HEALTH, SAFETY, ENVIRONMENTAL AND REMEDIATION WEEKLY REPORT
Williams AFB ST012

Site No.: 910-11-10001

Week Ending 15 July 2016

I. SITE SUBCONTRACTOR SUMMARY

Company	Sat	Sun	Mon	Tue	Wed	Thu	Fri
Amec Foster Wheeler	X	X	X	X	X	X	X
Terra Therm							
MP Environmental							
Yellow Jacket							

II. SCHEDULE / SITE ACTIVITIES REVIEW

A. SEE Demolition - None

B. Well Drilling and Development - None

C. EBR Construction - None

D. Sampling/Monitoring

- Continued baseline monitoring of interior wells.
- Perimeter well monitoring
- SEE/EBR well temperature monitoring
- SEE/EBR well LNAPL monitoring/removal

E. SVE System - None

III. SVE OPERATING DATA

Destruction Efficiency/Mass Removal Summary

The destruction efficiency and mass removal calculations are tabulated below. A correction factor was applied to PID readings based on available analytical data and corresponding PID data. This factor is updated each time new analytical data is available and may retroactively alter previously reported data.

Date Period Began	Date Period Ended	Days in Period	Time Catalytic Oxidizer Operated	Catalytic Oxidizer Uptime	Date of Influent Laboratory TPH Result	Influent Concentration (PID)	Influent Concentration (Adjusted PID)[c]	Effluent Concentration (PID)	Effluent Concentration (Adjusted PID)	Calculated Destruction Efficiency[a]	Flowrate into Oxidizer (End of Period)	Estimated VOC Mass Removed[b]	Average Daily Removal Rate[b]	Estimated VOC Mass Released to Atmosphere[b]	Average VOC Mass Released to Atmosphere[b]
---	---	days	hrs	%		ppmv	mg/m^3	ppmv	mg/m^3	%	scfm	lbs/period	lbs/day	lbs/period	lbs/day
4/7/2016	4/15/2016	9	112	52%	3/11/2016	560	56,313	4.6	4.2 *	99.99%	1,396	32,984	3,665	2	0.27
4/15/2016	4/21/2016	7	147	88%	3/11/2016	342	34,391	1.0	0.9 *	100.00%	1,571	29,743	4,249	0.8	0.11
4/21/2016	4/29/2016	9	188	87%	4/25/2016	296	7,980	2.6	2.4 *	99.97%	1,396	7,846	872	2.3	0.26
4/29/2016	5/5/2016	7	130	77%	4/25/2016	179	4,826	1.6	1.5 *	99.97%	1,396	3,281	469	1.0	0.14
5/5/2016	5/20/2016	16	323	84%	4/25/2016	394	10,622	0.5	0.5 *	100.00%	1,047	13,457	841	0.6	0.04
5/20/2016	5/26/2016	7	146	87%	5/23/2016	699	18,340	42.2	38 *	99.79%	698	7,002	1,000	14.6	2.09
5/26/2016	6/2/2016	8	166	86%	5/23/2016	340	9,166	62.2	56 *	99.38%	698	3,979	497	24.5	3.06
6/2/2016	6/10/2016	9	164	76%	6/9/2016	679	17,325	1.2	1.1 *	99.99%	1,309	13,933	1,548	0.9	0.10
6/10/2016	6/17/2016	8	167	87%	6/9/2016	462	11,788	12.7	12 *	99.90%	1,047	7,721	965	7.5	0.94
6/17/2016	6/24/2016	8	165	86%	6/9/2016	179	4,567	0.6	0.5 *	99.99%	1,466	4,139	517	0.5	0.06
6/24/2016	6/27/2016	4	74	77%	6/9/2016	431	10,997 *	0.0	0.0 *	100.00%	1,920	5,853	1,463	0.0	0.00
6/27/2016	6/29/2016	3	47	65%	6/9/2016	N/A	10,997 *	N/A	0.0 *	100.00%	1,152	2,231	744	0.0	0.00
6/29/2016	7/8/2016	10	215	90%	6/9/2016	697	17,784 *	0.2	0.2 *	100.00%	524	7,506	751	0.1	0.01
7/8/2016	7/14/2016	7	128	76%	6/9/2016	1080	27,556 *	1.0	0.9 *	100.00%	489	6,461	923	0.2	0.03

Notes:
% - percent
hrs - hours
JP-4 - jet petroleum fuel grade four
lbs - pounds
mg/m^3 - milligrams per cubic meter
ppmv - parts per million by volume
scfm - standard cubic feet per minute
TPH - total petroleum hydrocarbons
PID - photoionization detector
SVE - soil vapor compound
VOC - volatile organic compound
* Concentration and associated calculated values may change after receipt of subsequent analytical data.

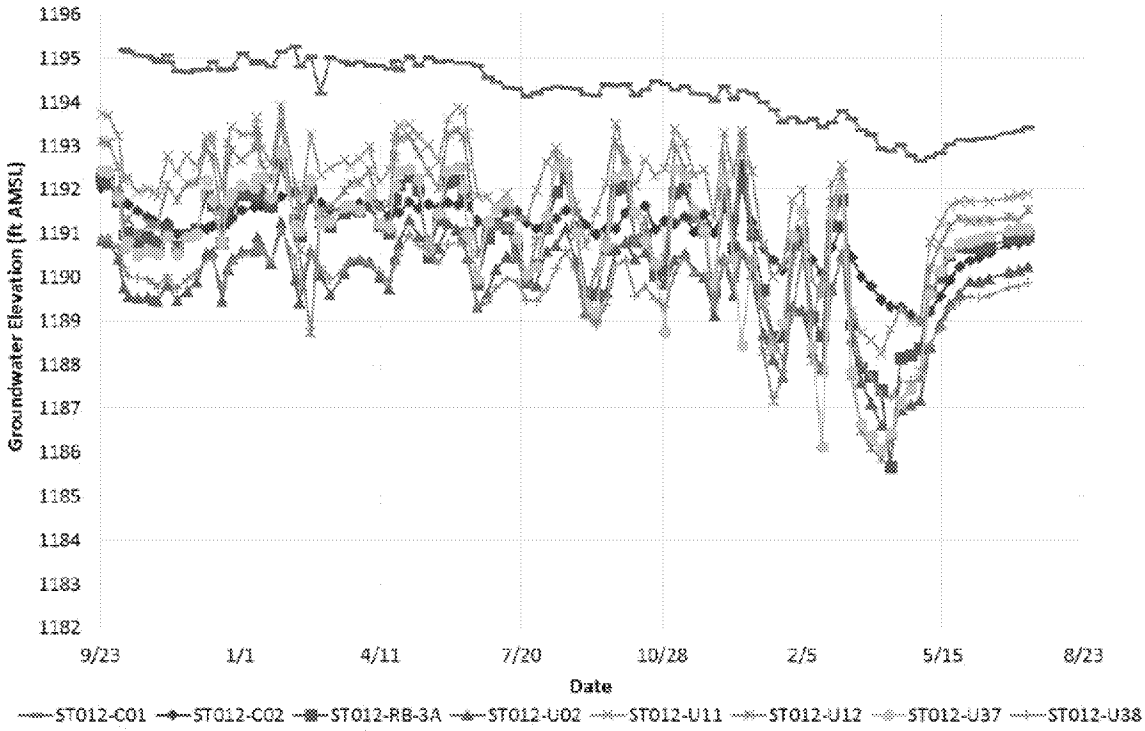
(a) Calculated destruction efficiencies are calculated using a single sampling event for each quarter, not using the average influent and effluent results.
(b) Mass and volumes are calculated based on laboratory data for TPH reported as JP-4. As has been the basis for previous calculations at ST012, the average molecular weight of TPH as JP-4 is assumed equivalent to xylene (106.168 grams per mole). The assumed liquid density of the fuel is 6.57 lbs per gallon.
(c) The PID correction factor for the 23 May 2016 sample was anomalous compared to historical values. An average of correction factors from samples before and after this date was used.

