# 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.

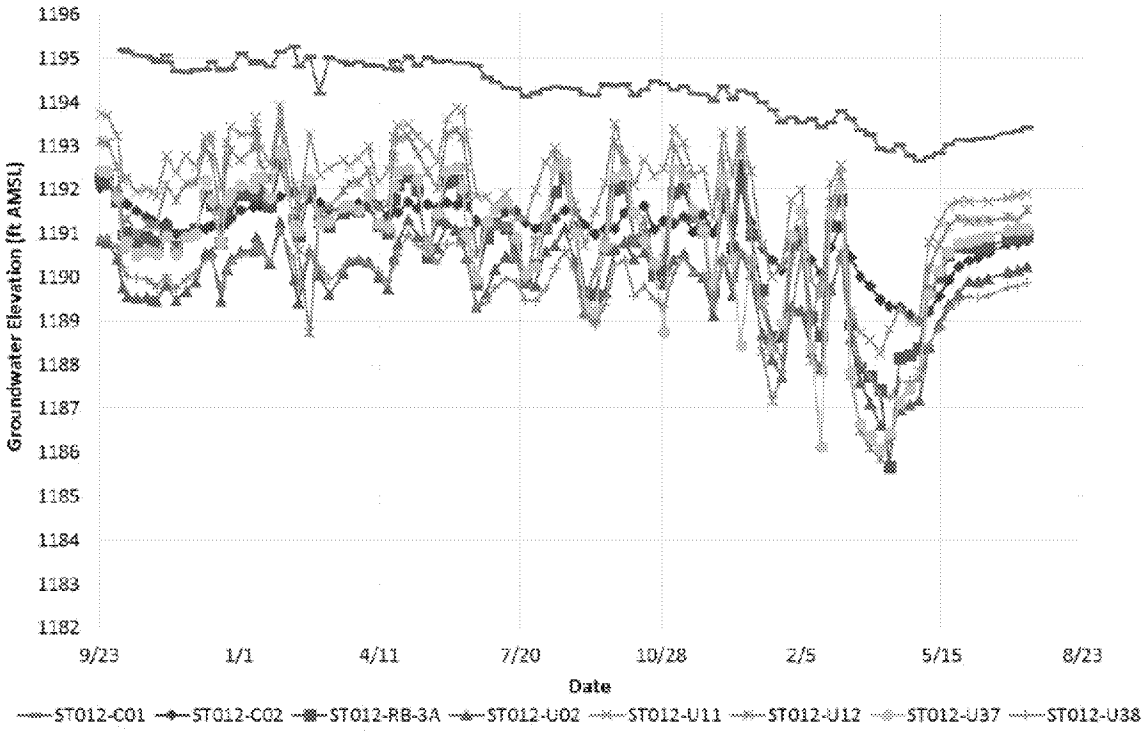
(a) Calculated destruction efficiencies are calculated using a single sampling event for each quarter, not using the average influent and effluent results.
(b) Mass and volumes are calculated based on laboratory data for TPH reported as JP-4. As has been the basis for previous calculations at ST012, 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

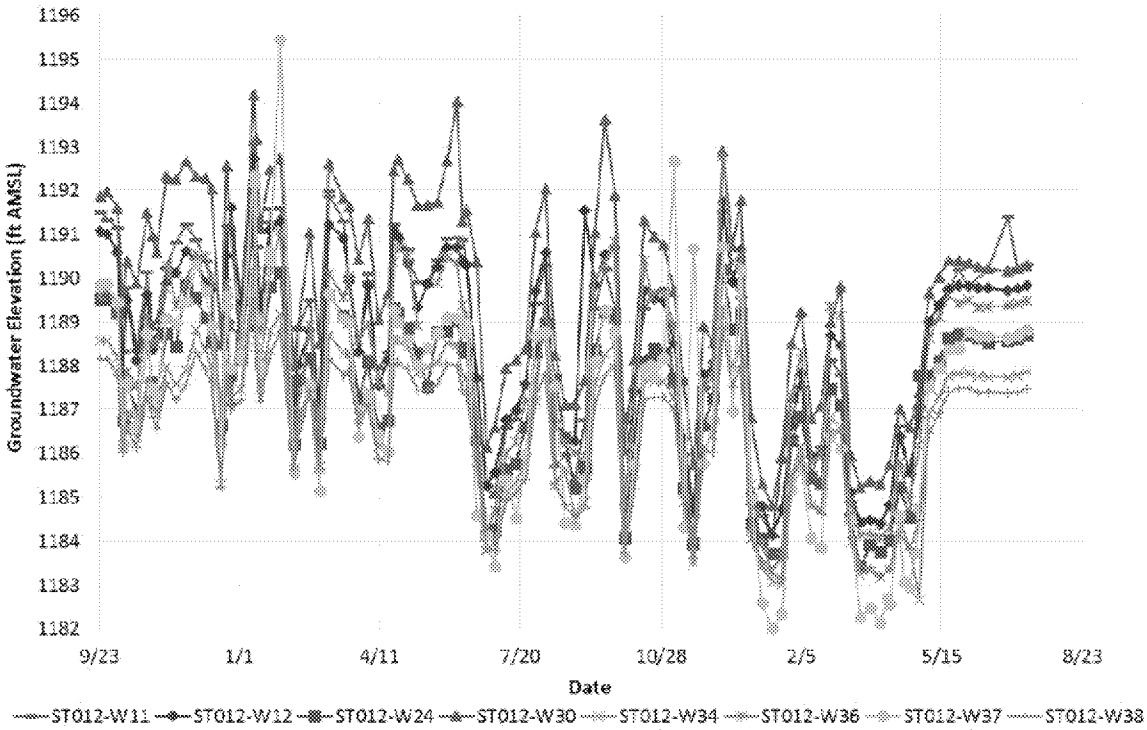
## A. Perimeter groundwater elevation differences (measured in feet) adjusted for regional groundwater table increase

