MONTHLY PROGRESS REPORT #210
FOR SEPTEMBER 2014

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 September to 30 September 2014.

1. SUMMARY OF REMEDIATION ACTIONS

The following is a description of Remediation Actions (RA) underway at Camp Edwards as of September 2014. Remediation Actions may include Rapid Response Actions (RRA). An RRA is an interim action that may be conducted prior to risk assessments or remedial investigations to address a known, ongoing threat of contamination to groundwater and/or soil.

Demolition Area 1 Comprehensive Groundwater RA

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

The Frank Perkins Road Treatment Facility has been optimized as part of the Environmental and System Performance Monitoring (ESPM) program at Demolition Area 1. The treatment facility was operating at a flow rate of 250 gpm with over 2.119 billion gallons of water treated and re-injected as of 26 September 2014. No Frank Perkins Road facility shut downs occurred in September.

The Pew Road Mobile Treatment Unit (MTU) continues to operate at a flow rate of 105 gpm with over 380 million gallons of water treated and re-injected as of 26 September 2014. The following Pew Road MTU shut down occurred in September:

- Shut down on 22 September 2014 at 0752 due to a power interruption, and restarted on 22 September 2014 at 0903.

The Base Boundary RA continues to operate at a flow rate of 65 gpm with over 89.4 million gallons of water treated and re-injected as of 26 September 2014. No Base Boundary MTU shut downs occurred in September.

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 26 September 2014, over 230 million gallons of water have been treated and re-injected. The following J-1 Range Southern system shut downs occurred in September:

- Shut down on 30 August 2014 at 0649 due to a system alarm, and restarted on 2 September 2014 at 1145; and
- Shut down on 16 September 2014 at 0837 due to system alarms, and restarted on 16 September 2014 at 1225.

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 26 September 2014, over 95 million gallons of water have been treated and re-injected. No J-1 Range Northern MTU shut downs occurred in September.

J-3 Range Groundwater RRA

The J-3 Range Groundwater RRA consists of removal and treatment of contaminated groundwater to control further migration of explosives compounds and perchlorate. The ETR system includes three extraction wells, ex-situ treatment process to remove explosives compounds and perchlorate from the groundwater and use of the existing Fuel Spill-12 (FS-12) infiltration gallery to return treated water to the aquifer.

The J-3 system continues to operate at a flow rate of 195 gpm. As of 26 September 2014, over 752 million gallons of water have been treated and re-injected. The following J-3 system shut down occurred in September:

- Shut down on 23 September 2014 at 1250 to prepare for an ion exchange media change-out, and restarted on 25 September at 0835.

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 Infiltration (ETI) 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 26 September 2014, over 536 million gallons of water have been treated and re-injected. No Northern Treatment Building shut downs occurred in September.

The Northern MTUs E and F continue to operate at a flow rate of 250 gpm. As of 26 September 2014, over 928 million gallons of water have been treated and re-injected. No J-2 Range Northern MTU shut downs occurred in September.

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 26 September 2014, over 618 million gallons of water have been treated and re-injected. No shut downs of MTUs H and I occurred in September.

MTU J continues to operate at a flow rate of 120 gpm. As of 26 September 2014, over 290 million gallons of water have been treated and re-injected. No shut downs of MTU J occurred in September.

MTU K continues to operate at a flow rate of 125 gpm. As of 26 September 2014, over 353 million gallons of water have been treated and re-injected. No shut downs of MTU K occurred in September.

Central Impact Area RA

The Central Impact Area (CIA) Groundwater treatment facility consists of removal and treatment of groundwater to minimize downgradient migration of explosives compounds and perchlorate. The ETR system includes the following components: two extraction wells, an ex-situ treatment process consisting of an ion exchange (IX) resin and granular activated carbon (GAC) media to treat explosives compounds and two infiltration galleries to return treated water to the aquifer. The CIA systems 1 and 2 continue to run at a combined total flow rate of 500 gpm. As of 26 September 2014, over 177 million gallons of water have been treated and re-injected. No CIA treatment facility shutdowns occurred in September.

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, 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 from the CIA, Demolition Area 1, J-2 Range Eastern, J-2 Range Northern, J-3 Range, Western Boundary, and Former A Range.

Profile Samples were collected from Demolition Area 1 (BH-641 and BH-642).

Soil samples were collected from the Small Arms Ranges (Former C Range).

Completed vegetation and surface clearance at J-2 Range.

Completed collection of cued Metal Mapper data 16-Acre area, initiated de-mobilization operations for Metal Mapper, and continued vegetation clearance at CIA Phase II 10-acre area.

JBCC IAGWSP Tech Update Meeting Minutes 25 September 2014

Project and Fieldwork Update
An update was provided on Central Impact Area fieldwork. Figures depicting clearance work to date were shown. There are two metal mapper teams operating. An update was provided on source work at the J-2 Range. Brush clearance has been completed. UXO clearance at the meandering path is underway. When contracts are awarded, intrusive investigations will occur at three anomalies. EPA noted that they would be submitting a letter regarding the recent discoveries at the range. Training Areas fieldwork was discussed. It was noted that IAGWSP would be providing a draft layout for the meandering path for the KD and IBC Ranges soon and the fieldwork should begin next month.