IV. GROUNDWATER ELEVATION MONITORING

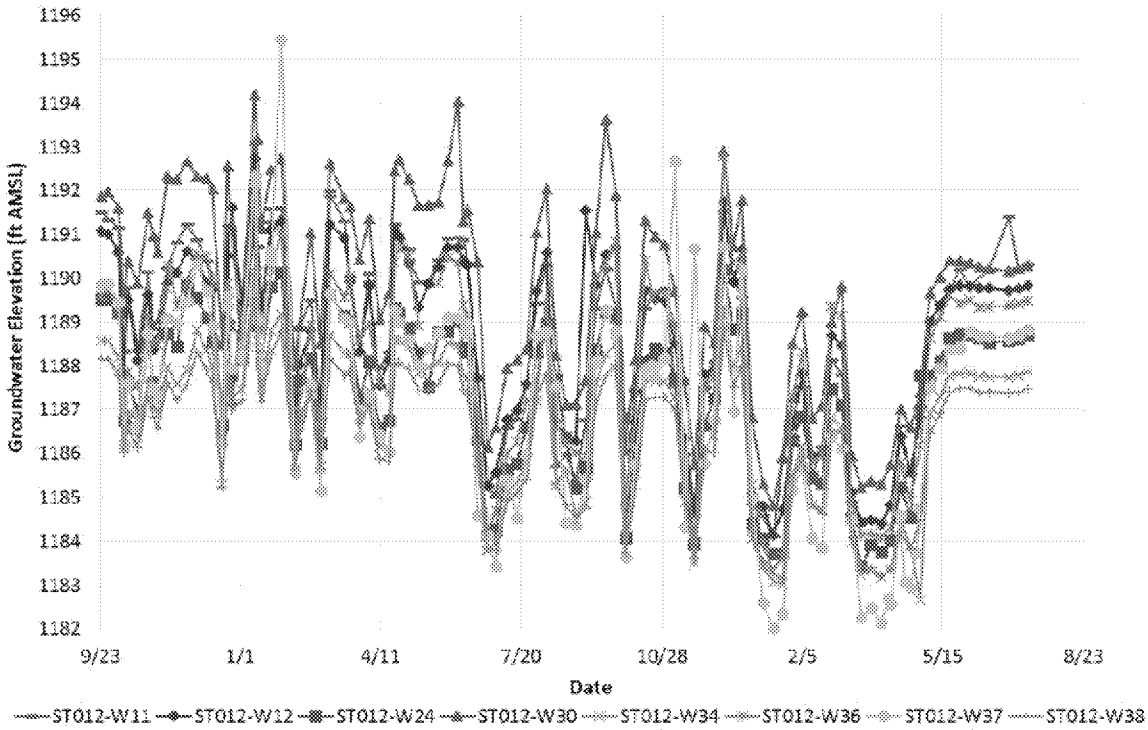
A. Perimeter groundwater elevation differences (measured in feet) adjusted for regional groundwater table increase

Monitoring Well	6/17/2016		7/1/2016		7/8/2016		7/15/2016	
	Change from Baseline	Change from Previous	Change from Baseline	Change from Previous	Change from Baseline	Change from Previous	Change from Baseline	Change from Previous
CZ/UWBZ Wells								
ST012-C01	-2.08	0.04	-1.95	0.18	-1.92	0.06	-1.84	0.11
ST012-C02	-1.50	0.13	-1.29	0.26	-1.26	0.06	-1.21	0.08
UWBZ Wells								
ST012-RB-3A	-1.57	0.05	-1.39	0.23	-1.36	0.06	-1.31	0.08
ST012-U02	-0.87	0.11	-0.73	0.19	-0.68	0.08	-0.59	0.12
ST012-U11	-2.01	0.05	-1.92	0.14	-1.86	0.09	-1.81	0.08
ST012-U12	-1.81	0.04	-1.73	0.13	-1.82	-0.06	-1.58	0.27
ST012-U37	-1.50	0.10	-1.36	0.19	-1.33	0.06	-1.32	0.04
ST012-U38	-1.31	0.09	-1.12	0.24	-1.09	0.06	-1.02	0.10
LSZ Wells								
ST012-W11	-1.33	0.42	-0.10	1.28	-1.30	-1.17	-1.21	0.12
ST012-W12	-1.30	0.02	-1.34	0.01	-1.31	0.06	-1.24	0.10
ST012-W24	-1.00	-0.08	-0.93	0.12	-0.90	0.06	-0.82	0.11
ST012-W30	-1.65	0.00	-1.72	-0.01	-1.67	0.08	-1.59	0.11
ST012-W34	-0.83	0.02	-0.84	0.04	-0.78	0.09	-0.71	0.10
ST012-W36	-0.25	0.05	-0.24	0.06	-0.19	0.08	-0.11	0.11
ST012-W37	-1.18	0.03	-1.21	0.03	-1.13	0.10	-1.02	0.14
ST012-W38	-0.76	0.04	-0.77	0.04	-0.76	0.04	-0.67	0.12