| 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**

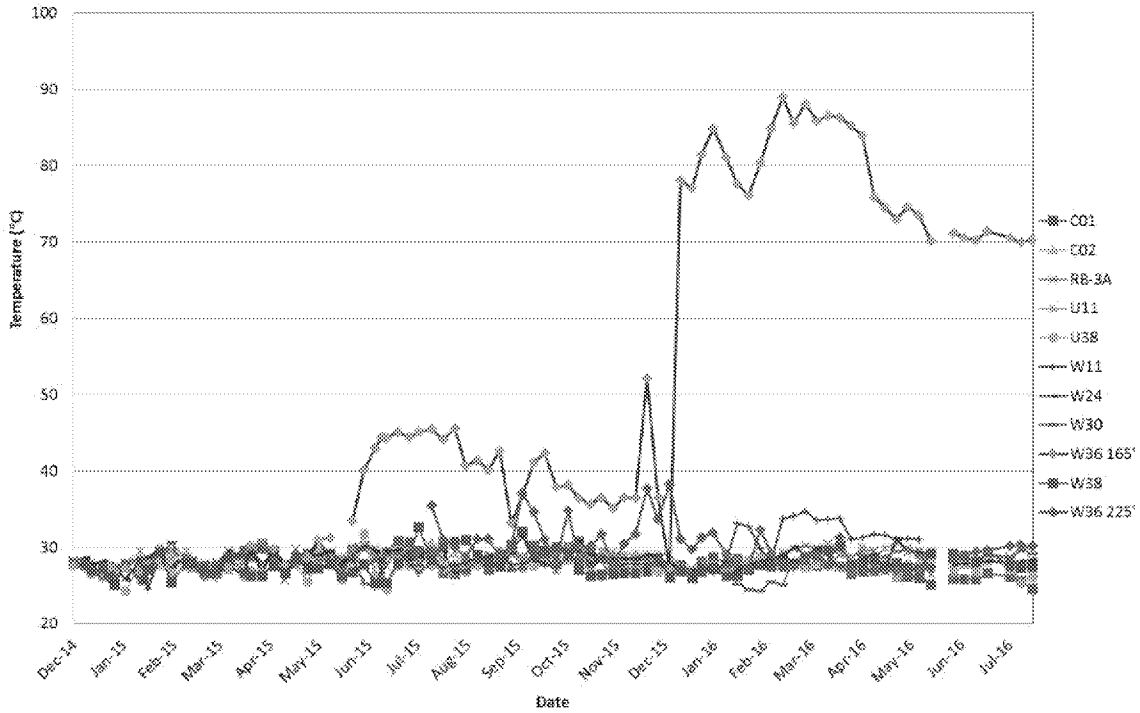



**LSZ Groundwater Elevations**



# 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<br>USCS Name<br>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'<br>~75% F-C-Gr Sand SR/SA<br>~25% Clay<br>NL, NP, Brown, Sl. moist, No odor, No stains |
| 5 | | 0 | | | |
| 10 | | 0 | | SM | Silty Sand @9'<br>~70% F-Gr Sand<br>~30% Silt<br>NL, NP, Brown, Sl. moist, No odor, No stains |
| 15 | | 0 | | | Note: @14' silt content increased<br>Note @16' clay content increased |
| 20 | | 0 | | SC | Clayey Sand @20'<br>~75% F-C-Gr Sand SR/SA<br>~25% Clay (some silt)<br>NL-WL, 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

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Boring ID: LSZ52

| Depth Below Ground Surface (feet) | Sample ID | PID Reading (PPM) | LNAPL Test (Red, Pink, None) | USCS | Soil Classification and Notes<br>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'<br>~65% Clay<br>~35% F-M/Gr Sand SR/SA<br>NC, MDW-Med PI, Red Brown, Sl. moist, No odor, No stains |
| 35 | | 0 | | | |
| | | | | SM | Silty Sand @ 36'<br>~60% F-Gr Sand<br>~40% Silt (some clay)<br>NC, Low PI, Brown, Sl. moist, No odor, No stains<br>Note: @38' silt content decreased |
| 40 | | 0 | | SC | Clayey Sand @ 40'<br>~60% F-Gr Sand<br>~40% Clay (some silt)<br>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: LSE52

