

**MONTHLY PROGRESS REPORT #252
FOR MARCH 2018**

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 March to 30 March 2018.

1. SUMMARY OF REMEDIATION ACTIONS

The following is a description of Remediation Actions (RA) underway at Camp Edwards as of March 2018.

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 2.544 billion gallons of water treated and re-injected as of 30 March 2018. The following Frank Perkins Road facility shut downs occurred in March:

- Shut down at 1730 on 2 March 2018 due to a power outage. The Treatment Facility was restarted at 0850 on 8 March 2018.
- Shut down on 0940 on 13 March 2018 due to a power outage caused by the blizzard. The treatment facility was restarted at 0750 on 26 March 2018.

The Pew Road Mobile Treatment Unit (MTU) continues to operate at a flow rate of 103 gpm with over 563.4 million gallons of water treated and re-injected as of 30 March 2018. The following Pew Road MTU shut down occurred in March:

- Shut down at 1730 on 2 March 2018 due to a power outage. The MTU was restarted at 0910 on 8 March 2018.
- Shut down at 0940 on 13 March 2018 due to a power outage caused by the blizzard. The MTU was restarted at 1700 on 23 March 2018.

The Base Boundary MTU is operating at a flow rate of 65 gpm with over 193.7 million gallons of water treated and re-injected as of 30 March 2018. The following Base Boundary MTU shut down occurred in March:

- The Base Boundary MTU shut down at 0942 on 13 March 2018 due to a power outage caused by the blizzard. BetCo was onsite on 16 March 2018 and replaced the extraction well motor starter. The MTU was restarted at 1100 on 16 March 2018.

The Leading Edge system continues to operate at a flow rate of 100 gpm with over 96.6 million gallons of water treated and re-injected as of 30 March 2018. The following Leading Edge system shut downs occurred in March:

- Shut down at 1826 on 2 March 2018 due to a power outage. The system was restarted at 1037 on 5 March 2018.
- Shut down at 0936 on 13 March 2018 due to a power outage caused by the blizzard. The System was restarted at 1120 on 15 March 2018.

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 30 March 2018, over 984.74 million gallons of water have been treated and re-injected. The following Northern Treatment Building shutdowns occurred in March:

- Shut down at 1826 on 2 March 2018 due to a power outage. The Treatment Building was restarted at 1240 on 5 March 2018.
- Shut down at 0921 on 13 March 2018 due to a power outage caused by the blizzard. Unit G was restarted at 1020 on 15 March 2018.

The Northern MTUs E and F continue to operate at a flow rate of 250 gpm. As of 30 March 2018, over 1.439 billion gallons of water have been treated and re-injected. The following J-2 Range Northern MTU E or F shut downs occurred in March

- MTU E shut down at 1549 on 2 March 2018 due to a power outage. The MTU was restarted at 0850 on 9 March 2018.
- MTUs E and F shut down at 0604 on 13 March 2018 due to a power outage caused by the blizzard. Both MTUs were restarted at 1010 on 15 March 2018.

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 30 March 2018, over 1.058 billion gallons of water have been treated and re-injected. The following MTU H and I shut downs occurred in March:

- MTUs H and I were turned off at 1230 on 27 February 2018 to drain IX vessels #1 and #2 at Unit H and IX vessels #1 and #2 at Unit I for resin exchange on 28 March 2018. Both MTUs were restarted 0740 on 1 March 2018.
- Shut down at 1649 on 3 March 2018 due to a power outage. Both MTUs were restarted at 1223 on 5 March 2018.
- Shut down at 0630 on 13 March 2018 due to a power outage caused by the blizzard. MTUs H and I were restarted at 1058 on 19 March 2018.

MTU J continues to operate at a flow rate of 120 gpm. As of 30 March 2018, over 489.5 million gallons of water have been treated and re-injected. The following MTU J shutdown occurred in March:

- Shut down at 0630 on 13 March 2018 due to a power outage caused by the blizzard. MTU J was restarted at 1038 on 19 March 2018.

MTU K continues to operate at a flow rate of 125 gpm. As of 30 March 2018, over 602.7 million gallons of water have been treated and re-injected. The following MTU K shutdowns occurred in March:

- MTU K shut down at 0630 on 13 March 2018 due to a power outage caused by the blizzard. MTU K was restarted at 1008 on 19 March 2018. BetCo was onsite on 19 March 2018 to remove a tree branch and install four disconnects to restore power.

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 is currently operating at a flow rate of 235 gpm (while J3EW0032 is running at 45 gpm instead of 65 gpm). As of 30 March 2018, over 1.093 billion gallons of water have been treated and re-injected. The following J-3 Range system shut downs occurred in March:

- Shut down at 0731 on 27 February 2018 due to FS-12 being down. The System was restarted at 0835 on 27 February 2018.
- J3EW0032 was turned off at 0800 on 1 March 2018 to replace pump and motor. J3EW0032 was restarted at 1500 on 1 March 2018.
- Shut down at 1840 on 2 March 2018 due to a power outage. The System was restarted at 1158 on 8 March 2018.
- Shut down at 1930 on 13 March 2018 due to a power outage caused by the blizzard. The System was restarted at 1140 on 19 March 2018.

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 30 March 2018, over 470.2 million gallons of water have been treated and re-injected. The following J-1 Range Southern system shut down occurred in March:

- Shut down at 0630 on 13 March 2018 due to a power outage caused by the blizzard. The system was restarted at 1101 on 19 March 2018.

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 30 March 2018, over 555.8 million gallons of water have been treated and re-injected. The following J-1 Range Northern MTU shut downs occurred in March:

- The System shut down at 0604 on 13 March 2018 due to a power outage caused by the blizzard. The System was restarted at 1040 on 15 March 2018.

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 30 March 2018, over 1.269 billion gallons of water have been treated and re-injected. The following CIA treatment facility shut downs occurred in March:

- System 1 shut down at 1730 on 2 March 2018 due to a power outage. The system was restarted at 1515 on 8 March 2018.
- System 2 shut down at 1730 on 2 March 2018 due to a power outage. The system was restarted at 0955 on 8 March 2018.
- System 3 shut down at 1830 h on 2 March 2018 due to a power outage. The system was restarted at 0744 on 6 March 2018.
- System 1 shut down at 0940 on 13 March 2018 due to a power outage caused by the blizzard. System was restarted at 0848 on 26 March 2018.
- System 2 shut down at 0940 on 13 March 2018 due to a power outage caused by the blizzard. System was restarted at 0820 on 26 March 2018.

