

**MONTHLY PROGRESS REPORT #244
FOR JULY 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 July to 31 July 2017.

1. SUMMARY OF REMEDIATION ACTIONS

The following is a description of Remediation Actions (RA) underway at Camp Edwards as of July 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 2.503 billion gallons of water treated and re-injected as of 28 July 2017. The following Frank Perkins Road facility shut downs occurred in July:

- Extraction Well EW-658 shut down at 1620 on 20 July 2017 due to a power interruption and was restarted at 0830 on 21 July 2017; and
- EW-658 shut down at 0853 on 31 July 2017 due to a power outage and was restarted at 1033 on 31 July 2017.

The Pew Road Mobile Treatment Unit (MTU) continues to operate at a flow rate of 103 gpm with over 529 million gallons of water treated and re-injected as of 28 July 2017. The following Pew Road MTU shut downs occurred in July:

- Shut down at 2348 on 12 July 2017 due to a power interruption and was restarted at 0720 on 13 July 2017;
- Shut down at 2035 on 17 July 2017 due to a power interruption and was restarted at 0720 on 18 July 2017;
- Shut down at 1730 on 20 July 2017 due to a power interruption and was restarted at 0751 on 21 July 2017;
- Shut down at 1810 on 24 July 2017 (no alarm) and was restarted at 0722 on 25 July 2017; and
- Shut down at 0853 on 31 July 2017 due to a power outage and was restarted at 0920 on 31 July 2017.

The Base Boundary RA is operating at a flow rate of 65 gpm with over 170.6 million gallons of water treated and re-injected as of 28 July 2017. No Base Boundary MTU shut downs occurred in July.

The Leading Edge system continues to operate at a flow rate of 100 gpm with over 53.6 million gallons of water treated and re-injected as of 28 July 2017. No Leading Edge system shut downs occurred in July.

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 28 July 2017, over 412.1 million gallons of water have been treated and re-injected. No J-1 Range Southern system shut downs occurred in July.

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 28 July 2017, over 427.9 million gallons of water have been treated and re-injected. No J-1 Range Northern MTU shut downs occurred in July.

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 was operating continues to operate at a flow rate of 255 gpm. As of 28 July 2017, over 1.033 billion gallons of water have been treated and re-injected. The following J-3 Range system shut down occurred in July:

- Shut down at 1520 on 26 July 2017 due to FS-12 being turned off and was restarted at 0725 on 27 July 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 28 July 2017, over 887.2 million gallons of water have been treated and re-injected. No Northern Treatment Building shut downs occurred in July.

The Northern MTUs E and F continue to operate at a flow rate of 250 gpm. As of 28 July 2017, over 1.387 billion gallons of water have been treated and re-injected. No J-2 Range Northern MTU shut downs occurred in July.

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 28 July 2017, over 970.2 million gallons of water have been treated and re-injected. No MTU H and I shut downs occurred in July.

MTU J continues to operate at a flow rate of 120 gpm. As of 28 July 2017, over 439.5 million gallons of water have been treated and re-injected. No shut downs of MTU J occurred in July.

MTU K continues to operate at a flow rate of 125 gpm. As of 28 July 2017, over 550.2 million gallons of water have been treated and re-injected. No shut downs of MTU K occurred in July.

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 28 July 2017, over 1.009 billion gallons of water have been treated and re-injected. The following CIA treatment facility shut downs occurred in July:

- System 3 shut down at 1033 on 30 June 2017 due to alarm and was restarted at 1040 on 6 July 2017;
- System 2 shut down at 2351 on 12 July 2017 due to a power interruption caused by thunderstorms and was restarted at 0805 on 13 July 2017;
- System 3 shut down at 1644 on 13 July 2017 due to a power interruption caused by thunderstorms and was restarted at 0721 on 14 July 2017; and
- System 2 shut down at 0853 on 31 July 2017 due to a power outage and was restarted at 0952 on 31 July 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 CIA, J-3 Range Northern, and L Range.

Surface water samples were collected at J-3 Range.

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

Performed anomaly investigation in Phase II Area 3 of the CIA.

Metalmapper demobilized for the FY17 field season. Phase II surveys are complete.

Performed Phase 2 Post-Decision Document geophysical investigation at the J-2 Range.

Continued transportation and disposal (T&D) of excavated soil at the Small Arms Ranges

JBCC IAGWSP Tech Update Meeting Minutes 13 July 2017

Action Items

The action items were discussed and updated.

MassDEP noted that during the investigation at the Old K Range under the Military Munitions Response Program (MMRP), AFCEC is finding material potentially presenting an explosive hazard as well as some UXO items that needed to be disposed of by blow-in-place. MassDEP said that they are going to be asking AFCEC to expand their investigations into additional grids in and across Wood Road. In some locations, AFCEC may not be able to investigate under the MRRP program because the new grids would be in areas that are considered to be within an active range area. MassDEP wanted to make the IAGWSP aware since they might be called upon to do the work if AFCEC is unable to. USACE noted that some of the area in question has recently been UXO cleared in support of fire break work. IAGWSP said that the investigation will get done under one of the cleanup programs.

Project and Fieldwork Update

Crews finished installing the new CIA2 injection well pilot boring. Grain size samples were collected from 176' to 306'. MassDEP suggested that the infiltration gallery be kept as a reserve for back up and USACE stated that they were planning to do so. The rig will mobilize Monday drill the shallow water table well in the northwest corner of the BEM. The J-1 Range Southern drive point drilling is scheduled to begin on July 19th. Groundwater sampling crews are performing annual sampling at the J-3 Range and recently completed water level rounds at J-1 and J-3 Ranges. All of the treatment systems are up and running.

In the Small Arms Ranges work is ongoing at three ranges. Additional lifts are required at the stockpile at D Range, Former B Range and C Range. The stockpile of 110 yards of hazardous soil at the B Range should go off-site to Canada next week. Sample results from the base of the BEM are expected back next week. After results are received, plans for reconstruction will be developed and discussed.

In the Central Impact Area, the Metal Mapper Crew completed Phase II Area 3 the last week in June. Crews have de-mobbed and Metal Mapper equipment is being returned to Baltimore and Huntsville. Dawson is digging in Phase II Area 3 and working on firebreaks. Work has begun at the 100% grid. There are 500 digs that will take the team approximately two and a half weeks to complete.

