

**MONTHLY PROGRESS REPORT #238  
FOR JANUARY 2017**

**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 January to 31 January 2017.

**1. SUMMARY OF REMEDIATION ACTIONS**

The following is a description of Remediation Actions (RA) underway at Camp Edwards as of January 2017.

Demolition Area 1 Comprehensive Groundwater RA

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

The Frank Perkins Road Treatment Facility has been optimized as part of the Environmental and System Performance Monitoring (ESPM) program at Demolition Area 1. The treatment facility continues to operate at a flow rate of 175 gpm, with over 2.458 billion gallons of water treated and re-injected as of 27 January 2017. The following Frank Perkins Road facility shut down occurred in January:

- Shut down on 11 January 2017 at 2000 due to a power interruption and was restarted on 12 January 2017 at 0840;
- Shut down on 13 January 2017 at 0800 due to a power interruption and was restarted on 13 January 2017 at 1338;
- EW-4 shut down at 0957 on 23 January 2017 due to a power interruption and was restarted at 1031 on 23 January 2017; and
- The Frank Perkins Road Treatment System Facility shut down at 1445 on 23 January 2017 due to a power outage and was restarted at 1105 on 24 January 2017 after power was restored.

The Pew Road Mobile Treatment Unit (MTU) continues to operate at a flow rate of 105 gpm with over 505 million gallons of water treated and re-injected as of 27 January 2017. The following Pew Road MTU shut downs occurred in January:

- Shut down on 11 January 2017 at 2000 due to a power interruption and was restarted on 12 January 2017 at 0924;
- Shut down on 13 January 2017 at 0800 due to a power interruption and was restarted on 13 January 2017 at 1200;
- Shut down at 1105 on 23 January 2017 due to a power interruption and was restarted at 1144 on 23 January 2017; and
- Shut down at 1445 on 23 January 2017 due to a power outage and was restarted at 0745 on 25 January 2017 after the motor starter (damaged during power outage) and bag filters were replaced.

The Base Boundary RA is operating at a flow rate of 65 gpm with over 153.3 million gallons of water treated and re-injected as of 27 January 2017. The following Base Boundary MTU shut downs occurred in January:

- Shut down at 0814 on 19 January 2017 for the change out of bag filters and was restarted at 0834 on 19 January 2017; and
- Shut down at 0815 on 26 January 2017 to repair leaking bag filter header and was restarted at 0846 on 26 January 2017.

The Leading Edge system continues to operate at a flow rate of 100 gpm with over 24.2 million gallons of water treated and re-injected as of 27 January 2017. No system shut downs occurred in January.

### J-1 Range Groundwater RA

#### Southern Plant

The J-1 Range Southern Groundwater RA consists of removal and treatment of contaminated groundwater to control further migration of explosives compounds. The ETR system includes two extraction wells, ex-situ treatment process to remove explosives compounds from the groundwater, and an infiltration trench to return treated water to the aquifer.

The Southern MTU continues to operate at a flow rate of 125 gpm. As of 27 January 2017, over 379.6 million gallons of water have been treated and re-injected. The following J-1 Range Southern system shut downs occurred in January:

- J1SEW0001 was turned off and the flow rate for J1SEW0002 was increased from 90 gpm to 125 gpm at 0740 on 31 January 2017.

#### Northern Plant

The J-1 Range Northern Groundwater RA consists of removal and treatment of contaminated groundwater to control further migration of explosives compounds and perchlorate. The ETR system includes two extraction wells, ex-situ treatment process to remove explosives compounds and perchlorate from the groundwater, and an infiltration trench to return treated water to the aquifer.

The Northern MTU continues to operate at a total system flow rate of 250 gpm. As of 27 January 2017, over 365.7 million gallons of water have been treated and re-injected. The following J-1 Range Northern MTU shut down occurred in January:

- Shut down at 1845 on 13 January 2017 due to a system alarm and was restarted at 1303 on 17 January 2017.

### 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 27 January 2017, over 976.1 million gallons of water have been treated and re-injected. The following J-3 Range system shut downs occurred in January:

- Extraction well EWIP1 shut down at 1718 on 23 January 2017 due to a power interruption and was restarted at 0824;
- The system shut down at 1547 on 31 January 2017 due to a power outage. J3EWIP1 and J3EWIP2 were restarted at 0944 on 1 February 2017. 90EW0001 and J3EW0032 were not able to be restarted due to communication issues with the PLC; A PLC Programmer was able to reload programs onto the PLC, and both wells were restarted at 0932 on 3 February 2017.

### J-2 Range Groundwater RA

#### Northern Plant

The J-2 Range Northern Treatment facility consists of removal and treatment of contaminated groundwater to control further migration of explosives compounds and perchlorate. The Extraction, Treatment, and Re-infiltration system includes three extraction wells, ex-situ treatment process to remove explosives compounds and perchlorate from the groundwater, and an infiltration basin to return treated water to the aquifer.

The Northern Treatment Building continues to operate at a flow rate of 225 gpm. As of 27 January 2017, over 832.1 million gallons of water have been treated and re-injected. No Northern Treatment Building shut down occurred in January.

The Northern MTUs E and F continue to operate at a flow rate of 250 gpm. As of 27 January 2017, over 1.323 billion gallons of water have been treated and re-injected. The following J-2 Range Northern MTU shut downs occurred in January:

- MTUs E and F were shut down at 0220 on 24 January 2017 due to "VFD Fault" caused by a power outage; both systems were restarted at 0900 on 24 January 2017; and
- MTUs E and F were shut down 0502 on 25 January 2017 due to a system alarm. "Floor Sump High Alarm" was due to a hose that broke on the LAG GAC effluent vessel of Unit "F". The hose was replaced and both systems were restarted at 1014 on 25 January 2017.