SUMMARY OF ACTIONS TAKEN

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

Process water samples were collected from the Demolition Area 1, Central Impact Area (CIA), J-1 Range Northern, J-1 Range Southern, J-2 Range Eastern, J-2 Range Northern, and J-3 Range.

Environmental and system performance monitoring groundwater samples were collected from CIA, Demolition Area 1, J-1 Range Northern, and Northwest Corner.

Performed routine inspections of BEM cover at the CIA to ensure cover is secure and intact.

Conducted groundwater sampling in the Central Impact Area (SPM), Demo 1 GW (Round 1), and Northwest Corner areas.

Hydraulic monitoring within the Central Impact Area SPM program.

Opened up (de-winterized) the USACE UXO trailer.

Cut up trees felled during the blizzard on well access roads and at the Frank Perkins Treatment Facility.

Collected groundwater samples from MW-695 S (Round 3; CIA BEM).

Locate and list USACE locks on-post.

JBCC IAGWSP Tech Update Meeting Minutes 1 March 2018

Project and Fieldwork Update

Watermark finished developing the newly installed monitoring wells at Demolition Area 1 last week. Groundwater sampling crews are performing sampling in the Central Impact Area. Next week, crews will be pulling the pump in J-3 Range extraction well EW32 to troubleshoot why the well is currently pumping at 45 rather than 65 gallons per minute. At the Small Arms Ranges, approximately 500 cubic yards of soil from Former B Range, C Range, and D Range was sent off-site as non-hazardous to the Bourne Landfill last week. There are no remaining stockpiles of soil on-site at this time. USACE is working on a contract modification for additional grids requiring excavation. There is one grid at each of the aforementioned ranges.

Action Items

Action items were discussed and updated.

An after tech meeting was held to discuss the draft final Training Areas Investigation Report and comments on the Five Year Review report.

JBCC IAGWSP Tech Update Meeting Minutes 29 March 2018

There are approved project notes for the next round of monitoring well installations. There are four: CIA on Greenway Road, upgradient of Pew Road at Demo 1, at J-3 co-located with MW-227 and west of MW-621 at J-2 North. There may be an additional location proposed for J-2 East. Currently targeting at June 4th rig mobilization. ROA and environmental filings will need to be completed. Rights of entry have been received for the abandonment of Western Boundary monitoring wells in Bourne. There are two groups of wells; one on Town of Bourne land the other in Schooner Lane. MassDEP asked if there was a standard protocol for well abandonment and USACE explained that MassDEP's procedures will be followed. That work is scheduled for the end of April. Watermark finished developing the newly installed monitoring wells at Demolition Area 1 last week. After a tough couple of weeks due to multiple storms and power outages, all of the treatment systems are up and running. Groundwater sampling crews are performing sampling in the Central Impact Area. EPA asked where the scheduling of drilling water table wells for the J-2 Range fit into the upcoming schedule. It was noted that they are still waiting for MassDEP approval

on well locations and that they may be able to be added to this mobilization if there is capacity left on the contract. If not, it will be in the next mobilization.

In the Small Arms Ranges, there is a contract modification being worked on to perform additional lifts at B Range, C Range, and Former B Range. Each Range requires one grid. Work will begin in approximately a month to give the area time to dry out. In the CIA, Parsons is mobilizing to the site on Monday as is the USACE's new Ordnance and Explosives Safety Specialist.

J-3 Plume Shell Development

Discussion was held on J-3 Plume Shell Development activities. The process used was explained. EDMS is queried for perchlorate and RDX data in the J3 Ranges. Then, existing steady-state MODFLOW groundwater model is run for "average" conditions. The simulation starts at the earliest date of groundwater sample collection and ends at the present time. Representative groundwater extraction rates are used for the simulation period.

Particles in MODPATH are initiated at locations and times of each sample collection point and migrated using results of the MODFLOW groundwater flow model. The MODPATH simulation is run to migrate particles (x, y, and z) to the present time. Model predicted x, y, z, and c values are imported to Excel and match the particles with their respective measured concentrations. Perchlorate concentrations are not adjusted and RDX concentrations are decayed (max decay 55% after 5 year) according to Jacobs. Values are imported to ArcView and use as a guide to manually develop plume contours representing 10-foot layers.

It was noted that the start date for J-3 Range perchlorate values was August 9, 2000 and the end date was August 29, 2017. The measured concentrations ranged from non-detect to 770 ppb. For RDX the start date was October 28, 1997 and the end date was also August 29, 2017. Concentrations ranged from non-detect to 37.6 ppb.

The new plume shells were presented and reviewed layer by layer.

J-2 East Pulsed Extraction Evaluation

A presentation was provided on an evaluation of using pulsed extraction at the J-2 East plume. It was explained that there has been historic persistent and elevated perchlorate concentrations measured at the MW-368M1 monitoring well. Comments on the 2015 Draft J2E Environmental Monitoring Report suggested that the contamination upgradient of MW-368M is "stuck" within the J2EW0004 stagnation zone. Because of this, a suggestion was made to evaluate the effectiveness of pulsed extraction of groundwater at J2EW0004/J2EW0005 to breakup contamination at this location.

The objectives of the exercise were to determine if elevated perchlorate concentrations at MW-368M1 are persisting because of the proximity of the well screen to the J2EW0004 stagnation zone, and evaluate the effect of pulsing groundwater extraction between the J2EW0004 and J2EW0005 extraction wells in order to facilitate the downgradient migration of perchlorate contamination within the J2EW0004 stagnation zone.

The evaluation was conducted by changing the existing groundwater flow simulation from steady state to transient and run for a period of 8-months. Two 8-month simulations were run to facilitate a comparison: one simulation with extraction rates held constant and another simulation with extraction rates cycled or "pulsed" between the two upgradient extraction wells. The simulated multiple particle sets that were strategically placed along the predicted flow path from the J2EW0004 to the J2EW0005 extraction well to

identify the location of the J2EW0004 stagnation zone, and along the predicted flow path upgradient of the MW-368M1 monitoring well to identify the source of contamination to this location.