| Depth Below Ground Surface (feet) | Sample ID | PID Reading (PPM) | LNAPL Test (Red, Pink, None) | USCS | Soil Classification and Notes<br>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'<br>~70% Silt (some Clay)<br>~30% F-Gr Sand<br>NC, low PI, Brown, Sl. Moist, No odor, No stains |
| 55 | | 0 | | | Note: @55' Silty sand lens ~1' |
| 60 | | 0 | | CL | Clay @ 60'<br>~80% Clay<br>~20% F-Gr Sand SR/SA<br>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'<br>~65% F-Gr Sand<br>~35% Silt (some Clay)<br>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<br>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'<br>~70% F-M-Gr Sand (SR/SA)<br>~30% Clay (some silt)<br>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'<br>~80% Clay (some silt)<br>~20% F-C-Gr Sand SR/SA<br>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'<br>~70% F-M-Gr Sand SR/SA<br>~30% silt<br>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'<br>~80% Clay (some silt)<br>~20% F Gr Sand<br>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) | NAPL Test (Red, Pink, None) | USCS | Soil Classification and Notes<br>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 | | 0.4 | | | 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'<br>~90% F-M-Gr Sand SP/SA<br>~10% silt<br>NC, NP, Brown, Sl. moist, No odor, No stains |
| 115 | | 0.0 | | | |
| | | | | SC | Clayey Sand @116'<br>~80% F/M-Gr sand SP/SA<br>~20% clay<br>NC, NP, Brown-red, Sl. moist, No odor, No stains |
| 120 | | 0.0 | | SP-SM | Poorly Graded Sand @120'<br>~90% F-M-Gr Sand SP/SA<br>~10% silt<br>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<br>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'<br>~70% Clay (some silt)<br>~30% F-M Gr Sand SR/SA<br>NC, Med PI, Red-Brown, Sl. moist, No odor, No stains |
| 130 | | 1.6 | | | Note: @130' cementation increased |
| | | | | SM | Silty Sand @ 131'<br>~75% F-M-Gr Sand SR/SA<br>~25% silt<br>NC, NP, Brown, Sl. moist, No stains, No odor. |
| 135 | | 0.7 | | | |
| | | | | SC | Clayey Sand @ 136'<br>~70% F-M-Gr Sand SR/SA<br>~30% Clay (some silt)<br>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'<br>~90% F-C-Gr Sand SR/SA<br>~10% silt<br>NC, NP, Brown, Moist-wet, No odor, No stains |
| 145 | | 0.0 | | | |
| | | | | SC | Clayey Sand @ 146'<br>~70% F-C-Gr Sand SR/SA<br>~30% Clay<br>NC, NP-Low PI, Brown-red, Moist-wet, No odor, No stains |
| 150 | | | | SW-SM | Well Graded Sand with Silt @ 149'<br>~90% F-C-Gr Sand SR/SA<br>~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) | LNAPL Test (Red, Pink, None) | USCS | Soil Classification and Notes<br>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<br>~10% F-Gr Sand<br>NC, Med-High PI, Red Brown, Moist, No odor, No Stains |
| | | | | | Note: @158' Sand content increased for 6" (lens) |
| 160 | | 0.4 | | | |
| | | | | | Note: @164' Clayey Sand lens ~1' |
| 165 | | 0.6 | | | |
| | | | | SC | Clayey Sand @166' |
| | | | | | ~60% Fgr-Gr Sand SA/SR<br>~40% Clay (some silt)<br>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<br>~10% Clay<br>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<br>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'<br>~90% Clay<br>~10% F-Gr Sand<br>HC-WC, Med-High PI, Red Brown, Sl. moist-moist, No odor, No Stains<br>Note: @183' Sand content increased |
| 185 | | 0.1 | | | |
| | | | | SC | Clayey Sand @ 188'<br>~65% F-M-Gr Sand SR/SA<br>~35% Clay (some silt)<br>NC, Low PI, Brown-red, moist-wet, No odor, No stains<br>Note: @191' cementation increased |
| 190 | | 2.1 | | | |
| | | | | | 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

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Boring ID: IST52

| Depth Below Ground Surface (feet) | Sample ID | PID Reading (PPM) | LNAPL Test (Red, Pink, None) | USCS | Soil Classification and Notes<br>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'<br>~90% Clay<br>~10% F-Gr Sand<br>NC, Med-High PI, Red Brown, Sl. moist-moist, No odor, No stains |
| 210 | | 0.0 | | SC | Clayey Sand @210'<br>~80% F-C-Gr Sand SR/SA<br>~20% Clay (some silt)<br>NC, NP, Brown, wet, No odor, No stains |
| 215 | | 0.0 | | CL | Clay @214'<br>~85% Clay<br>~15% F-Gr Sand<br>NC-WC, Med-High PI, Red Brown, Sl. moist-moist, No odor, No stains |
| | | | | SC | Clayey Sand @216<br>~60% F-M-Gr Sand SR/SA<br>~40% Clay (some silt)<br>NC, Low PI-Med PI, Red Brown, Moist |
| 220 | | 0.0 | | | Note: @220' Clay content decreased (~15%)<br>C-Gr Sand increased<br>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<br>USCS Name<br>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 | | | | | |