

**MONTHLY PROGRESS REPORT #229  
FOR APRIL 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 April to 30 April 2016.

**1. SUMMARY OF REMEDIATION ACTIONS**

The following is a description of Remediation Actions (RA) underway at Camp Edwards as of April 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 2.349 billion gallons of water treated and re-injected as of 29 April 2016. The following Frank Perkins Road facility shut down occurred in April:

- Shut down on 11 April 2016 at 1005 to change-out bag filters and was restarted on 11 April 2016 at 1050; and
- Extraction well (EW-501) shut down on 21 April 2016 at 0755 to change-out VFD and was restarted on 21 April 2016 at 1312.

The Pew Road Mobile Treatment Unit (MTU) continues to operate at a flow rate of 105 gpm with over 464.2 million gallons of water treated and re-injected as of 29 April 2016. The following Pew Road MTU shut downs occurred in April:

- Shut down on 7 April 2016 at 1616 due to a power interruption and was restarted on 8 April 2016 at 1149; and
- Shut down on 13 April 2016 at 1400 for media change-out and was restarted on 15 April 2016 at 0820.

The Base Boundary RA was offline awaiting extraction well motor replacement, with over 147.6 million gallons of water treated and re-injected as of 29 April 2016. The following Base Boundary MTU shut downs occurred in April:

- Shut down on 3 April 2016 at 2216 for system repairs. The system remains off while waiting for extraction well motor replacement.

### 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 29 April 2016, over 341 million gallons of water have been treated and re-injected. The following J-1 Range Southern system shut down occurred in April:

- Shut down on 13 April 2016 at 1200 for media change-out and was restarted on 13 April 2016 at 1015.

#### 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 29 April 2016, over 294 million gallons of water have been treated and re-injected. The following J-1 Range Northern MTU shut downs occurred in April:

- Extraction well EW-0001 shut down on 8 April 2016 at 0459 due to a system alarm and was restarted on 11 April 2016 at 0914; and
- Shut down on 27 April 2016 at 0822 for system maintenance and was restarted on 27 April 2016.

### 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 29 April 2016, over 897.7 million gallons of water have been treated and re-injected. The following J-3 Range system shut downs occurred in April:

- Shut down on 7 April 2016 at 1625 due to a power interruption and was restarted on 8 April 2016 at 1005;
- EW-IP1 shut down on 23 April 2016 at 1627 due to a power interruption and was restarted on 25 April 2016 at 0932;

- 90EW0001 was shut down on 16 April 2016 at 1250 due to a power interruption and was restarted on 18 April 2016 at 1102; and
- Shut down on 20 April 2016 at 1135 to tie in the new extraction well pipeline and was restarted on 20 April 2016 at 1355.

### 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 29 April 2016, over 755.5 million gallons of water have been treated and re-injected. The following Northern Treatment Building shut down occurred in April:

- Shut down on 7 April 2016 at 1607 due to a system alarm and was restarted on 8 April 2016 at 0850.

The Northern MTUs E and F continue to operate at a flow rate of 250 gpm. As of 29 April 2016, over 1.216 billion gallons of water have been treated and re-injected. The following J-2 Range Northern MTU shut downs occurred in April:

- MTU F was shut down on 3 April 2016 at 0911 due to a system alarm and was restarted on 4 April 2016 at 0740;
- MTU E was shut down on 3 April 2016 at 0922 due to a system alarm and was restarted on 4 April 2016 at 0742;
- MTUs E and F were shut down on 7 April 2016 at 1604 due to a power interruption and were restarted on 8 April 2016 at 0920;
- MTU E shut down on 22 April 2016 at 0610 due to a system alarm and was restarted on 22 April 2016 at 0839; and
- MTU F shut down on 22 April 2016 at 0605 due to a system alarm and was restarted on 22 April 2016 at 0836.

#### 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 29 April 2016, over 832.5 million gallons of water have been treated and re-injected. No MTU H and I shut downs occurred in April.

MTU J continues to operate at a flow rate of 120 gpm. As of 29 April 2016, over 371 million gallons of water have been treated and re-injected. The following shut down of MTU J occurred in April:

- MTU J shut down on 7 April 2016 at 1608 due to a power interruption and was restarted on 8 April 2016 at 1116.

MTU K continues to operate at a flow rate of 125 gpm. As of 29 April 2016, over 476 million gallons of water have been treated and re-injected. No MTU K shut downs occurred in April.

### 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 29 April 2016, over 589 million gallons of water have been treated and re-injected. The following CIA treatment facility shut down occurred in April:

- System 1 shut down on 8 April 2016 at 0755 for system repairs (leak at fire fighter fitting). The system was restarted on 19 April 2016 at 1151.

## **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, 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, Demolition Area 2, J-1 Range Northern, J-3 Range, L Range, and IBC Range.

Collected surface soil samples and continued excavation in soil removal grids at J-2 Range.

Surveyed and developed new monitoring wells.

Completed vegetative clearance in additional Former B and D Range soil removal grids. Completed excavation, stockpiling, and post-excavation sampling at Former N Range berms, completed excavation and stockpiling (2<sup>nd</sup> lifts) at C Range, began excavation and stockpiling (2<sup>nd</sup> lifts) at B Range, and continued soil excavation in U Range soil removal grids in the Training Areas.