Drilling Update
Drilling on the two monitoring well locations on Michael Road in Pocasset began on September 22nd. Drilling was completed on the first location. Samples were collected from 60 through 166 feet and data should be available by the end of the week. A screen setting call will be scheduled for early next week. Although the second location was originally planned to be contingent on the results from the first, IAGWSP proposed moving forward to drill it regardless of the results. The agencies agreed with this approach.

Demo 1
An update was provided on the appraisal of property in Pocasset. USACE is still waiting to hear back from the Mendes family and planned to check in with them at the end of the week. USACE is working on drafting the easement documentation. IAGWSP will continue to provide updates of progress at tech meetings.

Small Arms Ranges
The Small Arms Ranges sampling results were displayed and discussed. MassDEP requested the QA/QC package from the laboratory because a number of the results were qualified.

Action Items
The action items were discussed and updated.

Demolition Area 2 Groundwater Monitoring Presentation
A presentation was provided on the Demolition Area 2 Annual Environmental Monitoring Report. It was explained that the draft report was submitted to agencies in early September, and covers sampling results from June 2014 through June 2014. Groundwater monitoring results and trends were reviewed. It was noted that RDX was detected in 9 of 19 monitoring well samples and the maximum detection during the reporting period was 2.7 µg/L. A comparison to the 2010 Decision Document cleanup estimates was provided. It was noted that the DD predicted RDX concentrations would be below the 2 µg/L health advisory in 2011 and below the risk-based level of 0.6 µg/L in 2013. However, during this reporting period RDX was detected at 2.7 µg/L in MW-523M2 and MW-161S, MW-572M1 and MW-573M2 had detections

exceeding 0.6 µg/L. EPA and MassDEP's comments on the annual report were reviewed. EPA requested a reassessment of the restoration timeframes to include a decision document addendum with new estimates. Both EPA and MassDEP requested modeling and particle tracking be completed to determine locations for new monitoring wells along the base boundary. Next steps were reviewed. They include approval of proposed well locations, provide a response to comments/request for extension letter, the development of a new plume shell and a run of the transport model and revise the Decision Document with new attenuation timeline (Due 16 Jan 2015). Proposed well locations were displayed and discussed. It was suggested to defer finalizing the new monitoring well locations until the plume shell could be updated and the fate and transport models could be run. IAGWSP noted that they would be providing responses to comments letter next week.

JBCC Cleanup Team Meeting

The next meeting of the JBCC Cleanup Team (JBCCCT), formerly the MMR Cleanup Team (MMRCT) is scheduled to meet on October 15, 2014. The Cleanup Team meeting discusses late breaking news and responses to action items, as well as updates from the IAGWSP and 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 September through 30 September 2014. 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, Jonathan Bourne Library, Falmouth Public Library, and Sandwich Public Library).

2. DELIVERABLES SUBMITTED

Deliverables submitted during the reporting period include the following:

- Monthly Progress Report No. 209 for August 2014 9/10/2014
- Draft Demolition Area 2 2014 Annual Environmental Monitoring Report 9/04/2014
- Draft J-2 Range Eastern Environmental Monitoring Work Plan and J-2 Range Northern Environmental Monitoring Work Plan 9/11/2014
- Project Note – Optimization of J-1 Range Northern and Southern Chemical and Hydraulic Monitoring Well Networks 9/19/2014
- Draft Central Impact 2014 Interim Environmental Monitoring Report 9/23/2014
- Draft Blown-in-Place (BIP) Summary Report 2013 9/24/2014
- Project Note – Excavation of 90-foot x 90-foot Grid at CIA Consolidate Shot Location 9/24/2014
- Draft Western Boundary 2014 Annual Environmental Monitoring Report 9/26/2014
- Final J-1 Range Southern 6-Month System Startup Monitoring Report 9/30/2014

3. SCHEDULED ACTIONS

The following documents are being prepared or revised during October 2014:

- CIA Project Note for ESTCP Metal Mapper Results;
- CIA 2013 Source Report;
- CIA System Start-up Report;
- J-2 Range Project Note for Additional Wells to evaluate source response;
- J-3 Range Draft RI/FS;
- J-3 Range Draft Remedy Selection Plan;
- Small Arms Ranges Decision Document;
- Training Areas Draft Investigation Report;
- J-1 Range Northern System Start-up Report;
- Former A Range 2014 Annual Environmental Monitoring Report;
- Demolition Area 2 2014 Annual Environmental Monitoring Report;
- J-2 Range Eastern and J-2 Range Northern Environmental Monitoring Work Plan;
- Northwest Corner 2014 Annual Environmental Monitoring Report;
- Central Impact Area 2014 Interim Environmental Monitoring Report;
- Western Boundary 2014 Annual Environmental Monitoring Report;
- J-1 Range Environmental Monitoring Work Plan; and
- J-3 Range 2014 Interim Environmental Monitoring Report.

