CITY OF ALBUQUERQUE

Ms. Dezbah Jesus
Remediation Oversight Section
Groundwater Quality Bureau
New Mexico Environment Department
121 Tijeras Ave. NE
Suite 1000
Albuquerque, NM 87102

January 31, 2020

RE: City of Albuquerque Los Angeles Landfill Groundwater Report for Remediation System, DP-1468–Half Two (2) 2019 and Voluntary Stage 2 Abatement Plan.

Dear Ms. Jesus:

The City of Albuquerque (COA) Environmental Health Department (EHD) submits this 2nd **Half 2019** (H-02) Monitoring Report to the New Mexico Environment Department (NMED) as a requirement of Discharge Permit DP-1468 Los Angeles Landfill (LALF) Groundwater Remediation System (GWRS) and Stage 2 Voluntary Abatement Plan (S2VAP).

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Albuquerque

NM 87103

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Pursuant to DP-1468, the activities which produce the discharge, the location of the discharge and the nature of this discharge are briefly described below:

- Up to 460,000 gallons per day (gpd) of remediated groundwater is discharged to onsite injection wells.
- Contaminated groundwater is pumped from three extraction wells (GWEX-2, GWEX-3, and GWEX 4) to a pre-treatment storage tank prior to filtration and air stripper treatment. Remediated groundwater from the remediation system is held in two pre injection storage tanks prior to being discharged to the injection well (IW-3).
- DP-1468 authorizes discharges associated with an abatement plan pursuant to Sections 206.2.4101 through 20.6.2.4116 NMAC (COA/LALF Conditional S2VAP approved March 12, 2004).
- The GWRS is located at 4400 Paseo del Norte NE, Albuquerque, in Section 23, Township 11N, Range 3E, Bernalillo County.
- Groundwater most likely to be affected at a depth of approximately 160 feet and has a total dissolved solids concentration of approximately 500 milligrams per liter.
- The original DP-1468 was issued on December 22, 2004 and renewed on December 6, 2010 and April 8, 2016. The permit will expire on May 6, 2021.

On November 27, 2018 a modification to the S2VAP was approved by NMED. The modification allowed for the following:

- Cessation of groundwater remediation via the groundwater pump and treat system.
- Implementation of Monitored Natural Attenuation (MNA) to abate groundwater contamination.

- Continuance of the soil vapor and landfill gas abatement strategy of source control via landfill gas extraction, soil vapor extraction, and air injection.

GWRS Pump System Decommission

On January 23, 2019, the pumping systems from three groundwater extraction wells (GWEX2, GWEX3, and GWEX4) and injection well IW3 were decommissioned. The pumping system decommissioning included removing all downhole equipment from the wells and securing the wellheads in a manner that allows access to the well for future monitoring and sampling purposes.

Further decommissioning activities began in early December 2020. All equipment was removed from the former pump house. Final decommissioning will take place in two phases. The first phase will be removal of all treatments systems, tanks, and buildings. The second phase will be the plug and abandonment of wells IW1, IW2, IW3, IW4, GWEX1, and GWEX3. Extraction wells GWEX2 and GWEX4 will be converted to groundwater monitoring wells at this time. The decommissioning should be completed by the end of February 2020. After the site is decommissioned the COA EHD will submit a closure report and request for termination of DP-1468 from NMED.

The GWRS system was not operated in the 2nd Half of 2019.

Ground Water Analytical Results

As of H-02 2019 no well is over Stage 2VAP Remedial Action Objectives. Monitor well LALF24 showed a concentration of 10 milligrams per liter (mg/l) of nitrate as nitrogen (nitrate) on Q3 sampling and 10 mg/l on Q4 sampling.

Analytical results from the following monitor wells were above the Water Quality Control Commission standards for manganese: LALF01(1.9 mg/l), LALF03 (0.39 mg/l), LALF04 (0.95 mg/l), LALF07 (1.2 mg/l), LALF09 (0.23 mg/l), LALF11 (1.1 mg/l), LALF12 (0.87 mg/l), LALF14 (1.7 mg/l), LALF16 (2.6 mg/l), LALF17 (0.36 mg/l), LALF18 (1.1 mg/l), and LALF19 (0.22 mg/l).

As previously stated in the June 2018 Abatement Plan Modification Proposal, data from LALF15 indicate a sulfate richer aquifer, aerobic conditions and potentially impacted by upgradient nitrate concentrations. Of interest is the presence of manganese in this upgradient well. Typically manganese is not present in groundwater when aerobic conditions exist with elevated nitrate concentrations. It is likely that LALF15 is affected by upgradient river valley anoxic conditions that have transported dissolved manganese and a non-oxidized form of nitrogen. When this transported water reaches aerobic conditions, as seen in LALF15 due to the higher dissolved oxygen concentrations, the nitrogen is oxidized to nitrate while the dissolved manganese remains in solution and has not reached highly oxygenated conditions capable of precipitation.

All other wells sampled were below all Stage 2VAP standards and all NMED Groundwater Quality Standards.

Groundwater Level Errors for GWEX4

It appears that the November and December 2019 groundwater level readings for groundwater monitoring wells GWEX4 are not correct. The November 2019 reading is approximately 5 feet lower than the October reading and the December reading is an additional 5 feet lower than the November reading (approximately 10 feet total). The electronic data in the COA database was compared with the field book for this activity and they were in agreement. It is therefore believed that the field technicians may have inadvertently read the water level tape incorrectly at these wells.

Table 5 reflects that water level readings for this half, which includes the two suspected erroneous readings. However, the potentiometric maps for November (Figure 10) and December 2019 (Figure 11) do not include the data for GWEX4 in the data set when the surface was generated.

Groundwater Level Well Network Update

As previously mentioned wells IW1, IW2, IW3, IW4, GWEX1, and GWEX3 will be plugged and abandoned in H1 2020. Starting with the December 2019 groundwater level reading event EHD will no longer be taking groundwater level readings at IW3, IW4, GWEX1, and GWEX3. The December 2019 potentiometric map (Figure 11) is the first potentiometric map generated from the new groundwater level network.

Non Regulatory Sampling

COA EHD staff made a decision to sample for 1,4-Dioxane in select wells at LALF. This sampling was conducted at the same time as the H02 2019 sampling. GWEX2 and GWEX4 were chosen for 1,4-Dioxane sampling due to historic higher detections of tetrachloroethene. LALF24 was chosen based on it being the newest well and LALF13 was chosen since it tested positive for 1, 4-Dioxane in H1 2019.
Of the wells sampled GWEX2, GWEX4, and LALF24 were non-detect for 1,4-Dioxane. LALF13 had a detection of 11 µg/l. LALF13 is located in the middle of the landfill. GWEX4, and LALF24 are all wells that are located down gradient of LALF13.

1,4-Dioxane results are reported in Table 7.

Soil Vapor Testing

In accordance with Section 4.2 and Table 10 of the modified S2VAP soil vapor probes M20 and M21 were sampled on September 19, 2019. The samples were analyzed for VOCs using EPA method TO-15.

The probe samples were below all Residential NMED Soil Screening Levels (NMSSL). Several chemical compounds were detected but none were over the Residential NMSSLs. All analytical detections are reported in Table 8.

Source Zone Capture Monitoring

In accordance with Section 4.2 and Table 10 of the modified S2VAP the Soil Vapor Extraction System (SVE) and Landfill Gas Extraction and Destruction System (Flare) were sampled on September 19, 2019. The samples were analyzed for VOCs using EPA method TO-15. All analytical detections are reported in Table 9.

The analytical results were used to calculate the estimated removal of chlorinated alkenes from the waste prism as well as from the vadose zone below and in the near proximity of LALF. In calculating the removal the average flow rate of each system from July 1, 2019 through December 31, 2019 was used. The average flow rate for the Flare was 262.0 CFM and the average flow rate for the SVE was 580.5 CFM.

In H-02 2019 it is estimated that the Flare and SVE combined to remove 85.36 pounds of Chlorinated Alkenes (Tetrachloroethene, Trichloroethene, cis-1,2-Dichloroethene, Vinyl chloride, trans-1,2-Dichloroethene, and Methylene chloride) from the source zone. The mass of Chlorinated Alkenes Removed from the Source Zone by the Flare and SVE is reported in Table 10.

Soil Vapor Well Sampling

In accordance with Section 4.2 and Table 10 of the modified S2VAP the 20 SVE wells were sampled on M20 and M21 were sampled on September 19, 2019. The samples were analyzed for VOCs using EPA method TO-15. All analytical detections are reported in Table 11.

First order Degradation Rates Update

In accordance with Section 5.1 of the modified S2VAP the first order degradation rates for LALF09, LALF10, LALF12, and GWEX4. This first order attenuation rate method used is from an EPA issued paper that explains when and how to apply these rate constant calculations to MNA studies (Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies, EPA, 2002). This is the same methodology that was used in the S2VAP modification proposal from June 2018.

The concentration verses time attenuation rate constant for LALF09 began with an initial PCE concentration of 10 µg/l in February 2010. The rate constant provides the slope of the best fit logarithmic line of 0.1482 with a good regression fit of 0.9497. LALF09 has been below 5 µg/l since November 6, 2015. The calculations and plot can be found in Figure 13.

The concentration verses time attenuation rate constant for LALF-10 began with an initial PCE concentration of 15 µg/l in February 2010. The rate constant provides the slope of the best fit logarithmic line of 0.17 with a good regression fit of 0.9597. LALF10 has been below 5 µg/l since August 14, 2017. The calculations and plot can be found in Figure 14.