Completed installation of well vault and installation of tie-in at the J-3 Range treatment plant, and continued trenching and installation of electrical and extraction well pump for new in-plume extraction well at J-3 Range.

Continued construction of the document storage room at Demolition Area 1.

Completed installation of electric poles for new in-plume extraction well and restoration of area along effluent pipeline/reinjection gallery, continued installation of electric service for new in-plume extraction well and pipeline, and continued installation of electric service and construction of access road for the leading edge system at Demolition Area 1.

Continued utility hookup, installed fiber optic cable, and completed system start up pump test at the CIA.

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

Transported and disposed of BIP, consolidated shot and partial item excavations in soil, continued metalmapper collection of cued data in Phase II area 2, and continued intrusive investigation of anomalies in Phase II area 1 at the CIA.

### **JBCC IAGWSP Tech Update Meeting Minutes 28 April 2016**

At the Demolition Area 1 off-site everything is completed with the exception of the connection to power. Because Eversource is still working at the CIA EW-3 groundwater treatment system, they have not started at Demo 1. Therefore, IAGWSP will not meet the enforceable milestone date for startup and submitted request for an extension to EPA. At the CIA EW-3 groundwater treatment system, Eversource needs to make the final connection between our utility line and their distribution line. The startup testing was completed using a portable generator.

The Demolition Area 1 source area extraction well is in but will not come online until sometime in June because the VFD and vault cover are currently on backorder. All other work has been completed.

At the Central Impact Area, Dawson is fully mobbed with two teams working in Phase II Area 1. Currently one metal mapper unit is in Phase II Area 2, the other is being repaired.

Approval has been received from Natural Heritage for the Demolition Area 1 and J-2 Range wells. Approvals from the SHPO and tribe are expected by May 6 and by May 17 for bat surveys. Because we are in bat season, tree cutting must be limited. Requests for several projects were submitted in late April and have a 30-day approval process. IAGWSP does not anticipate bats will be an issue with any of the project areas submitted.

There is a new issue with the Demolition Area 1 base boundary system. The extraction well broke and the pump needs to be replaced. In order to do so, a crane needs to be brought in to pull the components out. Since the time that the system was originally installed, Eversource has put in a power line over the system and we need to obtain their permission to work within the easement area. Eversource has inspected the line and needs to make a technical determination on how to protect the line while the work is being completed. They have requested that USACE provide all paperwork outlining their rights to the easement where the extraction well is located. USACE has gathered all the real estate paperwork and is waiting to hear back from Eversource.

The components for the new J-3 extraction well are just about completed. The pipeline, vault and well pump have been installed and have been tied into the J-3 system. They are waiting for backordered items: the lid, VFD and a cover for the manhole. Paving should begin in May. USACE has been working with Range Control as they would like to close Greenway Road while they pave.

At the Small Arms Ranges, they are finishing up the second lifts at the C Range and will move to B Range, D Range and Former B Range when completed. Results were received from samples collected as part of the 5<sup>th</sup> addendum project note from the Former B and D Ranges.

### **Action Items**

The action items were discussed and updated.

### **JBCC Cleanup Team Meeting**

The JBCC Cleanup Team (JBCCCT), formerly the MMR Cleanup Team (MMRCT) was previously scheduled to meet next on May 11, 2016; this meeting has been canceled, and the next meeting date has not yet been determined. 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 April to 30 April 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. 228 for March 2016 04/10/2016
- J-2 Range Eastern Data Gap Drilling to Confirm Predicted RDX and Perchlorate Cleanup Times – Project Note 03/31/2016
- J-2 Range Post-DD Confirmatory Geophysical and Soil Investigation Program Findings – Project Note 04/04/2016
- Final J-3 Range 2015 Interim Environmental Monitoring Report 04/05/2016

**3. SCHEDULED ACTIONS**

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

- J-2 Range Project Note for Additional Wells to Evaluate Source Response;
- Training Areas Draft Investigation Report;
- Training Areas Draft Remedy Selection Plan;
- CIA Environmental Monitoring Work Plan;
- CIA Draft 2015 Source Removal Annual Report; and
- Draft BIP Report;
- L Range 2016 Environmental Monitoring Report; and
- J-1 Range Northern and J-1 Range Southern 2016 Environmental Monitoring Report