#### Eastern Plant

The J-2 Range Eastern Treatment facility consists of removal and treatment of groundwater to minimize downgradient migration of explosives compounds and perchlorate. The ETI system includes the following components: three extraction wells in an axial array, an ex-situ treatment process consisting of an ion exchange (IX) resin and granular activated carbon (GAC) media to treat perchlorate and explosives compounds and three infiltration trenches located along the lateral boundaries of the plume where treated water will enter the vadose zone and infiltrate into the aquifer. The J-2 Range Eastern system is running at a combined total flow rate of 495 gpm.

The MTUs H and I continue to operate at a flow rate of 250 gpm. As of 27 January 2017, over 909.5 million gallons of water have been treated and re-injected. No MTUs H and I shut downs occurred in January.

MTU J continues to operate at a flow rate of 120 gpm. As of 27 January 2017, over 410.4 million gallons of water have been treated and re-injected. The following shut downs of MTU J occurred in January:

- MTU J shut down at 1545 on 31 January 2017 due to a power outage and was restarted at 1115 on 1 February 2017.

MTU K continues to operate at a flow rate of 125 gpm. As of 27 January 2017, over 515.6 million gallons of water have been treated and re-injected. The following shut downs of MTU K occurred in January:

- MTU K shut down at 1545 on 31 January 2017 due to a power outage and was restarted at 1143 on 1 February 2017.

### 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 27 January 2017, over 832.2 million gallons of water have been treated and re-injected. The following CIA treatment facility shut downs occurred in January:

- System 2 shut down on 11 January 2017 at 1939 due to a power interruption and was restarted on 12 January 2017 at 1029;
- System 1 shut down on 13 January 2017 at 0800 due to a power interruption and was restarted on 13 January 2017 at 1310;
- System 2 shut down on 13 January 2017 at 0800 due to a power interruption and was restarted on 13 January 2017 at 1254;
- System 1 shut down at 1445 on 23 January 2017 due to a power outage and was restarted at 1135 on 24 January 2017;
- System 2 shut down at 1445 on 23 January 2017 due to a power outage and was restarted at 1156 on 24 January 2017; and
- System 2 shut down at 0900 on 26 January 2017 to change bag filters and was restarted at 0940 on 26 January 2017.

### **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 1, J-2 Range Northern, J-2 Range Eastern, J-3 Range, Western Boundary, and L Range.

Drinking water samples were collected at Western Boundary and Ammunition Supply Point.

Soil samples were collected at CIA.

Completed excavation (5<sup>th</sup> lift) at one G Range grid.

Completed excavation (4<sup>th</sup> lifts) at nine Former B Range grids.

Completed excavation (6<sup>th</sup> lifts) at one B Range grid.

Continued 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 3.

Completed demolition operations at the CIA.

Continued drive point investigation at J-1 Range Southern.

Repaired infiltration gallery at J-2 Range Northern.

Performed vegetation clearance on well pads and roads.

Installed antennas for system telemetry.

## **JBCC IAGWSP Tech Update Meeting Minutes 12 January 2017**

### **Project and Fieldwork Update**

A figure depicting the recently drilled J-1 Southern drive points was distributed and reviewed. It was noted that all the points souths of Greenway Road had no RDX detections. The target depth was not reached at location DP-672. Because the contractor has the additional capacity on the contract to do one more location, IAGWSP recommends finishing location DP-672 and if there is still capacity left, move to location DP-676. It was also noted that the base boundary extraction well has not had a detection of RDX greater than the reporting limit since 2013. MassDEP noted that there needed to be a monitoring well identified that could act as a "trigger" to turn the well back on if needed. IAGWSP will draft a project note with their recommendations for the extraction well. The project note will include the travel time from MW-360 to the extraction well with the extraction well turned off.

Data from the two newest monitoring wells off-base, MW-699 and MW-670 was just received and both were non-detect for explosives in the well samples. The data will be forwarded to the agencies.

A figure showing two proposed monitoring well locations for the J-1 Northern plume was displayed and discussed. It was explained that BH-1 was located along the main axis of the plume and BH-2 was located in a position to see contamination coming from MW-584 and/or MW-590. EPA asked to see graphics of observed vs. model predicted capture zones; IAGWSP will send. It was noted that the record of actions for these locations have been approved but that they could be moved a little bit.

In the CIA, the Metal Mapper team continued working in Phase II Area 3 and will continue until the end of January until some of the crew leaves the site. During that time, the remaining team will work on BIPs, clearing the J-1 Northern well pads and scrap operations until the Baltimore USACE staff returns to continue with Metal Mapper targets in Phase II Area 3.

At the Small Arms Ranges, the soil that fails the TCLP test for lead is being shipped off-site to Canada beginning Tuesday. Soil that has been stockpiled at D Range is being moved to C Range. Coordination is ongoing between IAGWSP and Camp Edwards staff to ensure work can continue at both the soil removal at D Range and renovations at Echo Range.

### **Action Items**

The action items were discussed and updated.