CIA Plume Shell Update

An updated was provided on the work recently completed on the CIA plume shell. The process for CIA model recalibration was explained. Starting with TetraTech's 2012 recalibrated flow model, adjustments to zonal hydraulic conductivity values were made while observing the effects on particles forward-migrated from the upgradient areas of known plumes, and particles reverse-migrated from extraction wells. Adjustments were relatively minor in the immediate vicinity of the CIA with one significant adjustment to an area north of the CIA plume. Recalibration was considered successful when the forward-migrated particles tracked closely with orientation of interpreted RDX plume. Also, capture zones for CIA-EW-001 and CIA-EW-002 were in agreement with what was predicted by TetraTech in 2012. And the capture zone for CIA-EW-003 was in agreement with what was predicted using the analytical solution developed by USACE. After the successful recalibration, the model was used to migrate particles for plume shell development.

Plume shell development began by querying EDMS for the RDX data in the CIA. The existing steady-state MODFLOW groundwater model was run for "average" conditions. The simulation was started at the earliest date of groundwater sample collection and ended at the present time. The representative groundwater extraction rates were used for the simulation period. Particles were initiated in MODPATH at locations and times of each sample collection point and migrate using results of the MODFLOW groundwater flow model then the MODPATH simulation was run to migrate particles (x, y, and z) to the present time. The model predicted x, y, z, and c values were imported to Excel and matched the particles with their respective measured concentrations. RDX concentrations are decayed (Max decay 55% after 5 year) according to Jacobs. Finally, values are imported to ArcView and use as a guide to manually develop plume contours representing 10 foot layers.

Plume layers and an animation of plume migration was displayed and discussed.

J-1 Range Southern Annual Environmental Monitoring Report Presentation

A presentation was provided on the J-1 Range Southern Annual Environmental Monitoring Report. During the reporting period (January 2016 to December 2016), eight of fourteen drivepoints and two groundwater profile borings with four new monitoring wells were completed off-base were completed. Also, since six drive points south of Greenway Road found RDX < 0.6 µg/L in all samples J1SEW0001 (on-base) was shut-off in January 2017 and J1SEW0002 (off-base) increased flow to 125 gallons per minute which is the capacity for the mobile treatment unit.

The J-1 Range Southern groundwater treatment system performance statistics were reviewed and discussed. During the reporting period, 63 million gallons of groundwater were treated and 0.37 pounds of RDX were removed.

Sampling locations, groundwater monitoring results, and trends were reviewed and discussed. In Zone 1 (source area) the maximum RDX concentration was 6.4 µg/L (MW-360M2). It was noted that the Zone 1 plume was depicted using the currently available data and is subject to revision based upon the completion of the remaining drive points. All sampling locations along the base boundary were non-detect for RDX in 2016.

In Zone 2, MW-524M1 has been less than 6 µg/L since October 2013. On Windsong Road, MW- 482M2 had an RDX concentration of 1.4 µg/L, which is the first time below the health advisory since 2011 and MW-645M1 had two detections between 1 to 1.5 µg/L. On Song Bird Circle, MW- 592M1 was consistent with 2015 (about 1 µg/L). In the leading edge eastern lobe, MW-646M1/M2 was non-detect in three samples in 2016. The leading edge showed 7.42 µg/L (MW-647M1) which is a decline from 9.1 µg/L and non-detects at MW-400M1/M2, MW-402M1/M2, MW-403M1/M2, MW-525M1/M2, MW-562M1, and MW-527M1. The western extent is constrained by NDs in MW-481M1/M2, MW-521M1, MW-522M1/M2, and the eastern extent is constrained by NDs in MW-591M1/M2.

An overview of the aquifer hydraulic monitoring and capture zone analysis was presented. There was one synoptic water level rounds (November 2016) and it was noted that the gradient was flatter compared to previous years and the downgradient stagnation point was farther away from J1SEW0002. For the capture zone analysis, capture zones were developed manually and by the model.

Decision Document cleanup timelines were discussed. The DD timeline of 2024 was originally based on the 2009 plume shell; however in the September 2011 project note for the leading edge well, the predicted cleanup year was 2032. Based on the 2015 plume shell, upgradient of J1SEW0001 is predicted to clean up by 2025; upgradient of J1SEW0002 is predicted to be less than 0.6 µg/ by 2036 and downgradient of J1SEW0002 will be less than 2.0 µg/ by 2045.

For Zone 1, IAGWSP recommends further delineating the RDX Plume by finishing the drivepoints in the source area and installing four new drive points between MW-360 and MW-528 on east side and potentially adding drive points upgradient of MW-360. Additionally, there are evaluations underway on alternative treatment technologies and the existing MTU to determine the need for further optimization. In Zone 2, IAGWSP recommends adding new wells MW-669M1/M2 and MW-670 M1/M2 to the sampling networks.

J-1 Range Northern Annual Environmental Monitoring Report Presentation

A presentation was provided on the J-1 Range Northern Annual Environmental Monitoring Report. During the reporting period (January 2016 to December 2016), two wells were installed along the eastern boundary of the plume. The J-1 Range Northern groundwater treatment system performance statistics were reviewed and discussed. During the reporting period, 127 million gallons of groundwater were treated, 0.65 pounds of perchlorate and 0.08 pounds of RDX were removed.

Sampling locations, groundwater monitoring results, and trends were reviewed and discussed. For perchlorate in Zone 1, it was noted that there is a declining trend in the trailing edge wells and mid-plume area. The maximum perchlorate concentration was 63.0 µg/L (MW-245M2). For RDX, there is a continued decreasing trend in the trailing well with a continued slight increasing trend in the mid-plume. The maximum RDX concentration was 77.4µg/L (MW-245M2).

For perchlorate in Zone 2, there is a continued decreasing trend in trailing edge while mid-plume wells are lower during the reporting period. The maximum perchlorate concentration was 35.2 µg/L (MW-564M1). For RDX, there is a continued non-detect in the trailing edge with a slight increasing trend in the mid-plume. The maximum RDX was 3.0 µg/L (MW-564M1).

An overview of the hydraulic monitoring and capture zone analysis was presented. It was noted that there was on synoptic water level round (October 2016) and hydraulic measurements were consistent with past results. For the capture zone analysis, capture zones were developed manually and by the model. Both the model predicted and observed capture zones include entire plumes. The observed capture zone appears to be slightly larger than the model predicted one.

Decision Document cleanup timelines were discussed. Based on the 2012 plume shell it is estimated that RDX cleanup ($< 0.6 \mu\text{g/L}$) will occur in 2046, perchlorate in 2038 ($< 2.0 \mu\text{g/L}$). At this time, the observed data does not indicate any obvious delays in cleanup timeline however, perchlorate detections in MW-370M1 above $2.0 \mu\text{g/L}$, if sustained, could impact cleanup timelines.