**TABLE 1**  
**Sampling Progress: 1 April to 30 April 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	MW-36M2	MW-36M2_S16	N	04/28/2016	Ground Water	131	141
Demolition Area 1	MW-36M1	MW-36M1_S16	N	04/28/2016	Ground Water	152	162
Demolition Area 1	MW-78M2	MW-78M2_S16	N	04/28/2016	Ground Water	115	125
Demolition Area 1	MW-78M1	MW-78M1_S16	N	04/28/2016	Ground Water	135	145
Demolition Area 1	MW-75M2	MW-75M2_S16	N	04/28/2016	Ground Water	115	125
Demolition Area 1	MW-75M1	MW-75M1_S16	N	04/28/2016	Ground Water	140	150
Demolition Area 1	MW-77S	MW-77S_S16	N	04/27/2016	Ground Water	83	93
Demolition Area 1	MW-77M2	MW-77M2_S16	N	04/27/2016	Ground Water	120	130
Demolition Area 1	MW-77M2	MW-77M2_S16D	FD	04/27/2016	Ground Water	120	130
Demolition Area 1	MW-77M1	MW-77M1_S16	N	04/27/2016	Ground Water	180	190
Demolition Area 1	MW-210M2	MW-210M2_S16	N	04/27/2016	Ground Water	156	166
Demolition Area 1	MW-210M1	MW-210M1_S16	N	04/27/2016	Ground Water	201	211
Demolition Area 1	MW-433	MW-433_S16	N	04/27/2016	Ground Water	180.2	190.2
Demolition Area 1	MW-76S	MW-76S_S16	N	04/26/2016	Ground Water	85	95
Demolition Area 1	MW-76S	MW-76S_S16D	FD	04/26/2016	Ground Water	85	95
Demolition Area 1	MW-76M2	MW-76M2_S16	N	04/26/2016	Ground Water	105	115
Demolition Area 1	MW-76M2	MW-76M2_S16D	FD	04/26/2016	Ground Water	105	115
Demolition Area 1	MW-76M1	MW-76M1_S16	N	04/26/2016	Ground Water	125	135
Demolition Area 1	MW-225M3	MW-225M3_S16	N	04/26/2016	Ground Water	125	135
Demolition Area 1	MW-225M2	MW-225M2_S16	N	04/26/2016	Ground Water	145	155
Demolition Area 1	MW-532M2	MW-532M2_S16	N	04/26/2016	Ground Water	138	148
Demolition Area 1	MW-532M2	MW-532M2_S16D	FD	04/26/2016	Ground Water	138	148
Demolition Area 1	MW-240M2	MW-240M2_S16	N	04/25/2016	Ground Water	125	135
Demolition Area 1	MW-532M1	MW-532M1_S16	N	04/25/2016	Ground Water	168	178
Demolition Area 1	MW-531M1	MW-531M1_S16	N	04/25/2016	Ground Water	138	148
Demolition Area 1	MW-258M3	MW-258M3_S16	N	04/25/2016	Ground Water	77	82
Demolition Area 1	MW-258M2	MW-258M2_S16	N	04/25/2016	Ground Water	87	92
Demolition Area 1	MW-258M1	MW-258M1_S16	N	04/25/2016	Ground Water	109	119
Demolition Area 1	MW-258M1	MW-258M1_S16D	FD	04/25/2016	Ground Water	109	119
Demolition Area 1	MW-542M1	MW-542M1_S16	N	04/21/2016	Ground Water	144	154
Demolition Area 1	MW-352M1	MW-352M1_S16	N	04/21/2016	Ground Water	115	125
Demolition Area 1	MW-353M2	MW-353M2_S16	N	04/21/2016	Ground Water	57	67
Former N Range	SSFNRNG01	FNRBRM01_D	FR	04/21/2016	Soil	0	0.25
Demolition Area 1	MW-353M1	MW-353M1_S16	N	04/21/2016	Ground Water	107	117
Former N Range	SSFNRNG01	FNRBRM01_C	FR	04/21/2016	Soil	0	0.25
Former N Range	SSFNRNG01	FNRBRM01_B	N	04/21/2016	Soil	0	0.25
Former N Range	SSFNRNG02	FNRBRM02_D	N	04/21/2016	Soil	0	0.25
Demolition Area 1	MW-597M2	MW-597M2_S16	N	04/21/2016	Ground Water	118	128
Demolition Area 1	MW-597M1	MW-597M1_S16	N	04/21/2016	Ground Water	148	158
J2 Range Eastern	SSJ2EM20	J2M20_A	N	04/21/2016	Soil	0	0.25
J2 Range Eastern	SSJ2EM19	J2M19_C	FR	04/21/2016	Soil	0	0.25
J2 Range Eastern	SSJ2EM19	J2M19_B	FR	04/21/2016	Soil	0	0.25
J2 Range Eastern	SSJ2EM19	J2M19_A	N	04/21/2016	Soil	0	0.25
Demolition Area 1	MW-546M2	MW-546M2_S16	N	04/20/2016	Ground Water	100	110
Demolition Area 1	MW-546M1	MW-546M1_S16	N	04/20/2016	Ground Water	140	150
Demolition Area 1	MW-543M2	MW-543M2_S16	N	04/20/2016	Ground Water	91.8	101.8
Demolition Area 1	MW-543M1	MW-543M1_S16	N	04/20/2016	Ground Water	127	137
IBC RANGE	MW-652S	MW-652S_R1	N	04/20/2016	Ground Water	106	116
Demolition Area 2	MW-654M1	MW-654M1_R1	N	04/19/2016	Ground Water	154	164
Demolition Area 2	MW-655M2	MW-655M2_R1	N	04/19/2016	Ground Water	156	166
Demolition Area 2	MW-655M1	MW-655M1_R1	N	04/19/2016	Ground Water	178	188
J3 Range	MW-653M2	MW-653M2_R1	N	04/19/2016	Ground Water	59.3	69.3
J3 Range	MW-653M2	MW-653M2_R1D	FD	04/19/2016	Ground Water	59.3	69.3
J3 Range	MW-653M1	MW-653M1_R1	N	04/19/2016	Ground Water	147.5	157.5
J3 Range	MW-653M1	MW-653M1_R1D	FD	04/19/2016	Ground Water	147.5	157.5
J1 Range Northern	MW-657M2	MW-657M2_R1	N	04/18/2016	Ground Water	208.3	218.3
J1 Range Northern	MW-657M1	MW-657M1_R1	N	04/18/2016	Ground Water	240.3	250.3