TABLE 1
Sampling Progress: 1 September to 30 September 2014

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	BH-642	D1-1_141-146	N	09/29/2014	Ground Water	141	146
Demolition Area 1	RS750COUNTY	RS750COUNTY_T14	N	09/29/2014	Ground Water	0	0
Demolition Area 1	BH-642	D1-1_131-136	N	09/29/2014	GW Profile	131	136
Demolition Area 1	BH-642	D1-1_121-126	N	09/29/2014	GW Profile	121	126
Central Impact Area	MW-89M2	MW-89M2_F14	N	09/29/2014	Ground Water	214	224
Central Impact Area	MW-89M2	MW-89M2_F14D	FD	09/29/2014	Ground Water	214	224
Demolition Area 1	BH-642	D1-1_111-116	N	09/29/2014	GW Profile	111	116
Demolition Area 1	BH-642	D1-1_101-106	N	09/29/2014	GW Profile	101	106
Demolition Area 1	BH-642	D1-1_101-106D	FD	09/29/2014	GW Profile	101	106
Central Impact Area	MW-23M1	MW-23M1_F14	N	09/29/2014	Ground Water	225	235
Demolition Area 1	BH-642	D1-1_91-96	N	09/29/2014	GW Profile	91	96
Central Impact Area	MW-223M2	MW-223M2_F14	N	09/29/2014	Ground Water	185	195
Central Impact Area	MW-223M1	MW-223M1_F14	N	09/29/2014	Ground Water	211	221
Demolition Area 1	BH-642	D1-1_81-86	N	09/29/2014	GW Profile	81	86
Central Impact Area	MW-176M1	MW-176M1_F14	N	09/29/2014	Ground Water	270	280
Demolition Area 1	BH-642	D1-1_71-76	N	09/26/2014	GW Profile	71	76
Demolition Area 1	BH-642	D1-1_61-66	N	09/26/2014	GW Profile	61	66
Demolition Area 1	BH-642	D1-1_51-56	N	09/26/2014	GW Profile	51	56
Central Impact Area	MW-123M2	MW-123M2_F14	N	09/25/2014	Ground Water	236	246
Central Impact Area	MW-123M1	MW-123M1_F14	N	09/25/2014	Ground Water	291	301
J2 Range Eastern	MW-228S	MW-228S_F14	N	09/25/2014	Ground Water	104	114
J2 Range Eastern	MW-228M2	MW-228M2_F14	N	09/25/2014	Ground Water	126	136
Western Boundary	4036000-03G	4036000-03G_14Q3	N	09/25/2014	Ground Water	50	60
Western Boundary	4036000-04G	4036000-04G_14Q3	N	09/25/2014	Ground Water	55	65
Western Boundary	4036000-04G	4036000-04G_14Q3D	FD	09/25/2014	Ground Water	55	65
Western Boundary	4036000-06G	4036000-06G_14Q3	N	09/25/2014	Ground Water	108	128
Western Boundary	4036000-01G	4036000-01G_14Q3	N	09/25/2014	Ground Water	38	70
Demolition Area 1	BH-641	D1-2_151-156	N	09/24/2014	GW Profile	151	156
Central Impact Area	MW-617M2	MW-617M2_R2	N	09/24/2014	Ground Water	118.3	128.3
Demolition Area 1	BH-641	D1-2_141-146	N	09/24/2014	GW Profile	141	146
Central Impact Area	MW-617M1	MW-617M1_R2	N	09/24/2014	Ground Water	175.8	185.8
Central Impact Area	MW-616M2	MW-616M2_R2	N	09/24/2014	Ground Water	107.1	117.1
Central Impact Area	MW-616M1	MW-616M1_R2	N	09/24/2014	Ground Water	217.1	227.1
Demolition Area 1	BH-641	D1-2_121-126	N	09/24/2014	GW Profile	121	126
Central Impact Area	MW-618M2	MW-618M2_R2	N	09/24/2014	Ground Water	190.5	200.5
Demolition Area 1	BH-641	D1-2_111-116	N	09/24/2014	GW Profile	111	116
Central Impact Area	MW-618M1	MW-618M1_R2	N	09/24/2014	Ground Water	238.5	248.5
Demolition Area 1	BH-641	D1-2_101-106	N	09/24/2014	GW Profile	101	106
Demolition Area 1	BH-641	D1-2_91-96	N	09/24/2014	GW Profile	91	96
Demolition Area 1	BH-641	D1-2_81-86	N	09/23/2014	GW Profile	81	86
Demolition Area 1	BH-641	D1-2_81-86D	FD	09/23/2014	GW Profile	81	86
Demolition Area 1	BH-641	D1-2_71-76	N	09/23/2014	GW Profile	71	76
Demolition Area 1	BH-641	D1-2_61-66	N	09/23/2014	GW Profile	61	66
Former C Range	FCR136	MISFCR136-A_R2	FR	09/19/2014	SOIL	0	0.25
Former C Range	FCR136	MISFCR136-A_R1	FR	09/19/2014	SOIL	0	0.25
Former C Range	FCR136	MISFCR136-A	N	09/19/2014	SOIL	0	0.25
J2 Range Eastern	MW-627M1	MW-627M1_R2	N	09/18/2014	Ground Water	269.5	279.5
J2 Range Northern	MW-631M2	MW-631M2_R2	N	09/18/2014	Ground Water	200.1	210.1
J2 Range Northern	MW-631M1	MW-631M1_R2	N	09/18/2014	Ground Water	233.1	243.1
J2 Range Northern	MW-622M2	MW-622M2_R2	N	09/18/2014	Ground Water	220.4	230.4
J2 Range Northern	MW-622M1	MW-622M1_R2	N	09/18/2014	Ground Water	245.4	255.4
J2 Range Eastern	MW-116S	MW-116S_F14	N	09/17/2014	Ground Water	103	113.7
J2 Range Eastern	MW-321M2	MW-321M2_F14	N	09/17/2014	Ground Water	155.7	165.7
J2 Range Eastern	MW-321M1	MW-321M1_F14	N	09/17/2014	Ground Water	174.6	184.6
J2 Range Eastern	MW-436M2	MW-436M2_F14	N	09/17/2014	Ground Water	235.5	245.5
J2 Range Eastern	MW-436M1	MW-436M1_F14	N	09/17/2014	Ground Water	295.5	305.5
J2 Range Eastern	MW-357M1	MW-357M1_F14	N	09/17/2014	Ground Water	274.5	284.5
J2 Range Eastern	MW-351M2	MW-351M2_F14	N	09/16/2014	Ground Water	233.7	243.7
J2 Range Eastern	MW-351M1	MW-351M1_F14	N	09/16/2014	Ground Water	278.6	288.6
J2 Range Eastern	MW-372M1	MW-372M1_F14	N	09/16/2014	Ground Water	273.1	283.1
J2 Range Eastern	MW-399M1	MW-399M1_F14	N	09/16/2014	Ground Water	238.2	248.2
J2 Range Northern	MW-630M1	MW-630M1_R2	N	09/15/2014	Ground Water	217	227
J2 Range Northern	MW-634M3	MW-634M3_R2	N	09/15/2014	Ground Water	170.6	180.6
J2 Range Northern	MW-634M2	MW-634M2_R2	N	09/15/2014	Ground Water	200.6	210.6
J2 Range Northern	MW-634M2	MW-634M2_R2D	FD	09/15/2014	Ground Water	200.6	210.6
J2 Range Northern	MW-634M1	MW-634M1_R2	N	09/15/2014	Ground Water	305.6	315.6
J3 Range	MW-636M2	MW-636M2_R2	N	09/15/2014	Ground Water	110.5	120.5
J3 Range	MW-636M1	MW-636M1_R2	N	09/15/2014	Ground Water	141.6	151.6
J3 Range	MW-576M3	MW-576M3_R2	N	09/12/2014	Ground Water	98.9	108.9
J3 Range	MW-576M2	MW-576M2_R2	N	09/12/2014	Ground Water	133.9	143.9
J3 Range	MW-576M2	MW-576M2_R2D	FD	09/12/2014	Ground Water	133.9	143.9
J3 Range	MW-576M1	MW-576M1_R2	N	09/12/2014	Ground Water	173.9	183.9
J3 Range	MW-637M3	MW-637M3_R2	N	09/12/2014	Ground Water	174.1	184.1
J3 Range	MW-637M2	MW-637M2_R2	N	09/12/2014	Ground Water	214.1	224.1