IAGWSP recommends making no modifications to treatment system operations. For the chemical monitoring network, IAGWSP recommends adding MW-688M1/2 and MW-689M1/2, removing source areas wells MW-136S, MW-168M2/M3, and MW-191M2, and reducing the sampling of MW-303M3 to annually for explosives. A 2017 plume shell update is in progress, the data cutoff is May 2017.

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Project and Fieldwork Update

The J-1 Range Southern drive point drilling began Monday and is scheduled to last approximately two weeks. They completed DP-691 and moved over to DP-692. Data should be available in approximately three weeks. Grain size sample data from the new CIA2 injection well pilot boring is expected tomorrow. USACE will then do a screen design and send it to the contractor and then will order the screen and schedule the rig to perform installation. EPA and MassDEP requested to see the screen design, IAGWSP said they would forward it to them. IAGWSP noted that once the well was installed and up and running, they would perform a synoptic water round. Groundwater sampling crews are performing annual sampling at the J-3 Range and will collect samples from Snake Pond at the end of the month. All of the treatment systems are up and running. EPA noted that the J-2 project note that is currently being implemented includes text about sampling of existing wells and proposing new wells. EPA recommended sampling the existing wells now, which may help inform where the new wells would go.

IAGWSP noted that they planned on having the UXO crews performing brush cutting around Former E. MassDEP supported the vegetation clearing on this former range. Crews will take a site visit Monday with Jake McCumber (Mass Guard Natural Resources Manager) to lay out where the fire breaks need to be.

In the Small Arms Ranges work is ongoing at three ranges. Additional lifts are required at the stockpile at D Range, Former B Range and C Range. The stockpile of 110 yards of hazardous soil at the B Range was shipped off-site so there are no soil currently stockpiled at the Small Arms Ranges. Still need to do additional lifts at C Range, D Range and Former B Range which may not happen until next fiscal year based on contract capacity.

In the Central Impact Area, the Metal Mapper Crew has de-mobilized. Tasks the crews will be working on are vegetation clearance, firebreaks and the BEM. Currently Dawson is digging in Phase III Area 1.

The status of tasks outlined in the May 2017 BEM project note was reviewed. All of the material has been removed, sifted and stockpiled. Samples of the stockpile need to be collected and the sample methodology is explained in the project note. A project note addendum was submitted this week. Figures showing how the original BEM was constructed and the new proposal for reconstruction were displayed and explained.

The new configuration increases the buffer area and the requirement for removal of fragmentation and refilling with sand. EPA and MassDEP will provide comments on the new project note.

EPA noted that IAGWSP can continue to use the BEM as long as it doesn't become a point source. IAGWSP noted that during the first two years of operation, sample results for materials collected inside of the BEM were below the S1/GW1 standard.

AECOM Technical Evaluation and Attenuation Study Update

IAGWSP noted that they are currently reviewing two AECOM reports; one on attenuation factors and one on screening of technologies. On the attenuation factor study, there's not a lot in the environment that's helping with natural attenuation of either RDX or perchlorate. AECOM is proposing that they perform a study of in-situ bacteria. On the screening of treatment technologies, they thought UV treatment, a mulch bed, and injecting vegetable-based material were three technologies worth pursuing further. USACE noted that they will ask AECOM to come to an upcoming tech meeting to discuss the reports.

Action Items

The action items were discussed and updated.

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 July to 31 July 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. 243 for June 2017 7/10/2017
- Final J-3 Range 2016 Interim Environmental Monitoring Report 7/05/2017
- Final J-3 Range J3EWIP2 Extraction Well Startup Monitoring Report 7/14/2017
- Draft Blow-in-Place (BIP) and Cracked Open Items Summary Report – 2016 Technical Memorandum 7/28/2017
- CIA Infiltration Well Installation – Gallery Replacement Project Note 7/31/2017

3. SCHEDULED ACTIONS

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

- Training Areas Draft Investigation Report;
- Training Areas Draft Remedy Selection Plan;
- CIA Draft Startup Report;
- 2016 CIA Source Removal Annual Report;
- Draft 2016 BIP and Cracked Open Items Summary Report;
- J-3 Range Confirmatory Geophysical and Soil Investigation Report;
- J-1 Range Northern and J-1 Range Southern 2017 Annual Environmental Monitoring Report;
- L Range 2017 Annual Environmental Monitoring Report;
- Five Year Review Report; and
- Small Arms Ranges 2017 Annual Environmental Monitoring Report