CZ and UWBZ Groundwater Elevations

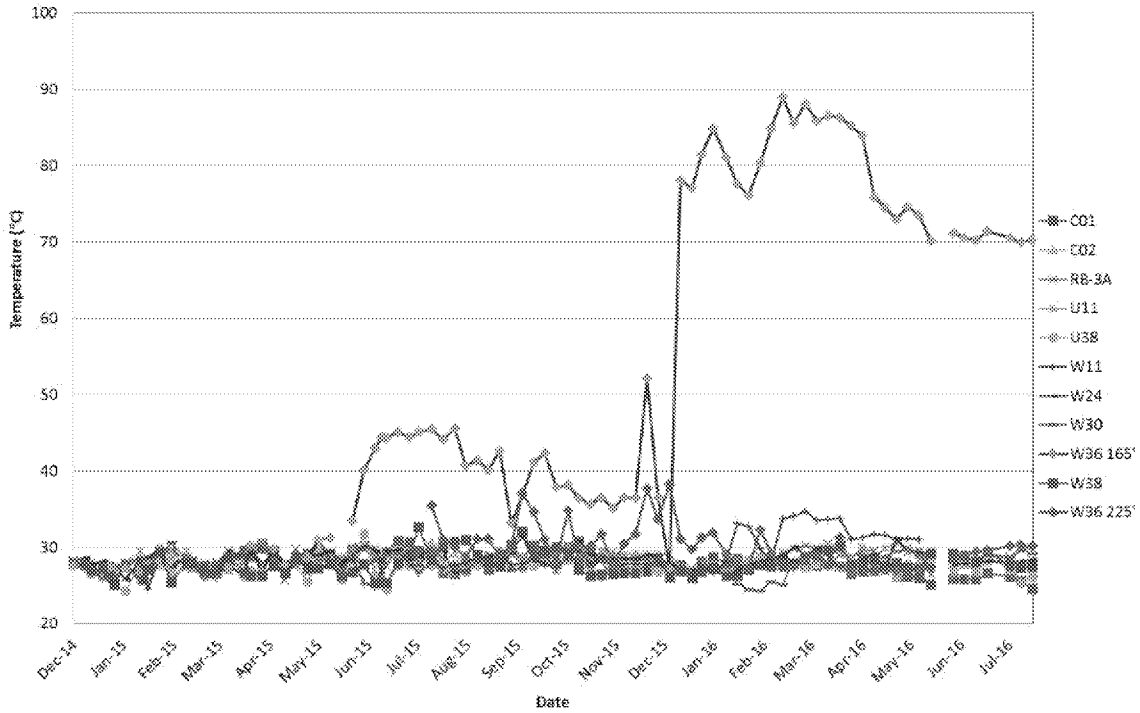


LSZ Groundwater Elevations



V. SUBSURFACE TEMPERATURE MONITORING

A. Perimeter Monitoring Well Temperatures



VI. WELL TEMPERATURE MONITORING

The following wells used during SEE were monitored for vertical temperature profile. The table lists the peak temperatures in the vadose and saturated zones. Temperature monitoring efforts have been focused on providing information to site personnel to support sampling efforts, not delineate subsurface temperature after SEE. Any additional wells that are monitored in future weeks will be included on this table.

Well ID	Well Use	Date	Vadose Zone Peak Temperature (°F)	Saturated Zone Peak Temperature (°F)
CZ01	SEE SIW	5/16/2016	178.9	215.6
CZ06	SEE SIW	5/16/2016	185.7	216.5
CZ07	SEE MPE	6/28/2016	176.3	197.6
CZ08	SEE MPE	6/29/2016	154.7	188.1
CZ09	SEE MPE	6/22/2016	143.3	206.8
CZ10	SEE MPE	6/22/2016	137.2	198.1
CZ11	SEE MPE	5/17/2016	182.8	214.9
		6/29/2016	185.9	198.3
CZ12	EBR Injection	5/13/2016	178.0	195.4
		6/22/2016	176.8	199.5
CZ14	EBR Injection	5/17/2016	151.7	203.4
		5/22/2016	186.1	211.4
CZ16	EBR Injection	5/17/2016	154.4	200.8
		6/22/2016	170.2	198.5
CZ18	EBR Extraction	6/22/2016	174.9	170.6
CZ19	EBR Extraction	6/22/2016	164.8	172.1
CZ20	SEE MPE	7/1/2016	104.0	97.2
UWBZ02	SEE MPE	7/6/2016	200.3	246.3
UWBZ10	EBR Extraction	5/20/2016	161.2	216.1
		6/22/2016	179.8	216.1
UWBZ12	SEE SIW	5/16/2016	211.1	239.5
UWBZ16	SEE SIW	5/16/2016	208.0	242.8
UWBZ17	SEE MPE	6/29/2016	180.2	205.3
		7/6/2016	181.5	204.5
UWBZ18	SEE MPE	6/22/2016	190.0	239.3
UWBZ19	SEE MPE	6/22/2016	172.2	228.9
UWBZ21	EBR Injection	5/17/2016	119.5	180.7
		6/28/2016	118.0	189.4
		7/6/2016	125.6	190.7
UWBZ22	EBR Extraction	5/19/2016	127.0	168.4
		7/7/2016	154.5	171.6
UWBZ23	EBR Injection	5/17/2016	99.0	196.3
		7/6/2016	204.9	231.0
UWBZ26	EBR Extraction	7/5/2016	98.1	138.9

Well ID	Well Use	Date	Vadose Zone Peak Temperature (°F)	Saturated Zone Peak Temperature (°F)
UWBZ27	EBR Extraction	5/17/2016	103.8	181.8
		7/1/2016	102.3	134.8
UWBZ29*	EBR Injection	6/19/2016	193.5	241.2
UWBZ30*	EBR Injection	6/17/2016	130.6	151.9
UWBZ31*	EBR Injection	6/18/2016	155.7	165.2
UWBZ34*	EBR Injection	6/11/2016	96.3	94.9
UWBZ36*	EBR Injection	6/11/2016	124.3	91.3
LSZ03	SEE SIW	5/16/2016	202.1	201.4
LSZ09	EBR Extraction	7/1/2016	136.7	158.1
LSZ10	SEE SIW	5/23/2016	142.7	206.1
LSZ11	EBR Extraction	5/19/2016	106.2	159.3
		7/1/2016	141.7	143.6
LSZ12	EBR Extraction	5/18/2016	159.8	161.4
		7/1/2016	147.1	160.8
LSZ14	EBR Extraction	5/17/2016	149.9	191.7
		7/1/2016	96.4	162.5
LSZ15	SEE MPE	6/28/2016	131.3	189.7
LSZ17	EBR Extraction	5/20/2016	177.8	216.7
		6/23/2016	179.1	213.1
LSZ18	SEE SIW	5/16/2016	204.1	238.1
LSZ22	SEE SIW	5/16/2016	139.1	218.5
LSZ23	EBR Extraction	5/23/2016	132.8	178.9
LSZ25	SEE SIW	5/16/2016	196.0	222.4
LSZ26	EBR Extraction	5/16/2016	171.1	190.9
		7/6/2016	168.3	193.1
LSZ28	EBR Extraction	5/20/2016	125.8	124.2
		6/23/2016	187.7	223.4
		7/6/2016	186.3	221.6
LSZ29	EBR Extraction	5/17/2016	119.7	178.9
		7/6/2016	145.9	200.2
LSZ31	SEE MPE	6/29/2016	98.7	98.4
LSZ32	SEE MPE	6/29/2016	123.1	124.7
LSZ34	Sampling/Monitoring	5/17/2016	119.5	182.5
		7/6/2016	171.8	208.0
LSZ35	SEE MPE	6/28/2016	110.7	135.9
LSZ36	EBR Extraction	5/18/2016	167.9	176.0
		7/7/2016	137.0	163.9
LSZ37	EBR Extraction	5/20/2016	100.6	168.1
		6/30/2016	96.9	97.7
LSZ38	EBR Extraction	5/13/2016	107.1	99.0

Well ID	Well Use	Date	Vadose Zone Peak Temperature (°F)	Saturated Zone Peak Temperature (°F)
		6/23/2016	101.4	147.3
LSZ39	EBR Extraction	5/19/2016	89.1	98.2
		6/23/2016	95.3	143.2
LSZ42	SEE MPE	6/30/2016	119.4	178.2
LSZ43*	EBR Injection	6/19/2016	191.3	232.7
LSZ44*	EBR Injection	6/19/2016	95.2	87.1
UWBZ-32/ LSZ-47*	EBR Injection	6/10/2016	91.4	84.9
UWBZ-33/ LSZ-48*	EBR Injection	6/10/2016	89.6	166.1
LSZ49*	EBR Injection	6/21/2016	90.3	86.0
LSZ50*	EBR Injection	6/22/2016	83.8	83.1
UWBZ28/LSZ51*	EBR Injection	6/9/2016	166.5	165.4

Notes:

* - Denotes a newly installed well

(1) Peak temperature corresponds to the highest temperature recorded in each zone. Temperatures not recorded below 200 ft bgs. LSZ well saturated temperatures are from the water column above the screened interval.

(2) Due to temperature interference with equipment, depth to water is assumed to be between 145 and 150 ft bgs, as observed in locations unaffected by temperature interference. Vadose zone temperatures range from 10 to 140 ft bgs and saturated zone temperatures range from 150 to the end of the temperature profile.