N = Normal Sample  
FD = Field Duplicate



**TABLE 1**  
**Sampling Progress: 1 April to 30 April 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-656M2	MW-656M2_R1	N	04/18/2016	Ground Water	222.1	232.1
J1 Range Northern	MW-656M1	MW-656M1_R1	N	04/18/2016	Ground Water	244.1	254.1
Central Impact Area	CIAEW3-EFF	CIAEW3-EFF	N	04/15/2016	Ground Water	0	0
Central Impact Area	CIAEW3-MIDGAC	CIAEW3-POST GAC#1	N	04/15/2016	Ground Water	0	0
Central Impact Area	CIAEW3-MIDIX	CIAEW3-POST IX	N	04/15/2016	Ground Water	0	0
Central Impact Area	CIAEW3-INF	CIAEW3-INF	N	04/15/2016	Ground Water	0	0
Demolition Area 1	MW-544M3	MW-544M3_S16	N	04/14/2016	Ground Water	77.5	87.5
Central Impact Area	CIAEW3-EFF	CIAEW3-EFF	N	04/14/2016	Ground Water	0	0
Central Impact Area	CIAEW3-MIDGAC	CIAEW3-POST GAC#1	N	04/14/2016	Ground Water	0	0
Central Impact Area	CIAEW3-MIDIX	CIAEW3-POST IX	N	04/14/2016	Ground Water	0	0
Central Impact Area	CIAEW3-INF	CIAEW3-INF	N	04/14/2016	Ground Water	0	0
Demolition Area 1	MW-544M2	MW-544M2_S16	N	04/14/2016	Ground Water	112	122
Demolition Area 1	MW-544M1	MW-544M1_S16	N	04/14/2016	Ground Water	162	172
Demolition Area 1	MW-611M2	MW-611M2_S16	N	04/14/2016	Ground Water	91	101
Demolition Area 1	MW-611M1	MW-611M1_S16	N	04/14/2016	Ground Water	141	151
Demolition Area 1	MW-598M2	MW-598M2_S16	N	04/14/2016	Ground Water	88	98
Demolition Area 1	MW-598M1	MW-598M1_S16	N	04/14/2016	Ground Water	122	132
Central Impact Area	CIAEW3-EFF	CIAEW3-EFF	N	04/13/2016	Ground Water	0	0
Demolition Area 1	MW-610M2	MW-610M2_S16	N	04/13/2016	Ground Water	85	95
Central Impact Area	CIAEW3-MIDGAC	CIAEW3-POST GAC#1	N	04/13/2016	Ground Water	0	0
Central Impact Area	CIAEW3-MIDIX	CIAEW3-POST IX	N	04/13/2016	Ground Water	0	0
Central Impact Area	CIAEW3-INF	CIAEW3-INF	N	04/13/2016	Ground Water	0	0
Demolition Area 1	MW-610M1	MW-610M1_S16	N	04/13/2016	Ground Water	110	120
Demolition Area 1	MW-641M2	MW-641M2_S16	N	04/13/2016	Ground Water	86.2	96.2
Demolition Area 1	MW-641M1	MW-641M1_S16	N	04/13/2016	Ground Water	113.2	123.2
Demolition Area 1	MW-559M2	MW-559M2_S16	N	04/13/2016	Ground Water	87	97
Demolition Area 1	MW-559M1	MW-559M1_S16	N	04/13/2016	Ground Water	135.6	145.6
Central Impact Area	CIAEW3-EFF	CIAEW3-EFF	N	04/12/2016	Ground Water	0	0
Central Impact Area	CIAEW3-MIDGAC	CIAEW3-POST GAC#1	N	04/12/2016	Ground Water	0	0
Central Impact Area	CIAEW3-MIDIX	CIAEW3-POST IX	N	04/12/2016	Ground Water	0	0
Central Impact Area	CIAEW3-INF	CIAEW3-INF	N	04/12/2016	Ground Water	0	0
Demolition Area 1	MW-642M2	MW-642M2_S16	N	04/12/2016	Ground Water	77.3	87.3
Demolition Area 1	MW-642M1	MW-642M1_S16	N	04/12/2016	Ground Water	104.3	114.3
Demolition Area 1	MW-554M2	MW-554M2_S16	N	04/12/2016	Ground Water	89.1	99.1
Demolition Area 1	MW-554M1	MW-554M1_S16	N	04/12/2016	Ground Water	120	130
Demolition Area 1	MW-582M2	MW-582M2_S16	N	04/12/2016	Ground Water	84	94
Demolition Area 1	MW-582M2	MW-582M2_S16D	FD	04/12/2016	Ground Water	84	94
Demolition Area 1	MW-582M1	MW-582M1_S16	N	04/12/2016	Ground Water	134	144
L Range	MW-651M1	MW-651M1_R1	N	04/11/2016	Ground Water	243	253
L Range	MW-650M1	MW-650M1_R1	N	04/11/2016	Ground Water	255.8	265.8
Demolition Area 1	MW-558M2	MW-558M2_S16	N	04/11/2016	Ground Water	98	108
Demolition Area 1	MW-558M1	MW-558M1_S16	N	04/11/2016	Ground Water	134	144
Demolition Area 1	MW-556M2	MW-556M2_S16	N	04/11/2016	Ground Water	111	121
Demolition Area 1	MW-556M1	MW-556M1_S16	N	04/11/2016	Ground Water	153	163
Demolition Area 1	MW-569M2	MW-569M2_S16	N	04/08/2016	Ground Water	84	94
Demolition Area 1	MW-569M1	MW-569M1_S16	N	04/08/2016	Ground Water	114	124
Demolition Area 1	MW-569M1	MW-569M1_S16D	FD	04/08/2016	Ground Water	114	124
Demolition Area 1	MW-571M2	MW-571M2_S16	N	04/08/2016	Ground Water	74	84
Demolition Area 1	MW-571M1	MW-571M1_S16	N	04/08/2016	Ground Water	114	124
Demolition Area 1	MW-571M1	MW-571M1_S16D	FD	04/08/2016	Ground Water	114	124
Demolition Area 1	MW-545M4	MW-545M4_S16	N	04/08/2016	Ground Water	72	82
Demolition Area 1	MW-545M3	MW-545M3_S16	N	04/07/2016	Ground Water	101.5	111.5
Demolition Area 1	MW-545M2	MW-545M2_S16	N	04/07/2016	Ground Water	142	152
Demolition Area 1	MW-545M1	MW-545M1_S16	N	04/07/2016	Ground Water	162	172
Demolition Area 1	MW-248M3	MW-248M3_S16	N	04/07/2016	Ground Water	143	153
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-121A	N	04/07/2016	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-121A	N	04/07/2016	Process Water	0	0