TABLE 1
Sampling Progress: 1 July to 31 July 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	90PZ0211	90PZ0211_F17	N	07/27/2017	Ground Water	80	110
J3 Range	90PZ0204	90PZ0204_F17	N	07/27/2017	Ground Water	80	85
J3 Range	LKSNK0006	LKSNK0006_F17	N	07/27/2017	Surface Water	0	1
J3 Range	LKSNK0007	LKSNK0007_F17	N	07/27/2017	Surface Water	0	4
J3 Range	LKSNK0005	LKSNK0005_F17	N	07/27/2017	Surface Water	0	4
L Range	MW-242M1	MW-242M1_F17	N	07/26/2017	Ground Water	235	245
L Range	MW-595M2	MW-595M2_F17	N	07/26/2017	Ground Water	205.3	215.3
L Range	MW-595M1	MW-595M1_F17	N	07/26/2017	Ground Water	255.3	265.3
L Range	MW-595M1	MW-595M1_F17D	FD	07/26/2017	Ground Water	255.3	265.3
L Range	MW-596M1	MW-596M1_F17	N	07/26/2017	Ground Water	231.1	241.1
L Range	90MW0034	90MW0034_F17	N	07/26/2017	Ground Water	94	99
J3 Range	MW-243M2	MW-243M2_F17	N	07/25/2017	Ground Water	84.5	94.5
J3 Range	MW-243M1	MW-243M1_F17	N	07/25/2017	Ground Water	114.5	124.5
J3 Range	90PLT01006	90PLT01006_F17	N	07/25/2017	Process Water	0	0
Central Impact Area	MW-629M2	MW-629M2_S17R	N	07/25/2017	Ground Water	186.9	196.9
Central Impact Area	MW-629M1	MW-629M1_S17R	N	07/25/2017	Ground Water	216.9	226.9
J3 Range	MW-197M3	MW-197M3_F17	N	07/24/2017	Ground Water	60.2	65.2
J3 Range	MW-197M3	MW-197M3_F17D	FD	07/24/2017	Ground Water	60.2	65.2
J3 Range	MW-197M2	MW-197M2_F17	N	07/24/2017	Ground Water	80.2	85.2
J3 Range	MW-198M4	MW-198M4_F17	N	07/24/2017	Ground Water	70	75
J3 Range	MW-198M4	MW-198M4_F17D	FD	07/24/2017	Ground Water	70	75
J3 Range	MW-198M3	MW-198M3_F17	N	07/24/2017	Ground Water	100	105
J3 Range	MW-198M2	MW-198M2_F17	N	07/24/2017	Ground Water	120	125
J3 Range	MW-198M1	MW-198M1_F17	N	07/24/2017	Ground Water	150	155
J3 Range	J3EWIP1	J3EWIP1_F17	N	07/19/2017	Ground Water	153	193
J3 Range	J3EWIP1	J3EWIP1_F17D	FD	07/19/2017	Ground Water	153	193
J3 Range	90MW0054	90MW0054_F17	N	07/19/2017	Ground Water	107	112
J3 Range	J3-MW-1-B	J3-MW-1-B_F17	N	07/19/2017	Ground Water	175.6	185.6
J3 Range	J3-MW-1-C	J3-MW-1-C_F17	N	07/19/2017	Ground Water	203.6	213.6
J3 Range	MW-343M2	MW-343M2_F17	N	07/18/2017	Ground Water	166.8	171.8
J3 Range	MW-343M1	MW-343M1_F17	N	07/18/2017	Ground Water	214.8	224.8
J3 Range	MW-637M3	MW-637M3_F17	N	07/18/2017	Ground Water	174.1	184.1
J3 Range	MW-637M2	MW-637M2_F17	N	07/18/2017	Ground Water	214.1	224.1
J3 Range	MW-637M2	MW-637M2_F17D	FD	07/18/2017	Ground Water	214.1	224.1
J3 Range	MW-227M1	MW-227M1_F17	N	07/18/2017	Ground Water	130	140
J3 Range	MW-250M1	MW-250M1_F17	N	07/18/2017	Ground Water	185	195
J3 Range	MW-637M1	MW-637M1_F17	N	07/17/2017	Ground Water	236.1	246.1
J3 Range	MW-329M2	MW-329M2_F17	N	07/17/2017	Ground Water	150.1	160.1
J3 Range	MW-329M1	MW-329M1_F17	N	07/17/2017	Ground Water	180	190
J3 Range	MW-247M3	MW-247M3_F17	N	07/17/2017	Ground Water	95	105
J3 Range	MW-247M2	MW-247M2_F17	N	07/17/2017	Ground Water	125	135
J3 Range	MW-247M1	MW-247M1_F17	N	07/17/2017	Ground Water	180	190
J3 Range	MW-250M3	MW-250M3_F17	N	07/13/2017	Ground Water	95	105
J3 Range	MW-250M3	MW-250M3_F17D	FD	07/13/2017	Ground Water	95	105
J3 Range	MW-250M2	MW-250M2_F17	N	07/13/2017	Ground Water	145	155
Central Impact Area	CIA2-EFF	CIA2-EFF-42A	N	07/13/2017	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-42A	N	07/13/2017	Process Water	0	0
J3 Range	MW-250M1	MW-250M1_F17	N	07/13/2017	Ground Water	185	195
Central Impact Area	CIA2-MID1	CIA2-MID1-42A	N	07/13/2017	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-42A	N	07/13/2017	Process Water	0	0
J3 Range	MW-157M3	MW-157M3_F17	N	07/13/2017	Ground Water	70	80
Central Impact Area	CIA1-EFF	CIA1-EFF-42A	N	07/13/2017	Process Water	0	0
J3 Range	MW-157M2	MW-157M2_F17	N	07/13/2017	Ground Water	110	120
Central Impact Area	CIA1-MID2	CIA1-MID2-42A	N	07/13/2017	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-42A	N	07/13/2017	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-42A	N	07/13/2017	Process Water	0	0
J3 Range	MW-157M1	MW-157M1_F17	N	07/13/2017	Ground Water	154	164

N = Normal Sample
 FD = Field Duplicate

TABLE 1
Sampling Progress: 1 July to 31 July 2017

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	CIA3-EFF	CIA3-EFF-13A	N	07/13/2017	Process Water	0	0
Central Impact Area	CIA3-MID2	CIA3-MID2-13A	N	07/13/2017	Process Water	0	0
Central Impact Area	CIA3-MID1	CIA3-MID1-13A	N	07/13/2017	Process Water	0	0
Central Impact Area	CIA3-INF	CIA3-INF-13A	N	07/13/2017	Process Water	0	0
J3 Range	MW-359M2	MW-359M2_F17	N	07/12/2017	Ground Water	148.6	158.6
J1 Range Southern	J1S-EFF	J1S-EFF-116A	N	07/12/2017	Process Water	0	0
J1 Range Southern	J1S-MID-2	J1S-MID-2-116A	N	07/12/2017	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-116A	N	07/12/2017	Process Water	0	0
J3 Range	J3-EFF	J3-EFF-130A	N	07/12/2017	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-130A	N	07/12/2017	Process Water	0	0
J3 Range	MW-193S	MW-193S_F17	N	07/12/2017	Ground Water	32.5	37.5
J3 Range	J3-MID-1	J3-MID-1-130A	N	07/12/2017	Process Water	0	0
J3 Range	J3-INF	J3-INF-130A	N	07/12/2017	Process Water	0	0
J3 Range	MW-227M3	MW-227M3_F17	N	07/12/2017	Ground Water	65	75
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-130A	N	07/12/2017	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-130A	N	07/12/2017	Process Water	0	0
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-130A	N	07/12/2017	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-130A	N	07/12/2017	Process Water	0	0
J3 Range	MW-227M2	MW-227M2_F17	N	07/12/2017	Ground Water	110	120
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-130A	N	07/12/2017	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-130A	N	07/12/2017	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-130A	N	07/12/2017	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-130A	N	07/12/2017	Process Water	0	0
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-130A	N	07/12/2017	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-130A	N	07/12/2017	Process Water	0	0
J1 Range Northern	J1N-EFF	J1N-EFF-45A	N	07/12/2017	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-45A	N	07/12/2017	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-45A	N	07/12/2017	Process Water	0	0
J1 Range Northern	J1N-INF2	J1N-INF2-45A	N	07/12/2017	Process Water	0	0
J3 Range	MW-163S	MW-163S_F17	N	07/11/2017	Ground Water	38	48
J3 Range	MW-163S	MW-163S_F17D	FD	07/11/2017	Ground Water	38	48
J3 Range	MW-232M2	MW-232M2_F17	N	07/11/2017	Ground Water	61	66
J3 Range	MW-232M1	MW-232M1_F17	N	07/11/2017	Ground Water	77.5	82.5
J3 Range	MW-193M1	MW-193M1_F17	N	07/11/2017	Ground Water	57.5	62.5
J3 Range	MW-155M1	MW-155M1_F17	N	07/11/2017	Ground Water	124	134
J3 Range	MW-142M2	MW-142M2_F17	N	07/10/2017	Ground Water	140	150
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-106A	N	07/10/2017	Process Water	0	0
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-106A	N	07/10/2017	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-106A	N	07/10/2017	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-106A	N	07/10/2017	Process Water	0	0
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-106A	N	07/10/2017	Process Water	0	0
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-106A	N	07/10/2017	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-106A	N	07/10/2017	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-106A	N	07/10/2017	Process Water	0	0
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-106A	N	07/10/2017	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-106A	N	07/10/2017	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-106A	N	07/10/2017	Process Water	0	0
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-106A	N	07/10/2017	Process Water	0	0
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-106A	N	07/10/2017	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-106A	N	07/10/2017	Process Water	0	0
Demolition Area 1	PR-EFF	PR-EFF-136A	N	07/10/2017	Process Water	0	0
Demolition Area 1	PR-MID-2	PR-MID-2-136A	N	07/10/2017	Process Water	0	0
J3 Range	MW-143M3	MW-143M3_F17	N	07/10/2017	Ground Water	107	112
Demolition Area 1	PR-MID-1	PR-MID-1-136A	N	07/10/2017	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-136A	N	07/10/2017	Process Water	0	0
J3 Range	MW-143M2	MW-143M2_F17	N	07/10/2017	Ground Water	117	122
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-136A	N	07/10/2017	Process Water	0	0