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 1 September to 30 September 2014

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J3 Range	MW-637M1	MW-637M1_R2	N	09/12/2014	Ground Water	236.1	246.1
J2 Range Eastern	MW-307M3	MW-307M3_F14	N	09/11/2014	Ground Water	125.8	135.8
Demolition Area 1	FPR-2-EFF	FPR-2-EFF-102A	N	09/11/2014	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID3A	FPR-2-GAC-MID3A-102A	N	09/11/2014	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-102A	N	09/11/2014	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-102A	N	09/11/2014	Process Water	0	0
J2 Range Eastern	MW-393M2	MW-393M2_F14	N	09/11/2014	Ground Water	218.2	228.2
Demolition Area 1	PR-EFF	PR-EFF-102A	N	09/11/2014	Process Water	0	0
Demolition Area 1	PR-MID-2	PR-MID-2-102A	N	09/11/2014	Process Water	0	0
Demolition Area 1	PR-MID-1	PR-MID-1-102A	N	09/11/2014	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-102A	N	09/11/2014	Process Water	0	0
J2 Range Eastern	MW-393M1	MW-393M1_F14	N	09/11/2014	Ground Water	268	278
J2 Range Eastern	MW-393D	MW-393D_F14	N	09/11/2014	Ground Water	313.6	323.6
Demolition Area 1	D1-EFF	D1-EFF-50A	N	09/11/2014	Process Water	0	0
Demolition Area 1	D1-MID-2	D1-MID-2-50A	N	09/11/2014	Process Water	0	0
Demolition Area 1	D1-MID-1	D1-MID-1-50A	N	09/11/2014	Process Water	0	0
Demolition Area 1	D1-INF	D1-INF-50A	N	09/11/2014	Process Water	0	0
J2 Range Eastern	MW-354M2	MW-354M2_F14	N	09/11/2014	Ground Water	234.8	244.8
J2 Range Eastern	MW-354M1	MW-354M1_F14	N	09/11/2014	Ground Water	274.5	284.5
J2 Range Eastern	MW-342M1	MW-342M1_F14	N	09/10/2014	Ground Water	193.7	203.7
J2 Range Eastern	MW-388M2	MW-388M2_F14	N	09/10/2014	Ground Water	144.8	154.8
Central Impact Area	CIA2-EFF	CIA2-EFF-08A	N	09/10/2014	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-08A	N	09/10/2014	Process Water	0	0
Central Impact Area	CIA2-MID1	CIA2-MID1-08A	N	09/10/2014	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-08A	N	09/10/2014	Process Water	0	0
J2 Range Eastern	MW-388M1	MW-388M1_F14	N	09/10/2014	Ground Water	175.2	185.2
Central Impact Area	CIA1-EFF	CIA1-EFF-08A	N	09/10/2014	Process Water	0	0
Central Impact Area	CIA1-MID2	CIA1-MID2-08A	N	09/10/2014	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-08A	N	09/10/2014	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-08A	N	09/10/2014	Process Water	0	0
J1 Range Southern	J1S-EFF	J1S-EFF-82A	N	09/10/2014	Process Water	0	0
J1 Range Southern	J1S-MID-2	J1S-MID-2-82A	N	09/10/2014	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-82A	N	09/10/2014	Process Water	0	0
J2 Range Eastern	MW-358M1	MW-358M1_F14	N	09/10/2014	Ground Water	230	240
J3 Range	J3-EFF	J3-EFF-96A	N	09/10/2014	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-96A	N	09/10/2014	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-96A	N	09/10/2014	Process Water	0	0
J3 Range	J3-INF	J3-INF-96A	N	09/10/2014	Process Water	0	0
J2 Range Eastern	MW-319M2	MW-319M2_F14	N	09/09/2014	Ground Water	165.2	175.2
J2 Range Eastern	MW-319M1	MW-319M1_F14	N	09/09/2014	Ground Water	200.3	210.3
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-72A	N	09/09/2014	Process Water	0	0
J2 Range Eastern	MW-334M1	MW-334M1_F14	N	09/09/2014	Ground Water	285	295
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-72A	N	09/09/2014	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-72A	N	09/09/2014	Process Water	0	0
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-72A	N	09/09/2014	Process Water	0	0
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-72A	N	09/09/2014	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-72A	N	09/09/2014	Process Water	0	0
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-72A	N	09/09/2014	Process Water	0	0
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-72A	N	09/09/2014	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-72A	N	09/09/2014	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-72A	N	09/09/2014	Process Water	0	0
J2 Range Eastern	MW-366M3	MW-366M3_F14	N	09/09/2014	Ground Water	145	155
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-72A	N	09/09/2014	Process Water	0	0
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-72A	N	09/09/2014	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-72A	N	09/09/2014	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-72A	N	09/09/2014	Process Water	0	0
J2 Range Eastern	MW-366M2	MW-366M2_F14	N	09/09/2014	Ground Water	175	185
J2 Range Eastern	MW-366M1	MW-366M1_F14	N	09/09/2014	Ground Water	215	225
J2 Range Eastern	J2MW-04M2	J2MW-04M2_F14	N	09/08/2014	Ground Water	210	220
J2 Range Eastern	J2MW-04M1	J2MW-04M1_F14	N	09/08/2014	Ground Water	257	267
J2 Range Eastern	J2MW-04M1	J2MW-04M1_F14D	FD	09/08/2014	Ground Water	257	267
J2 Range Eastern	J2MW-01M2	J2MW-01M2_F14	N	09/08/2014	Ground Water	245	255
J2 Range Eastern	J2MW-01M2	J2MW-01M2_F14D	FD	09/08/2014	Ground Water	245	255
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-96A	N	09/08/2014	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-96A	N	09/08/2014	Process Water	0	0
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-96A	N	09/08/2014	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-96A	N	09/08/2014	Process Water	0	0
J2 Range Eastern	J2MW-01M1	J2MW-01M1_F14	N	09/08/2014	Ground Water	275	285
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-96A	N	09/08/2014	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-96A	N	09/08/2014	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-96A	N	09/08/2014	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-96A	N	09/08/2014	Process Water	0	0
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-96A	N	09/08/2014	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-96A	N	09/08/2014	Process Water	0	0

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 1 September to 30 September 2014