N = Normal Sample  
FD = Field Duplicate

**TABLE 1**  
**Sampling Progress: 1 April to 30 April 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	FPR2-POST-IX-A	FPR2-POST-IX-A-121A	N	04/07/2016	Process Water	0	0
Demolition Area 1	MW-248M2	MW-248M2_S16	N	04/07/2016	Ground Water	178	188
Demolition Area 1	FPR-2-INF	FPR-2-INF-121A	N	04/07/2016	Process Water	0	0
Demolition Area 1	MW-248M1	MW-248M1_S16	N	04/07/2016	Ground Water	216.3	226.3
Demolition Area 1	PR-EFF	PR-EFF-121A	N	04/07/2016	Process Water	0	0
Demolition Area 1	PR-MID-2	PR-MID-2-121A	N	04/07/2016	Process Water	0	0
Demolition Area 1	PR-MID-1	PR-MID-1-121A	N	04/07/2016	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-121A	N	04/07/2016	Process Water	0	0
Demolition Area 1	MW-221M1	MW-221M1_S16	N	04/06/2016	Ground Water	221	231
Demolition Area 1	MW-231M1	MW-231M1_S16R	N	04/06/2016	Ground Water	210.5	220.5
Demolition Area 1	MW-231M1	MW-231M1_S16RD	FD	04/06/2016	Ground Water	210.5	220.5
J1 Range Southern	J1S-EFF	J1S-EFF-101A	N	04/06/2016	Process Water	0	0
J1 Range Southern	J1S-MID-2	J1S-MID-2-101A	N	04/06/2016	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-101A	N	04/06/2016	Process Water	0	0
Demolition Area 1	MW-173M1	MW-173M1_S16	N	04/06/2016	Ground Water	243	253
J3 Range	J3-EFF	J3-EFF-115A	N	04/06/2016	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-115A	N	04/06/2016	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-115A	N	04/06/2016	Process Water	0	0
J3 Range	J3-INF	J3-INF-115A	N	04/06/2016	Process Water	0	0
Demolition Area 1	MW-341M3	MW-341M3_S16	N	04/06/2016	Ground Water	209.5	219.5
Central Impact Area	CIA2-EFF	CIA2-EFF-27A	N	04/06/2016	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-27A	N	04/06/2016	Process Water	0	0
Central Impact Area	CIA2-MID1	CIA2-MID1-27A	N	04/06/2016	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-27A	N	04/06/2016	Process Water	0	0
Demolition Area 1	MW-341M2	MW-341M2_S16	N	04/06/2016	Ground Water	264.5	269.5
Demolition Area 1	MW-341M2	MW-341M2_S16D	FD	04/06/2016	Ground Water	264.5	269.5
Central Impact Area	CIA1-EFF	CIA1-EFF-27A	N	04/06/2016	Process Water	0	0
Central Impact Area	CIA1-MID2	CIA1-MID2-27A	N	04/06/2016	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-27A	N	04/06/2016	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-27A	N	04/06/2016	Process Water	0	0
Demolition Area 1	MW-341M1	MW-341M1_S16	N	04/06/2016	Ground Water	289.5	299.5
Central Impact Area	MW-96M2	MW-96M2_S16	N	04/05/2016	Ground Water	160	170
Central Impact Area	MW-03M2	MW-03M2_S16	N	04/05/2016	Ground Water	180	185
Central Impact Area	MW-204M2	MW-204M2_S16	N	04/05/2016	Ground Water	76	86
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-115A	N	04/05/2016	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-115A	N	04/05/2016	Process Water	0	0
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-115A	N	04/05/2016	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-115A	N	04/05/2016	Process Water	0	0
Central Impact Area	MW-204M1	MW-204M1_S16	N	04/05/2016	Ground Water	141	151
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-115A	N	04/05/2016	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-115A	N	04/05/2016	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-115A	N	04/05/2016	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-115A	N	04/05/2016	Process Water	0	0
Central Impact Area	MW-115M1	MW-115M1_S16	N	04/05/2016	Ground Water	138	148
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-115A	N	04/05/2016	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-115A	N	04/05/2016	Process Water	0	0
J1 Range Northern	J1N-EFF	J1N-EFF-30A	N	04/05/2016	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-30A	N	04/05/2016	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-30A	N	04/05/2016	Process Water	0	0
J1 Range Northern	J1N-INF2	J1N-INF2-30A	N	04/05/2016	Process Water	0	0
Central Impact Area	MW-184M1	MW-184M1_S16	N	04/05/2016	Ground Water	186	196
Central Impact Area	MW-184M1	MW-184M1_S16D	FD	04/05/2016	Ground Water	186	196
Central Impact Area	MW-38M4	MW-38M4_S16	N	04/04/2016	Ground Water	132	142
Central Impact Area	MW-38M3	MW-38M3_S16	N	04/04/2016	Ground Water	170	180
Central Impact Area	MW-628M2	MW-628M2_S16	N	04/04/2016	Ground Water	120.8	130.8
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-91A	N	04/04/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-91A	N	04/04/2016	Process Water	0	0