The concentration verses time attenuation rate constant for LALF-12 began with an initial PCE concentration of 8.5 µg/l in February 2010. The rate constant provides the slope of the best fit logarithmic line of 0.2152 with a good regression fit of 0.9517. LALF10 has been below 5 µg/l since November 7, 2012. The H2 2019 sample was non-detect for PCE therefore 1 µg/l was used for the calculation of the degradation rate. The calculations and plot can be found in Figure 15.

The concentration verses time attenuation rate constant for GWEX4 began with an initial PCE concentration of 11 µg/l in May 2014. This value represents the highest value for GWEX4. The rate constant provides the slope of the best fit logarithmic line of 0.1604 with a regression fit of 0.7827. LALF10 has been below 5 µg/l since February 7, 2019. The calculations and plot can be found in Figure 16.

Microbial Bioanalysis Results

In accordance with Section 5.1 and Table 10 of the modified S2VAP samples from wells LALF09, LALF10, LALF12, GWEX2, and GWEX4 were analyzed for QuantArray® microbial activity by Microbial Insights. A sample from well LALF24 was also analyzed by Microbial Insights for the same parameters.

The Microbial Insight QuantArray® report is included as an attachment.

The report shows the presence of reductive dechlorinators in all wells sampled. Wells GWEX4, GWEX2, and LALF09 showed the most presence of dehalobacter (DHBt). Wells LALF12 and LALF09 show the most presence of dehalococoides (DHC). Well LALF10 was the only well to show the presence of dehalogenimonas (DHG). All wells except LALF24 showed the presence of sulfate reducing bacteria, with the highest counts being found in samples from wells GWEX2 and GWEX4. This data indicates that reductive dechlorination had been and may continue to be a contaminant degradation process. These data provide lines of evidence that reductive dechlorination for both the former and current plumes have been a contributing factor to natural attenuation.

Microbial populations are presented in the Site Logic Report in the Microbial Insight QuantArray® report as low, mid, or high populations. These designations were developed by Microbial Insights by comparing site specific results to thousands of other samples from numerous sites over 20 years. Overall site specific bacterial counts were on the upper range of low. Of note is the mid-level microbial population for reductive dechlorination of chlorinated ethenes and the presence of aerobic chlorinated ethene populations. Figures 17 and 18 summarize the analytical results.

Overall, this report provides measureable data that supports that biological degradation has played and continues to play a valuable role in attenuation of the site's chlorinated ethene contamination.

Compound Specific Isotope Analysis Results

In accordance with Section 5.1 and Table 10 of the modified S2VAP samples from wells LALF09, LALF10, LALF12, GWEX2, and GWEX4 were analyzed for Compound Specific Isotope Analysis (CSIA) by Microbial Insights. A sample from well LALF24 was also analyzed by Microbial Insights for the same parameters.

CSIA) is an analytical technique useful to determine if concentrations decreases are due to biological or abiotic degradative processes. The stable carbon isotopes are ^{12}C and ^{13}C, with ^{13}C being heavier with one extra neutron. Stable isotopes are reported as a ratio of the two isotopes compared to a reference standard. Many studies have established ranges from these two isotopes and the ^{13}C of a manufactured chlorinated solvent is about -30 +/- 5o/oo. This is widely accepted as the reference standard.

Since bacteria prefer the lighter isotope for respiration (^{12}C), over time the heavier isotope remains and has a higher count. CSIA is a measurement of the change in the isotopes ratio known as fractionation. An increase or enrichment in ^{13}C indicates biological activity.

Results can be found in the attached Microbial Insights CSIA Report.

Wells LALF09, LALF10, LALF12, GWEX2, and GWEX4 all showed an enrichment of ^{13}C for PCE when compared to a CSIA conducted in 2017.

Many of the samples were non-detect for DCE and TCE therefore they could not have a CSIA conducted for this analyte. A CSIA for Vinyl Chloride was not conducted for any wells since all samples were non-detect for this analyte.

Figure 19 summarizes the comparison of CSIA results compared to the 2017 CSIA.

The comparison of the 2019 CSIA to the 2017 CSIA indicates an enrichment of ^{13}C for multiple analytes.

Updates/Highlights for H-02 LALF S2VAP and GWRS:

Pursuant to and in accordance with the approved S2VAP:

- 27 wells were sampled and reported in Table 1;
    - LALF24 was sampled quarterly during H-02 2019
- Constituents of concern (CoC), are reported in Table 2;
- Water quality field parameters are reported in Table 3;
- Inorganic monitoring results are reported in Table 4 and
- Groundwater elevations are reported in Table 5.
- Groundwater monitoring wells and CoC concentrations are reported in Figures 1-5.

Pursuant to and in accordance with DP-1468 *Page 3, Item 2, and Page 5, Item 11*:

- Since the GWRS was decommissioned and not operated in the 2nd half of 2019 the alternative monitoring wells (LALF12, LALF19, LALF22, and LALF23) were sampled and reported in Table 6.

Pursuant to and in accordance with DP-1468 *Page 6, Item 12*:

- Since the GWRS was decommissioned and not operated in the 2nd half of 2019 the monthly average, maximum, and minimum values for injection pressure are 0.
- Since the GWRS was decommissioned and not operated in the 2nd half of 2019 flow rates and total volume of groundwater treated and discharged are 0.

Pursuant to and in accordance with DP-1468 *Page 6, Item 13*:

- H-02 2019 water level data is summarized in Table 5. Groundwater flow contour maps are depicted in Figures 6-11 for each month of the reporting period. The map area includes the PNM Reeves Station and PNM monitoring wells. As has been the case throughout the period of monitoring at LALF, groundwater generally flows toward the south, to south-east.

Pursuant to and in accordance with DP-1468 *Page 7, Item 14*:

- Since the GWRS was decommissioned and not operated in the 2nd half of 2019 the totalized average daily and peak daily discharge volumes for each month of reclaimed contaminated groundwater are 0.

Pursuant to and in accordance with DP-1468 *Page 7, Item 15*:

- Since the GWRS was decommissioned and not operated in the 2nd half of 2019 the totalized average daily and peak daily discharge volumes for each month of reclaimed contaminated groundwater are 0.

The landfill gas system at LALF is optimized through a procedures known as balancing. The landfill gas system at LALF is balanced on a bi-weekly basis. The balancing of the landfill gas system ensures that landfill gas generated from the landfill is contained and not moving off site it also ensures that ambient air is not being introduced into the landfill as this could potentially lead to a landfill gas fire.

The EHD will continue monitoring the groundwater, landfill gas and vadose zone at the Los Angeles Landfill per the Stage 2VAP and the DP-1468. The staff is continuously improving operations to assure compliance with the requirements of NMED.

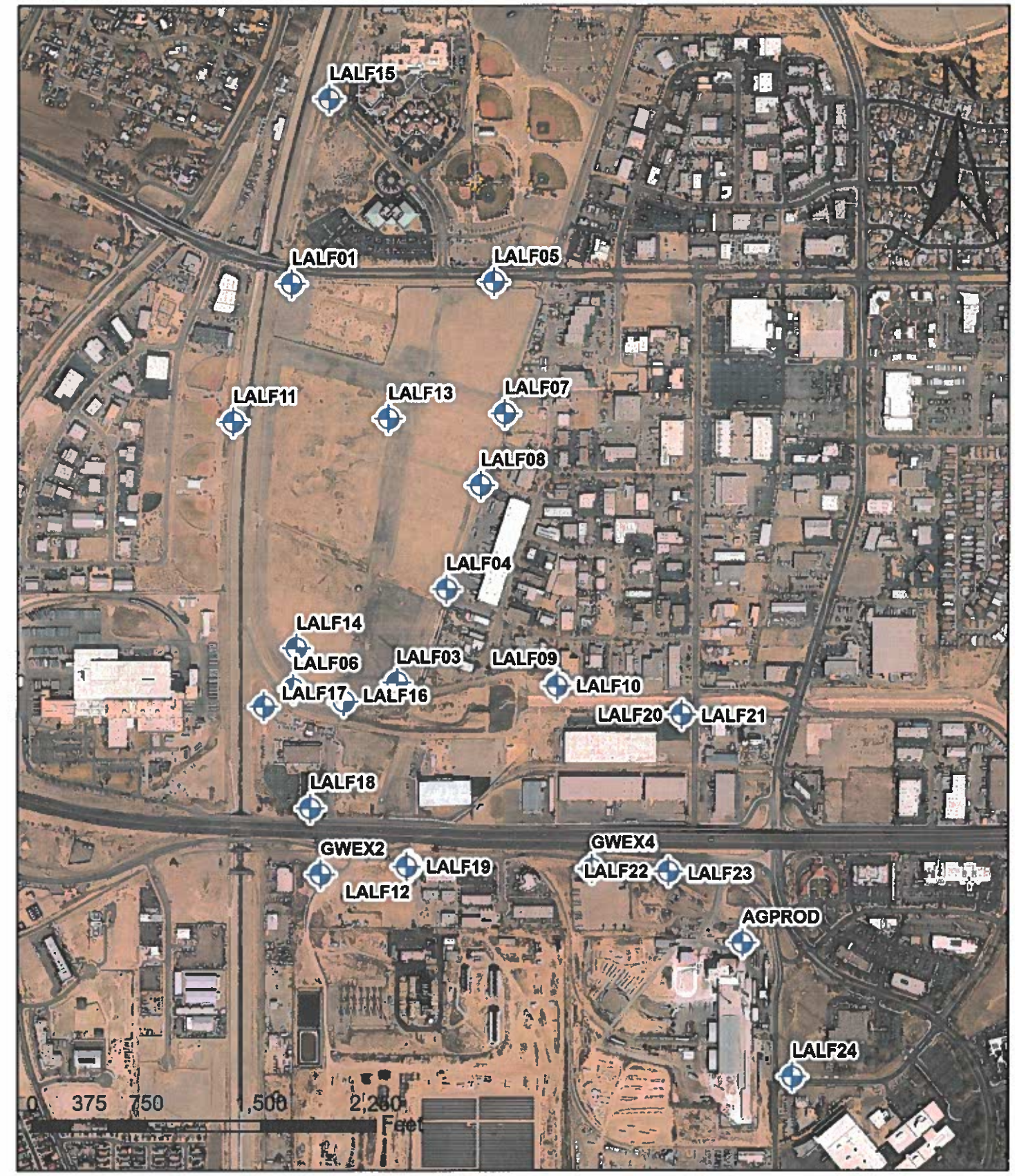
Plans for decommissioning of the remainder of the GWRS as well as plugging and abandonment of Injection Wells IW1, IW2, IW3, IW4, and extraction wells GWEX1 and GWEX3 should take place in H-01 2020.