A figure showing the results of the evaluation was displayed and discussed. A project note describing the evaluation that included a recommendation to install another monitoring well was distributed for signature.

J-2 North Modeling Evaluation

A presentation was provided on the modeling evaluation of J-2 Range North MW-586M1. It was noted that there is a draft Memorandum of Resolutions for comments on the Annual Monitoring Report but IAGWSP wanted to provide this presentation before sending the MOR. It was explained that the historic perchlorate concentrations at MW-586M1 were less than 2 ppb in 2013, when the well screens were first installed, but have since increased. The increase occurred slowly at first and up to a concentration greater than 2 ppb by 2016. In August 2017, perchlorate concentration increased to 23.1 ppb and there is no reliable way to predict the maximum concentration.

The objectives of the evaluation were to determine the J2EW0001/J2EW0002 extraction rates necessary to 1) cutoff the source of contamination to MW-586M1 and 2) both cutoff the source of contamination and ultimately extract the contamination recently observed at MW-586M1.

The evaluation using a steady-state version of the existing groundwater flow model was conducted. Particles at MW-586M1 well screen were reverse migrated. Then J2EW0001/J2EW0002 were adjusted (250 gpm) to capture upgradient particles and adjusted J2EW0001/J2EW0002 (250 gpm) to capture MW-586M1 particles. Adjusted J2EW0001/J2EW0002 (>250 gpm) to capture upgradient particles. Adjusted J2EW0001/J2EW0002 (>250 gpm) to capture MW-586M1 particles. Finally, rates were incorporated into the fate and transport model to evaluate any changes to the cleanup time when compared to that predicted using the 2017 plume shell.

Figures showing the results of the evaluation was displayed and discussed. An animation showing the plume over time was run. A project note describing the modeling evaluation and outlining a proposed monitoring well was distributed.

An after tech meeting was held 29 March 2018 to finalize the Training Areas Investigation Report.

Action Items

Action items were discussed and updated.

An after-tech meeting was held to discuss finalize the Training Areas Investigation Report.

JBCC Cleanup Team Meeting

The next JBCC Cleanup Team (JBCCCT) meeting is scheduled for April 11, 2018. 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 March to 31 March 2018. 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.

Twelve operable units (OU) are 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:

- Central Impact Area 2017 Annual Environmental Monitoring Report 03/07/2018
- J-3 Range 2017 Annual Environmental Monitoring Report 03/09/2018
- Monthly Progress Report No. 251 for February 2018 03/10/2018

3. SCHEDULED ACTIONS

The following documents are being prepared or revised during April 2018:

Training Areas

- Investigation Report
- Final Remedy Selection Plan
- Training Areas' Decision Document

Annual Reports/ Environmental Monitoring Reports/Work Plans

- J-2 Range Northern and Eastern Annual Environmental Monitoring Reports
- Northwest Corner Annual Monitoring Report

Central Impact Area

- 2018 Source Area Workplan
- 2017 Source Removal Annual Report
- Quality Assurance Project Plan (QAPP) for UXO

Miscellaneous

- Annual Land Use Controls monitoring report
- Five Year Review report
- Generic QAPP
- J-2 Phase 2 Geophysical and Soil Technical Memorandum
- J-3 Geophysical and Soil Technical Memorandum
- Technology evaluation and attenuation study reports