**TABLE 1**  
**Sampling Progress: 1 April to 30 April 2016**

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-MID-1K	J2E-MID-1K-91A	N	04/04/2016	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-91A	N	04/04/2016	Process Water	0	0
Central Impact Area	MW-628M1	MW-628M1_S16	N	04/04/2016	Ground Water	230.8	240.8
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-91A	N	04/04/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-91A	N	04/04/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-91A	N	04/04/2016	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-91A	N	04/04/2016	Process Water	0	0
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-91A	N	04/04/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-91A	N	04/04/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-91A	N	04/04/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-91A	N	04/04/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-91A	N	04/04/2016	Process Water	0	0
Central Impact Area	MW-212M1	MW-212M1_S16	N	04/04/2016	Ground Water	333	343
J2 Range Eastern	J2E-INF-I	J2E-INF-I-91A	N	04/04/2016	Process Water	0	0

**TABLE 2**  
**VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS**  
 Data Received April 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-545M3	MW-545M3_S16	101.5	111.5	04/07/2016	SW6850	Perchlorate	0.67		UG/L	2.0		0.019	0.20
Demolition Area 1	MW-545M2	MW-545M2_S16	142	152	04/07/2016	SW6850	Perchlorate	0.47		UG/L	2.0		0.019	0.20
Demolition Area 1	MW-545M1	MW-545M1_S16	162	172	04/07/2016	SW6850	Perchlorate	0.67		UG/L	2.0		0.019	0.20
Demolition Area 1	MW-248M3	MW-248M3_S16	143	153	04/07/2016	SW6850	Perchlorate	0.039	J	UG/L	2.0		0.019	0.20
Demolition Area 1	MW-248M2	MW-248M2_S16	178	188	04/07/2016	SW6850	Perchlorate	0.068	J	UG/L	2.0		0.019	0.20
Demolition Area 1	MW-248M1	MW-248M1_S16	216.3	226.3	04/07/2016	SW6850	Perchlorate	0.13	J	UG/L	2.0		0.019	0.20
CS-19 (ARNG)	MW-17S	MW-17S_S16	120	130	03/29/2016	SW6020A	Cadmium	0.17	J	UG/L		X	0.15	1.0
CS-19 (ARNG)	MW-17S	MW-17S_S16	120	130	03/29/2016	SW6010C	Manganese	59.9		UG/L		X	1.3	10.0
CS-19 (ARNG)	MW-17S	MW-17S_S16	120	130	03/29/2016	SW6010C	Chromium	7.5	J	UG/L		X	0.64	10.0
CS-19 (ARNG)	MW-53S	MW-53S_S16	121.2	131.2	03/29/2016	SW6010C	Manganese	34.2		UG/L		X	1.3	10.0
CS-19 (ARNG)	MW-53S	MW-53S_S16	121.2	131.2	03/29/2016	SW6010C	Chromium	6.6	J	UG/L		X	0.64	10.0
CS-19 (ARNG)	MW-52S	MW-52S_S16	150	160	03/25/2016	SW6010C	Manganese	128	J	UG/L		X	1.3	10.0
CS-19 (ARNG)	MW-52S	MW-52S_S16	150	160	03/25/2016	SW6010C	Chromium	141	J	UG/L		X	0.64	10.0
Central Impact Area	MW-25	MW-25_S16	108	118	03/11/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.6		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-607M1	MW-607M1_S16	207.4	217.4	03/11/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.3		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-485M1	MW-485M1_S16	125.3	135.3	03/09/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.99		UG/L	400		0.019	0.20
Central Impact Area	MW-485M1	MW-485M1_S16	125.3	135.3	03/09/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	10.7		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-485M1	MW-485M1_S16D	125.3	135.3	03/09/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.91		UG/L	400		0.019	0.20
Central Impact Area	MW-485M1	MW-485M1_S16D	125.3	135.3	03/09/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	10.0		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-01S	MW-01S_S16	114	124	03/09/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.52		UG/L	400		0.019	0.20
Central Impact Area	MW-01S	MW-01S_S16	114	124	03/09/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	5.5		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-02M2	MW-02M2_S16	170	175	03/03/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.55		UG/L	0.60		0.025	0.20
Central Impact Area	MW-113M2	MW-113M2_S16	190	200	03/03/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.7		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-100M1	MW-100M1_S16	179	189	03/02/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.69		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-100M1	MW-100M1_S16D	179	189	03/02/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.69		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-644M2	MW-644M2_S16	230.9	240.9	03/01/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.1		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-644M1	MW-644M1_S16	275.9	285.9	03/01/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.2		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-223M1	MW-223M1_S16	211	221	03/01/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.59		UG/L	0.60		0.025	0.20
Central Impact Area	MW-176M1	MW-176M1_S16	270	280	02/29/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.36		UG/L	400		0.019	0.20
Central Impact Area	MW-176M1	MW-176M1_S16	270	280	02/29/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.8		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-629M2	MW-629M2_S16	186.9	196.9	02/29/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.73		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-629M1	MW-629M1_S16	216.9	226.9	02/29/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	7.8		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-629M1	MW-629M1_S16D	216.9	226.9	02/29/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	7.7		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-638M2	MW-638M2_S16	204.2	214.2	02/29/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.65		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-86S	MW-86S_S16	143	153	02/25/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.45		UG/L	0.60		0.025	0.20
Central Impact Area	MW-86M2	MW-86M2_S16	158	168	02/25/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.41		UG/L	0.60		0.025	0.20
Central Impact Area	MW-43M1	MW-43M1_S16	223	233	02/25/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.1		UG/L	0.60	X	0.025	0.20
Central Impact Area	MW-208M1	MW-208M1_S16	195	205	02/25/2016	SW6850	Perchlorate	0.10	J	UG/L	2.0		0.015	0.20
J2 Range Eastern	MW-324M2	MW-324M2_S16	203.7	214.7	02/24/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.42		UG/L	0.60		0.025	0.20
J2 Range Eastern	MW-324M2	MW-324M2_S16	203.7	214.7	02/24/2016	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_S16	203.7	214.7	02/24/2016	SW6850	Perchlorate	8.2		UG/L	2.0	X	0.015	0.20