If you have any questions regarding any aspect of the project please feel free to contact me at 505.768.2669 or krziegler@cabq.gov.

Sincerely,

Ken R. Ziegler
Senior Environmental Health Scientist
Environmental Health Department

Cc: Steve Pullen, NMED-Ground Water Quality Bureau Pollution Prevention Section, (Mailed hard copy report)
John Hale, PNM Reeves Station (electronic report)
Carey Slater, American Gypsum Company (electronic report)
Carin Munoz-Dyer, City of Albuquerque, Acting Environmental Health Manager (electronic report)
Diane Agnew, Albuquerque Bernalillo County Water Utility Authority
File



Groundwater Monitoring Wells Sampled

Source: COA EQuIS Database

Figure 1
LALF Monitoring Well
Location Map
H02 2019 Groundwater Monitoring

Soil Vapor Probe
SVE Well (Dual Located)

Source: COA EQuIS Database

Figure 12
Soil Vapor Sampling Locations

Groundwater Monitoring Wells Sampled

Figure 2
Chloride
H02 2019 Groundwater Monitoring

Source: COA EQuIS Database

Groundwater Monitoring Wells Sampled

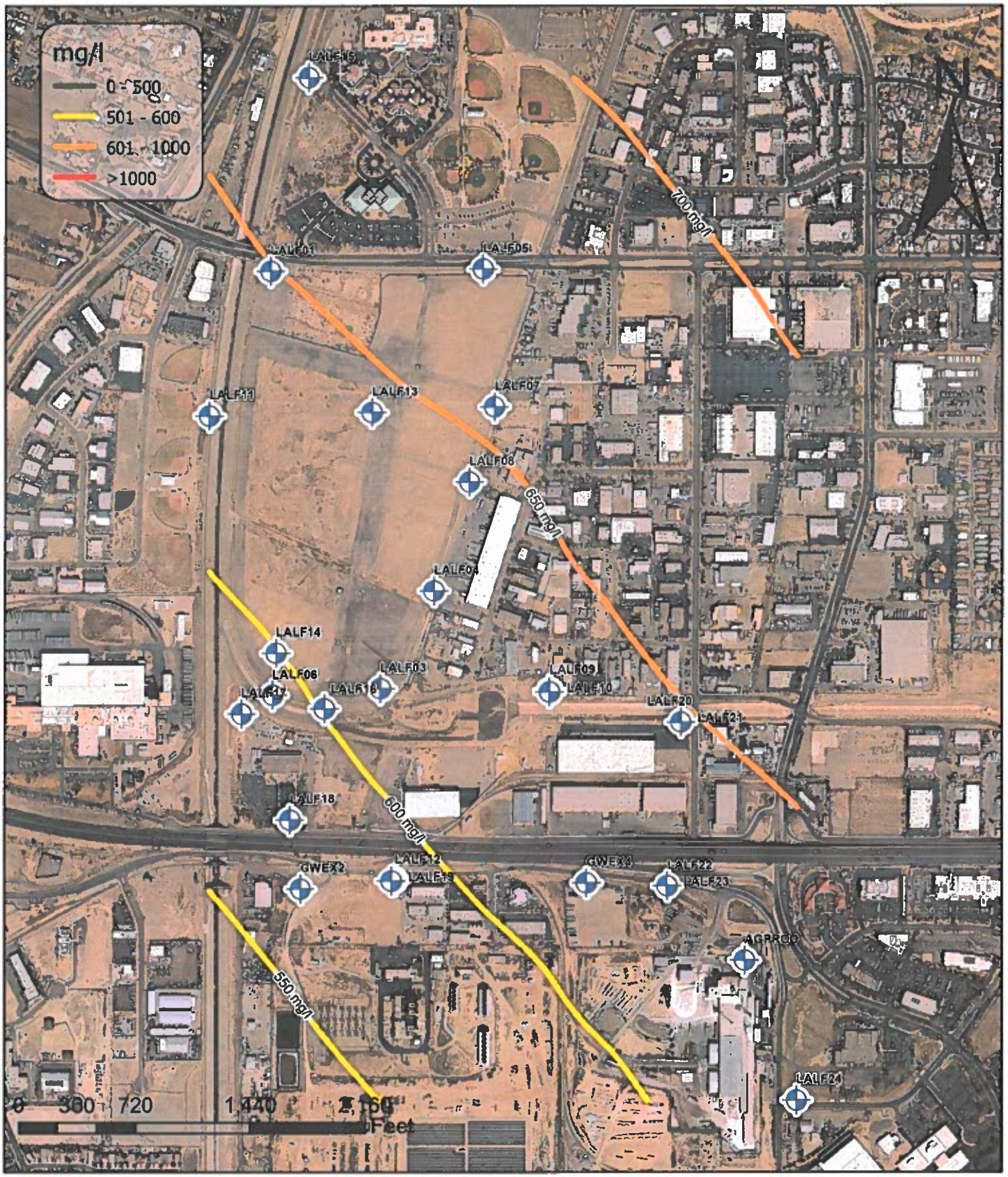
Source: COA EQuIS Database

Figure 3
Tetrachloroethene
H02 2019 Groundwater Monitoring

Groundwater Monitoring Wells Sampled

Figure 4
Trichloroethene
H02 2019 Groundwater Monitoring

Source: COA EQuIS Database



Groundwater Monitoring Wells Sampled

Figure 6
Total Dissolved Solids
H02 2019 Groundwater Monitoring

Source: COA EQuIS Database

Groundwater Level Wells

Source: COA EQuIS Database

Figure 6
Groundwater Elevation Contours
July 2019
H02 2019 Groundwater Monitoring

Groundwater Level Wells

Source: COA EQuIS Database

Figure 7
Groundwater Elevation Contours
August 2019
H02 2019 Groundwater Monitoring

Groundwater Level Wells

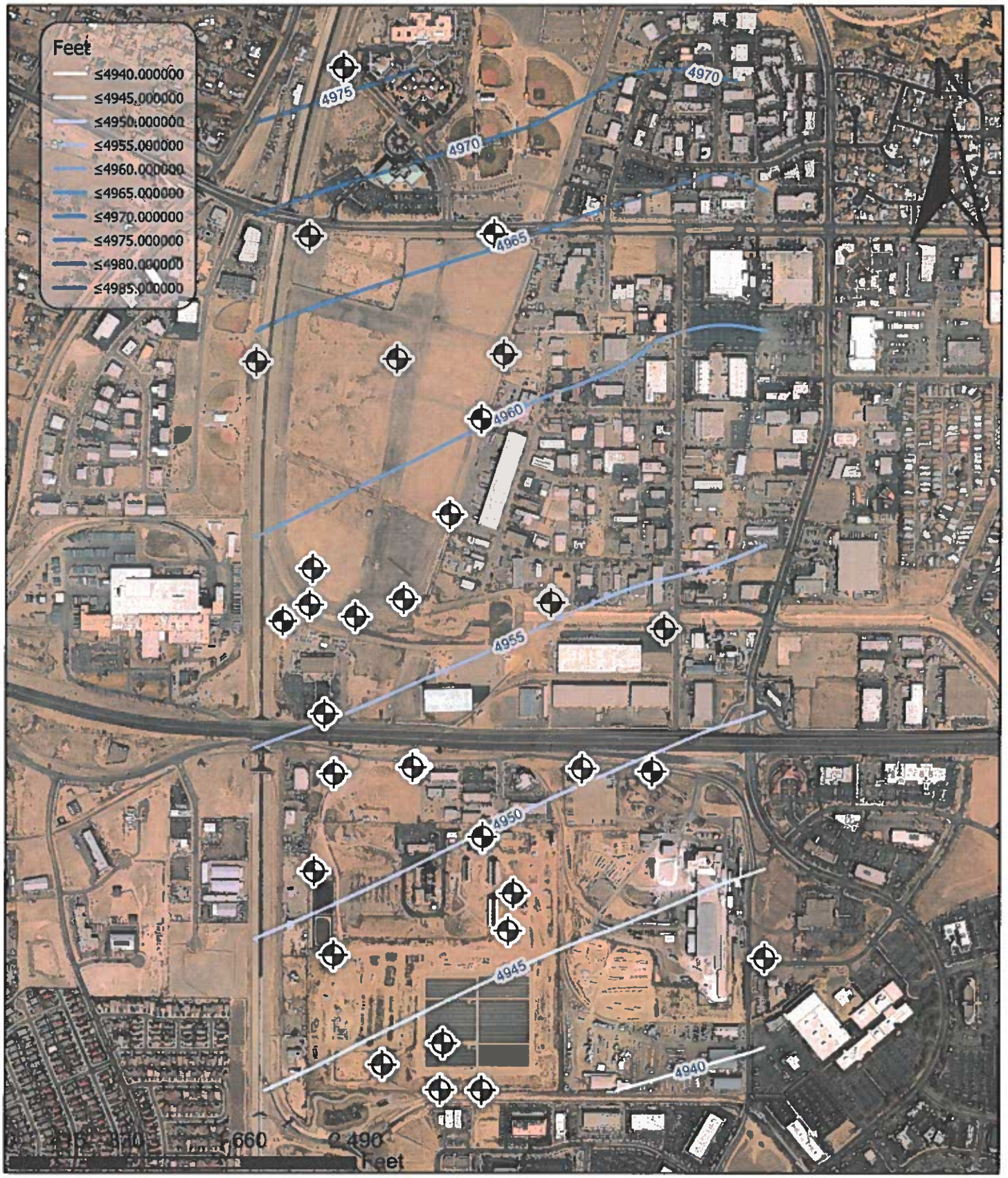
Source: COA EQuIS Database

Figure 8
Groundwater Elevation Contours
September 2019
H02 2019 Groundwater Monitoring