### **Central Impact Area Annual Environmental Monitoring Report Presentation**

A presentation was provided on the Central Impact Area Annual Environmental Monitoring Report. It was noted that the presentation would cover new work conducted, system performance, annual groundwater sampling results (July 2015 through June 2016) and trends, hydraulic monitoring and capture zone analysis, a comparison to Decision Document criteria, and recommendations.

New work conducted during the reporting period included the completion of extraction well CIA- EW3, the mobile treatment unit and the infiltration gallery in March 2016. A brief shakedown test was performed on April 11, and a pumping test was performed (using a generator) between April 11 and 25. The system was fully hooked up to the Eversource Grid on June 29. A figure showing the new infrastructure was reviewed.

System performance summaries with statistics for both MTU CIA 1 and MTU CIA 2 were displayed and reviewed. It was noted that the influent concentration range for MTU 1 was ND to 0.9 µg/L for RDX and <0.35 µg/L to 0.39 µg/L for perchlorate. For MTU 2, RDX influent concentrations ranged from 1.46 µg/L to 1.63 µg/L and perchlorate concentrations were less than 0.36 µg/L. The two systems treated 633 million gallons of water. During the reporting period, MTU 1 removed 0.83 pounds of RDX, 0.06 pounds of HMX and 0.41 pounds of perchlorate. MTU 2 removed 2.01 pounds of RDX, 0.11 pounds of HMX and 0.30 pounds of perchlorate.

Groundwater monitoring results and trends were discussed. In Zone 1, RDX concentrations exceeded 0.6 µg/L in 22 wells and exceeded 2.0 µg/L in 14 wells. Perchlorate concentrations exceeded 2 µg/L in 3 wells (MW-87M1/88M2, 89M2). In zone 2, RDX concentrations exceeded 0.6 µg/L in 19 wells and exceeded 2.0 µg/L in 12 wells. Figures showing RDX and perchlorate plume concentration trend plots were displayed, reviewed and discussed.

Two synoptic events were discussed. In September 2015, there were 76 wells in the approved hydraulic program. In Zone 1, the groundwater hydraulic gradient was 0.00265 ft/ft and the groundwater flow direction was N45W. In Zone 2, the groundwater hydraulic gradient was 0.00265 ft/ft and the groundwater flow direction was N35W. During the February 2016 event, there were 101 wells in the approved hydraulic program. In Zone 1, the groundwater hydraulic gradient was 0.00275 ft/ft and groundwater flow direction was N45W. In Zone 2 the groundwater hydraulic gradient was 0.00285 ft/ft and groundwater flow direction was N35W. It was noted that in Zone 1 the Capture Zone is as designed and consistent w/startup data.

A comparison to Decision Document criteria was presented. The current cleanup projections are consistent with the DD predictions of RDX would be below the health advisory (2 µg/L) in 2051, below the risk-based level (0.6 µg/L) in 2059 and below background (0.25 µg/L) in 2114.

Recommendations were discussed and displayed on a figure. IAGWSP is recommending adding 12 wells to the hydraulic program in Zone 2. For RDX, IAGWSP is recommending adding 7 wells to chemical monitoring program in the 2000 m Berm and northeast plume area and 7 wells to the main plume upgradient of Burgoyne Road. In the area of the main plume downgradient of Burgoyne Road, IAGWSP is proposing to add one well; 10 existing wells and 2 additional wells are recommended for the Northwest Corner Plume. For the perchlorate monitoring program, IAGWSP has recommending adding three wells to the annual monitoring program.

### **New Google Earth Functionality in EDMS Presentation**

A presentation was provided on new enhancements made to the Google Earth functionality in EDMS. Instructions on how to download the necessary files was reviewed. It was explained that clicking on a well location gives the user hyperlinks to several data queries that are generated “on- the-fly” that were not previously available. Information available includes groundwater elevations, lithology, well contraction, intervals and maintenance and chemistry. The data can be viewed in table or chart format. Examples of the new functionality were shown.

### **Conceptual Overview of Drift Function Presentation**

A presentation was provided on the conceptual overview of the drift function and its use on plume shell development at JBCC. It was explained that “drift” is a mathematical function used in kriging water levels such as KT3D. It was developed by S.S. Papadopoulos & Associates (SSPA) from Bethesda Maryland. Used in late 1990-2000’s at JBCC, the Drift Function uses a background data set and affords the ability to add additional “measured” data to the existing data set. The result of this “weighting/adjustment factor” is a new 2D or 3D kriged data set. Bounding “shapes” representing the plumes are used to control the kriging. Work was done in software called “Groundwater Desktop” developed by SSPA.

It was explained that the Drift Function could be used to update plume shells using annual or bi- annual data sets to answer questions arising regarding cleanup time-frames, rather than having to wait for a full plume shell update. The results could be exported to the Groundwater Vistas numerical model for starting concentrations in a transport model. An example of the drift functions application at Demolition Area was provided. It was agreed that USACE should apply the Drift Function to its next annual report so the team can see how it works using an active IAGWSP site.

### **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 January to 31 January 2017. 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. 237 for December 2016 1/10/2017
- Draft Former A Range Demonstration of Compliance Report 1/03/2017
- Final Demolition Area 1 2016 Annual Environmental Monitoring Report 1/04/2017
- Draft J-3 Range J3EWIP2 Extraction Well Startup Monitoring Report 1/18/2017
- Draft Demolition Area 1 Leading Edge Off-Base System Startup Report and Demolition Area 1 Trailing Edge On-Base System Startup Report 1/20/2017
- J-1 Range Northern – Profile Investigation Wood Road Project Note 1/26/2017
- J-1 Range Southern Treatment System Optimization Project Note 1/30/2017

**3. SCHEDULED ACTIONS**

The following documents are being prepared or revised during February 2017:

- Training Areas Draft Investigation Report;
- Training Areas Draft Remedy Selection Plan;
- CIA 2016 Annual Environmental Monitoring Report;
- CIA Draft Startup Report;
- 2016 CIA Source Removal Annual Report;
- Draft 2015 BIP 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;
- Land Use Control Monitoring Report;
- Five Year Review Report; and
- Former A Range Demonstration of Compliance Report.