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

**TABLE 2**  
**VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS**  
 Data Received April 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	MW-324M1	MW-324M1_S16	234.9	244.9	02/24/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.41		UG/L	0.60		0.025	0.20
J2 Range Eastern	MW-324M1	MW-324M1_S16	234.9	244.9	02/24/2016	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-324M1	MW-324M1_S16	234.9	244.9	02/24/2016	SW6850	Perchlorate	4.9		UG/L	2.0	X	0.015	0.20
J2 Range Eastern	MW-335M2	MW-335M2_S16	215.3	225.3	02/24/2016	SW6850	Perchlorate	0.050	J	UG/L	2.0		0.015	0.20
J2 Range Eastern	MW-335M1	MW-335M1_S16	255.2	265.2	02/24/2016	SW6850	Perchlorate	0.12	J	UG/L	2.0		0.015	0.20
J2 Range Eastern	MW-319M1	MW-319M1_S16	200.3	210.3	02/24/2016	SW6850	Perchlorate	0.16	J	UG/L	2.0		0.015	0.20
J2 Range Eastern	J2MW-04M2	J2MW-04M2_S16	210	220	02/23/2016	SW6850	Perchlorate	0.023	J	UG/L	2.0		0.015	0.20
J2 Range Eastern	J2MW-04M1	J2MW-04M1_S16	257	267	02/23/2016	SW6850	Perchlorate	0.23		UG/L	2.0		0.015	0.20
J2 Range Eastern	J2MW-04M1	J2MW-04M1_S16	257	267	02/23/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.35		UG/L	0.60		0.025	0.20
J2 Range Eastern	J2MW-04M1	J2MW-04M1_S16	257	267	02/23/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.55		UG/L	400		0.019	0.20
J2 Range Eastern	MW-436M1	MW-436M1_S16	295.5	305.5	02/23/2016	SW6850	Perchlorate	0.14	J	UG/L	2.0		0.015	0.20
J1 Range Southern	MW-645M1	MW-645M1_R2	183.5	193.5	02/22/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.4		UG/L	0.60	X	0.025	0.20
J1 Range Southern	MW-646M2	MW-646M2_R2	166	176	02/22/2016	SW6850	Perchlorate	0.044	J	UG/L	2.0		0.015	0.20
J1 Range Southern	MW-646M1	MW-646M1_R2	196	206	02/22/2016	SW6850	Perchlorate	0.075	J	UG/L	2.0		0.015	0.20
J1 Range Southern	MW-647M1	MW-647M1_R2	207.8	217.8	02/22/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	9.1		UG/L	0.60	X	0.025	0.20
J2 Range Eastern	MW-307M3	MW-307M3_S16	125.8	135.8	02/19/2016	SW6850	Perchlorate	2.6		UG/L	2.0	X	0.015	0.20
J2 Range Eastern	MW-310M1	MW-310M1_S16	171.4	181.4	02/19/2016	SW6850	Perchlorate	0.076	J	UG/L	2.0		0.015	0.20
J2 Range Eastern	MW-368M2	MW-368M2_S16	202.7	212.7	02/19/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2.3		UG/L	400		0.019	0.20
J2 Range Eastern	MW-368M2	MW-368M2_S16	202.7	212.7	02/19/2016	SW6850	Perchlorate	31.2		UG/L	2.0	X	0.045	0.60
J2 Range Eastern	MW-368M2	MW-368M2_S16	202.7	212.7	02/19/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	9.4		UG/L	0.60	X	0.025	0.20
J2 Range Eastern	MW-368M2	MW-368M2_S16D	202.7	212.7	02/19/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2.3		UG/L	400		0.019	0.20
J2 Range Eastern	MW-368M2	MW-368M2_S16D	202.7	212.7	02/19/2016	SW6850	Perchlorate	33.7		UG/L	2.0	X	0.045	0.60
J2 Range Eastern	MW-368M2	MW-368M2_S16D	202.7	212.7	02/19/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	9.0		UG/L	0.60	X	0.025	0.20