VII. LNAPL MONITORING

A. Perimeter LNAPL Thickness (ft)

	6/17/2016			7/1/2016			7/8/2016			7/15/2016		
Monitoring Well	Before bailing/ pumping	After Bailing/ pumping	Weekly Gallons Removed	Before bailing/ pumping	After Bailing/ pumping	Weekly Gallons Removed	Before bailing/ pumping	After Bailing/ pumping	Weekly Gallons Removed	Before bailing/ pumping	After Bailing/ pumping	Weekly Gallons Removed
CZ/UWBZ Wells												
ST012-C01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ST012-C02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UWBZ Wells												
ST012-U02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ST012-U11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ST012-U12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ST012-U37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ST012-U38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ST012-RB-3A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LSZ Wells												
ST012-W11	1.40	1.40	0.00	0.00	0.00	0.00	7.11	7.11	0.00	8.88	8.88	0.00
ST012-W12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ST012-W24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ST012-W30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ST012-W34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ST012-W36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ST012-W37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ST012-W38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

B. LNAPL Monitoring and Removal

The following table summarizes the removal and monitoring performed at LNAPL screened wells. LNAPL monitoring of wells was prioritized based on expected future usage of each well as part of EBR. Subsequent LNAPL monitoring/removal frequency was prioritized based on the amount of LNAPL, the observed LNAPL recharge, and the temperature of each well. LNAPL monitoring and removal is initially conducted weekly at wells with LNAPL and the frequency may be reduced depending on whether LNAPL returns after pumping/bailing. Wells with high temperatures were not able to be bailed, or NAPL thicknesses recorded because of temperature interference with equipment. Currently 16 SEE wells have eductors in them that have not been removed and cannot be effectively screened for LNAPL (CZ13, CZ15, CZ17, UWBZ04, UWBZ05, UWBZ06, LSZ01, LSZ02, LSZ04, LSZ05, LSZ06, LSZ08, LSZ13, LSZ16, LSZ30, LSZ33). Eductor removal was put on hold along with SEE decommissioning. Any additional wells that are monitored in future weeks will be included on this table:

Well	Date	Able to Use Interface Probe? (Y/N)	NAPL Present (Y/N)	Before Pumping			Bailed/ Pumped (Y/N)	NAPL Remaining (Y/N)	After Pumping			LNAPL Removed (Gallons)
				Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)			Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)	
CZ02	7/12/2016	N	N	---	144 (2)	---	N	N	---	---	---	0
CZ03	7/7/2016	N	N	---	---	---	N	N	---	---	---	0
	7/11/2016	N	N	NM	142 (2)	NM	N	N	---	---	---	0
CZ04	7/7/2016	N	N	---	---	---	N	N	---	---	---	0
	7/12/2016	N	N	---	147 (2)	---	N	N	---	---	---	0
CZ05	7/7/2016	N	N	---	---	---	N	N	---	---	---	0
	7/12/2016	N	N	---	145 (2)	---	N	N	---	---	---	0
CZ06	7/11/2016	N	N	---	145 (2)	---	N	N	---	---	---	0
CZ07	7/13/2016	N	Y	NM	142 (2)	0.04 (1)	N	Y	---	---	---	0
CZ08	7/13/2016	N	Y	NM	147 (2)	0.04 (1)	N	Y	---	---	---	0
CZ09	6/22/2016	N	Y	NR	NR	0.13 (1)	N	Y	---	---	---	0
CZ10	6/23/2016	N	N	---	---	---	N	N	---	---	---	0
	7/12/2016	N	Sheen	146 (2)	146 (2)	Sheen	N	Sheen	---	---	---	0
CZ11	5/23/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	7/7/2016	N	Sheen	---	NM	---	N	Sheen	---	---	---	0

Well	Date	Able to Use Interface Probe? (Y/N)	NAPL Present (Y/N)	Before Pumping			Bailed/ Pumped (Y/N)	After Pumping				LNAPL Removed (Gallons)
				Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)		NAPL Remaining (Y/N)	Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)	
	7/12/2016	N	Y	145 (2)	NM	>15	N	Y	---	---	---	0
	5/24/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/7/2016	N	Y	149 (2)	NM	NM	Y	N	NR	NR	NR	1
	6/23/2016	N	N	---	---	---	N	N	---	---	---	0
	6/29/2016	N	N	NM	156 (2)	NM	N	N	---	---	---	0
CZ12	7/13/2016	N	Y	143 (2)	150 (2)	7	N	Y	---	---	---	0
	5/22/2016	N	N	---	---	---	N	N	---	---	---	0
	5/26/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/7/2016	N	Y	148 (2)	NM	NM	Y	N	NR	NR	NR	3
	6/22/2016	N	N	---	---	---	N	N	---	---	---	0
	6/29/2016	N	Sheen	NM	152 (2)	NM	N	Sheen	---	---	---	0
	7/7/2016	N	Sheen	---	NM	---	N	Sheen	---	---	---	0
CZ14	7/11/2016	N	Sheen	142 (2)	142 (2)	Sheen	N	Sheen	---	---	---	0
	5/19/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/7/2016	N	Y	151 (2)	NM	NM	Y	N	151	NR	NR	1
	6/22/2016	N	N	---	---	---	N	N	---	---	---	0
	6/29/2016	N	N	---	152 (2)	---	N	N	---	---	---	0
CZ16	7/11/2016	N	N	---	141 (2)	---	N	N	---	---	---	0
	5/31/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/15/2016	N	N	NM	149 (2)	NM	N	N	---	---	---	0
	6/22/2016	N	Y	NM	NM	0.13 (1)	N	Y	---	---	---	0
	6/29/2016	N	N	---	148 (2)	---	N	N	---	---	---	0
CZ18	7/12/2016	N	Y	---	144 (2)	0.02 (1)	N	Y	---	---	---	0
CZ19	5/31/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0

Well	Date	Able to Use Interface Probe? (Y/N)	NAPL Present (Y/N)	Before Pumping			Bailed/ Pumped (Y/N)	After Pumping				LNAPL Removed (Gallons)
				Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)		NAPL Remaining (Y/N)	Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)	
	6/22/2016	N	N	---	NM (2)	---	N	N	---	---	---	0
	6/29/2016	N	N	---	149 (2)	---	N	N	---	---	---	0
	7/12/2016	N	Sheen	147 (2)	147 (2)	Sheen	N	Sheen	---	---	---	0
CZ20	7/12/2016	N	N	NM	145 (2)	NM	N	N	---	---	---	0
UWBZ02	7/12/2016	N	Y	142 (2)	169 (2)	27 (1)	Y	N	NR	NR	0	25
	7/7/2016	N	N	---	---	---	N	N	---	---	---	0
UWBZ03	7/12/2016	N	N	---	145 (2)	---	N	N	---	145 (2)	---	0
	7/7/2016	N	N	---	---	---	N	N	---	---	---	0
UWBZ07	7/12/2016	N	N	---	148 (2)	---	N	N	---	148 (2)	---	0
	5/24/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/3/2016	N	Y	143 (3)	NM	NM	Y	N	NR	NR	NR	13
	6/23/2016	N	N	---	---	---	N	N	---	---	---	0
	6/29/2016	N	Y	151 (2)	151 (2)	0.08 (1)	N	Y	---	---	---	0
	7/12/2016	N	Y	142 (2)	152 (2)	10 (1)	N	Y	---	---	---	0
UWBZ10	7/13/2016	N	Y	NR	NR	NR	Y	N	NR	NR	0	18
	7/7/2016	N	Y	NM	NM	<0.02 (1)	N	Y	---	---	---	0
	7/12/2016	N	Y	140 (2)	165 (2)	25 (1)	N	Y	---	---	---	0
UWBZ13	7/13/2016	N	Y	NR	NR	NR	Y	N	NR	NR	0	40
	7/7/2016	N	Y	NM	NM	0.02 (1)	N	Y	---	---	---	0
UWBZ14	7/11/2016	N	Y	NM	144 (2)	0.02 (1)	N	Y	---	---	---	0
UWBZ15	7/12/2016	N	Y	140 (2)	170 (2)	30 (1)	N	Y	---	---	---	0
UWBZ16	7/11/2016	N	Y	NM	143 (2)	0.02 (1)	N	Y	---	---	---	0
	6/22/2016	N	Y	NM	NM	3 (1)	N	Y	---	---	---	0
UWBZ18	6/30/2016	N	Y	147 (2)	NM	NM	Y	N	NR	NR	0	20