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	MW-57D	MW-57D_F14	N	09/08/2014	Ground Water	213	223
J1 Range Northern	J1N-EFF	J1N-EFF-11A	N	09/08/2014	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-11A	N	09/08/2014	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-11A	N	09/08/2014	Process Water	0	0
J1 Range Northern	J1N-INF2	J1N-INF2-11A	N	09/08/2014	Process Water	0	0
J2 Range Eastern	MW-365M2	MW-365M2_F14	N	09/08/2014	Ground Water	205.5	215.5
J2 Range Eastern	MW-310M1	MW-310M1_F14	N	09/08/2014	Ground Water	171.4	181.4
J2 Range Northern	MW-632M2	MW-632M2_R2	N	09/05/2014	Ground Water	229.5	239.5
J2 Range Northern	MW-632M1	MW-632M1_R2	N	09/05/2014	Ground Water	254.5	264.5
J2 Range Northern	MW-635M1	MW-635M1_R2	N	09/05/2014	Ground Water	265.4	275.4
J2 Range Northern	MW-621M2	MW-621M2_R2	N	09/05/2014	Ground Water	219.4	229.4
J2 Range Northern	MW-621M2	MW-621M2_R2D	FD	09/05/2014	Ground Water	219.4	229.4
J2 Range Northern	MW-621M1	MW-621M1_R2	N	09/05/2014	Ground Water	249.4	259.4
J2 Range Eastern	MW-335M2	MW-335M2_F14	N	09/04/2014	Ground Water	215.3	225.3
J2 Range Eastern	MW-335M1	MW-335M1_F14	N	09/04/2014	Ground Water	255.2	265.2
J2 Range Eastern	MW-170M2	MW-170M2_F14	N	09/04/2014	Ground Water	198	208
J2 Range Eastern	MW-170M1	MW-170M1_F14	N	09/04/2014	Ground Water	265	275
J2 Range Eastern	MW-381M2	MW-381M2_F14	N	09/04/2014	Ground Water	196.4	206.4
J2 Range Eastern	MW-381M1	MW-381M1_F14	N	09/04/2014	Ground Water	232.9	242.9
J2 Range Eastern	MW-324M2	MW-324M2_F14	N	09/03/2014	Ground Water	203.7	214.7
J2 Range Eastern	MW-324M2	MW-324M2_F14D	FD	09/03/2014	Ground Water	203.7	214.7
J2 Range Eastern	MW-324M1	MW-324M1_F14	N	09/03/2014	Ground Water	234.9	244.9
Former A Range	MW-249M3	MW-249M3_S14	N	09/03/2014	Ground Water	154	164
J2 Range Eastern	MW-215M2	MW-215M2_F14	N	09/02/2014	Ground Water	205	215
J2 Range Eastern	MW-215M2	MW-215M2_F14D	FD	09/02/2014	Ground Water	205	215
J2 Range Eastern	MW-215M1	MW-215M1_F14	N	09/02/2014	Ground Water	240	250
J2 Range Eastern	MW-339M2	MW-339M2_F14	N	09/02/2014	Ground Water	213	223
J2 Range Eastern	MW-339M1	MW-339M1_F14	N	09/02/2014	Ground Water	233	243
J2 Range Eastern	MW-368M3	MW-368M3_F14	N	09/02/2014	Ground Water	155.5	165.5
J2 Range Eastern	MW-368M2	MW-368M2_F14	N	09/02/2014	Ground Water	202.7	212.7
J2 Range Eastern	MW-368M2	MW-368M2_F14D	FD	09/02/2014	Ground Water	202.7	212.7
J2 Range Eastern	MW-368M1	MW-368M1_F14	N	09/02/2014	Ground Water	237.4	247.4
J2 Range Eastern	MW-368M1	MW-368M1_F14D	FD	09/02/2014	Ground Water	237.4	247.4