Groundwater Level Wells

Source: COA EQuIS Database

Figure 9
Groundwater Elevation Contours
October 2019
H02 2019 Groundwater Monitoring



Groundwater Level Wells

Source: COA EQuIS Database

Figure 10
Groundwater Elevation Contours
November 2019
H02 2019 Groundwater Monitoring

Groundwater Level Wells

Source: COA EQuIS Database

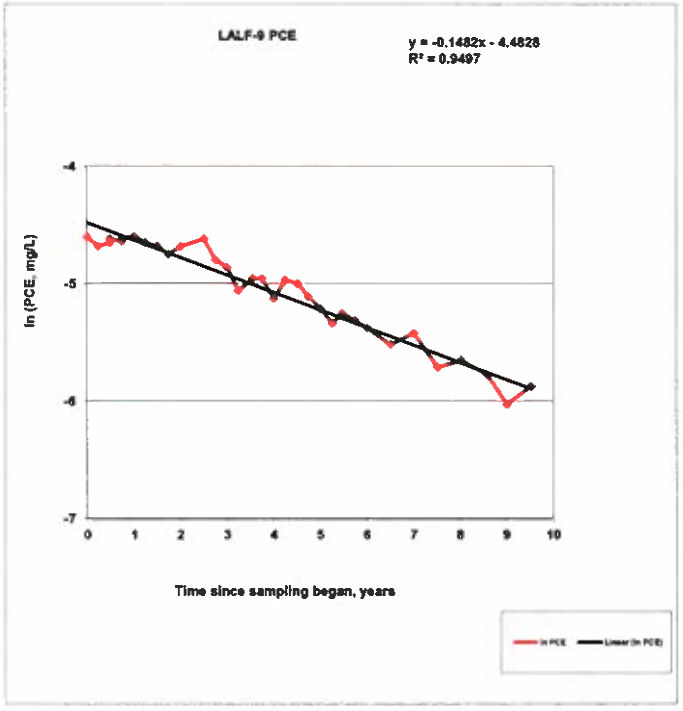
Figure 11
Groundwater Elevation Contours
December 2019
H02 2019 Groundwater Monitoring

First-Order Decay Rate Calculation for Monitored Natural Attenuation

Facility Name:

LALF-9

Sampling Date	PCE LALF-9 mg/L	PCE LALF-9 (ug/l)	ln PCE LALF-9 mg/L	Elapsed time since 2/5/10 years
2/5/2010	0.010	10	-4.605	0.00
5/7/2010	0.009	9.2	-4.689	0.25
8/9/2010	0.010	9.5	-4.656	0.51
8/9/2010	0.010	9.8	-4.625	0.51
11/9/2010	0.010	9.6	-4.646	0.76
11/9/2010	0.010	9.8	-4.625	0.76
2/11/2011	0.010	10	-4.605	1.02
5/11/2011	0.010	9.5	-4.656	1.26
8/11/2011	0.009	9.2	-4.689	1.51
11/8/2011	0.009	8.6	-4.756	1.76
2/14/2012	0.009	9.2	-4.689	2.03
8/10/2012	0.010	9.8	-4.625	2.51
11/8/2012	0.008	8.2	-4.804	2.76
2/7/2013	0.008	7.7	-4.867	3.01
5/7/2013	0.006	6.3	-5.067	3.25
8/27/2013	0.007	7	-4.962	3.56
11/8/2013	0.007	7	-4.962	3.76
2/11/2014	0.006	5.9	-5.133	4.02
5/9/2014	0.007	6.9	-4.976	4.26
8/14/2014	0.007	6.7	-5.006	4.52
11/7/2014	0.006	6	-5.116	4.76
2/10/2015	0.005	5.4	-5.221	5.02
5/12/2015	0.005	4.8	-5.339	5.27
7/31/2015	0.005	5.2	-5.259	5.49
11/6/2015	0.005	4.9	-5.319	5.75
2/9/2016	0.005	4.6	-5.382	6.02
8/10/2016	0.004	4	-5.521	6.52
2/9/2017	0.004	4.4	-5.426	7.02
8/14/2017	0.003	3.3	-5.714	7.53
2/13/2018	0.004	3.5	-5.655	8.03
9/4/2018	0.003	3.1	-5.776	8.58
2/7/2019	0.002	2.4	-6.032	9.01
8/15/2019	0.003	2.8	-5.878	9.53
ISL	*0.005*	*5*	*-5.298317367*	



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, years^{-1}
= slope of the line, y

Solutions

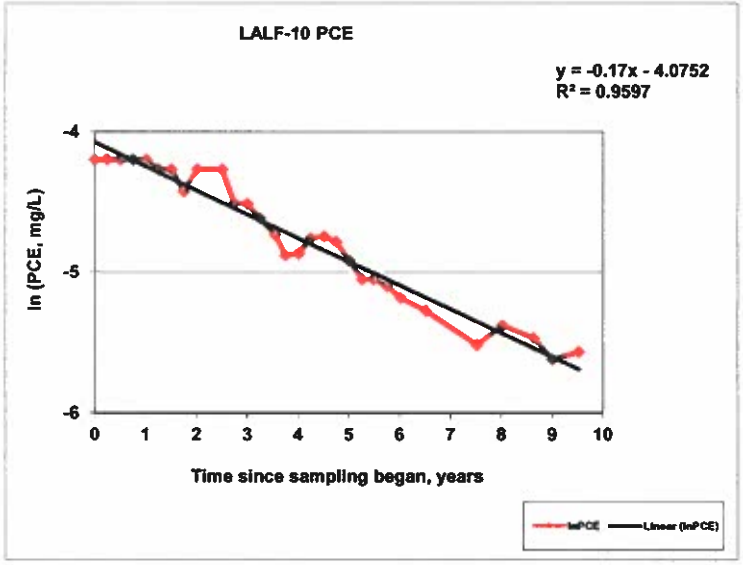
LALF-9			
Enter C_{CL}	⇒	0.005	
Enter C_o	⇒	0.01	
Enter k_{point}	⇒	0.1482	
Time to reach cleanup level		4.7	years

First-Order Decay Rate Calculation for Monitored Natural Attenuation

Facility Name:

LALF-10

Sampling Date	PCE MW-mg/L	PCE MW-10 (ug/l)	ln PCE MW-10 mg/L	Elapsed time since 2/5/10 years
2/5/2010	0.015	15	-4.200	0.00
5/7/2010	0.015	15	-4.200	0.25
8/9/2010	0.015	15	-4.200	0.51
11/9/2010	0.015	15	-4.200	0.76
2/11/2011	0.015	15	-4.200	1.02
5/11/2011	0.014	14	-4.269	1.26
8/12/2011	0.014	14	-4.269	1.52
11/8/2011	0.012	12	-4.423	1.76
2/14/2012	0.014	14	-4.269	2.03
8/10/2012	0.014	14	-4.269	2.51
11/8/2012	0.011	11	-4.510	2.76
2/7/2013	0.011	11	-4.510	3.01
5/7/2013	0.010	9 9	-4.615	3.25
8/27/2013	0.009	8.8	-4.733	3.56
11/8/2013	0.008	7.6	-4.880	3.76
2/11/2014	0.008	7.7	-4.867	4.02
5/9/2014	0.009	8.6	-4.756	4.26
8/14/2014	0.009	8.7	-4.744	4.52
11/7/2014	0.008	8.4	-4.780	4.76
2/10/2015	0.007	7.3	-4.920	5.02
5/12/2015	0.006	6.4	-5.051	5.27
7/31/2015	0.006	6.4	-5.051	5.49
11/6/2015	0.006	6.1	-5.099	5.75
2/12/2016	0.006	5.6	-5.185	6.02
8/10/2016	0.005	5.1	-5.279	6.52
8/14/2017	0.004	4	-5.521	7.53
2/13/2018	0.005	4.6	-5.382	8.03
9/24/2018	0.004	4.2	-5.473	8.64
2/7/2019	0.004	3.6	-5.627	9.01
8/15/2019	0.004	3.8	-5.573	9.53
ISL		*0.005*	*5*	*-5.298317367*



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, years^{-1}

= slope of the line, y

Solutions

LALF-10 PCE			
Enter C_{CL}	⟹	0.005	
Enter C_o	⟹	0.015	
Enter k_{point}	⟹	0.17	
Time to reach cleanup level		6.5	years