Well	Date	Able to Use Interface Probe? (Y/N)	NAPL Present (Y/N)	Before Pumping			Bailed/ Pumped (Y/N)	After Pumping				LNAPL Removed (Gallons)
				Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)		NAPL Remaining (Y/N)	Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)	
	6/6/2016	N	Y	150 (2)	NM	NM	Y	N	NR	NR	0	1
	6/22/2016	N	Y	NM	NM	3 (1)	N	Y	---	---	---	0
	7/11/2016	N	Y	138 (2)	164 (2)	26 (1)	N	Y	---	---	---	0
UWBZ19	7/12/2016	N	Y	142	162	20 (1)	Y	N	---	144 (2)	0	28
	5/26/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/14/2016	N	Y	148 (2)	NM	NM	Y	N	NR	NR	0	24
	6/23/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/29/2016	N	Y	155 (2)	157.5 (2)	2.5 (1)	N	Y	---	---	---	0
UWBZ21	7/7/2016	N	Y	NM	NM	0.08 (1)	N	Y	---	---	---	0
	5/19/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/8/2016	N	Y	149 (2)	NM	NM	Y	N	NR	NR	0	1
	6/29/2016	N	Y	147.5 (2)	147 (2)	0.5 (1)	N	Y	---	---	---	0
	7/7/2016	N	Y	NM	NM	0.02 (1)	N	Y	---	---	---	0
UWBZ22	7/12/2016	N	Y	NM	146 (2)	0.04 (1)	N	Y	---	---	---	0
	5/18/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/9/2016	N	Y	148 (2)	NM	NM	Y	N	NR	NR	0	35
	6/29/2016	N	Y	153 (2)	154.5 (2)	1.5 (1)	N	Y	---	---	---	0
UWBZ23	7/11/2016	N	Y	142 (2)	148 (2)	6 (1)	N	Y	---	---	---	0
	6/29/2016	N	Y	141.5 (2)	170 (2)	28.5 (1)	N	Y	---	---	---	0
	7/5/2016	Y	Y	140.44	167.05	26.61	Y	Y	142.15	162.85	20.7	10
	7/6/2016	Y	Y	141.96	162.95	20.99	Y	Y	147.34	147.79	0.45	40
UWBZ26	7/12/2016	N	Y	NM	142 (2)	0.17 (1)	N	Y	---	---	---	0
	5/24/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
UWBZ27	6/8/2016	N	Y	143 (2)	NM	NM	Y	N	NR	NR	NR	32

Well	Date	Able to Use Interface Probe? (Y/N)	NAPL Present (Y/N)	Before Pumping			Bailed/ Pumped (Y/N)	After Pumping				LNAPL Removed (Gallons)
				Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)		NAPL Remaining (Y/N)	Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)	
	6/29/2016	N	Y	148 (2)	148 (2)	<0.02 (1)	N	Y	---	---	---	0
	7/12/2016	N	N	---	143 (2)	---	N	N	---	---	---	0
UWBZ33/LSZ48*	7/12/2016	Y	Y	144.9	146.55	1.65	Y	Y	145.22	145.35	0.13	2
UWBZ36*	7/15/2016	Y	N	---	144.31	---	N	N	---	---	---	0
	7/7/2016	N	N	---	---	---	N	N	---	---	---	0
LSZ03	7/12/2016	N	N	---	145 (2)	---	N	N	---	---	---	0
	7/7/2016	N	N	---	---	---	N	N	---	---	---	0
LSZ07	7/12/2016	N	N	---	145 (2)	---	N	N	---	---	---	0
	5/26/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/29/2016	N	Y	152 (2)	152 (2)	<0.08 (1)	N	Y	---	---	---	0
	7/7/2016	N	Y	NM	NM	<0.08 (1)	N	Y	---	---	---	0
LSZ09	7/12/2016	N	Sheen	144 (2)	144 (2)	Sheen	N	Sheen	---	---	---	0
LSZ10	7/12/2016	N	N	---	142 (2)	---	N	N	---	---	---	0
	5/24/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/1/2016	N	Y	NM	NM	NM	Y	N	NR	NR	0	10 (4)
	6/29/2016	N	N	---	147	---	N	N	---	---	---	0
	7/7/2016	N	Y	NM	NM	<0.02 (1)	N	Y	---	---	---	0
LSZ11	7/11/2016	N	Y	NM	145 (2)	0.08 (1)	N	Y	---	---	---	0
	5/19/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/14/2016	N	Y	NM	NM	NM	Y	N	NR	NR	0	50
	6/24/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/29/2016	N	Y	148 (2)	158 (2)	10 (1)	Y	Y	NR	NR	<0.08	25
LSZ12	7/12/2016	N	N	---	147 (2)	---	N	N	---	---	---	0
	5/18/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
LSZ14	6/13/2016	N	Y	144 (2)	NM	NM	Y	N	NR	NR	0	26

Well	Date	Able to Use Interface Probe? (Y/N)	NAPL Present (Y/N)	Before Pumping			Bailed/ Pumped (Y/N)	After Pumping				LNAPL Removed (Gallons)
				Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)		NAPL Remaining (Y/N)	Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)	
	6/29/2016	N	N	---	150 (2)	---	N	N	---	---	---	0
	7/7/2016	N	Y	146 (2)	165 (2)	21 (1)	N	Y	148 (2)	NR	NR	35
	7/12/2016	N	Y	135 (2)	NM	>35 (1)	N	Y	---	---	---	0
LSZ15	7/14/2016	N	Y	144 (2)	159 (2)	15 (1)	Y	Sheen	NR	147 (2)	Sheen	100
	5/24/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/2/2016	N	Y	130 (2)	NM	NM	Y	N	NR	NR	0	50 (4)
	6/23/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/29/2016	N	Y	150 (2)	150 (2)	0.08 (1)	N	Y	---	---	---	0
LSZ17	7/12/2016	N	Y	NM	145 (2)	0.08 (1)	N	Y	---	---	---	0
	7/7/2016	N	Y	NM	NM	0.02 (1)	N	Y	---	---	---	0
LSZ19	7/12/2016	N	Y	NM	144 (2)	0.04 (1)	N	Y	---	---	---	0
	7/7/2016	N	Sheen	---	NM	---	N	Y	---	---	---	0
LSZ20	7/11/2016	N	Sheen	142 (2)	142 (2)	Sheen	N	Sheen	---	---	---	0
	5/26/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/20/2016	N	N	---	151 (2)	---	N	N	---	---	---	0
	6/29/2016	N	N	---	152 (2)	---	N	N	---	---	---	0
	7/7/2016	N	N	---	---	---	N	N	---	---	---	0
LSZ23	7/12/2016	N	N	---	147 (2)	---	N	N	---	---	---	0
LSZ24	7/12/2016	N	N	---	142 (2)	---	N	N	---	---	---	0
LSZ25	7/11/2016	N	Sheen	143 (2)	143 (2)	Sheen	N	Sheen	---	---	---	0
	5/16/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/14/2016	N	N	---	149 (2)	---	N	N	---	---	---	0
	6/29/2016	N	N	---	153 (2)	---	N	N	---	---	---	0
LSZ26	7/11/2016	N	N	---	146 (2)	---	N	N	---	---	---	0
LSZ27	7/7/2016	N	N	---	---	---	N	N	---	---	---	0