N = Normal Sample
FD = Field Duplicate

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received September 2014

Area of Concern	Location ID	Field Sample ID	Top Depth (ft bgs)	Bottom Depth (ft bgs)	Date Sampled	Test Method	Analyte	Result Value	Qualifier	Units	MCL/HA	> MCL/HA	MDL	RL
J2 Range Northern	MW-340M2	MW-340M2_F14	215.8	225.1	08/15/2014	SW6850	Perchlorate	0.029	J	UG/L	2.0		0.019	0.20
J2 Range Northern	MW-340M1	MW-340M1_F14	255.9	265.9	08/15/2014	SW6850	Perchlorate	0.023	J	UG/L	2.0		0.019	0.20
J2 Range Northern	MW-640M2	MW-640M2_R1	215.5	225.5	08/14/2014	SW6850	Perchlorate	0.70		UG/L	2.0		0.019	0.20
J2 Range Northern	MW-640M1	MW-640M1_R1	245.5	255.5	08/14/2014	SW6850	Perchlorate	1.0		UG/L	2.0		0.019	0.20
J2 Range Northern	MW-586M2	MW-586M2_F14	211	221	08/14/2014	SW6850	Perchlorate	2.9		UG/L	2.0	X	0.019	0.20
J2 Range Northern	MW-586M1	MW-586M1_F14	237	247	08/12/2014	SW6850	Perchlorate	0.80		UG/L	2.0		0.019	0.20
J2 Range Northern	J2EW1-MW1-C	J2EW1-MW1-C_F14	240.8	250.8	08/12/2014	SW6850	Perchlorate	0.26		UG/L	2.0		0.019	0.20
J2 Range Northern	MW-589M2	MW-589M2_F14	211	221	08/07/2014	SW6850	Perchlorate	6.6		UG/L	2.0	X	0.019	0.20
J2 Range Northern	MW-589M2	MW-589M2_F14D	211	221	08/07/2014	SW6850	Perchlorate	6.7		UG/L	2.0	X	0.019	0.20
J2 Range Northern	MW-229M4	MW-229M4_F14	117	127	08/07/2014	SW6850	Perchlorate	0.11	J	UG/L	2.0		0.019	0.20
J2 Range Northern	MW-229M3	MW-229M3_F14	141	151	08/07/2014	SW6850	Perchlorate	0.091	J	UG/L	2.0		0.019	0.20
J2 Range Northern	MW-229M2	MW-229M2_F14	206	216	08/07/2014	SW6850	Perchlorate	0.055	J	UG/L	2.0		0.019	0.20
J2 Range Northern	MW-229M1	MW-229M1_F14	286	296	08/07/2014	SW6850	Perchlorate	0.027	J	UG/L	2.0		0.019	0.20
Central Impact Area	MW-607M3	MW-607M3_R3	157.4	167.4	08/05/2014	SW6850	Perchlorate	0.11	J	UG/L	2.0		0.019	0.20
Central Impact Area	MW-607M3	MW-607M3_R3	157.4	167.4	08/05/2014	SW8330	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	1.3		UG/L	0.60	X	0.026	0.20
Central Impact Area	MW-607M2	MW-607M2_R3	177.4	187.4	08/05/2014	SW6850	Perchlorate	0.019	J	UG/L	2.0		0.019	0.20
Central Impact Area	MW-607M2	MW-607M2_R3	177.4	187.4	08/05/2014	SW8330	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	3.7		UG/L	0.60	X	0.026	0.20
Central Impact Area	MW-607M1	MW-607M1_R3	207.4	217.4	08/05/2014	SW8330	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	1.8		UG/L	0.60	X	0.026	0.20
Central Impact Area	MW-609M2	MW-609M2_R3	182.4	192.4	08/05/2014	SW6850	Perchlorate	0.23		UG/L	2.0		0.019	0.20
Central Impact Area	MW-609M1	MW-609M1_R3	210.4	220.4	08/05/2014	SW6850	Perchlorate	0.22		UG/L	2.0		0.019	0.20
Central Impact Area	MW-609M1	MW-609M1_R3	210.4	220.4	08/05/2014	SW8330	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	1.2		UG/L	0.60	X	0.026	0.20
Central Impact Area	MW-608M4	MW-608M4_R3	185.4	195.4	08/04/2014	SW6850	Perchlorate	0.024	J	UG/L	2.0		0.019	0.20
Central Impact Area	MW-608M3	MW-608M3_R3	220.4	230.4	08/04/2014	SW6850	Perchlorate	0.027	J	UG/L	2.0		0.019	0.20