**TABLE 1**  
**Sampling Progress: 1 January to 31 January 2017**

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J2 Range Northern	MW-313M3	MW-313M3_S17	N	01/31/2017	Ground Water	195.1	205.6
J2 Range Northern	MW-313M2	MW-313M2_S17	N	01/31/2017	Ground Water	215.5	225.5
J2 Range Northern	MW-313M1	MW-313M1_S17	N	01/31/2017	Ground Water	255.4	265.4
J2 Range Northern	MW-313M1	MW-313M1_S17D	FD	01/31/2017	Ground Water	255.4	265.4
Central Impact Area	SSCIACSL03	CIA-BEM-PILE-C	N	01/27/2017	Soil	0	16
Central Impact Area	SSCIACSL03	CIA-BEM-C	N	01/27/2017	Soil	0	48
Central Impact Area	SSCIAMM1178	DA011017CIA01_30A	N	01/26/2017	Soil	0	0.25
Central Impact Area	SSCIAMM1110	DA111416CIA01_30A	N	01/26/2017	Soil	0	0.25
J2 Range Northern	MW-630M1	MW-630M1_S17	N	01/26/2017	Ground Water	217	227
J2 Range Northern	MW-612M2	MW-612M2_S17	N	01/26/2017	Ground Water	267	277
J2 Range Northern	MW-612M1	MW-612M1_S17	N	01/26/2017	Ground Water	297	307
J2 Range Northern	MW-327M3	MW-327M3_S17	N	01/26/2017	Ground Water	220.2	230.2
J2 Range Northern	MW-635M1	MW-635M1_S17	N	01/26/2017	Ground Water	265.4	275.4
J2 Range Eastern	MW-666M3	MW-666M3_R1	N	01/25/2017	Ground Water	199.8	209.8
J2 Range Eastern	MW-666M2	MW-666M2_R1	N	01/25/2017	Ground Water	219.8	229.8
J2 Range Eastern	MW-666M1	MW-666M1_R1	N	01/25/2017	Ground Water	244.8	254.8
J2 Range Eastern	MW-665M3	MW-665M3_R1	N	01/25/2017	Ground Water	175.2	185.2
J2 Range Eastern	MW-665M2	MW-665M2_R1	N	01/25/2017	Ground Water	205.2	215.2
J2 Range Eastern	MW-665M1	MW-665M1_R1	N	01/25/2017	Ground Water	225.2	235.2
J2 Range Eastern	MW-685M1	MW-685M1_R1	N	01/23/2017	Ground Water	166.2	176.2
J2 Range Eastern	MW-668M1	MW-668M1_R1	N	01/23/2017	Ground Water	168.7	178.7
J2 Range Eastern	MW-667M2	MW-667M2_R1	N	01/23/2017	Ground Water	277.3	287.3
J2 Range Eastern	MW-667M1	MW-667M1_R1	N	01/23/2017	Ground Water	302.3	312.3
Demolition Area 1	MW-664M2	MW-664M2_R1	N	01/19/2017	Ground Water	218.5	228.5
Demolition Area 1	MW-664M1	MW-664M1_R1	N	01/19/2017	Ground Water	248.5	258.5
Demolition Area 1	MW-662D	MW-662D_R1	N	01/18/2017	Ground Water	202.3	212.3
Demolition Area 1	MW-661D	MW-661D_R1	N	01/18/2017	Ground Water	251.6	261.6
J2 Range Northern	MW-619M2	MW-619M2_S17	N	01/17/2017	Ground Water	234.1	244.1
J2 Range Northern	MW-619M1	MW-619M1_S17	N	01/17/2017	Ground Water	255.1	265.1
J2 Range Northern	MW-620M1	MW-620M1_S17	N	01/17/2017	Ground Water	268.6	278.6
J2 Range Northern	MW-337M1	MW-337M1_S17	N	01/17/2017	Ground Water	243.7	253.7
Demolition Area 1	PR-EFF	PR-EFF-130A	N	01/17/2017	Process Water	0	0
Demolition Area 1	PR-MID-2	PR-MID-2-130A	N	01/17/2017	Process Water	0	0
Demolition Area 1	PR-MID-1	PR-MID-1-130A	N	01/17/2017	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-130A	N	01/17/2017	Process Water	0	0
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-130A	N	01/17/2017	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-130A	N	01/17/2017	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-130A	N	01/17/2017	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-130A	N	01/17/2017	Process Water	0	0
Demolition Area 1	D1LE-EFF	D1LE-EFF-06A	N	01/17/2017	Process Water	0	0
Demolition Area 1	D1LE-MID2	D1LE-MID2-06A	N	01/17/2017	Process Water	0	0
Demolition Area 1	D1LE-MID1	D1LE-MID1-06A	N	01/17/2017	Process Water	0	0
Demolition Area 1	D1LE-INF	D1LE-INF-06A	N	01/17/2017	Process Water	0	0
Demolition Area 1	D1-EFF	D1-EFF-78A	N	01/17/2017	Process Water	0	0
Demolition Area 1	D1-MID-2	D1-MID-2-78A	N	01/17/2017	Process Water	0	0
Demolition Area 1	D1-MID-1	D1-MID-1-78A	N	01/17/2017	Process Water	0	0
Demolition Area 1	D1-INF	D1-INF-78A	N	01/17/2017	Process Water	0	0
L Range	MW-650M1	MW-650M1_S17	N	01/12/2017	Ground Water	260	270
L Range	MW-596M1	MW-596M1_S17	N	01/12/2017	Ground Water	231.1	241.1
L Range	90MW0034	90MW0034_S17	N	01/12/2017	Ground Water	94	99
L Range	MW-595M2	MW-595M2_S17	N	01/11/2017	Ground Water	205.3	215.3
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-100A	N	01/11/2017	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-100A	N	01/11/2017	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-100A	N	01/11/2017	Process Water	0	0
L Range	MW-595M1	MW-595M1_S17	N	01/11/2017	Ground Water	255.3	265.3
L Range	MW-595M1	MW-595M1_S17D	FD	01/11/2017	Ground Water	255.3	265.3
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-100A	N	01/11/2017	Process Water	0	0
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-100A	N	01/11/2017	Process Water	0	0