Well	Date	Able to Use Interface Probe? (Y/N)	NAPL Present (Y/N)	Before Pumping			Bailed/ Pumped (Y/N)	After Pumping				LNAPL Removed (Gallons)
				Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)		NAPL Remaining (Y/N)	Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)	
	7/12/2016	N	N	---	145 (2)	---	N	N	---	---	---	0
LSZ28	5/24/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/3/2016	N	Y	146	NM	NM	Y	N	NR	NR	0	5
	6/23/2016	N	N	---	NM	---	N	N	---	---	---	0
	6/29/2016	N	N	---	151	---	N	N	---	---	---	0
	7/12/2016	N	Sheen	145 (2)	145 (2)	Sheen	N	Sheen	---	---	---	0
LSZ29	5/18/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/6/2016	N	Y	142 (2)	NM	NM	Y	Y	NR	NR	NR	3
	6/29/2016	N	Y	152 (2)	152 (2)	<0.01 (1)	N	Y	NR	NR	<0.01	0
LSZ31	6/6/2016	N	Y	151 (2)	NM	NM	Y	N	NR	NR	0	20
LSZ34	5/17/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/14/2016	N	Y	148 (2)	NM	NM	Y	N	NR	NR	0	38
	6/29/2016	N	Y	152 (2)	152 (2)	<0.08 (1)	N	Y	---	---	---	0
	7/11/2016	N	Y	NM	145 (2)	0.08 (1)	N	Y	---	---	---	0
LSZ35	6/29/2016	N	Y	147 (2)	NM	NM	Y	N	NR	NR	0	65
	7/12/2016	N	Y	140 (2)	168 (2)	28 (1)	N	Y	---	---	---	0
LSZ36	5/19/2016	N	Y	NM	NM	NM	N	Y	---	---	---	0
	6/10/2016	N	Y	144 (2)	NM	NM	Y	N	NR	NR	0	86
	6/29/2016	N	Y	152 (2)	152 (2)	0.08 (1)	N	Y	---	---	---	0
	7/7/2016	N	Y	NM	NM	0.06 (1)	N	Y	---	---	---	0
	7/11/2016	N	Y	NM	145 (2)	0.08 (1)	N	Y	---	---	---	0
LSZ37	5/23/2016	Y	Y	138.40	185.80	47.40	N	Y	---	---	---	0
	5/24/2016	Y	Y	NR	NR	NR	Y	Y	145.09	161.65	16.56	60
	5/25/2016	Y	Y	NR	NR	NR	Y	Y	148.55	149.6	1.05	25
	5/25/2016	Y	Y	148.45	149.51	1.06	N	Y	---	---	---	0

Well	Date	Able to Use Interface Probe? (Y/N)	NAPL Present (Y/N)	Before Pumping			Bailed/ Pumped (Y/N)	NAPL Remaining (Y/N)	After Pumping			LNAPL Removed (Gallons)
				Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)			Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)	
	5/26/2016	Y	Y	148.46	149.5	1.04	N	Y	---	---	---	0
	5/26/2016	Y	Y	148.42	149.54	1.12	N	Y	---	---	---	0
	5/27/2016	Y	Y	148.31	149.5	1.19	N	Y	---	---	---	0
	5/31/2016	Y	Y	148.31	149.49	1.18	N	N	---	---	---	0
	6/2/2016	Y	Y	NR	NR	NR	Y	Y	149.12	150.11	0.99	17
	6/3/2016	Y	Y	148.66	148.7	0.04	N	Y	---	---	---	0
	7/1/2016	Y	N	---	148.58	---	N	N	---	---	---	0
	7/15/2016	Y	N	---	148.45	---	N	N	---	---	---	0
LSZ38	5/23/2016	Y	Y	145.33	156.19	10.86	N	Y	---	---	---	0
	5/24/2016	Y	Y	NR	NR	NR	Y	Y	148.5	149.58	1.08	15
	5/25/2016	Y	Y	148.55	149.7	1.15	N	Y	---	---	---	0
	5/25/2016	Y	Y	148.47	149.66	1.19	N	Y	---	---	---	0
	5/26/2016	Y	Y	148.51	149.76	1.25	N	Y	---	---	---	0
	5/26/2016	Y	Y	148.42	149.61	1.19	N	Y	---	---	---	0
	5/27/2016	Y	Y	148.34	149.58	1.24	N	Y	---	---	---	0
	5/31/2016	Y	Y	148.33	149.61	1.28	N	Y	---	---	---	0
	6/3/2016	Y	Y	148.41	149.62	1.21	N	Y	---	---	---	0
	7/1/2016	Y	N	---	148.33	---	N	N	---	---	---	0
	7/15/2016	Y	N	---	148.22	---	N	N	---	---	---	0
LSZ39	5/19/2016	Y	Y	NR	NR	NR	N	Y	---	---	---	0
	5/23/2016	Y	Y	135.78	191.02	55.24	N	Y	---	---	---	0
	5/26/2016	Y	Y	135.91	191.2	55.29	N	Y	---	---	---	0
	6/1/2016	Y	Y	135.85	190.8	54.95	Y	Y	150.16	152.45	2.29	80
	6/1/2016	Y	Y	148.49	150.82	2.33	N	Y	---	---	---	0
	6/1/2016	Y	Y	148.71	151.09	2.38	N	Y	---	---	---	0
	6/3/2016	Y	Y	148.71	151.11	2.40	N	Y	---	---	---	0
	7/1/2016	Y	N	---	149.18	---	N	N	---	---	---	0
	7/15/2016	Y	N	---	149.05	---	N	N	---	---	---	0
LSZ44*	7/8/2016	Y	N	---	144.70	---	N	N	---	---	---	0

Well	Date	Able to Use Interface Probe? (Y/N)	NAPL Present (Y/N)	Before Pumping			Bailed/ Pumped (Y/N)	After Pumping				LNAPL Removed (Gallons)
				Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)		NAPL Remaining (Y/N)	Depth to Product (ft. bgs)	Depth to Water (ft. bgs)	NAPL Thickness (ft.)	
	7/15/2016	Y	N	---	150.33	---	N	N	---	---	---	0
	6/27/2016	Y	N	---	151.61	---	N	N	---	---	---	0
	7/8/2016	Y	N	---	148.94	---	N	N	---	---	---	0
	7/11/2016	Y	N	---	145.00	---	N	N	---	---	---	0
LSZ45*	7/15/2016	Y	N	---	148.89	---	N	N	---	---	---	0
	6/27/2016	Y	N	---	148.05	---	N	N	---	---	---	0
	7/8/2016	Y	N	---	147.95	---	N	N	---	---	---	0
LSZ46*	7/15/2016	Y	N	---	147.87	---	N	N	---	---	---	0
	6/14/2016	Y	N	---	145.67	---	N	N	---	---	---	0
	7/8/2016	Y	N	---	145.93	---	N	N	---	---	---	0
LSZ49*	7/15/2016	Y	N	---	145.85	---	N	N	---	---	---	0
	6/14/2016	Y	N	---	145.26	---	N	N	---	---	---	0
	7/8/2016	Y	N	---	144.70	---	N	N	---	---	---	0
LSZ50*	7/15/2016	Y	N	144.60	146.82	2.22	N	Y	---	---	---	0
	7/8/2016	Y	N	---	149.00	---	N	N	---	---	---	0
LSZ52*	7/15/2016	Y	N	---	148.89	---	N	N	---	---	---	0

NM = Not measured due to temperature interference.
NR = Not recorded.
--- = No NAPL present. Measurement not performed.
* = Newly installed well.