Central Impact Area	MW-608M2	MW-608M2_R3	253.4	263.4	08/04/2014	SW6850	Perchlorate	0.037	J	UG/L	2.0		0.019	0.20
Central Impact Area	MW-608M2	MW-608M2_R3	253.4	263.4	08/04/2014	SW8330	Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine (HMX)	0.22		UG/L	400		0.023	0.20
Central Impact Area	MW-608M2	MW-608M2_R3	253.4	263.4	08/04/2014	SW8330	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	5.9		UG/L	0.60	X	0.026	0.20
Central Impact Area	MW-608M2	MW-608M2_R3D	253.4	263.4	08/04/2014	SW6850	Perchlorate	0.039	J	UG/L	2.0		0.019	0.20
Central Impact Area	MW-608M2	MW-608M2_R3D	253.4	263.4	08/04/2014	SW8330	Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine (HMX)	0.24		UG/L	400		0.023	0.20
Central Impact Area	MW-608M2	MW-608M2_R3D	253.4	263.4	08/04/2014	SW8330	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	6.0		UG/L	0.60	X	0.026	0.20
Central Impact Area	MW-608M1	MW-608M1_R3	267.4	277.4	08/04/2014	SW6850	Perchlorate	0.025	J	UG/L	2.0		0.019	0.20
Central Impact Area	MW-608M1	MW-608M1_R3	267.4	277.4	08/04/2014	SW8330	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	3.1		UG/L	0.60	X	0.026	0.20
J2 Range Northern	J2EW0001	J2EW0001_F14	179	234	07/30/2014	SW8330	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	0.28		UG/L	0.60		0.026	0.20
J2 Range Northern	J2EW0001	J2EW0001_F14	179	234	07/30/2014	SW6850	Perchlorate	6.2		UG/L	2.0	X	0.019	0.20
J2 Range Northern	J2EW0001	J2EW0001_F14D	179	234	07/30/2014	SW6850	Perchlorate	6.2		UG/L	2.0	X	0.019	0.20
J2 Range Northern	J2EW0002	J2EW0002_F14	198	233	07/30/2014	SW6850	Perchlorate	3.6		UG/L	2.0	X	0.019	0.20
J2 Range Northern	J2EW0003	J2EW0003_F14	202	232	07/30/2014	SW6850	Perchlorate	0.91		UG/L	2.0		0.019	0.20
J2 Range Northern	MW-348M2	MW-348M2_F14	206.5	216.5	07/30/2014	SW6850	Perchlorate	0.28		UG/L	2.0		0.019	0.20
J2 Range Northern	MW-302M2	MW-302M2_F14	194.4	204.4	07/30/2014	SW6850	Perchlorate	0.045	J	UG/L	2.0		0.019	0.20
J2 Range Northern	MW-331M2	MW-331M2_F14	195.3	205.3	07/30/2014	SW6850	Perchlorate	0.031	J	UG/L	2.0		0.019	0.20
J2 Range Northern	MW-331M1	MW-331M1_F14	235.4	245.4	07/30/2014	SW6850	Perchlorate	0.17	J	UG/L	2.0		0.019	0.20
J2 Range Northern	MW-318M1	MW-318M1_F14	305.8	315.8	07/29/2014	SW6850	Perchlorate	0.041	J	UG/L	2.0		0.019	0.20
J2 Range Northern	MW-296M2	MW-296M2_F14	215	225	07/29/2014	SW6850	Perchlorate	0.041	J	UG/L	2.0		0.019	0.20
J2 Range Northern	MW-296M1	MW-296M1_F14	255.1	265.1	07/29/2014	SW6850	Perchlorate	3.2	J	UG/L	2.0	X	0.019	0.20
J2 Range Northern	MW-337M1	MW-337M1_F14	243.7	253.7	07/28/2014	SW6850	Perchlorate	0.12	J	UG/L	2.0		0.019	0.20
J2 Range Northern	MW-305M1	MW-305M1_F14	202.8	212.8	07/28/2014	SW6850	Perchlorate	0.16	J	UG/L	2.0		0.019	0.20
J2 Range Northern	MW-300M3	MW-300M3_F14	135.3	145.3	07/28/2014	SW6850	Perchlorate	0.044	J	UG/L	2.0		0.019	0.20
J2 Range Northern	MW-300M2	MW-300M2_F14	197.2	207.2	07/28/2014	SW6850	Perchlorate	0.30	J	UG/L	2.0		0.019	0.20
J3 Range	MW-218M2	MW-218M2_F14	98	103	07/10/2014	SW6850	Perchlorate	0.027	J	UG/L	2.0		0.019	0.20