TABLE 1
Sampling Progress: 1 March to 31 March 2018

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
Central Impact Area	MW-107M2	MW-107M2_S18	N	03/29/2018	Ground Water	125	135
Central Impact Area	MW-27	MW-27_S18	N	03/29/2018	Ground Water	117	127
Central Impact Area	MW-477M2	MW-477M2_S18	N	03/29/2018	Ground Water	145.6	155.6
Central Impact Area	MW-477M2	MW-477M2_S18D	FD	03/29/2018	Ground Water	145.6	155.6
Central Impact Area	MW-477M1	MW-477M1_S18	N	03/29/2018	Ground Water	187.5	197.5
Central Impact Area	MW-485M1	MW-485M1_S18	N	03/29/2018	Ground Water	125.3	135.3
Central Impact Area	MW-485M1	MW-485M1_S18D	FD	03/29/2018	Ground Water	125.3	135.3
Central Impact Area	MW-486M1	MW-486M1_S18	N	03/29/2018	Ground Water	185.7	195.7
Demolition Area 1	MW-696M1	MW-696M1_R1	N	03/28/2018	Ground Water	175.2	185.2
Demolition Area 1	MW-697M1	MW-697M1_R1	N	03/28/2018	Ground Water	243	253
Demolition Area 1	D1-EFF	D1-EFF-92A	N	03/28/2018	Process Water	0	0
Demolition Area 1	MW-698M1	MW-698M1_R1	N	03/28/2018	Ground Water	212.4	222.4
Demolition Area 1	D1-MID-2	D1-MID-2-92A	N	03/28/2018	Process Water	0	0
Demolition Area 1	D1-MID-1	D1-MID-1-92A	N	03/28/2018	Process Water	0	0
Demolition Area 1	D1-INF	D1-INF-92A	N	03/28/2018	Process Water	0	0
Demolition Area 1	D1LE-EFF	D1LE-EFF-20A	N	03/28/2018	Process Water	0	0
Demolition Area 1	D1LE-MID2	D1LE-MID2-20A	N	03/28/2018	Process Water	0	0
Demolition Area 1	D1LE-MID1	D1LE-MID1-20A	N	03/28/2018	Process Water	0	0
Demolition Area 1	D1LE-INF	D1LE-INF-20A	N	03/28/2018	Process Water	0	0
Demolition Area 1	PR-EFF	PR-EFF-144A	N	03/28/2018	Process Water	0	0
Demolition Area 1	PR-MID-2	PR-MID-2-144A	N	03/28/2018	Process Water	0	0
Demolition Area 1	PR-MID-1	PR-MID-1-144A	N	03/28/2018	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-144A	N	03/28/2018	Process Water	0	0
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-144A	N	03/28/2018	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-144A	N	03/28/2018	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-144A	N	03/28/2018	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-144A	N	03/28/2018	Process Water	0	0
Central Impact Area	CIA2-EFF	CIA2-EFF-50A	N	03/27/2018	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-50A	N	03/27/2018	Process Water	0	0
Central Impact Area	CIA2-MID1	CIA2-MID1-50A	N	03/27/2018	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-50A	N	03/27/2018	Process Water	0	0
Central Impact Area	CIA1-EFF	CIA1-EFF-50A	N	03/27/2018	Process Water	0	0
Central Impact Area	CIA1-MID2	CIA1-MID2-50A	N	03/27/2018	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-50A	N	03/27/2018	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-50A	N	03/27/2018	Process Water	0	0
Central Impact Area	MW-40S	MW-40S_S18	N	03/26/2018	Ground Water	115.5	126
Central Impact Area	MW-40M1	MW-40M1_S18	N	03/26/2018	Ground Water	132.5	142.5
Central Impact Area	MW-44M1	MW-44M1_S18	N	03/26/2018	Ground Water	182	192
Central Impact Area	MW-487M2	MW-487M2_S18	N	03/26/2018	Ground Water	195.8	205.8
J1 Range Northern	MW-487M2	MW-487M2_S18	N	03/26/2018	Ground Water	195.8	205.8
Central Impact Area	MW-487M1	MW-487M1_S18	N	03/26/2018	Ground Water	240.3	250.3
J1 Range Northern	MW-487M1	MW-487M1_S18	N	03/26/2018	Ground Water	240.3	250.3
Central Impact Area	MW-37M3	MW-37M3_S18	N	03/26/2018	Ground Water	130	140
Central Impact Area	MW-37M2	MW-37M2_S18	N	03/26/2018	Ground Water	145	155
Central Impact Area	MW-178M1	MW-178M1_S18	N	03/22/2018	Ground Water	257	267
Central Impact Area	MW-103M2	MW-103M2_S18	N	03/22/2018	Ground Water	282	292
Central Impact Area	MW-103M1	MW-103M1_S18	N	03/22/2018	Ground Water	298	308
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-114A	N	03/22/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-114A	N	03/22/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-114A	N	03/22/2018	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-114A	N	03/22/2018	Process Water	0	0
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-114A	N	03/22/2018	Process Water	0	0
Central Impact Area	MW-124M1	MW-124M1_S18	N	03/22/2018	Ground Water	234	244
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-114A	N	03/22/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-114A	N	03/22/2018	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-114A	N	03/22/2018	Process Water	0	0
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-114A	N	03/22/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-114A	N	03/22/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-114A	N	03/22/2018	Process Water	0	0

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 1 March to 31 March 2018

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-2I	J2E-MID-2I-114A	N	03/22/2018	Process Water	0	0
Central Impact Area	MW-23M1	MW-23M1_S18	N	03/22/2018	Ground Water	225	235
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-114A	N	03/22/2018	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-114A	N	03/22/2018	Process Water	0	0
Central Impact Area	MW-23D	MW-23D_S18	N	03/22/2018	Ground Water	272	282
Central Impact Area	CIA3-EFF	CIA3-EFF-21A	N	03/22/2018	Process Water	0	0
Central Impact Area	CIA3-MID2	CIA3-MID2-21A	N	03/22/2018	Process Water	0	0
Central Impact Area	CIA3-MID1	CIA3-MID1-21A	N	03/22/2018	Process Water	0	0
Central Impact Area	CIA3-INF	CIA3-INF-21A	N	03/22/2018	Process Water	0	0
J1 Range Southern	J1S-EFF	J1S-EFF-124A	N	03/21/2018	Process Water	0	0
J1 Range Southern	J1S-MID-2	J1S-MID-2-124A	N	03/21/2018	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-124A	N	03/21/2018	Process Water	0	0
Central Impact Area	MW-184M2	MW-184M2_S18	N	03/21/2018	Ground Water	126	136
J3 Range	J3-EFF	J3-EFF-138A	N	03/21/2018	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-138A	N	03/21/2018	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-138A	N	03/21/2018	Process Water	0	0
J3 Range	J3-INF	J3-INF-138A	N	03/21/2018	Process Water	0	0
Central Impact Area	MW-184M1	MW-184M1_S18	N	03/21/2018	Ground Water	186	196
Central Impact Area	MW-184M1	MW-184M1_S18D	FD	03/21/2018	Ground Water	186	196
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-138A	N	03/21/2018	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-138A	N	03/21/2018	Process Water	0	0
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-138A	N	03/21/2018	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-138A	N	03/21/2018	Process Water	0	0
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-138A	N	03/21/2018	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-138A	N	03/21/2018	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-138A	N	03/21/2018	Process Water	0	0
Central Impact Area	MW-38M4	MW-38M4_S18	N	03/21/2018	Ground Water	132	142
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-138A	N	03/21/2018	Process Water	0	0
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-138A	N	03/21/2018	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-138A	N	03/21/2018	Process Water	0	0
Central Impact Area	MW-38M3	MW-38M3_S18	N	03/21/2018	Ground Water	170	180
J1 Range Northern	J1N-EFF	J1N-EFF-53A	N	03/21/2018	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-53A	N	03/21/2018	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-53A	N	03/21/2018	Process Water	0	0
J1 Range Northern	J1N-INF2	J1N-INF2-53A	N	03/21/2018	Process Water	0	0
Central Impact Area	MW-01S	MW-01S_S18	N	03/20/2018	Ground Water	114	124
Central Impact Area	MW-01S	MW-01S_S18D	FD	03/20/2018	Ground Water	114	124
Central Impact Area	MW-01M2	MW-01M2_S18	N	03/20/2018	Ground Water	160	165
Central Impact Area	MW-115S	MW-115S_S18	N	03/20/2018	Ground Water	116	126
Central Impact Area	MW-115M1	MW-115M1_S18	N	03/20/2018	Ground Water	138	148
Central Impact Area	MW-85S	MW-85S_S18	N	03/20/2018	Ground Water	116	126
Central Impact Area	MW-90S	MW-90S_S18	N	03/19/2018	Ground Water	118	128
Central Impact Area	MW-90M1	MW-90M1_S18	N	03/19/2018	Ground Water	145	155
Central Impact Area	MW-91S	MW-91S_S18	N	03/19/2018	Ground Water	124	134
Central Impact Area	MW-91S	MW-91S_S18D	FD	03/19/2018	Ground Water	124	134
Central Impact Area	MW-91M1	MW-91M1_S18	N	03/19/2018	Ground Water	170	180
Central Impact Area	MW-93M2	MW-93M2_S18	N	03/19/2018	Ground Water	145	155
Central Impact Area	MW-93M1	MW-93M1_S18	N	03/19/2018	Ground Water	185	195
Central Impact Area	MW-614M2	MW-614M2_S18	N	03/15/2018	Ground Water	215	225
Central Impact Area	MW-614M1	MW-614M1_S18	N	03/15/2018	Ground Water	275	285
Central Impact Area	MW-615M2	MW-615M2_S18	N	03/15/2018	Ground Water	200	210
Central Impact Area	MW-615M1	MW-615M1_S18	N	03/15/2018	Ground Water	260	270
Central Impact Area	MW-615M1	MW-615M1_S18D	FD	03/15/2018	Ground Water	260	270
Central Impact Area	MW-123M2	MW-123M2_S18	N	03/15/2018	Ground Water	236	246
Central Impact Area	MW-123M1	MW-123M1_S18	N	03/15/2018	Ground Water	291	301
Central Impact Area	MW-123M1	MW-123M1_S18D	FD	03/15/2018	Ground Water	291	301
Central Impact Area	MW-105M1	MW-105M1_S18	N	03/12/2018	Ground Water	205	215
Central Impact Area	MW-235M1	MW-235M1_S18	N	03/12/2018	Ground Water	154	164
Central Impact Area	MW-106M1	MW-106M1_S18	N	03/12/2018	Ground Water	170.5	180.5

