09/19/2016	SW6850	Perchlorate	1.6		ug/L	2.0		0.019	0.20
J2 Range Northern	MW-585M3	MW-585M3_F16	198.5	208.5	09/19/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.7		ug/L	400		0.019	0.20
J2 Range Northern	MW-585M3	MW-585M3_F16	198.5	208.5	09/19/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.9		ug/L	0.60	X	0.025	0.20
J2 Range Northern	MW-585M3	MW-585M3_F16	198.5	208.5	09/19/2016	SW6850	Perchlorate	3.8		ug/L	2.0	X	0.019	0.20
J2 Range Northern	MW-585M3	MW-585M3_F16D	198.5	208.5	09/19/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.7		ug/L	400		0.019	0.20
J2 Range Northern	MW-585M3	MW-585M3_F16D	198.5	208.5	09/19/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.0		ug/L	0.60	X	0.025	0.20
J2 Range Northern	MW-585M3	MW-585M3_F16D	198.5	208.5	09/19/2016	SW6850	Perchlorate	3.9		ug/L	2.0	X	0.019	0.20
J2 Range Northern	MW-585M2	MW-585M2_F16	218.5	228.5	09/19/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.68		ug/L	0.60	X	0.025	0.20
J2 Range Northern	MW-585M2	MW-585M2_F16	218.5	228.5	09/19/2016	SW6850	Perchlorate	17.4		ug/L	2.0	X	0.019	0.20
J2 Range Northern	MW-585M2	MW-585M2_F16D	218.5	228.5	09/19/2016	SW6850	Perchlorate	17.6		ug/L	2.0	X	0.019	0.20
J2 Range Northern	MW-585M1	MW-585M1_F16	240	250	09/19/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.1		ug/L	0.60	X	0.025	0.20
J2 Range Northern	MW-585M1	MW-585M1_F16	240	250	09/19/2016	SW6850	Perchlorate	16.9		ug/L	2.0	X	0.019	0.20
J2 Range Northern	MW-585M1	MW-585M1_F16D	240	250	09/19/2016	SW6850	Perchlorate	15.7		ug/L	2.0	X	0.019	0.20
J2 Range Northern	MW-640M2	MW-640M2_F16	216	226	09/16/2016	SW6850	Perchlorate	0.81		ug/L	2.0		0.019	0.20
J2 Range Northern	MW-640M1	MW-640M1_F16	246	256	09/16/2016	SW6850	Perchlorate	2.0		ug/L	2.0		0.019	0.20
J2 Range Northern	MW-300M2	MW-300M2_F16	197.2	207.2	09/16/2016	SW6850	Perchlorate	0.28		ug/L	2.0		0.019	0.20
J2 Range Northern	MW-587M2	MW-587M2_F16	220	230	09/15/2016	SW6850	Perchlorate	39.6		ug/L	2.0	X	0.076	0.80
J2 Range Northern	MW-587M2	MW-587M2_F16D	220	230	09/15/2016	SW6850	Perchlorate	39.4		ug/L	2.0	X	0.076	0.80
J2 Range Northern	MW-587M1	MW-587M1_F16	250	260	09/15/2016	SW6850	Perchlorate	0.41		ug/L	2.0		0.019	0.20
J2 Range Northern	MW-613M2	MW-613M2_F16	246.1	256.1	09/15/2016	SW6850	Perchlorate	0.022	J	ug/L	2.0		0.019	0.20
J2 Range Northern	MW-613M1	MW-613M1_F16	267.1	277.1	09/15/2016	SW6850	Perchlorate	0.033	J	ug/L	2.0		0.019	0.20
J2 Range Northern	MW-348M2	MW-348M2_F16	206.5	216.5	09/14/2016	SW6850	Perchlorate	0.60		ug/L	2.0		0.019	0.20
J2 Range Northern	MW-293S	MW-293S_F16	110.1	120.1	09/14/2016	SW6850	Perchlorate	0.037	J	ug/L	2.0		0.019	0.20
J2 Range Northern	MW-293M2	MW-293M2_F16	196.4	206.4	09/14/2016	SW6850	Perchlorate	0.14	J	ug/L	2.0		0.019	0.20
J2 Range Northern	J2EW2-MW3-B	J2EW2-MW3-B_F16	212.7	222.7	09/13/2016	SW6850	Perchlorate	4.0		ug/L	2.0	X	0.019	0.20
J2 Range Northern	MW-327M3	MW-327M3_F16	220.2	230.2	09/13/2016	SW6850	Perchlorate	0.10	J	ug/L	2.0		0.019	0.20
J2 Range Northern	MW-327M2	MW-327M2_F16	265	275	09/12/2016	SW6850	Perchlorate	0.10	J	ug/L	2.0		0.019	0.20

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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
J2 Range Northern	MW-313M2	MW-313M2_F16	215.5	225.5	09/12/2016	SW6850	Perchlorate	0.16	J	ug/L	2.0		0.019	0.20
J2 Range Northern	MW-313M1	MW-313M1_F16	255.4	265.4	09/12/2016	SW6850	Perchlorate	8.5		ug/L	2.0	X	0.019	0.20
J2 Range Northern	MW-313M1	MW-313M1_F16D	255.4	265.4	09/12/2016	SW6850	Perchlorate	8.9		ug/L	2.0	X	0.019	0.20
J2 Range Northern	MW-621M2	MW-621M2_F16	219.4	229.4	09/08/2016	SW6850	Perchlorate	3.3		ug/L	2.0	X	0.019	0.20
J2 Range Northern	MW-588M2	MW-588M2_F16	198	208	09/08/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.27		ug/L	0.60		0.025	0.20
J2 Range Northern	MW-588M2	MW-588M2_F16	198	208	09/08/2016	SW6850	Perchlorate	7.7		ug/L	2.0	X	0.019	0.20
J2 Range Northern	MW-588M2	MW-588M2_F16D	198	208	09/08/2016	SW6850	Perchlorate	8.0		ug/L	2.0	X	0.019	0.20
J2 Range Northern	MW-631M2	MW-631M2_F16	200.1	210.1	09/08/2016	SW6850	Perchlorate	0.19	J	ug/L	2.0		0.019	0.20
J2 Range Northern	MW-631M1	MW-631M1_F16	233.1	243.1	09/08/2016	SW6850	Perchlorate	0.27		ug/L	2.0		0.019	0.20
J2 Range Northern	MW-619M1	MW-619M1_F16	255.1	265.1	09/07/2016	SW6850	Perchlorate	0.26		ug/L	2.0		0.019	0.20
J2 Range Northern	MW-337M1	MW-337M1_F16	243.7	253.7	09/07/2016	SW6850	Perchlorate	0.066	J	ug/L	2.0		0.019	0.20
J2 Range Northern	MW-331M2	MW-331M2_F16	195.3	205.3	09/06/2016	SW6850	Perchlorate	0.22		ug/L	2.0		0.019	0.20

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