TABLE 1
Sampling Progress: 1 July to 31 July 2017

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-136A	N	07/10/2017	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-136A	N	07/10/2017	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-136A	N	07/10/2017	Process Water	0	0
J3 Range	MW-143M1	MW-143M1_F17	N	07/10/2017	Ground Water	144	154
Demolition Area 1	D1-EFF	D1-EFF-84A	N	07/10/2017	Process Water	0	0
Demolition Area 1	D1-MID-2	D1-MID-2-84A	N	07/10/2017	Process Water	0	0
Demolition Area 1	D1-MID-1	D1-MID-1-84A	N	07/10/2017	Process Water	0	0
Demolition Area 1	D1-INF	D1-INF-84A	N	07/10/2017	Process Water	0	0
Demolition Area 1	D1LE-EFF	D1LE-EFF-12A	N	07/10/2017	Process Water	0	0
Demolition Area 1	D1LE-MID2	D1LE-MID2-12A	N	07/10/2017	Process Water	0	0
Demolition Area 1	D1LE-MID1	D1LE-MID1-12A	N	07/10/2017	Process Water	0	0
J3 Range	MW-144M2	MW-144M2_F17	N	07/10/2017	Ground Water	130	140
Demolition Area 1	D1LE-INF	D1LE-INF-12A	N	07/10/2017	Process Water	0	0