**TABLE 1**  
**Sampling Progress: 1 January to 31 January 2017**

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J2 Range Eastern	J2E-INF-I	J2E-INF-I-100A	N	01/11/2017	Process Water	0	0
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-100A	N	01/11/2017	Process Water	0	0
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-100A	N	01/11/2017	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-100A	N	01/11/2017	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-100A	N	01/11/2017	Process Water	0	0
L Range	90MW0031	90MW0031_S17	N	01/11/2017	Ground Water	195.3	200.2
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-100A	N	01/11/2017	Process Water	0	0
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-100A	N	01/11/2017	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-100A	N	01/11/2017	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-100A	N	01/11/2017	Process Water	0	0
L Range	MW-651M1	MW-651M1_S17	N	01/11/2017	Ground Water	242.3	252.3
Central Impact Area	CIA2-EFF	CIA2-EFF-36A	N	01/11/2017	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-36A	N	01/11/2017	Process Water	0	0
Central Impact Area	CIA2-MID1	CIA2-MID1-36A	N	01/11/2017	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-36A	N	01/11/2017	Process Water	0	0
Central Impact Area	CIA1-EFF	CIA1-EFF-36A	N	01/11/2017	Process Water	0	0
Central Impact Area	CIA1-MID2	CIA1-MID2-36A	N	01/11/2017	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-36A	N	01/11/2017	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-36A	N	01/11/2017	Process Water	0	0
L Range	MW-242M1	MW-242M1_S17	N	01/11/2017	Ground Water	235	245
Central Impact Area	CIA3-EFF	CIA3-EFF-07A	N	01/11/2017	Process Water	0	0
Central Impact Area	CIA3-MID2	CIA3-MID2-07A	N	01/11/2017	Process Water	0	0
Central Impact Area	CIA3-MID1	CIA3-MID1-07A	N	01/11/2017	Process Water	0	0
Central Impact Area	CIA3-INF	CIA3-INF-07A	N	01/11/2017	Process Water	0	0
J1 Range Southern	J1S-EFF	J1S-EFF-110A	N	01/10/2017	Process Water	0	0
L Range	90WT0013	90WT0013_S17	N	01/10/2017	Ground Water	92	102
J1 Range Southern	J1S-MID-2	J1S-MID-2-110A	N	01/10/2017	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-110A	N	01/10/2017	Process Water	0	0
J3 Range	J3-EFF	J3-EFF-124A	N	01/10/2017	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-124A	N	01/10/2017	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-124A	N	01/10/2017	Process Water	0	0
J3 Range	J3-INF	J3-INF-124A	N	01/10/2017	Process Water	0	0
L Range	MW-153M2	MW-153M2_S17	N	01/10/2017	Ground Water	144	154
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-124A	N	01/10/2017	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-124A	N	01/10/2017	Process Water	0	0
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-124A	N	01/10/2017	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-124A	N	01/10/2017	Process Water	0	0
L Range	MW-153M1	MW-153M1_S17	N	01/10/2017	Ground Water	199	209
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-124A	N	01/10/2017	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-124A	N	01/10/2017	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-124A	N	01/10/2017	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-124A	N	01/10/2017	Process Water	0	0
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-124A	N	01/10/2017	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-124A	N	01/10/2017	Process Water	0	0
J1 Range Northern	J1N-EFF	J1N-EFF-39A	N	01/10/2017	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-39A	N	01/10/2017	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-39A	N	01/10/2017	Process Water	0	0
J1 Range Northern	J1N-INF2	J1N-INF2-39A	N	01/10/2017	Process Water	0	0
J3 Range	MW-653M2	MW-653M2_S17	N	01/09/2017	Ground Water	59.3	69.3
J3 Range	MW-653M1	MW-653M1_S17	N	01/09/2017	Ground Water	147.5	157.5
J3 Range	90PLT01006	90PLT01006_S17	N	01/09/2017	Process Water	0	0
J3 Range	MW-637M3	MW-637M3_S17	N	01/05/2017	Ground Water	174.1	184.1
J3 Range	MW-637M2	MW-637M2_S17	N	01/05/2017	Ground Water	214.1	224.1
J3 Range	MW-637M1	MW-637M1_S17	N	01/05/2017	Ground Water	236.1	246.1
J3 Range	MW-636M2	MW-636M2_S17	N	01/04/2017	Ground Water	110.5	120.5
J3 Range	MW-636M1	MW-636M1_S17	N	01/04/2017	Ground Water	141.6	151.6
J3 Range	J3EWIP2	J3EWIP2_S17	N	01/04/2017	Ground Water	149.5	169.5
J3 Range	J3EWIP2	J3EWIP2_S17D	FD	01/04/2017	Ground Water	149.5	169.5