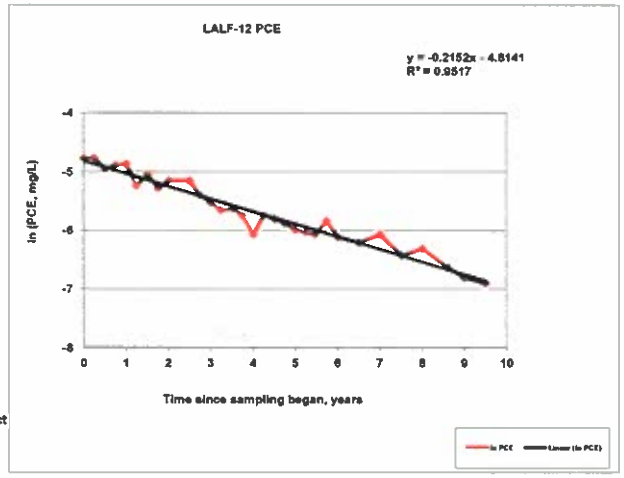
First-Order Decay Rate Calculation for Monitored Natural Attenuation

Facility Name:

LALF-12

Sampling Date	PCE LALF-12 mg/L	PCE LALF-12 (ug/l)	ln PCE LALF-12	Elapsed time since 2/5/10
2/5/2010	0.009	8.5	-4.766	0.00
5/7/2010	0.009	8.6	-4.766	0.25
8/6/2010	0.007	7.1	-4.948	0.51
11/9/2010	0.008	7.5	-4.893	0.76
2/10/2011	0.008	7.7	-4.867	1.02
5/6/2011	0.005	5.3	-5.240	1.25
8/11/2011	0.006	6.4	-5.051	1.51
11/8/2011	0.005	5.1	-5.279	1.76
2/13/2012	0.006	5.8	-5.150	2.02
5/8/2012	0.006	5.8	-5.150	2.51
11/7/2012	0.005	4.5	-5.404	2.76
2/7/2013	0.004	4	-5.521	3.01
5/7/2013	0.004	3.5	-5.655	3.25
8/27/2013	0.004	3.6	-5.627	3.56
11/8/2013	0.003	3.2	-5.745	3.76
2/11/2014	0.002	2.3	-6.075	4.02
5/6/2014	0.003	3.2	-5.745	4.26
8/14/2014	0.003	3	-5.809	4.52
11/7/2014	0.003	2.8	-5.878	4.76
2/6/2015	0.003	2.5	-5.991	5.01
5/6/2015	0.002	2.4	-6.032	5.26
7/28/2015	0.002	2.3	-6.075	5.48
11/5/2015	0.003	2.9	-5.843	5.75
2/9/2016	0.002	2.2	-6.119	6.02
8/8/2016	0.002	2	-6.215	6.51
2/9/2017	0.002	2.3	-6.075	7.02
8/14/2017	0.002	1.6	-6.438	7.53
2/8/2018	0.002	1.8	-6.320	8.01
8/19/2018	0.001	1.3	-6.645	8.62
2/8/2019	0.001	1.1	-6.812	9.01
8/8/2019	0.001	1	-6.908	9.51
ISL	*0.005*	*5*	*-5.298*	

Non Detect



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, years^{-1}

= slope of the line, y

Solutions

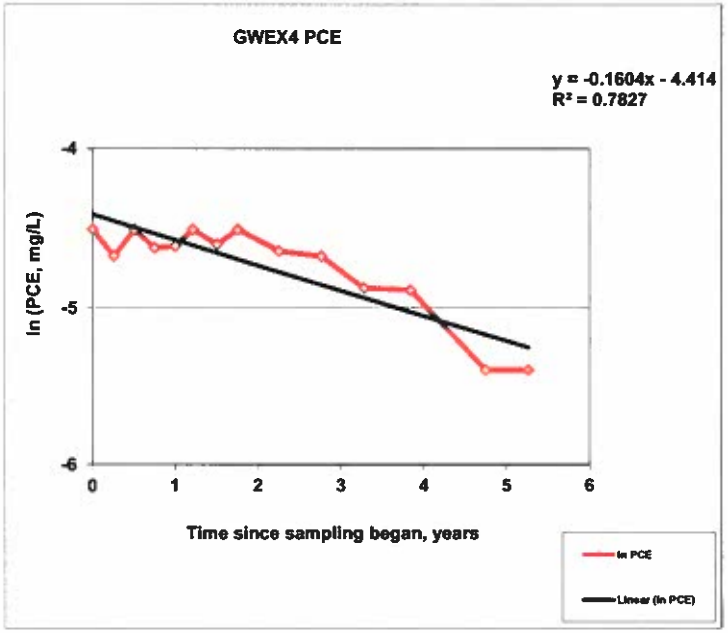
LALF-12			
Enter C_{CL}	⇒	0.005	
Enter C_o	⇒	0.009	
Enter k_{point}	⇒	0.2152	
Time to reach cleanup level		**2.7**	**years**

First-Order Decay Rate Calculation for Monitored Natural Attenuation

Facility Name:

GWEX-4 2014-2019

Sampling Date	PCE GWEX-4 mg/L	PCE GWEX-4 (ug/l)	ln PCE GWEX-4 mg/L	Elapsed time since9/15/05 years
5/13/2014	0.011	11	-4.510	0.00
8/15/2014	0.009	9.3	-4.678	0.26
11/14/2014	0.011	11	-4.510	0.51
2/10/2015	0.010	9.8	-4.625	0.75
5/12/2015	0.010	9.9	-4.615	1.00
7/29/2015	0.011	11	-4.510	1.21
11/13/2015	0.010	10	-4.605	1.51
2/12/2016	0.011	11	-4.510	1.75
8/11/2016	0.010	9.6	-4.646	2.25
2/14/2017	0.009	9.3	-4.678	2.76
8/22/2017	0.008	7.6	-4.880	3.28
3/14/2018	0.008	7.5	-4.893	3.84
2/7/2019	0.005	4.5	-5.404	4.74
8/15/2019	0.005	4.5	-5.404	5.26
ISL		*0.005*	*5*	*-5.298317367*
Tier 1 SL		*0.3*	*300*	*-1.203972804*



Formula

$t = -[\ln(C_{CL}/C_o)] / k_{point}$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, mg/L

C_o = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate constant at one monitoring point, years^{-1}

= slope of the line, y

Solutions

GWEX-4 PCE				
Enter C_{CL}	⇒	0.005		
Enter C_o	⇒	0.011		
Enter k_{point}	⇒	0.1457		
Time to reach cleanup level			5.4	years