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 1 March to 31 March 2018

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
Central Impact Area	OW-1	OW-1_S18	N	03/12/2018	Ground Water	126	136
Central Impact Area	OW-2	OW-2_S18	N	03/12/2018	Ground Water	175	185
Central Impact Area	MW-695S	MW-695S_S18	N	03/08/2018	Ground Water	130	140
Central Impact Area	MW-695S	MW-695S_S18D	FD	03/08/2018	Ground Water	130	140
Central Impact Area	MW-101S	MW-101S_S18	N	03/08/2018	Ground Water	131	141
Central Impact Area	MW-101M1	MW-101M1_S18	N	03/08/2018	Ground Water	158	168
Central Impact Area	MW-100M2	MW-100M2_S18	N	03/08/2018	Ground Water	164	174
Central Impact Area	MW-100M1	MW-100M1_S18	N	03/08/2018	Ground Water	179	189
Central Impact Area	MW-99S	MW-99S_S18	N	03/08/2018	Ground Water	133	143
Central Impact Area	MW-99M1	MW-99M1_S18	N	03/08/2018	Ground Water	195	205
Central Impact Area	MW-92S	MW-92S_S18	N	03/07/2018	Ground Water	139	149
Central Impact Area	MW-98S	MW-98S_S18	N	03/07/2018	Ground Water	137	147
Central Impact Area	MW-98M1	MW-98M1_S18	N	03/07/2018	Ground Water	164	174
Central Impact Area	MW-02M2	MW-02M2_S18	N	03/07/2018	Ground Water	170	175
Central Impact Area	MW-02M1	MW-02M1_S18	N	03/07/2018	Ground Water	212	217
Central Impact Area	MW-179M1	MW-179M1_S18	N	03/07/2018	Ground Water	187	197
Central Impact Area	MW-112M2	MW-112M2_S18	N	03/06/2018	Ground Water	165	175
Central Impact Area	MW-112M1	MW-112M1_S18	N	03/06/2018	Ground Water	195	205
Central Impact Area	MW-113M2	MW-113M2_S18	N	03/06/2018	Ground Water	190	200
Central Impact Area	MW-113M2	MW-113M2_S18D	FD	03/06/2018	Ground Water	190	200
Central Impact Area	MW-113M1	MW-113M1_S18	N	03/06/2018	Ground Water	240	250
Northwest Corner	MW-277S	MW-277S_S18	N	03/06/2018	Ground Water	102	112
Northwest Corner	MW-344M2	MW-344M2_S18	N	03/05/2018	Ground Water	145	155
Northwest Corner	MW-344M2	MW-344M2_S18D	FD	03/05/2018	Ground Water	145	155
Northwest Corner	MW-279S	MW-279S_S18	N	03/05/2018	Ground Water	66	76
Northwest Corner	MW-279M2	MW-279M2_S18	N	03/05/2018	Ground Water	83	88
Northwest Corner	MW-278S	MW-278S_S18	N	03/05/2018	Ground Water	80	90
Northwest Corner	MW-278M2	MW-278M2_S18	N	03/05/2018	Ground Water	97	102
Northwest Corner	MW-278M1	MW-278M1_S18	N	03/05/2018	Ground Water	113	123