**TABLE 1**  
**Sampling Progress: 1 January to 31 January 2017**

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J3 Range	J3EWIP1	J3EWIP1_S17	N	01/04/2017	Ground Water	153	193
J3 Range	J3EW0032	J3EW0032_S17	N	01/04/2017	Ground Water	102	152
J3 Range	J3EW0032	J3EW0032_S17D	FD	01/04/2017	Ground Water	102	152
J3 Range	90EW0001	90EW0001_S17	N	01/04/2017	Ground Water	83.1	143.8
Western Boundary	4036000-04G	4036000-04G_16Q4	N	01/04/2017	Ground Water	55	65
Ammunition Supply Point (ASP)	ASP_KTCHN	ASP_KTCHN_F16	N	01/03/2017	Drinking Water	0	0
Western Boundary	RNGCNTRL_KTCHN	RNGCNTRL_KTCHN_F16	N	01/03/2017	Drinking Water	0	0

**TABLE 2**  
**VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS**  
 Data Received January 2017

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-544M3	MW-544M3_F16	77.5	87.5	12/07/2016	SW6850	Perchlorate	0.069	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-544M2	MW-544M2_F16	112	122	12/07/2016	SW6850	Perchlorate	0.17	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-544M1	MW-544M1_F16	162	172	12/07/2016	SW6850	Perchlorate	4.1		ug/L	2.0	X	0.019	0.20
Demolition Area 1	MW-545M4	MW-545M4_F16	72	82	12/07/2016	SW6850	Perchlorate	0.57		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-545M3	MW-545M3_F16	101.5	111.5	12/07/2016	SW6850	Perchlorate	0.33		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-545M2	MW-545M2_F16	142	152	12/07/2016	SW6850	Perchlorate	2.9		ug/L	2.0	X	0.019	0.20
Demolition Area 1	MW-545M1	MW-545M1_F16	162	172	12/07/2016	SW6850	Perchlorate	0.55		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-558M1	MW-558M1_F16	134	144	12/06/2016	SW6850	Perchlorate	0.66		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-559M1	MW-559M1_F16	135.6	145.6	12/06/2016	SW6850	Perchlorate	1.1		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-556M1	MW-556M1_F16	153	163	12/06/2016	SW6850	Perchlorate	2.5		ug/L	2.0	X	0.019	0.20
Demolition Area 1	MW-554M2	MW-554M2_F16	89.1	99.1	12/06/2016	SW6850	Perchlorate	0.20		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-554M1	MW-554M1_F16	120	130	12/06/2016	SW6850	Perchlorate	0.24		ug/L	2.0		0.019	0.20
Demolition Area 2	MW-655M1	MW-655M1_F16	178	188	11/30/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.26		ug/L	0.60		0.025	0.20
Demolition Area 2	MW-160S	MW-160S_F16	137.5	147.5	11/29/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.21		ug/L	0.60		0.025	0.20
Demolition Area 2	MW-573M2	MW-573M2_F16	155.4	165.4	11/29/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.73		ug/L	0.60	X	0.025	0.20
Demolition Area 2	MW-573M2	MW-573M2_F16D	155.4	165.4	11/29/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.72		ug/L	0.60	X	0.025	0.20
J1 Range Northern	MW-187D	MW-187D_F16	306	316	11/29/2016	SW8270D	2-Methylnaphthalene	1.4	J	ug/L		X	0.83	11.0
J1 Range Northern	MW-187D	MW-187D_F16	306	316	11/29/2016	SW8270D	Naphthalene	1.9	J	ug/L		X	0.74	11.0
Demolition Area 2	MW-161S	MW-161S_F16	145.5	155.5	11/28/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.41		ug/L	0.60		0.025	0.20
J1 Range Northern	MW-584M2	MW-584M2_F16	228	238	11/28/2016	SW6850	Perchlorate	0.12	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-584M1	MW-584M1_F16	248	258	11/28/2016	SW6850	Perchlorate	4.4		ug/L	2.0	X	0.019	0.20
J1 Range Northern	MW-584M1	MW-584M1_F16D	248	258	11/28/2016	SW6850	Perchlorate	4.4		ug/L	2.0	X	0.019	0.20
J1 Range Northern	MW-401M3	MW-401M3_F16	228.5	238.5	11/28/2016	SW6850	Perchlorate	0.035	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-136S	MW-136S_F16	107	117	11/22/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.74	J	ug/L	400		0.019	0.20
J1 Range Northern	MW-326M3	MW-326M3_F16	165.2	175.3	11/22/2016	SW6850	Perchlorate	0.024	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-326M2	MW-326M2_F16	196.3	206.3	11/22/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	24.2	J	ug/L	0.60	X	0.050	0.40
J1 Range Northern	MW-326M2	MW-326M2_F16	196.3	206.3	11/22/2016	SW6850	Perchlorate	8.2		ug/L	2.0	X	0.019	0.20
J1 Range Northern	MW-326M2	MW-326M2_F16	196.3	206.3	11/22/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	8.5	J	ug/L	400		0.019	0.20
J1 Range Northern	MW-326M2	MW-326M2_F16D	196.3	206.3	11/22/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	24.2	J	ug/L	0.60	X	0.050	0.40
J1 Range Northern	MW-326M2	MW-326M2_F16D	196.3	206.3	11/22/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	8.3	J	ug/L	400		0.019	0.20
J1 Range Northern	MW-326M1	MW-326M1_F16	250	260	11/22/2016	SW6850	Perchlorate	0.37		ug/L	2.0		0.019	0.20
J1 Range Northern	MW-541M1	MW-541M1_F16	210	220	11/21/2016	SW6850	Perchlorate	0.021	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-606M2	MW-606M2_F16	193.2	203.2	11/21/2016	SW6850	Perchlorate	0.030	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-430M2	MW-430M2_F16	188.4	198.4	11/21/2016	SW6850	Perchlorate	0.033	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-191M2	MW-191M2_F16	120	130	11/17/2016	SW6850	Perchlorate	0.041	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-191M2	MW-191M2_F16	120	130	11/17/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	4.7		ug/L	400		0.019	0.20
J1 Range Northern	MW-369M1	MW-369M1_F16	254.1	264.1	11/17/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.23		ug/L	400		0.019	0.20
J1 Range Northern	MW-369M1	MW-369M1_F16	254.1	264.1	11/17/2016	SW6850	Perchlorate	0.66		ug/L	2.0		0.019	0.20
J1 Range Northern	MW-369M1	MW-369M1_F16	254.1	264.1	11/17/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.4		ug/L	0.60	X	0.025	0.20
J1 Range Northern	MW-220M1	MW-220M1_F16	248	258	11/17/2016	SW6850	Perchlorate	0.17	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 January 2017