Figure 17

QuantArray Analysis

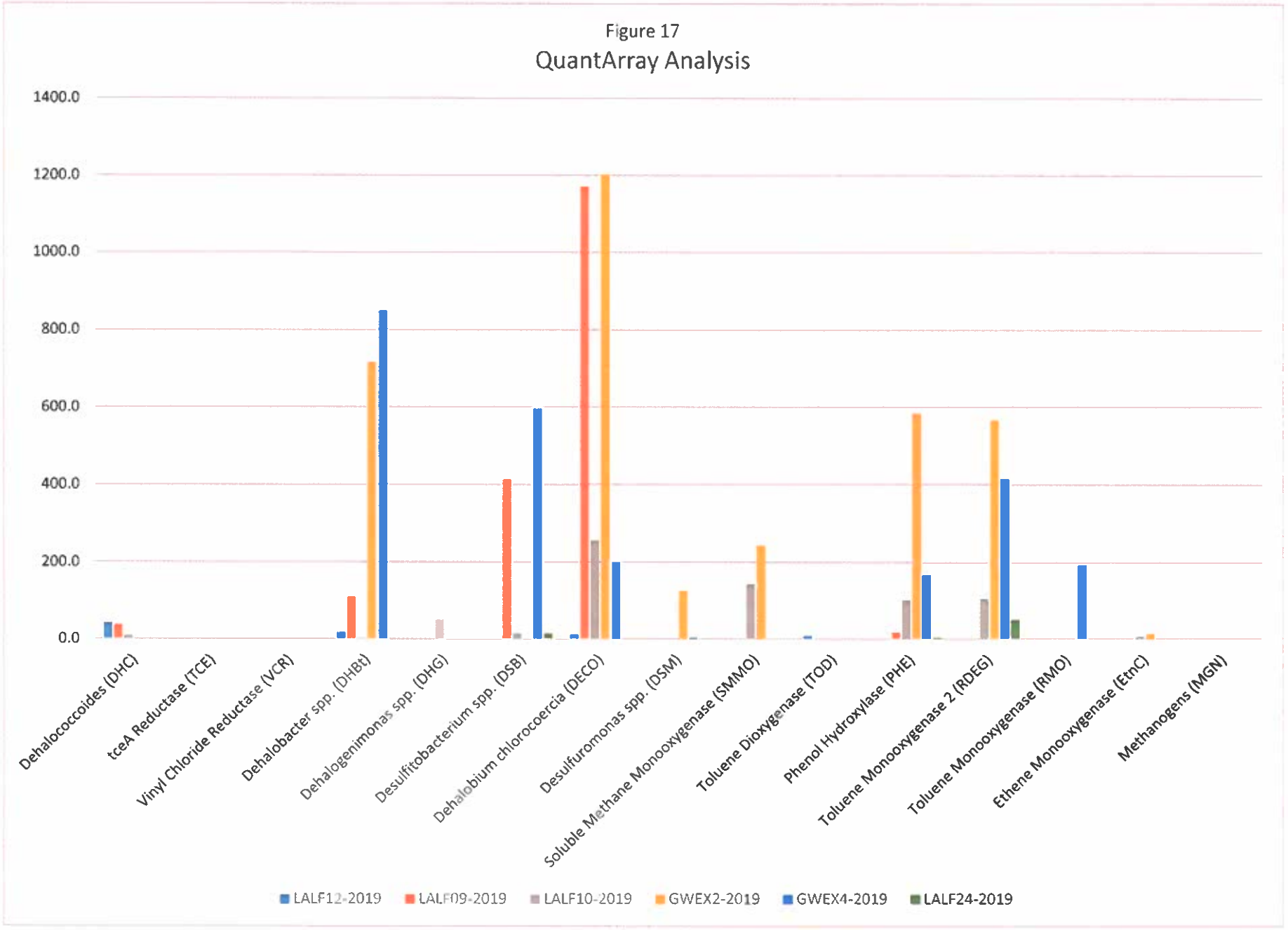


Figure 18

QuantArray Analysis

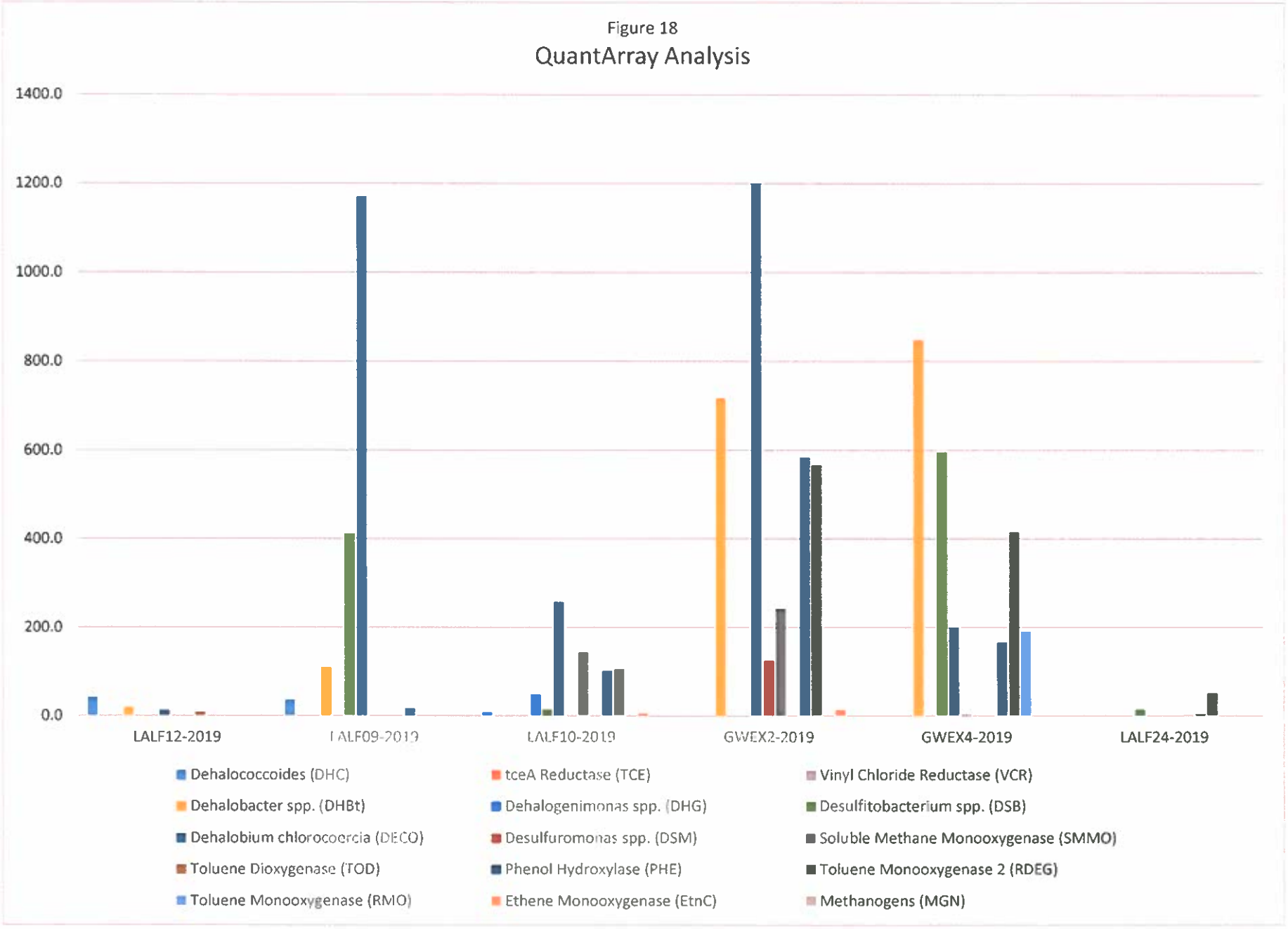


Figure 19

CSIA comparison

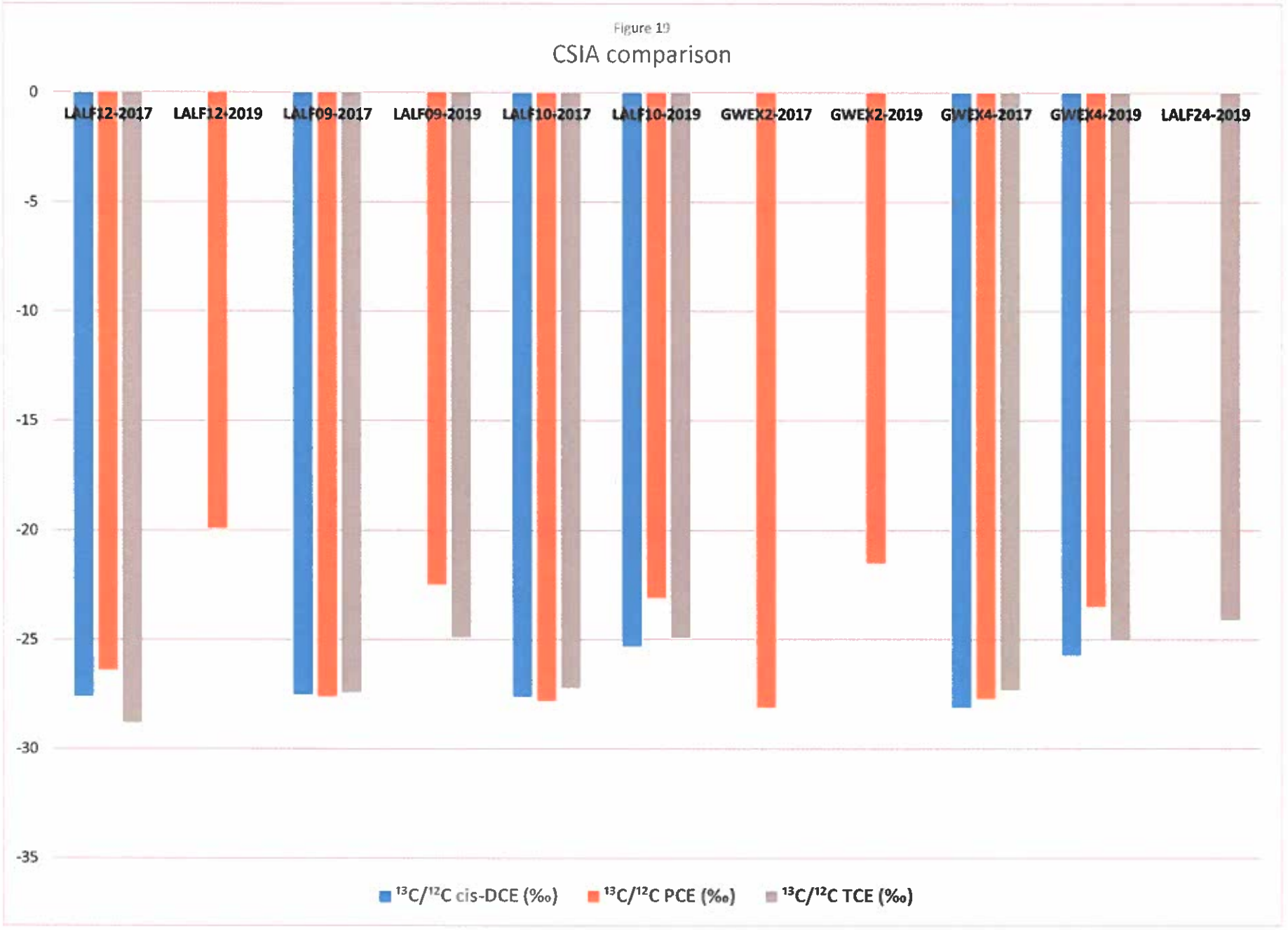


Table 1
H02 2019 Groundwater Wells Sampled

Location ID	Sample ID	Sample Date	Sample Type
AGPROD	AGPROD-W-201908191322	8/19/2019	Normal
GWEX2	GWEX2-W-201908151257	8/15/2019	Normal
GWEX4	GWEX4-W-201908151440	8/15/2019	Normal
LALF01	LALF01-W-201908071449	8/7/2019	Normal
LALF03	LALF03-W-201908071354	8/7/2019	Normal
LALF04	LALF04-W-201908061348	8/6/2019	Normal
LALF05	LALF05-W-20190806-N-5	8/6/2019	Normal
LALF06	LALF06-W-201908061014	8/6/2019	Normal
LALF07	LALF07-W-201908071109	8/7/2019	Normal
LALF08	LALF08-W-20190811448	8/1/2019	Normal
LALF09	LALF09-W-201908150927	8/15/2019	Normal
LALF10	LALF10-W-201908151100	8/15/2019	Normal
LALF11	LALF11-W-201908061514	8/6/2019	Normal
LALF12	LALF12-W-201908081111	8/8/2019	Normal
LALF13	LALF13-W-201908080946	8/8/2019	Normal
LALF14	LALF14-W-201908061130	8/6/2019	Normal
LALF15	LALF15-W-201908081232	8/8/2019	Normal
LALF16	LALF16-W-201908071241	8/7/2019	Normal
LALF17	LALF17-W-201908060849	8/6/2019	Normal
LALF18	LALF18-W-201908080820	8/8/2019	Normal
LALF19	LALF19-W-201908010958	8/1/2019	Normal
LALF20	LALF20-W-201908070943	8/7/2019	Normal
LALF21	LALF21-W-201908070850	8/7/2019	Normal
LALF22	LALF22-W-201908011243	8/1/2019	Normal
LALF23	LALF23-W-20190811154	8/1/2019	Normal
LALF24	LALF24-W-201908081345	8/8/2019	Normal
	LALF24-W-201911181412	11/18/2019	Normal