N = Normal Sample
 FD = Field Duplicate

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
 Data Received March 2018

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	J2EW1-MW1-C	J2EW1-MW1-C_S18	240.8	250.8	02/06/2018	SW6850	Perchlorate	2.2		ug/L	2.0	X	0.012	0.20
J1 Range Southern	J1S-EFF	J1S-EFF-123A	0	0	02/06/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.082	J	ug/L	0.60		0.036	0.20
J1 Range Southern	J1S-MID-2	J1S-MID-2-123A	0	0	02/06/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.033	J	ug/L	400		0.025	0.20
J1 Range Southern	J1S-MID-2	J1S-MID-2-123A	0	0	02/06/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.20		ug/L	0.60		0.036	0.20
J1 Range Southern	J1S-INF-2	J1S-INF-2-123A	0	0	02/06/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.047	J	ug/L	400		0.025	0.20
J1 Range Southern	J1S-INF-2	J1S-INF-2-123A	0	0	02/06/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.31		ug/L	0.60		0.036	0.20
J2 Range Northern	MW-612M2	MW-612M2_S18	267	277	02/06/2018	SW6850	Perchlorate	0.037	J	ug/L	2.0		0.012	0.20
J2 Range Northern	MW-612M1	MW-612M1_S18	297	307	02/06/2018	SW6850	Perchlorate	0.074	J	ug/L	2.0		0.012	0.20
J2 Range Northern	MW-613M2	MW-613M2_S18	246.1	256.1	02/06/2018	SW6850	Perchlorate	0.052	J	ug/L	2.0		0.012	0.20
J2 Range Northern	MW-613M1	MW-613M1_S18	267.1	277.1	02/06/2018	SW6850	Perchlorate	0.040	J	ug/L	2.0		0.012	0.20
J1 Range Northern	J1N-EFF	J1N-EFF-52A	0	0	02/06/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.044	J	ug/L	0.60		0.036	0.20
J1 Range Northern	J1N-EFF	J1N-EFF-52A	0	0	02/06/2018	SW6850	Perchlorate	0.10	J	ug/L	2.0		0.012	0.20
J1 Range Northern	J1N-MID2	J1N-MID2-52A	0	0	02/06/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.038	J	ug/L	400		0.025	0.20
J1 Range Northern	J1N-MID2	J1N-MID2-52A	0	0	02/06/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.074	J	ug/L	0.60		0.036	0.20
J1 Range Northern	J1N-MID1	J1N-MID1-52A	0	0	02/06/2018	SW6850	Perchlorate	0.091	J	ug/L	2.0		0.012	0.20
J1 Range Northern	J1N-INF2	J1N-INF2-52A	0	0	02/06/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.038	J	ug/L	400		0.025	0.20
J1 Range Northern	J1N-INF2	J1N-INF2-52A	0	0	02/06/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.11	J	ug/L	0.60		0.036	0.20
J1 Range Northern	J1N-INF2	J1N-INF2-52A	0	0	02/06/2018	SW6850	Perchlorate	0.67		ug/L	2.0		0.012	0.20
J2 Range Northern	MW-313M3	MW-313M3_S18	195.1	205.6	02/01/2018	SW6850	Perchlorate	0.038	J	ug/L	2.0		0.012	0.20
Central Impact Area	CIA2-MID2	CIA2-MID2-49A	0	0	02/01/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.040	J	ug/L	400		0.025	0.20
Central Impact Area	CIA2-MID2	CIA2-MID2-49A	0	0	02/01/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.074	J	ug/L	0.60		0.036	0.20
Central Impact Area	CIA2-MID1	CIA2-MID1-49A	0	0	02/01/2018	SW6850	Perchlorate	0.095	J	ug/L	2.0		0.012	0.20
Central Impact Area	CIA2-INF	CIA2-INF-49A	0	0	02/01/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.12	J	ug/L	400		0.025	0.20
Central Impact Area	CIA2-INF	CIA2-INF-49A	0	0	02/01/2018	SW6850	Perchlorate	0.24		ug/L	2.0		0.012	0.20
Central Impact Area	CIA2-INF	CIA2-INF-49A	0	0	02/01/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.3		ug/L	0.60	X	0.036	0.20
J2 Range Northern	MW-313M2	MW-313M2_S18	215.5	225.5	02/01/2018	SW6850	Perchlorate	0.029	J	ug/L	2.0		0.012	0.20
Central Impact Area	CIA1-EFF	CIA1-EFF-49A	0	0	02/01/2018	SW6850	Perchlorate	0.16	J	ug/L	2.0		0.012	0.20
Central Impact Area	CIA1-MID2	CIA1-MID2-49A	0	0	02/01/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.037	J	ug/L	400		0.025	0.20
Central Impact Area	CIA1-MID2	CIA1-MID2-49A	0	0	02/01/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.20		ug/L	0.60		0.036	0.20
Central Impact Area	CIA1-MID1	CIA1-MID1-49A	0	0	02/01/2018	SW6850	Perchlorate	0.24		ug/L	2.0		0.012	0.20
Central Impact Area	CIA1-INF	CIA1-INF-49A	0	0	02/01/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.075	J	ug/L	400		0.025	0.20
Central Impact Area	CIA1-INF	CIA1-INF-49A	0	0	02/01/2018	SW6850	Perchlorate	0.44		ug/L	2.0		0.012	0.20
Central Impact Area	CIA1-INF	CIA1-INF-49A	0	0	02/01/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.74		ug/L	0.60	X	0.036	0.20
J2 Range Northern	MW-313M1	MW-313M1_S18	255.4	265.4	02/01/2018	SW6850	Perchlorate	12.5		ug/L	2.0	X	0.012	0.20
J2 Range Northern	MW-313M1	MW-313M1_S18D	255.4	265.4	02/01/2018	SW6850	Perchlorate	13.2		ug/L	2.0	X	0.012	0.20
Central Impact Area	CIA3-MID2	CIA3-MID2-20A	0	0	02/01/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.13	J	ug/L	0.60		0.036	0.20
Central Impact Area	CIA3-INF	CIA3-INF-20A	0	0	02/01/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.055	J	ug/L	400		0.025	0.20
Central Impact Area	CIA3-INF	CIA3-INF-20A	0	0	02/01/2018	SW6850	Perchlorate	0.083	J	ug/L	2.0		0.012	0.20
Central Impact Area	CIA3-INF	CIA3-INF-20A	0	0	02/01/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.87		ug/L	0.60	X	0.036	0.20
J2 Range Northern	MW-630M1	MW-630M1_S18	217	227	02/01/2018	SW6850	Perchlorate	0.016	J	ug/L	2.0		0.012	0.20
J2 Range Northern	MW-619M2	MW-619M2_S18	234.1	244.1	01/31/2018	SW6850	Perchlorate	0.020	J	ug/L	2.0		0.012	0.20
J2 Range Northern	MW-619M1	MW-619M1_S18	255.1	265.1	01/31/2018	SW6850	Perchlorate	0.073	J	ug/L	2.0		0.012	0.20
L Range	90MW0031	90MW0031_S18	195.3	200.2	01/29/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.29		ug/L	0.60		0.036	0.20