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
 Data Received July 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-545M4	MW-545M4_S17	72	82	06/28/2017	SW6850	Perchlorate	0.54		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-545M2	MW-545M2_S17	142	152	06/28/2017	SW6850	Perchlorate	1.8		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-545M1	MW-545M1_S17	162	172	06/28/2017	SW6850	Perchlorate	0.58		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-659M2	MW-659M2_S17	85	95	06/27/2017	SW6850	Perchlorate	0.20		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-659M1	MW-659M1_S17	120	130	06/27/2017	SW6850	Perchlorate	1.3		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-641M2	MW-641M2_S17	86.2	96.2	06/27/2017	SW6850	Perchlorate	0.60		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-641M1	MW-641M1_S17	113.2	123.2	06/27/2017	SW6850	Perchlorate	2.5		ug/L	2.0	X	0.019	0.20
Demolition Area 1	MW-642M2	MW-642M2_S17	77.3	87.3	06/27/2017	SW6850	Perchlorate	0.19	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-642M1	MW-642M1_S17	104.3	114.3	06/27/2017	SW6850	Perchlorate	0.22		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-558M2	MW-558M2_S17	98	108	06/26/2017	SW6850	Perchlorate	0.21	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-558M1	MW-558M1_S17	134	144	06/26/2017	SW6850	Perchlorate	0.45		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-559M2	MW-559M2_S17	87	97	06/26/2017	SW6850	Perchlorate	0.15	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-559M1	MW-559M1_S17	135.6	145.6	06/26/2017	SW6850	Perchlorate	0.76		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-432	MW-432_S17	88	188	06/26/2017	SW6850	Perchlorate	0.082	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-554M2	MW-554M2_S17	89.1	99.1	06/26/2017	SW6850	Perchlorate	0.22		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-554M1	MW-554M1_S17	120	130	06/26/2017	SW6850	Perchlorate	0.16	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-554M1	MW-554M1_S17D	120	130	06/26/2017	SW6850	Perchlorate	0.21		ug/L	2.0		0.019	0.20
B Range	MW-537M1	MW-537M1_S17R	106	116	06/22/2017	SW6020A	Antimony	0.37	J	ug/L	0.60		0.18	2.0
B Range	MW-537M1	MW-537M1_S17R	106	116	06/22/2017	SW6020A	Tungsten	0.38	J	ug/L		X	0.14	2.0
B Range	MW-537M1	MW-537M1_S17R	106	116	06/22/2017	SW6010C	Copper	8.1	J	ug/L		X	1.7	25.0
B Range	MW-537M1	MW-537M1_S17F	106	116	06/22/2017	SW6020A	Tungsten	0.30	J	ug/L		X	0.14	2.0
B Range	MW-537M1	MW-537M1_S17F	106	116	06/22/2017	SW6020A	Antimony	0.58	J	ug/L	0.60		0.18	2.0
	03MW0122A	03MW0122A_S17	83.4	93.4	06/22/2017	SW6010C	Copper	2.1	J	ug/L		X	1.7	25.0
Demolition Area 1	MW-571M2	MW-571M2_S17	74	84	06/21/2017	SW6850	Perchlorate	0.55		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-571M1	MW-571M1_S17	114	124	06/21/2017	SW6850	Perchlorate	1.5		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-569M2	MW-569M2_S17	84	94	06/21/2017	SW6850	Perchlorate	1.3		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-569M1	MW-569M1_S17	114	124	06/21/2017	SW6850	Perchlorate	0.80		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-569M1	MW-569M1_S17D	114	124	06/21/2017	SW6850	Perchlorate	0.80		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-582M2	MW-582M2_S17	84	94	06/21/2017	SW6850	Perchlorate	1.5		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-582M1	MW-582M1_S17	134	144	06/21/2017	SW6850	Perchlorate	4.1		ug/L	2.0	X	0.019	0.20
Demolition Area 1	MW-582M1	MW-582M1_S17D	134	144	06/21/2017	SW6850	Perchlorate	3.9		ug/L	2.0	X	0.019	0.20
Demolition Area 1	MW-556M2	MW-556M2_S17	111	121	06/20/2017	SW6850	Perchlorate	0.21		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-556M1	MW-556M1_S17	153	163	06/20/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.25	J	ug/L	0.60		0.025	0.20
Demolition Area 1	MW-556M1	MW-556M1_S17	153	163	06/20/2017	SW6850	Perchlorate	2.3		ug/L	2.0	X	0.019	0.20
Demolition Area 1	MW-610M2	MW-610M2_S17	85	95	06/20/2017	SW6850	Perchlorate	0.59		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-610M1	MW-610M1_S17	110	120	06/20/2017	SW6850	Perchlorate	1.4		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-598M2	MW-598M2_S17	88	98	06/20/2017	SW6850	Perchlorate	0.93		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-598M1	MW-598M1_S17	122	132	06/20/2017	SW6850	Perchlorate	3.2		ug/L	2.0	X	0.019	0.20
Demolition Area 1	MW-546M2	MW-546M2_S17	100	110	06/19/2017	SW6850	Perchlorate	0.074	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-546M1	MW-546M1_S17	140	150	06/19/2017	SW6850	Perchlorate	0.12	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-597M2	MW-597M2_S17	118	128	06/19/2017	SW6850	Perchlorate	0.065	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-597M1	MW-597M1_S17	148	158	06/19/2017	SW6850	Perchlorate	0.16	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-353M1	MW-353M1_S17	107	117	06/19/2017	SW6850	Perchlorate	0.14	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 July 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-431	MW-431_S17	88	188	06/15/2017	SW6850	Perchlorate	0.12	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-431	MW-431_S17	88	188	06/15/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.26		ug/L	0.60		0.025	0.20
Demolition Area 1	EW-658	EW-658_S17	96	136	06/15/2017	SW6850	Perchlorate	0.055	J	ug/L	2.0		0.019	0.20
Demolition Area 1	EW-658	EW-658_S17	96	136	06/15/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.26	J	ug/L	0.60		0.025	0.20
Demolition Area 1	EW-658	EW-658_S17D	96	136	06/15/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.30	J	ug/L	0.60		0.025	0.20
Central Impact Area	MW-686M2	MW-686M2_S17	194.3	204.3	06/15/2017	SW6850	Perchlorate	0.078	J	ug/L	2.0		0.019	0.20
Central Impact Area	MW-686M2	MW-686M2_S17	194.3	204.3	06/15/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.68		ug/L	0.60	X	0.025	0.20
Central Impact Area	MW-686M1	MW-686M1_S17	243.2	253.2	06/15/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.20		ug/L	0.60		0.025	0.20
Central Impact Area	MW-687M2	MW-687M2_S17	188	198	06/15/2017	SW6850	Perchlorate	0.021	J	ug/L	2.0		0.019	0.20
Central Impact Area	MW-687M2	MW-687M2_S17	188	198	06/15/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.27		ug/L	0.60		0.025	0.20
J1 Range Northern	MW-688M2	MW-688M2_S17	227.8	237.8	06/14/2017	SW6850	Perchlorate	0.027	J	ug/L	2.0		0.019	0.20
J1 Range Northern	MW-688M1	MW-688M1_S17	255.2	265.2	06/14/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.22	J	ug/L	0.60		0.025	0.20
J1 Range Northern	MW-689M2	MW-689M2_S17	231.4	241.4	06/14/2017	SW6850	Perchlorate	0.46		ug/L	2.0		0.019	0.20
J1 Range Northern	MW-689M1	MW-689M1_S17	253.5	263.5	06/14/2017	SW6850	Perchlorate	0.22		ug/L	2.0		0.019	0.20
CS-10 (ARNG)	03MW0709	03MW0709_S17	82.1	87.1	06/13/2017	SW6010C	Copper	43.4		ug/L		X	1.7	25.0
CS-10 (ARNG)	03MW0709	03MW0709_S17	82.1	87.1	06/13/2017	SW6010C	Lead	7.6	J	ug/L	15.0		2.7	10.0
Demolition Area 1	MW-352M1	MW-352M1_S17	115	125	06/12/2017	SW6850	Perchlorate	0.11	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-611M2	MW-611M2_S17	91	101	06/08/2017	SW6850	Perchlorate	1.8		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-611M1	MW-611M1_S17	141	151	06/08/2017	SW6850	Perchlorate	2.2		ug/L	2.0	X	0.019	0.20
Northwest Corner	RSNW06	RSNW06_S17	0	0	06/08/2017	SW6850	Perchlorate	0.53		ug/L	2.0		0.019	0.20
Central Impact Area	MW-638M2	MW-638M2_S17	204.2	214.2	06/08/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.24		ug/L	0.60		0.025	0.20
Central Impact Area	MW-629M2	MW-629M2_S17	186.9	196.9	06/08/2017	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.94		ug/L	400		0.019	0.20
Central Impact Area	MW-629M2	MW-629M2_S17	186.9	196.9	06/08/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	7.5		ug/L	0.60	X	0.025	0.20
Central Impact Area	MW-629M1	MW-629M1_S17	216.9	226.9	06/07/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.90		ug/L	0.60	X	0.025	0.20