Notes:
(1) LNAPL estimated using PTFE bailer, not interface probe.
(2) Depth measured using a bailer.
(3) Depth measured using a tagline.
(4) LNAPL recovered included water.

VIII. WASTE GENERATION

No site-derived waste was removed from ST012 this week.

IX. TWO WEEK LOOK AHEAD

A. SEE Demolition - None

B. EBR Construction - None

C. Well Drilling/Development - None

D. Sampling Activities

1. Pumping and bailing to remove NAPL from SEE wells
2. Continued NAPL screening in SEE extraction and injection wells
3. Continued sampling in newly drilled EBR wells

E. SVE System

1. Provide natural gas and temporary power to the Flame Oxidizer and test functionality

X. ATTACHMENTS

1. Boring Log – LSZ52

Project Name: ST012 EBR Drilling

Project Number: 9101110001.5310.02

Date: 6-17-16

Boring ID: LSZ52

Boring Location:	
Elevation and Datum:	Logged By: Kyle K
Start Date: 6-17-16 21:45	Project Manager: Gwen Minaker
Completion Date: 6-18-16 07:15	Drilling Contractor: Yellow Jacket Drilling
Total Depth: 230'	Drilling Method: Sonic
Depth to Water: ~146	Drilling Equipment: 6" Core Barrel, 8" Casing
	Sampling Method: Continuous Core

Depth Below Ground Surface (feet)	Sample ID	PID Reading (PPM)	LNAPL Test (Red, Pink, None)	USCS	Soil Classification, Description and Notes USCS Name Soil description [i.e. % by weight, gradation, angularity] starting with largest percent, cementation, plasticity, color, moisture, odor, staining. Any additional descriptive information may be included in the soil description or notes.
0		0			Note: 1.5' of Asphalt, gravel + concrete
				SC	Clayey Sand @1.5' ~75% F-C-Gr Sand SR/SA ~25% Clay NC, NP, Brown, Sl. moist, No odor, No stains
5		0			
10		0		SM	Silty Sand @9' ~70% F-Gr Sand ~30% Silt NC, NP, Brown, Sl. moist, No odor, No stains
15		0			Note: @14' silt content increased Note @16' clay content increased
20		0		SC	Clayey Sand @20' ~75% F-C-Gr Sand SR/SA ~25% Clay (some silt) NC-WC, NP, Brown-red, Sl. moist, No odor, No stains
25		0			

Project Name: ST012 EBR Drilling

Project Number: 9101110001.5310.02

Date: 6-17-16

Boring ID: LSZ52

Depth Below Ground Surface (feet)	Sample ID	PID Reading (PPM)	LNAPL Test (Red, Pink, None)	USCS	Soil Classification and Notes Name (USCS Symbol): color, moisture, material with description [i.e. % by weight, gradation, angularity] starting with largest percent, cementation, plasticity, odor, staining, any additional information
25		0			
30		0			Note: @30' Clay content decreased
				CL	Clay @ 32' ~65% Clay ~35% F-M/Gr Sand SR/SA NC, MDW-Med PI, Red Brown, Sl. moist, No odor, No stains
35		0			
				SM	Silty Sand @36' ~60% F-Gr Sand ~40% Silt (some clay) NC, Low PI, Brown, Sl. moist, No odor, No stains Note: @38' silt content decreased
40		0		SC	Clayey Sand @40' ~60% F-Gr Sand ~40% Clay (some silt) NC, Low-Med PI, Red Brown, Sl. moist, No odor, No stains Note: @44' Clay content decreased
45		0			Note: @46' Clay content increased
50					

Project Name: ST012 EBR Drilling

Project Number: 9101110001.5310.02

Date: 6-17-16

Boring ID: LSZ52

Depth Below Ground Surface (feet)	Sample ID	PID Reading (PPM)	LNAPL Test (Red, Pink, None)	USCS	Soil Classification and Notes Name (USCS Symbol): color, moisture, material with description [i.e. % by weight, gradation, angularity] starting with largest percent, cementation, plasticity, odor, staining, any additional information
50		0		ML	Silt with Sand @50' ~70% Silt (some Clay) ~30% F-Gr Sand NC, low PI, Brown, Sl. Moist, No odor, No stains
55		0			Note: @55' Silty sand lens ~1'
60		0		CL	Clay @ 60' ~80% Clay ~20% F-Gr Sand SR/SA NC-VC, Med PI, Red Brown, Sl. moist, No odor, No stains
					Note: @63' Clayey sand lens ~1'
65		0			Note: @66' SC Nodules begin
70		0			Note: @70' SC lens ~4"
75		0		SM	Silty Sand @74' ~65% F-Gr Sand ~35% Silt (some Clay) NC, NP-low PI, Brown, Sl. Moist, No odor, No stains

Project Name: ST012 EBR Drilling

Project Number: 9101110001.5310.02

Date:

Boring ID: L5752

Depth Below Ground Surface (feet)	Sample ID	PID Reading (PPM)	LNAPL Test (Red, Pink, None)	USCS	Soil Classification and Notes Name (USCS Symbol): color, moisture, material with description [i.e. % by weight, gradation, angularity] starting with largest percent, cementation, plasticity, odor, staining, any additional information
75		0			Note: @75' SC lens ~5"
				SC	Clayey Sand @76' ~70% F-M-Gr Sand (SR/SA) ~30% Clay (some silt) NC, NP, Red Brown, Sl. moist, No odor, No stains
80					Note: @79' Clay content decreased
		0			Note: @80' C-Gr Sand content increased
85				CL	Clay @84' ~80% Clay (some silt) ~20% F-C-Gr Sand SR/SA NC (SC Nodules), Med PI, Red Brown, Sl. moist, No odor, No stains
		0			Note: @86' Cementation increased
90		0			Note: @90' Clayey Sand lens ~1'
				SM	Silty Sand @90' ~70% F-M-Gr Sand SR/SA ~30% silt NC, NP, Brown, Sl. moist, No odor, No stains
95					Note: @94' Pred. F-Gr Sand, silt content increased (~35-40%)
		0			Note: @96' Clayey Sand lens ~1'
100				CL	Clay @98' ~80% Clay (some silt) ~20% F Gr Sand NC NP, Med PI, Brown Red, Sl. moist, No odor, No stains
		0			

Project Name: ST012 EBR Drilling

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Project Number: 9101110001.5310.02