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

MCL/HA= Either the MCL or Lowest Health Advisory Limit
 April 06, 2018

**TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received March 2018**

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
L Range	MW-650M1	MW-650M1_S18	260	270	01/24/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.86		ug/L	0.60	X	0.036	0.20
L Range	MW-651M1	MW-651M1_S18	242.3	252.3	01/24/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.88		ug/L	0.60	X	0.036	0.20
L Range	MW-242M1	MW-242M1_S18	235	245	01/24/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.0		ug/L	0.60	X	0.036	0.20
L Range	MW-242M1	MW-242M1_S18D	235	245	01/24/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.9		ug/L	0.60	X	0.036	0.20
L Range	MW-595M1	MW-595M1_S18	255.3	265.3	01/23/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.5		ug/L	0.60	X	0.036	0.20
J3 Range	MW-237S	MW-237S_S18	49	59	01/18/2018	SW6850	Perchlorate	0.065	J	ug/L	2.0		0.012	0.20
J3 Range	MW-356S	MW-356S_S18	105.1	115.1	01/18/2018	SW6850	Perchlorate	0.18	J	ug/L	2.0		0.012	0.20
Demolition Area 1	PR-EFF	PR-EFF-142A	0	0	01/17/2018	SW6850	Perchlorate	0.087	J	ug/L	2.0		0.012	0.20
Demolition Area 1	PR-MID-2	PR-MID-2-142A	0	0	01/17/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.070	J	ug/L	0.60		0.036	0.20
Demolition Area 1	PR-MID-1	PR-MID-1-142A	0	0	01/17/2018	SW6850	Perchlorate	0.10	J	ug/L	2.0		0.012	0.20
Demolition Area 1	PR-INF	PR-INF-142A	0	0	01/17/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.043	J	ug/L	400		0.025	0.20
Demolition Area 1	PR-INF	PR-INF-142A	0	0	01/17/2018	SW6850	Perchlorate	0.42		ug/L	2.0		0.012	0.20
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-142A	0	0	01/17/2018	SW6850	Perchlorate	0.34		ug/L	2.0		0.012	0.20
J3 Range	J3EW0032	J3EW0032_S18	102	152	01/17/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.20		ug/L	400		0.025	0.20
J3 Range	J3EW0032	J3EW0032_S18	102	152	01/17/2018	SW6850	Perchlorate	0.49		ug/L	2.0		0.012	0.20
J3 Range	J3EW0032	J3EW0032_S18	102	152	01/17/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.84		ug/L	0.60	X	0.036	0.20
J3 Range	J3EW0032	J3EW0032_S18D	102	152	01/17/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.20		ug/L	400		0.025	0.20
J3 Range	J3EW0032	J3EW0032_S18D	102	152	01/17/2018	SW6850	Perchlorate	0.47		ug/L	2.0		0.012	0.20
J3 Range	J3EW0032	J3EW0032_S18D	102	152	01/17/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.82		ug/L	0.60	X	0.036	0.20
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-142A	0	0	01/17/2018	SW6850	Perchlorate	0.32		ug/L	2.0		0.012	0.20
Demolition Area 1	FPR-2-INF	FPR-2-INF-142A	0	0	01/17/2018	SW6850	Perchlorate	0.097	J	ug/L	2.0		0.012	0.20
Demolition Area 1	FPR-2-INF	FPR-2-INF-142A	0	0	01/17/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.19	J	ug/L	400		0.025	0.20
Demolition Area 1	FPR-2-INF	FPR-2-INF-142A	0	0	01/17/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.21		ug/L	0.60		0.036	0.20
Demolition Area 1	D1LE-MID1	D1LE-MID1-18A	0	0	01/17/2018	SW6850	Perchlorate	0.11	J	ug/L	2.0		0.012	0.20
Demolition Area 1	D1LE-INF	D1LE-INF-18A	0	0	01/17/2018	SW6850	Perchlorate	0.21		ug/L	2.0		0.012	0.20
J3 Range	90PLT01006	90PLT01006_S18	0	0	01/17/2018	SW6850	Perchlorate	0.087	J	ug/L	2.0		0.012	0.20
Demolition Area 1	D1-EFF	D1-EFF-90A	0	0	01/17/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.064	J	ug/L	0.60		0.036	0.20
Demolition Area 1	D1-MID-2	D1-MID-2-90A	0	0	01/17/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.057	J	ug/L	0.60		0.036	0.20
Demolition Area 1	D1-INF	D1-INF-90A	0	0	01/17/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.048	J	ug/L	0.60		0.036	0.20
Demolition Area 1	D1-INF	D1-INF-90A	0	0	01/17/2018	SW6850	Perchlorate	0.77		ug/L	2.0		0.012	0.20
J1 Range Southern	J1S-EFF	J1S-EFF-122A	0	0	01/16/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.088	J	ug/L	0.60		0.036	0.20
J3 Range	MW-125S	MW-125S_S18	50	60	01/16/2018	SW6850	Perchlorate	0.078	J	ug/L	2.0		0.012	0.20
J1 Range Southern	J1S-MID-2	J1S-MID-2-122A	0	0	01/16/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.20		ug/L	0.60		0.036	0.20
J1 Range Southern	J1S-INF-2	J1S-INF-2-122A	0	0	01/16/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.059	J	ug/L	400		0.025	0.20
J1 Range Southern	J1S-INF-2	J1S-INF-2-122A	0	0	01/16/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.32		ug/L	0.60		0.036	0.20
J3 Range	J3-MID-2	J3-MID-2-136A	0	0	01/16/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.051	J	ug/L	400		0.025	0.20
J3 Range	J3-MID-2	J3-MID-2-136A	0	0	01/16/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.15	J	ug/L	0.60		0.036	0.20
J3 Range	J3-MID-1	J3-MID-1-136A	0	0	01/16/2018	SW6850	Perchlorate	0.026	J	ug/L	2.0		0.012	0.20
J3 Range	J3-INF	J3-INF-136A	0	0	01/16/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.23		ug/L	400		0.025	0.20
J3 Range	J3-INF	J3-INF-136A	0	0	01/16/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.44		ug/L	0.60		0.036	0.20
J3 Range	J3-INF	J3-INF-136A	0	0	01/16/2018	SW6850	Perchlorate	1.7		ug/L	2.0		0.012	0.20
Central Impact Area	CIA2-MID1	CIA2-MID1-48A	0	0	01/16/2018	SW6850	Perchlorate	0.074	J	ug/L	2.0		0.012	0.20
Central Impact Area	CIA2-INF	CIA2-INF-48A	0	0	01/16/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.13	J	ug/L	400		0.025	0.20