Central Impact Area	MW-629M1	MW-629M1_S17D	216.9	226.9	06/07/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.91		ug/L	0.60	X	0.025	0.20
Central Impact Area	MW-223M1	MW-223M1_S17	211	221	06/07/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.63		ug/L	0.60	X	0.025	0.20
Central Impact Area	MW-607M3	MW-607M3_S17	157.4	167.4	06/07/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.3		ug/L	0.60	X	0.025	0.20
Central Impact Area	MW-607M2	MW-607M2_S17	177.4	187.4	06/07/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	4.2		ug/L	0.60	X	0.025	0.20
Central Impact Area	MW-607M2	MW-607M2_S17D	177.4	187.4	06/07/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	4.1		ug/L	0.60	X	0.025	0.20
Central Impact Area	MW-607M1	MW-607M1_S17	207.4	217.4	06/06/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.1		ug/L	0.60	X	0.025	0.20
Central Impact Area	MW-608M2	MW-608M2_S17	253.4	263.4	06/06/2017	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.27	J	ug/L	400		0.019	0.20
Central Impact Area	MW-608M2	MW-608M2_S17	253.4	263.4	06/06/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	4.1		ug/L	0.60	X	0.025	0.20
Central Impact Area	MW-608M2	MW-608M2_S17D	253.4	263.4	06/06/2017	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.27	J	ug/L	400		0.019	0.20
Central Impact Area	MW-608M2	MW-608M2_S17D	253.4	263.4	06/06/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	4.2		ug/L	0.60	X	0.025	0.20
Central Impact Area	MW-608M1	MW-608M1_S17	267.4	277.4	06/06/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.0		ug/L	0.60	X	0.025	0.20
Central Impact Area	MW-608M1	MW-608M1_S17D	267.4	277.4	06/06/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.0		ug/L	0.60	X	0.025	0.20
Demolition Area 1	MW-533M1	MW-533M1_S17	160	170	06/05/2017	SW6850	Perchlorate	4.0		ug/L	2.0	X	0.019	0.20
Demolition Area 1	MW-531M1	MW-531M1_S17	138	148	06/05/2017	SW6850	Perchlorate	1.8		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-542M1	MW-542M1_S17	144	154	06/05/2017	SW6850	Perchlorate	0.25		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-532M2	MW-532M2_S17	138	148	06/05/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.77		ug/L	0.60	X	0.025	0.20
Demolition Area 1	MW-532M2	MW-532M2_S17	138	148	06/05/2017	SW6850	Perchlorate	5.7		ug/L	2.0	X	0.019	0.20
Demolition Area 1	MW-532M1	MW-532M1_S17	168	178	06/05/2017	SW6850	Perchlorate	0.27		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-274	MW-274_S17	109	199	06/01/2017	SW6850	Perchlorate	0.15	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 July 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-433	MW-433_S17	180.2	190.2	06/01/2017	SW6850	Perchlorate	0.033	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-248M3	MW-248M3_S17	143	153	06/01/2017	SW6850	Perchlorate	0.061	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-248M2	MW-248M2_S17	178	188	06/01/2017	SW6850	Perchlorate	0.023	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-248M1	MW-248M1_S17	216.3	226.3	06/01/2017	SW6850	Perchlorate	0.099	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-258M1	MW-258M1_S17	109	119	05/31/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.6		ug/L	0.60	X	0.025	0.20
Demolition Area 1	MW-258M1	MW-258M1_S17	109	119	05/31/2017	SW6850	Perchlorate	13.1		ug/L	2.0	X	0.019	0.20
Demolition Area 1	MW-258M1	MW-258M1_S17D	109	119	05/31/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.6		ug/L	0.60	X	0.025	0.20
Demolition Area 1	MW-258M1	MW-258M1_S17D	109	119	05/31/2017	SW6850	Perchlorate	12.7		ug/L	2.0	X	0.019	0.20
Demolition Area 1	MW-210M2	MW-210M2_S17	156	166	05/31/2017	SW6850	Perchlorate	0.36		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-210M1	MW-210M1_S17	201	211	05/31/2017	SW6850	Perchlorate	0.21		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-139M2	MW-139M2_S17	154	164	05/30/2017	SW6850	Perchlorate	0.083	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-165M2	MW-165M2_S17	124.5	134.5	05/30/2017	SW6850	Perchlorate	0.084	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-341M2	MW-341M2_S17	264.5	269.5	05/25/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.80		ug/L	0.60	X	0.025	0.20
Demolition Area 1	MW-341M2	MW-341M2_S17	264.5	269.5	05/25/2017	SW6850	Perchlorate	3.3		ug/L	2.0	X	0.019	0.20
Demolition Area 1	MW-341M2	MW-341M2_S17D	264.5	269.5	05/25/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.82		ug/L	0.60	X	0.025	0.20
Demolition Area 1	MW-341M2	MW-341M2_S17D	264.5	269.5	05/25/2017	SW6850	Perchlorate	3.2		ug/L	2.0	X	0.019	0.20
Demolition Area 1	MW-211M2	MW-211M2_S17	175	185	05/24/2017	SW6850	Perchlorate	0.077	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-211M1	MW-211M1_S17	200	210	05/24/2017	SW6850	Perchlorate	0.18	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-173M2	MW-173M2_S17	208	218	05/24/2017	SW6850	Perchlorate	0.33		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-231M2	MW-231M2_S17	165.5	175.5	05/24/2017	SW6850	Perchlorate	0.50		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-231M1	MW-231M1_S17	210.5	220.5	05/24/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.5		ug/L	0.60	X	0.025	0.20
Demolition Area 1	MW-231M1	MW-231M1_S17	210.5	220.5	05/24/2017	SW6850	Perchlorate	5.5		ug/L	2.0	X	0.019	0.20
Demolition Area 1	MW-231M1	MW-231M1_S17D	210.5	220.5	05/24/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.5		ug/L	0.60	X	0.025	0.20
Demolition Area 1	MW-231M1	MW-231M1_S17D	210.5	220.5	05/24/2017	SW6850	Perchlorate	5.3		ug/L	2.0	X	0.019	0.20
Demolition Area 1	MW-240M2	MW-240M2_S17	125	135	05/23/2017	SW6850	Perchlorate	0.21		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-240M1	MW-240M1_S17	198	208	05/23/2017	SW6850	Perchlorate	0.068	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-225M3	MW-225M3_S17	125	135	05/23/2017	SW6850	Perchlorate	0.052	J	ug/L	2.0		0.019	0.20
Demolition Area 1	MW-225M1	MW-225M1_S17	175	185	05/23/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.20	J	ug/L	0.60		0.025	0.20
Demolition Area 1	MW-225M1	MW-225M1_S17	175	185	05/23/2017	SW6850	Perchlorate	0.43		ug/L	2.0		0.019	0.20
Demolition Area 1	MW-73S	MW-73S_S17	52.2	61.7	05/16/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.24		ug/L	0.60		0.025	0.20
Demolition Area 1	MW-19S	MW-19S_S17	52.7	62.7	05/16/2017	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.57		ug/L	400		0.019	0.20
Demolition Area 1	MW-19S	MW-19S_S17	52.7	62.7	05/16/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.9		ug/L	0.60	X	0.025	0.20
Demolition Area 1	MW-19S	MW-19S_S17D	52.7	62.7	05/16/2017	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.55		ug/L	400		0.019	0.20
Demolition Area 1	MW-19S	MW-19S_S17D	52.7	62.7	05/16/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.0		ug/L	0.60	X	0.025	0.20
Demolition Area 1	MW-31S	MW-31S_S17	98	103	05/15/2017	SW8330	4-Amino-2,6-dinitrotoluene	0.26		ug/L	7.3		0.023	0.20
Demolition Area 1	MW-31S	MW-31S_S17	98	103	05/15/2017	SW8330	2-Amino-4,6-dinitrotoluene	0.27		ug/L	7.3		0.023	0.20
Demolition Area 1	MW-31S	MW-31S_S17	98	103	05/15/2017	SW8330	2,4,6-Trinitrotoluene	1.1		ug/L	2.0		0.028	0.20
Demolition Area 1	MW-31S	MW-31S_S17	98	103	05/15/2017	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.1		ug/L	400		0.019	0.20
Demolition Area 1	MW-31S	MW-31S_S17	98	103	05/15/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.3		ug/L	0.60	X	0.025	0.20
Demolition Area 1	MW-31S	MW-31S_S17D	98	103	05/15/2017	SW8330	2-Amino-4,6-dinitrotoluene	0.27		ug/L	7.3		0.023	0.20
Demolition Area 1	MW-31S	MW-31S_S17D	98	103	05/15/2017	SW8330	4-Amino-2,6-dinitrotoluene	0.27		ug/L	7.3		0.023	0.20
Demolition Area 1	MW-31S	MW-31S_S17D	98	103	05/15/2017	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.1		ug/L	400		0.019	0.20
Demolition Area 1	MW-31S	MW-31S_S17D	98	103	05/15/2017	SW8330	2,4,6-Trinitrotoluene	1.1		ug/L	2.0		0.028	0.20