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

MCL/HA= Either the MCL or Lowest Health Advisory Limit

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received September 2014

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
J3 Range	MW-218M1	MW-218M1_F14	128	133	07/10/2014	SW6850	Perchlorate	0.034	J	UG/L	2.0		0.019	0.20
J3 Range	90MP0059B	90MP0059B_F14	116.4	118.9	07/10/2014	SW6850	Perchlorate	0.90		UG/L	2.0		0.019	0.20
J3 Range	MW-144M2	MW-144M2_F14	130	140	07/10/2014	SW6850	Perchlorate	0.026	J	UG/L	2.0		0.019	0.20
J3 Range	MW-143M3	MW-143M3_F14	107	112	07/10/2014	SW6850	Perchlorate	0.43		UG/L	2.0		0.019	0.20
J3 Range	MW-143M2	MW-143M2_F14	117	122	07/09/2014	SW8330	Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine (HMX)	0.85		UG/L	400		0.023	0.20
J3 Range	MW-143M2	MW-143M2_F14	117	122	07/09/2014	SW6850	Perchlorate	1.5		UG/L	2.0		0.019	0.20
J3 Range	MW-143M2	MW-143M2_F14D	117	122	07/09/2014	SW8330	Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine (HMX)	0.83		UG/L	400		0.023	0.20
J3 Range	MW-143M1	MW-143M1_F14	144	154	07/09/2014	SW6850	Perchlorate	1.5		UG/L	2.0		0.019	0.20
J3 Range	90MW0104B	90MW0104B_F14	115	120	07/09/2014	SW6850	Perchlorate	0.027	J	UG/L	2.0		0.019	0.20
Northwest Corner	MW-338S	MW-338S_S14	72	82	06/12/2014	SW6860	Perchlorate	0.061		UG/L	2.0		0.011	0.050
Northwest Corner	MW-338S	MW-338S_S14	72	82	06/12/2014	SW8330	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	0.084	J	UG/L	0.60		0.026	0.20
Northwest Corner	MW-323M2	MW-323M2_S14	120	130	06/12/2014	SW8330	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	0.041	J	UG/L	0.60		0.026	0.20
Northwest Corner	MW-323M1	MW-323M1_S14	195	205	06/12/2014	SW8330	2,4-Dinitrotoluene	0.031	J	UG/L	5.0		0.026	0.20
Northwest Corner	MW-323M1	MW-323M1_S14	195	205	06/12/2014	SW8330	Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine (HMX)	0.051	J	UG/L	400		0.023	0.20
Northwest Corner	MW-323M1	MW-323M1_S14	195	205	06/12/2014	SW8330	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)	1.1		UG/L	0.60	X	0.026	0.20
Northwest Corner	MW-277S	MW-277S_S14	102	112	06/12/2014	SW6860	Perchlorate	0.21		UG/L	2.0		0.011	0.050
Northwest Corner	MW-277M1	MW-277M1_S14	130	140	06/12/2014	SW6860	Perchlorate	0.17		UG/L	2.0		0.011	0.050

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

MCL/HA= Either the MCL or Lowest Health Advisory Limit