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

MCL/HA= Either the MCL or Lowest Health Advisory Limit
April 06, 2018

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
 Data Received March 2018

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	CIA2-INF	CIA2-INF-48A	0	0	01/16/2018	SW6850	Perchlorate	0.24		ug/L	2.0		0.012	0.20
Central Impact Area	CIA2-INF	CIA2-INF-48A	0	0	01/16/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.4		ug/L	0.60	X	0.036	0.20
Central Impact Area	CIA1-EFF	CIA1-EFF-48A	0	0	01/16/2018	SW6850	Perchlorate	0.25		ug/L	2.0		0.012	0.20
Central Impact Area	CIA1-MID2	CIA1-MID2-48A	0	0	01/16/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.041	J	ug/L	400		0.025	0.20
Central Impact Area	CIA1-MID2	CIA1-MID2-48A	0	0	01/16/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.22		ug/L	0.60		0.036	0.20
Central Impact Area	CIA1-MID1	CIA1-MID1-48A	0	0	01/16/2018	SW6850	Perchlorate	0.24		ug/L	2.0		0.012	0.20
Central Impact Area	CIA1-INF	CIA1-INF-48A	0	0	01/16/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.081	J	ug/L	400		0.025	0.20
Central Impact Area	CIA1-INF	CIA1-INF-48A	0	0	01/16/2018	SW6850	Perchlorate	0.45		ug/L	2.0		0.012	0.20
Central Impact Area	CIA1-INF	CIA1-INF-48A	0	0	01/16/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.79		ug/L	0.60	X	0.036	0.20
J3 Range	MW-190M2	MW-190M2_S18	110	120	01/16/2018	SW6850	Perchlorate	0.40		ug/L	2.0		0.012	0.20
Central Impact Area	CIA3-MID2	CIA3-MID2-19A	0	0	01/16/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.15	J	ug/L	0.60		0.036	0.20
Central Impact Area	CIA3-INF	CIA3-INF-19A	0	0	01/16/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.054	J	ug/L	400		0.025	0.20
Central Impact Area	CIA3-INF	CIA3-INF-19A	0	0	01/16/2018	SW6850	Perchlorate	0.091	J	ug/L	2.0		0.012	0.20
Central Impact Area	CIA3-INF	CIA3-INF-19A	0	0	01/16/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.95		ug/L	0.60	X	0.036	0.20
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-112A	0	0	01/11/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.044	J	ug/L	400		0.025	0.20
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-112A	0	0	01/11/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.067	J	ug/L	0.60		0.036	0.20
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-112A	0	0	01/11/2018	SW6850	Perchlorate	0.24		ug/L	2.0		0.012	0.20
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-112A	0	0	01/11/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.044	J	ug/L	400		0.025	0.20
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-112A	0	0	01/11/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.11	J	ug/L	0.60		0.036	0.20
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-112A	0	0	01/11/2018	SW6850	Perchlorate	0.50		ug/L	2.0		0.012	0.20
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-112A	0	0	01/11/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.11	J	ug/L	400		0.025	0.20
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-112A	0	0	01/11/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.20		ug/L	0.60		0.036	0.20
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-112A	0	0	01/11/2018	SW6850	Perchlorate	0.37		ug/L	2.0		0.012	0.20
J2 Range Eastern	J2E-INF-I	J2E-INF-I-112A	0	0	01/11/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.17	J	ug/L	400		0.025	0.20
J2 Range Eastern	J2E-INF-I	J2E-INF-I-112A	0	0	01/11/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.28		ug/L	0.60		0.036	0.20
J2 Range Eastern	J2E-INF-I	J2E-INF-I-112A	0	0	01/11/2018	SW6850	Perchlorate	1.2		ug/L	2.0		0.012	0.20
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-112A	0	0	01/11/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.13	J	ug/L	0.60		0.036	0.20
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-112A	0	0	01/11/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.23		ug/L	0.60		0.036	0.20
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-112A	0	0	01/11/2018	SW6850	Perchlorate	0.10	J	ug/L	2.0		0.012	0.20
J2 Range Eastern	J2E-INF-K	J2E-INF-K-112A	0	0	01/11/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.053	J	ug/L	400		0.025	0.20
J2 Range Eastern	J2E-INF-K	J2E-INF-K-112A	0	0	01/11/2018	SW6850	Perchlorate	0.18	J	ug/L	2.0		0.012	0.20
J2 Range Eastern	J2E-INF-K	J2E-INF-K-112A	0	0	01/11/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.41		ug/L	0.60		0.036	0.20
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-112A	0	0	01/11/2018	SW6850	Perchlorate	0.053	J	ug/L	2.0		0.012	0.20
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-112A	0	0	01/11/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.15	J	ug/L	0.60		0.036	0.20
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-112A	0	0	01/11/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.20		ug/L	400		0.025	0.20
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-112A	0	0	01/11/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.13	J	ug/L	0.60		0.036	0.20
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-112A	0	0	01/11/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.24		ug/L	400		0.025	0.20
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-112A	0	0	01/11/2018	SW6850	Perchlorate	0.079	J	ug/L	2.0		0.012	0.20
J2 Range Eastern	J2E-INF-J	J2E-INF-J-112A	0	0	01/11/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.11	J	ug/L	0.60		0.036	0.20
J2 Range Eastern	J2E-INF-J	J2E-INF-J-112A	0	0	01/11/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.16	J	ug/L	400		0.025	0.20
J2 Range Eastern	J2E-INF-J	J2E-INF-J-112A	0	0	01/11/2018	SW6850	Perchlorate	0.50		ug/L	2.0		0.012	0.20

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

MCL/HA= Either the MCL or Lowest Health Advisory Limit
 April 06, 2018