Area of Concern	Location ID	Field Sample ID	Top Depth (ft bgs)	Bottom Depth (ft bgs)	Date Sampled	Test Method	Analyte	Result Value	Qualifier	Units	MCL/HA	> MCL/HA	MDL	RL
J1 Range Northern	MW-253M1	MW-253M1_F16	265.4	275.4	11/17/2016	SW6850	Perchlorate	0.022	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-286M2	MW-286M2_F16	205	215	11/17/2016	SW6850	Perchlorate	0.44		ug/L	2.0		0.019	0.20
J1 Range Northern	MW-315M2	MW-315M2_F16	195.7	205.7	11/16/2016	SW6850	Perchlorate	0.020	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-265M3	MW-265M3_F16	200	210	11/16/2016	SW6850	Perchlorate	0.023	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-265M2	MW-265M2_F16	225	235	11/16/2016	SW6850	Perchlorate	27.6		ug/L	2.0	X	0.038	0.40
J1 Range Northern	MW-265M2	MW-265M2_F16	225	235	11/16/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	4.8		ug/L	0.60	X	0.025	0.20
J1 Range Northern	MW-265M2	MW-265M2_F16D	225	235	11/16/2016	SW6850	Perchlorate	27.8		ug/L	2.0	X	0.038	0.40
J1 Range Northern	MW-265M2	MW-265M2_F16D	225	235	11/16/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	4.8		ug/L	0.60	X	0.025	0.20
J1 Range Northern	MW-265M1	MW-265M1_F16	265	275	11/16/2016	SW6850	Perchlorate	0.23		ug/L	2.0		0.019	0.20
J1 Range Northern	MW-605M2	MW-605M2_F16	182.2	192.2	11/15/2016	SW6850	Perchlorate	0.031	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-605M1	MW-605M1_F16	220.2	230.2	11/15/2016	SW6850	Perchlorate	0.023	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-657M2	MW-657M2_F16	208.3	218.3	11/15/2016	SW6850	Perchlorate	0.23		ug/L	2.0		0.019	0.20
J1 Range Northern	MW-187D	MW-187D_F16	306	316	11/15/2016	SW8260C	m,p-Xylene	0.45	J	ug/L		X	0.35	1.0
J1 Range Northern	MW-187D	MW-187D_F16	306	316	11/15/2016	SW8260C	o-Xylene	0.56	J	ug/L		X	0.23	1.0
J1 Range Northern	MW-187D	MW-187D_F16	306	316	11/15/2016	SW8260C	Xylenes, Total	1.0		ug/L		X	0.23	1.0
J1 Range Northern	MW-187D	MW-187D_F16	306	316	11/15/2016	SW8260C	Ethylbenzene	1.5		ug/L		X	0.33	1.0
J1 Range Northern	MW-187D	MW-187D_F16	306	316	11/15/2016	SW8260C	Benzene	12.0		ug/L		X	0.43	1.0
J1 Range Northern	MW-306M2	MW-306M2_F16	164.7	174.7	11/14/2016	SW6850	Perchlorate	0.53		ug/L	2.0		0.019	0.20
J1 Range Northern	MW-306M1	MW-306M1_F16	184.9	194.9	11/14/2016	SW6850	Perchlorate	0.077	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-567M1	MW-567M1_F16	215.5	225.5	11/10/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.1		ug/L	0.60	X	0.025	0.20
J1 Range Northern	MW-567M1	MW-567M1_F16	215.5	225.5	11/10/2016	SW6850	Perchlorate	4.7		ug/L	2.0	X	0.019	0.20
J1 Range Northern	MW-567M1	MW-567M1_F16D	215.5	225.5	11/10/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.0		ug/L	0.60	X	0.025	0.20
J1 Range Northern	MW-567M1	MW-567M1_F16D	215.5	225.5	11/10/2016	SW6850	Perchlorate	4.5		ug/L	2.0	X	0.019	0.20
J1 Range Northern	MW-370M3	MW-370M3_F16	175	185	11/10/2016	SW6850	Perchlorate	0.024	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-370M2	MW-370M2_F16	215.5	225.5	11/10/2016	SW6850	Perchlorate	0.027	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-370M1	MW-370M1_F16	245	255	11/10/2016	SW6850	Perchlorate	6.0		ug/L	2.0	X	0.019	0.20
J1 Range Northern	MW-656M2	MW-656M2_F16	222.1	232.1	11/10/2016	SW6850	Perchlorate	0.88		ug/L	2.0		0.019	0.20
J1 Range Northern	MW-349M1	MW-349M1_F16	229	239	11/03/2016	SW6850	Perchlorate	0.49		ug/L	2.0		0.019	0.20
J1 Range Northern	MW-590M2	MW-590M2_F16	238	248	11/03/2016	SW6850	Perchlorate	1.7		ug/L	2.0		0.019	0.20
J1 Range Northern	MW-590M1	MW-590M1_F16	258	268	11/03/2016	SW6850	Perchlorate	0.053	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-479M1	MW-479M1_F16	240	250	11/03/2016	SW6850	Perchlorate	0.025	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-166M3	MW-166M3_F16	125	135	11/02/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.43		ug/L	400		0.019	0.20
J1 Range Northern	MW-166M3	MW-166M3_F16	125	135	11/02/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.78		ug/L	0.60	X	0.025	0.20
J1 Range Northern	MW-166M3	MW-166M3_F16	125	135	11/02/2016	SW8330	4-Amino-2,6-dinitrotoluene	3.9		ug/L	7.3		0.023	0.20
J1 Range Northern	MW-168M3	MW-168M3_F16	103	113	11/02/2016	SW6850	Perchlorate	0.051	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-168M2	MW-168M2_F16	198	208	11/02/2016	SW6850	Perchlorate	0.027	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-164M1	MW-164M1_F16	227	237	11/02/2016	SW6850	Perchlorate	0.051	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-303M3	MW-303M3_F16	139.7	149.7	10/31/2016	SW6850	Perchlorate	0.046	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-303M3	MW-303M3_F16	139.7	149.7	10/31/2016	SW8330	4-Amino-2,6-dinitrotoluene	0.36		ug/L	7.3		0.023	0.20
J1 Range Northern	MW-303M2	MW-303M2_F16	235.1	245.1	10/31/2016	SW6850	Perchlorate	0.47		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 January 2017**