J2 Range Eastern	MW-339M1	MW-339M1_S16	233	243	02/19/2016	SW6850	Perchlorate	0.93		UG/L	2.0		0.015	0.20
C Range	MW-456S	MW-456S_S16	150.3	160.3	02/18/2016	SW7470A	Mercury	0.099	J	UG/L		X	0.034	0.20
B Range	MW-537M1	MW-537M1_S16	106	116	02/18/2016	SW6010C	Manganese	124		UG/L		X	1.3	10.0
B Range	MW-537M1	MW-537M1_S16	106	116	02/18/2016	SW6010C	Barium	24.4	J	UG/L		X	4.1	50.0
B Range	MW-490S	MW-490S_S16	108.1	118.1	02/18/2016	SW7470A	Mercury	0.048	J	UG/L		X	0.034	0.20
B Range	MW-490S	MW-490S_S16	108.1	118.1	02/18/2016	SW6010C	Barium	6.2	J	UG/L		X	4.1	50.0
B Range	MW-539M1	MW-539M1_S16	113	123	02/12/2016	SW6010C	Manganese	6.4	J	UG/L		X	1.3	10.0
B Range	MW-539M1	MW-539M1_S16	113	123	02/12/2016	SW6010C	Barium	8.5	J	UG/L		X	4.1	50.0
G Range	MW-470S	MW-470S_S16	76.3	86.3	02/11/2016	SW6010C	Zinc	15.7	J	UG/L	0.60	X	7.0	20.0
G Range	MW-470S	MW-470S_S16	76.3	86.3	02/11/2016	SW6020A	Arsenic	2.0		UG/L	10.0		0.66	2.0
MP-1	MW-68S	MW-68S_S16	84	94	02/11/2016	SW6850	Perchlorate	0.32		UG/L	2.0		0.015	0.20
B Range	MW-455S	MW-455S_S16	117.6	127.6	02/10/2016	SW6010C	Barium	10.2	J	UG/L		X	4.1	50.0
Former B Range	MW-475S	MW-475S_S16	50.3	60.3	02/10/2016	SW6010C	Zinc	10.4	J	UG/L	0.60	X	7.0	20.0
Former B Range	MW-475S	MW-475S_S16	50.3	60.3	02/10/2016	SW6010C	Barium	10.5	J	UG/L		X	4.1	50.0
B Range	MW-72S	MW-72S_S16	106	116	02/03/2016	SW6010C	Zinc	11.0	J	UG/L	0.60	X	7.0	20.0
B Range	MW-72S	MW-72S_S16	106	116	02/03/2016	SW6010C	Manganese	2.1	J	UG/L		X	1.3	10.0
B Range	MW-72S	MW-72S_S16	106	116	02/03/2016	SW6020A	Tungsten	3.8		UG/L		X	0.32	2.0
B Range	MW-72S	MW-72S_S16	106	116	02/03/2016	SW6010C	Barium	6.9	J	UG/L		X	4.1	50.0

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

**TABLE 2**  
**VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS**  
**Data Received April 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
B Range	MW-72S	MW-72S_S16	106	116	02/03/2016	SW6010C	Phosphorus, Total (as P)	78.7	J	UG/L		X	5.0	250
B Range	MW-72S	MW-72S_S16D	106	116	02/03/2016	SW6010C	Zinc	11.1	J	UG/L	0.60	X	7.0	20.0
B Range	MW-72S	MW-72S_S16D	106	116	02/03/2016	SW6010C	Manganese	2.2	J	UG/L		X	1.3	10.0
B Range	MW-72S	MW-72S_S16D	106	116	02/03/2016	SW6020A	Tungsten	3.9		UG/L		X	0.32	2.0
B Range	MW-72S	MW-72S_S16D	106	116	02/03/2016	SW6010C	Barium	4.5	J	UG/L		X	4.1	50.0
B Range	MW-72S	MW-72S_S16D	106	116	02/03/2016	SW6010C	Phosphorus, Total (as P)	76.4	J	UG/L		X	5.0	250
Former B Range	MW-476S	MW-476S_S16	59.9	69.8	02/01/2016	SW6010C	Barium	7.4	J	UG/L		X	4.1	50.0
Former D Range	MW-174S	MW-174S_S16	190	200	02/01/2016	SW6010C	Phosphorus, Total (as P)	46.2	J	UG/L		X	5.0	250
J2 Range Northern	MW-635M1	MW-635M1_S16	265.4	275.4	02/01/2016	SW6850	Perchlorate	0.10	J	UG/L	2.0		0.015	0.20
J2 Range Northern	MW-337M1	MW-337M1_S16	243.7	253.7	02/01/2016	SW6850	Perchlorate	0.072	J	UG/L	2.0		0.015	0.20

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