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 MDL = Method Detection Limit
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TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
 Data Received July 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-31S	MW-31S_S17D	98	103	05/15/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.3		ug/L	0.60	X	0.025	0.20
Demolition Area 1	MW-31M	MW-31M_S17	113	123	05/15/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.65		ug/L	0.60	X	0.025	0.20
Demolition Area 1	MW-31M	MW-31M_S17D	113	123	05/15/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.66		ug/L	0.60	X	0.025	0.20
J2 Range Eastern	MW-685M1	MW-685M1_R2	166.2	176.2	05/09/2017	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.40		ug/L	400		0.019	0.20
J2 Range Eastern	MW-685M1	MW-685M1_R2	166.2	176.2	05/09/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.42		ug/L	0.60		0.025	0.20
J2 Range Eastern	MW-685M1	MW-685M1_R2	166.2	176.2	05/09/2017	SW6850	Perchlorate	0.63		ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-668M1	MW-668M1_R2	168.7	178.7	05/09/2017	SW6850	Perchlorate	11.5		ug/L	2.0	X	0.019	0.20
J2 Range Eastern	MW-668M1	MW-668M1_R2D	168.7	178.7	05/09/2017	SW6850	Perchlorate	11.3		ug/L	2.0	X	0.019	0.20
J2 Range Eastern	MW-665M3	MW-665M3_R2	175.2	185.2	05/09/2017	SW6850	Perchlorate	4.3		ug/L	2.0	X	0.019	0.20
J2 Range Eastern	MW-665M2	MW-665M2_R2	205.2	215.2	05/09/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.3		ug/L	0.60	X	0.025	0.20
J2 Range Eastern	MW-665M2	MW-665M2_R2	205.2	215.2	05/09/2017	SW6850	Perchlorate	5.6		ug/L	2.0	X	0.019	0.20
J2 Range Eastern	MW-665M2	MW-665M2_R2D	205.2	215.2	05/09/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.3		ug/L	0.60	X	0.025	0.20
J2 Range Eastern	MW-665M1	MW-665M1_R2	225.2	235.2	05/09/2017	SW6850	Perchlorate	0.15	J	ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-666M3	MW-666M3_R2	199.8	209.8	05/08/2017	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.23	J	ug/L	400		0.019	0.20
J2 Range Eastern	MW-666M3	MW-666M3_R2	199.8	209.8	05/08/2017	SW6850	Perchlorate	2.3		ug/L	2.0	X	0.019	0.20
J2 Range Eastern	MW-666M2	MW-666M2_R2	219.8	229.8	05/08/2017	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.32		ug/L	400		0.019	0.20
J2 Range Eastern	MW-666M2	MW-666M2_R2	219.8	229.8	05/08/2017	SW6850	Perchlorate	2.2		ug/L	2.0	X	0.019	0.20
J2 Range Eastern	MW-666M1	MW-666M1_R2	244.8	254.8	05/08/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.20		ug/L	0.60		0.025	0.20
J2 Range Eastern	MW-666M1	MW-666M1_R2	244.8	254.8	05/08/2017	SW6850	Perchlorate	5.3		ug/L	2.0	X	0.019	0.20
J2 Range Eastern	MW-667M2	MW-667M2_R2	277.3	287.3	05/08/2017	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.61		ug/L	400		0.019	0.20
J2 Range Eastern	MW-667M2	MW-667M2_R2	277.3	287.3	05/08/2017	SW6850	Perchlorate	1.5		ug/L	2.0		0.019	0.20
J2 Range Eastern	MW-667M2	MW-667M2_R2	277.3	287.3	05/08/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.5		ug/L	0.60	X	0.025	0.20
J2 Range Eastern	MW-667M2	MW-667M2_R2D	277.3	287.3	05/08/2017	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.61		ug/L	400		0.019	0.20
J2 Range Eastern	MW-667M2	MW-667M2_R2D	277.3	287.3	05/08/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.5		ug/L	0.60	X	0.025	0.20
J2 Range Eastern	MW-667M1	MW-667M1_R2	302.3	312.3	05/08/2017	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.2	J	ug/L	0.60	X	0.025	0.20
J2 Range Eastern	MW-667M1	MW-667M1_R2	302.3	312.3	05/08/2017	SW6850	Perchlorate	4.3		ug/L	2.0	X	0.019	0.20
IBC RANGE	MW-652S	MW-652S_R3	106	116	05/08/2017	SW6850	Perchlorate	0.095	J	ug/L	2.0		0.019	0.20

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