Date: 6-17-16

Boring ID: LSZ52

Depth Below Ground Surface (feet)	Sample ID	PID Reading (PPM)	LNAPL Test (Red, Pink, None)	USCS	Soil Classification and Notes Name (USCS Symbol): color, moisture, material with description [i.e. % by weight, gradation, angularity] starting with largest percent, cementation, plasticity, odor, staining, any additional information
100		0.0			Note: @100' cementation increased
					Note: @102' silt content increased
105		1.8			
110		2.0			
					Note: @112' Clay sand lens ~6"
				SP-SM	Poorly Graded Sand with Silt @113' ~90% F-M-Gr Sand SP/SM ~10% silt NC, NP, Brown, Sl. moist, No odor, No stains
115		0.0			
				SC	Clayey Sand @116' ~80% F/M-Gr sand SP/SM ~20% clay NC, NP, Brown-red, Sl. moist, No odor, No stains
120		0.0		SP-SM	Poorly Graded Sand @120' ~90% F-M Gr Sand SP/SM ~10% silt NC, NP, Brown, Sl. moist, No odor, No stains
					Note: @123' Clay lens ~6"
125		0.0			

Project Name: ST012 EBR Drilling

Project Number: 9101110001.5310.02

Date: 6-17-16

Boring ID: LS752

Depth Below Ground Surface (feet)	Sample ID	PID Reading (PPM)	LNAPL Test (Red, Pink, None)	USCS	Soil Classification and Notes Name (USCS Symbol): color, moisture, material with description [i.e. % by weight, gradation, angularity] starting with largest percent, cementation, plasticity, odor, staining, any additional information
125		0.0			
					Note: @126' Clayey Sand lens ~1'
				CL	Clay @ 127' ~70% Clay (some silt) ~30% F-M Gr Sand SR/SA NC, Med PI, Red-Brown, Sl. moist, No odor, No stains
130		1.0			Note: @130' cementation increased
				SM	Silty Sand @ 131' ~75% F-M-Gr Sand SR/SA ~25% silt NC, NP, Brown, Sl. moist, No stains, No odor.
135		0.7			
				SC	Clayey Sand @ 136' ~70% F-M-Gr Sand SR/SA ~30% Clay (some silt) NC, NP-Low PI, Brown-red, Sl. moist-moist, No odor, No stains
140		0.0			
					Note: @142' Silty sand lens ~1'
▽				SW-SM	Well Graded Sand with Silt @ 143' ~90% F-C-Gr Sand SR/SA ~10% silt NC, NP, Brown, Moist-wet, No odor, No stains
145		0.0			
				SC	Clayey Sand @ 146' ~70% F-C-Gr Sand SR/SA ~30% Clay NC, NP-Low PI, Brown-red, Moist-wet, No odor, No stains
150				SW-SM	Well Graded Sand with Silt @ 149' ~90% F-C-Gr Sand SR/SA ~10% Silt NC, NP, Brown, wet, No odor, No stains

Project Name: ST012 EBR Drilling

Project Number: 9101110001.5310.02

Date:

Boring ID: LS152

Depth Below Ground Surface (feet)	Sample ID	PID Reading (PPM)	NAPL Test (Red, Pink, None)	USCS	Soil Classification and Notes Name (USCS Symbol): color, moisture, material with description [i.e. % by weight, gradation, angularity] starting with largest percent, cementation, plasticity, odor, staining, any additional information
150		0.1			
					Note: @154' Clayey Sand lens ~1'
155		0.6			
				SC	~~Clayey Sand~~ @156' Clay
				CL	~90% Clay ~10% F-Gr Sand NC, Med-High PI, Red Brown, Moist, No odor, No Stains
					Note: @158' Sand content increased for 6" (lens)
160		0.9			
					Note: @164' Clayey Sand lens ~1'
165		0.6			
				SC	Clayey Sand @166'
					~60% Fgr-Gr Sand SA/SR ~40% Clay (some silt) NC, Low PI, Brown, Moist, No odor, No Stains
170		0.3			
				SW-SC	Well Graded Sand with Clay @171'
					~90% F-C-Gr Sand SR/SR ~10% Clay NC, NP, Brown, Wet, No odor, No stains
175					

Project Name: ST012 EBR Drilling

Project Number: 9101110001.5310.02

Date: 6-28-14

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Boring ID: LSE52

Depth Below Ground Surface (feet)	Sample ID	PID Reading (PPM)	LNAPL Test (Red, Pink, None)	USCS	Soil Classification and Notes Name (USCS Symbol): color, moisture, material with description [i.e. % by weight, gradation, angularity] starting with largest percent, cementation, plasticity, odor, staining, any additional information
175		0.6			Note: @175' C-Gr Gravel content increased
180		0.8		CL	Clay @180' ~90% Clay ~10% F-Gr Sand HC-WC, Med-High PI, Red Brown, Sl. moist-moist, No odor, No Stains Note: @183' Sand content increased
185		0.1			
190		0.1		SC	Clayey Sand @198' ~65% F-M-Gr Sand SR/SA ~35% Clay (some silt) NC, Low PI, Brown-red, moist-wet, No odor, No stains Note: @191' cementation increased Note: @193' Clay lens ~1'-1.5'
195		0.9			Note: @197' Clay lens ~1'
200					

ect Name: ST012 EBR Drilling

Project Number: 9101110001.5310.02

Date: 6-18-16

Boring ID: IST52

Depth Below Ground Surface (feet)	Sample ID	PID Reading (PPM)	LNAPL Test (Red, Pink, None)	USCS	Soil Classification and Notes Name (USCS Symbol): color, moisture, material with description [i.e. % by weight, gradation, angularity] starting with largest percent, cementation, plasticity, odor, staining, any additional information
200		1.8			Note: @200' Clay content increased
					Note: @202' Clay content decreased
205		1.1		CL	Clay @204' ~90% Clay ~10% F-Gr Sand NC, Med-High PI, Red Brown, Sl. moist-moist, No odor, No stains
210		0.0		SC	Clayey Sand @210' ~80% F-C-Gr Sand SR/SA ~20% Clay (some silt) NC, NP, Brown, wet, No odor, No stains
215		0.0		CL	Clay @214' ~85% Clay ~15% F-Gr Sand NC-WC, Med-High PI, Red Brown, Sl. moist-moist, No odor, No stains
				SC	Clayey Sand @216 ~60% F-M-Gr Sand SR/SA ~40% Clay (some silt) NC, Low-Med PI, Red Brown, Moist
220		0.0			Note: @220' Clay content decreased (~15%) C-Gr Sand increased Moisture content increased
225		0.0			Note: @223' Clay content increased

Project Name: ST012 EBR Drilling

Project Number: 9101110001.5310.02

Date: 6-18-16

Boring ID: LSZ52

Boring Location:	Logged By:
Elevation and Datum:	Project Manager:
Start Date:	Drilling Contractor:
Completion Date:	Drilling Method:
Total Depth:	Drilling Equipment:
Depth to Water:	Sampling Method:

Depth Below Ground Surface (feet)	Sample ID	PID Reading (PPM)	NAPL Test (Red, Pink, None)	USCS	Soil Classification, Description and Notes USCS Name Soil description [i.e. % by weight, gradation, angularity] starting with largest percent, cementation, plasticity, color, moisture, odor, staining. Any additional descriptive information may be included in the soil description or notes
225		0.0			
				SW-SP	Well Graded Sand with Silt and Gravel @ 220'
					~75% F-C-Gr Sand SR/SA
					~15% Med F-Gr Gravel SR/SA
					~10% Silt
					NC, NP, Brown, wet, No odor, No stains
230		0.0			
					TD @ 230' 6-8-16 OTIS
235					
240					
245					
250					