Area of Concern	Location ID	Field Sample ID	Top Depth (ft bgs)	Bottom Depth (ft bgs)	Date Sampled	Test Method	Analyte	Result Value	Qualifier	Units	MCL/HA	> MCL/HA	MDL	RL
J1 Range Northern	MW-303M2	MW-303M2_F16	235.1	245.1	10/31/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	3.5		ug/L	400		0.019	0.20
J1 Range Northern	MW-303M2	MW-303M2_F16	235.1	245.1	10/31/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	8.2		ug/L	0.60	X	0.025	0.20
J1 Range Northern	MW-303M2	MW-303M2_F16D	235.1	245.1	10/31/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	3.5		ug/L	400		0.019	0.20
J1 Range Northern	MW-303M2	MW-303M2_F16D	235.1	245.1	10/31/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	8.3		ug/L	0.60	X	0.025	0.20
J1 Range Northern	MW-303M1	MW-303M1_F16	299.1	309.1	10/31/2016	SW6850	Perchlorate	0.044	J	ug/L	2.0		0.019	0.20
J1 Range Southern	MW-360M2	MW-360M2_F16	102	112	10/31/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2.3		ug/L	400		0.019	0.20
J1 Range Southern	MW-360M2	MW-360M2_F16	102	112	10/31/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	6.4		ug/L	0.60	X	0.025	0.20
J1 Range Southern	MW-360M2	MW-360M2_F16D	102	112	10/31/2016	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2.3		ug/L	400		0.019	0.20
J1 Range Southern	MW-360M2	MW-360M2_F16D	102	112	10/31/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	6.4		ug/L	0.60	X	0.025	0.20
J3 Range	J3EWIP2	J3EWIP2_D7R	149.5	169.5	10/24/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.25		ug/L	0.60		0.025	0.20
J3 Range	J3EWIP2	J3EWIP2_D7R	149.5	169.5	10/24/2016	SW6850	Perchlorate	8.0	J	ug/L	2.0	X	0.095	1.0
IBC RANGE	MW-652S	MW-652S_R2	106	116	10/20/2016	SW6850	Perchlorate	0.056	J	ug/L	2.0		0.019	0.20
U Range	MW-649S	MW-649S_R3	113.5	123.5	10/20/2016	SW6850	Perchlorate	0.18	J	ug/L	2.0		0.019	0.20
J3 Range	J3EWIP2	J3EWIP2_D1R	149.5	169.5	10/14/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.22		ug/L	0.60		0.025	0.20
J3 Range	J3EWIP2	J3EWIP2_D1R	149.5	169.5	10/14/2016	SW6850	Perchlorate	8.2		ug/L	2.0	X	0.019	0.20

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