Table 2
H02 2019 Groundwater Monitoring Analytical Results

		Location ID and Sample Date			
		AGPROD	GWEX2	GWEX4	LALF01
Chemical Name	Unit	8/19/2019	8/15/2019	8/15/2019	8/7/2019
1,1-Dichloroethene	ug/l	<0.105	<0.105	<0.105	<0.105
Chloride	mg/l	12.00	45.00	42.00	54.00
cis-1,2-Dichloroethene	ug/l	<0.095	<0.095	1.00	1.10
Methylene chloride	ug/l	<0.075	<0.075	<0.075	<0.075
Tetrachloroethene	ug/l	<0.075	2.60	4.50	1.60
Total Dissolved Solids	mg/l	259.00	487.00	705.00	737.00
trans-1,2-Dichloroethene	ug/l	<0.09	<0.09	<0.09	<0.09
Trichloroethene	ug/l	<0.085	<0.085	2.10	<0.085
Vinyl chloride	ug/l	<0.09	<0.09	<0.09	<0.09

Notes: Non-detects are shown as less than half the detection limit
µg/L = micrograms per liter
mg/L = milligrams per liter

Table 2
H02 2019 Groundwater Monitoring Analytical Results

		LALF03	LALF04	LALF05	LALF06	LALF07	LALF08
Chemical Name	Unit	8/7/2019	8/6/2019	8/6/2019	8/6/2019	8/7/2019	8/1/2019
1,1-Dichloroethene	ug/l	<0.105	<0.105	<0.105	<0.105	<0.105	<0.105
Chloride	mg/l	43.00	43.00	25.00	56.00	45.00	22.00
cis-1,2-Dichloroethene	ug/l	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095
Methylene chloride	ug/l	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075
Tetrachloroethene	ug/l	2.20	1.30	<0.075	2.00	<0.075	<0.075
Total Dissolved Solids	mg/l	620.00	658.00	561.00	535.00	676.00	411.00
trans-1,2-Dichloroethene	ug/l	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09
Trichloroethene	ug/l	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085
Vinyl chloride	ug/l	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09

Notes: Non-detects are shown as less than half the detection limit
µg/L = micrograms per liter
mg/L = milligrams per liter

Table 2
H02 2019 Groundwater Monitoring Analytical Results

Chemical Name	Unit	LALF09 8/15/2019	LALF10 8/15/2019	LALF11 8/6/2019	LALF12 8/8/2019	LALF13 8/8/2019	LALF14 8/6/2019	LALF15 8/8/2019
1,1-Dichloroethene	ug/l	<0.105	<0.105	<0.105	<0.105	<0.105	<0.105	<0.105
Chloride	mg/l	29.00	39.00	44.00	38.00	95.00	38.00	61.00
cis-1,2-Dichloroethene	ug/l	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095
Methylene chloride	ug/l	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075
Tetrachloroethene	ug/l	2.80	3.80	<0.075	<0.075	1.40	<0.075	2.50
Total Dissolved Solids	mg/l	571.00	686.00	622.00	700.00	734.00	587.00	713.00
trans-1,2-Dichloroethene	ug/l	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09
Trichloroethene	ug/l	1.30	1.70	<0.085	<0.085	1.10	<0.085	<0.085
Vinyl chloride	ug/l	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09

Notes: Non-detects are shown as less than half the detection limit
µg/L = micrograms per liter
mg/L = milligrams per liter

Table 2
H02 2019 Groundwater Monitoring Analytical Results

Chemical Name	Unit	LALF16 8/7/2019	LALF17 8/6/2019	LALF18 8/8/2019	LALF19 8/1/2019	LALF20 8/7/2019	LALF21 8/7/2019	LALF22 8/1/2019	LALF23 8/1/2019
1,1-Dichloroethene	ug/l	<0.105	<0.105	<0.105	<0.105	<0.105	<0.105	<0.105	<0.105
Chloride	mg/l	41.00	31.00	50.00	21.00	39.00	45.00	42.00	27.00
cis-1,2-Dichloroethene	ug/l	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095
Methylene chloride	ug/l	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075
Tetrachloroethene	ug/l	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075
Total Dissolved Solids	mg/l	667.00	538.00	560.00	449.00	646.00	653.00	655.00	534.00
trans-1,2-Dichloroethene	ug/l	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09
Trichloroethene	ug/l	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085
Vinyl chloride	ug/l	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09

Notes: Non-detects are shown as less than half the detection limit
µg/L = micrograms per liter
mg/L = milligrams per liter

Table 2
H02 2019 Groundwater Monitoring Analytical Results

		LALF24	LALF24
Chemical Name	Unit	8/8/2019	11/18/2019
1,1-Dichloroethene	ug/l	<0.105	<0.105
Chloride	mg/l	86.00	88.00
cis-1,2-Dichloroethene	ug/l	<0.095	<0.095
Methylene chloride	ug/l	<0.075	<0.075
Tetrachloroethene	ug/l	<0.075	<0.075
Total Dissolved Solids	mg/l	808.00	799.00
trans-1,2-Dichloroethene	ug/l	<0.09	<0.09
Trichloroethene	ug/l	2.40	1.70
Vinyl chloride	ug/l	<0.09	<0.09

Notes: Non-detects are shown as
less than half the detection limit
µg/L = micrograms per liter
mg/L = milligrams per liter

Table 3
H02 2019 Groundwater Monitoring Field Parameters

		Field Dissolved Oxygen	Field Specific Conductivity	Field Eh Redox potential
Location ID	Sample Date	mg/L	µS/cm	mv
AGPROD	8/19/2019	0.81	361.00	194.20
GWEX2	8/15/2019	0.49	689.00	150.30
GWEX4	8/15/2019	3.08	893.00	24.50
LALF01	8/7/2019	0.13	905.00	29.10
LALF05	8/6/2019	0.13	658.00	129.40
LALF06	8/6/2019	5.39	727.00	25.00
LALF07	8/7/2019	0.13	797.00	163.10
LALF08	8/1/2019	0.11	509.00	6.50
LALF09	8/15/2019	0.24	725.00	112.70
LALF10	8/15/2019	0.93	853.00	132.80
LALF11	8/6/2019	0.31	788.00	198.00
LALF14	8/6/2019	0.25	636.00	105.10
LALF15	8/8/2019	3.52	910.00	207.80
LALF16	8/7/2019	0.11	871.00	137.50
LALF17	8/6/2019	0.79	686.00	114.00
LALF18	8/8/2019	0.77	710.00	140.90
LALF19	8/1/2019	0.11	551.00	9.20
LALF20	8/7/2019	1.40	798.00	149.30
LALF21	8/7/2019	1.30	797.00	124.60
LALF22	8/1/2019	1.95	813.00	5.55
LALF23	8/1/2019	0.09	484.00	32.30
LALF24	8/8/2019	7.48	955.00	222.90
LALF24	11/18/2019	7.24	1369.00	225.30

Notes:

Table 3
H02 2019 Groundwater Monitoring Field Parameters

		Field pH	Field Temperature	Field Turbidity
Location ID	Sample Date	pH	°C	NTU
AGPROD	8/19/2019	7.81	19.30	0.41
GWEX2	8/15/2019	7.35	22.70	48.60
GWEX4	8/15/2019	7.44	18.60	3.89
LALF01	8/7/2019	7.23	18.40	83.40
LALF05	8/6/2019	7.44	18.10	0.75
LALF06	8/6/2019	7.28	20.70	3.50
LALF07	8/7/2019	7.50	18.90	0.30
LALF08	8/1/2019	8.23	17.30	0.42
LALF09	8/15/2019	7.59	17.00	0.25
LALF10	8/15/2019	7.32	18.00	0.51
LALF11	8/6/2019	7.27	18.10	0.39
LALF14	8/6/2019	7.30	19.60	1.22
LALF15	8/8/2019	7.35	18.50	0.27
LALF16	8/7/2019	7.29	20.40	0.54
LALF17	8/6/2019	7.26	18.30	0.46
LALF18	8/8/2019	7.07	19.00	1.09
LALF19	8/1/2019	7.92	17.00	0.22
LALF20	8/7/2019	7.47	18.00	0.41
LALF21	8/7/2019	7.48	17.00	0.41
LALF22	8/1/2019	7.68	18.50	0.83
LALF23	8/1/2019	7.95	17.50	0.44
LALF24	8/8/2019	7.51	18.80	0.80
LALF24	11/18/2019	6.96	17.56	1.34

Notes:

Table 4
H02 2019 Groundwater Monitoring Analytical Results: Inorganics

		Arsenic	Bicarbonate	Calcium
Location ID	Date	mg/l	mg/l	mg/l
AGPROD	8/19/2019	0.0035	130.6	57
GWEX2	8/15/2019	<0.00005	200.1	78
GWEX4	8/15/2019	0.0017	313.5	130
LALF01	8/7/2019	0.0067	302.7	140
LALF03	8/7/2019	0.0019	259.8	120
LALF04	8/6/2019	0.0026	283.6	140
LALF05	8/6/2019	0.0028	308.7	120
LALF06	8/6/2019	0.003	228.6	93
LALF07	8/7/2019	0.0024	273.9	130
LALF08	8/1/2019	0.002	196	79
LALF09	8/15/2019	0.0016	281.2	120
LALF10	8/15/2019	0.0018	316.5	130
LALF11	8/6/2019	0.006	259.1	120
LALF12	8/8/2019	0.0016	292.6	130
LALF13	8/8/2019	0.0034	148	140
LALF14	8/6/2019	0.002	247.4	120
LALF15	8/8/2019	0.005	266.7	130
LALF16	8/7/2019	0.0022	290.7	130
LALF17	8/6/2019	0.0027	244.5	110
LALF18	8/8/2019	0.002	206.8	95
LALF19	8/1/2019	0.0021	208.8	85
LALF20	8/7/2019	0.0021	276	120
LALF21	8/7/2019	0.0021	277.5	120
LALF22	8/1/2019	0.002	269.2	120
LALF23	8/1/2019	0.0024	267.9	110
LALF24	8/8/2019	0.002	197.2	160
LALF24	11/18/2019	0.0021	222.6	160

Items in Red and Bold are above Standard
Notes: Non-detects are shown as less than half the detection limit
mg/L = milligrams per liter
* Samples collected but not analyzed by lab

Table 4
H02 2019 Groundwater Monitoring Analytical Results: Inorganics

	Carbonate	Chloride	Magnesium	Nitrogen, Nitrate (As N)	Nitrogen, Nitrite (As N)
Location ID	mg/l	mg/l	mg/l	mg/l	mg/l
AGPROD	170	12	7.4	<0.0025	<0.0027
GWEX2	260	45	16	1.1	<0.0027
GWEX4	410	42	18	2.3	<0.0027
LALF01	450	54	25	0.77	<0.0027
LALF03	360	43	17	0.16	<0.0027
LALF04	410	43	17	*	*
LALF05	360	25	14	*	*
LALF06	300	56	16	*	*
LALF07	390	45	17	7.2	<0.0027
LALF08	240	22	11	<0.0025	<0.0027
LALF09	350	29	16	0.4	<0.0027
LALF10	390	39	17	1.6	<0.0027
LALF11	380	44	19	*	*
LALF12	410	38	20	<0.0025	<0.0027
LALF13	420	95	16	5	<0.0027
LALF14	370	38	18	*	*
LALF15	380	61	15	9.7	<0.0027
LALF16	430	41	23	<0.0025	<0.0027
LALF17	350	31	15	*	*
LALF18	310	50	17	1.2	<0.0027
LALF19	260	21	11	<0.0025	<0.0027
LALF20	380	39	18	5.6	<0.0027
LALF21	380	45	18	4	<0.0027
LALF22	370	42	17	5.4	<0.0027
LALF23	340	27	14	1.4	0.11
LALF24	510	86	24	**10**	<0.0027
LALF24	500	88	23	**10**	<0.0027

Items in Red and Bold are al

Notes: Non-detects are shown as less than half the detection limit

mg/L = milligrams per liter

* Samples collected but not analyzed by lab

Table 4
H02 2019 Groundwater Monitoring Analytical Results: Inorganics

	Potassium	Sodium	Total Dissolved Solids	Manganese
Location ID	mg/l	mg/l	mg/l	mg/l
AGPROD	2.7	19	259	0.064
GWEX2	5.4	51	487	0.15
GWEX4	6.9	67	705	<0.0007
LALF01	7.5	65	737	**1.9**
LALF03	7.7	63	620	**0.39**
LALF04	5.8	53	658	**0.95**
LALF05	6.3	48	561	**1.5**
LALF06	7.4	58	535	0.048
LALF07	7.5	68	676	**1.2**
LALF08	4.4	29	411	0.15
LALF09	5.9	48	571	**0.23**
LALF10	7.1	67	686	0.074
LALF11	6.2	50	622	**1.1**
LALF12	6.3	66	700	**0.87**
LALF13	7.2	57	734	0.16
LALF14	5.8	40	587	**1.7**
LALF15	11	72	713	0.17
LALF16	6.4	51	667	**2.6**
LALF17	5.1	39	538	**0.36**
LALF18	5.8	54	560	**1.1**
LALF19	5	31	449	**0.22**
LALF20	7.3	64	646	0.038
LALF21	7.1	63	653	0.0058
LALF22	7.1	60	655	<0.0007
LALF23	5.1	41	534	0.18
LALF24	6.6	44	808	<0.0007
LALF24	6.3	43	799	<0.0007

Items in Red and Bold are al
Notes: Non-detects are shown as less than half the detection limit
mg/L = milligrams per liter
* Samples collected but not analyzed by lab

Table 5
H01 2019 Groundwater Elevations (Feet)

Location ID	July	August	September	October	November	December
GWEX2	4953.86	4953.62	4953.83	4953.92	4954.13	4953.56
GWEX3	4951.14	4951.06	4951.11	4951.15	4951.35	N/A
GWEX4	4951.78	4951.53	4951.84	4951.96	4947.3*	4941.62*
IW3	4946.76	4946.70	4946.76	4946.83	4947.01	N/A
IW4	4945.75	4945.70	4945.75	4945.42	4946.03	N/A
LALF01	4966.23	4966.26	4966.24	4966.44	4966.58	4966.55
LALF03	4957.35	4957.38	4957.37	4957.51	4957.70	4957.75
LALF04	4958.64	4958.54	4958.63	4958.78	4958.95	4958.95
LALF05	4964.22	4964.24	4964.24	4964.36	4964.53	4964.53
LALF06	4957.57	4957.54	4957.57	4957.73	4957.91	4957.92
LALF07	4961.22	4961.28	4961.26	4961.42	4961.72	4961.56
LALF08	4958.98	4958.91	4959.04	4959.19	4959.38	4959.37
LALF09	4953.61	4953.60	4953.70	4953.83	4954.05	4954.06
LALF10	4956.79	4956.82	4956.82	4956.89	4957.13	4957.21
LALF11	4963.10	4963.12	4963.18	4963.43	4963.47	4963.51
LALF12	4953.71	4953.69	4953.72	4953.75	4953.97	4954.11
LALF13	4962.08	4962.14	4962.17	4962.36	4962.44	4962.46
LALF14	4958.29	4958.34	4958.37	4958.53	4958.69	4958.67
LALF15	4977.77	4977.83	4977.88	4977.93	4978.07	4978.14
LALF16	4957.13	4957.21	4957.21	4957.34	4957.55	4957.55
LALF17	4957.40	4957.22	4957.25	4957.40	4957.50	4957.61
LALF18	4955.24	4955.26	4955.29	4955.41	4955.53	4955.67
LALF19	4949.79	4950.75	4950.82	4950.90	4951.12	4951.27
LALF20	4955.98	4956.01	4956.05	4956.11	4956.20	4956.20
LALF21	4951.77	4951.84	4951.91	4951.97	4952.16	4952.15
LALF22	4949.08	4949.10	4949.13	4949.20	4949.41	4949.68
LALF23	4948.55	4948.54	4948.60	4948.64	4948.84	4949.03
LALF24	4941.87	4941.91	4941.92	4941.98	4942.20	4942.32
REEVES1	4940.46	4940.41	4940.47	4940.54	4940.78	4940.94
REEVES2	4943.37	4929.84	4933.54	4943.39	4943.55	4943.69
REEVES3	4944.26	4944.25	4944.33	4944.45	4944.64	4944.76
REEVES4	4941.19	4941.12	4941.13	4941.21	4941.44	4941.61
REEVES5	4951.38	4951.36	4951.40	4951.45	4951.67	4951.85
REEVES6	4948.45	4948.39	4948.46	4948.50	4948.72	4948.89

Table 6
H02 2019 Groundwater Remediation System (GWRS) Analytical Results Contaminants of Concern (DP 1468)

		Location ID and Sample Date			
		LALF12	LALF19	LALF22	LALF23
Chemical Name	Unit	2/6/2019	1/31/2019	1/31/2019	1/31/2019
1,1-Dichloroethene (1,1-DCE)	ug/l	0.11	0.11	0.11	0.11
Chloride	mg/l	38.00	21.00	42.00	27.00
cis-1,2-Dichloroethene	ug/l	0.10	0.10	0.10	0.10
Iron	mg/l	0.004	0.004	0.004	0.004
Manganese	mg/l	**0.870**	**0.220**	<0.0007	0.18
Methylene Chloride (DCM)	ug/l	<0.075	<0.075	<0.075	<0.075
Nitrogen, Nitrate (As N)	mg/l	<0.06	<0.06	5.40	1.50
Nitrogen, Total	mg/l	<0.5	<0.5	5.40	1.50
Tetrachloroethene (PCE)	ug/l	<0.075	<0.075	<0.075	<0.075
Total Dissolved Solids	mg/l	700.00	449.00	655.00	534.00
trans-1,2-Dichloroethene	ug/l	<0.09	<0.09	<0.09	<0.09
Trichloroethene (TCE)	ug/l	<0.085	<0.085	<0.085	<0.085
Vinyl chloride	ug/l	<0.09	<0.09	<0.09	<0.09

Items in Red and Bold are above Standard

Notes: Non-detects are shown as
less than half the detection limit
µg/L = micrograms per liter
mg/L = milligrams per liter

Table 7
H02 2019 Non Regulatory Sampling 1,4-Dioxane

		1,4-Dioxane
Location ID	Date	ug/l
GWEX2	8/15/2019	<0.5
GWEX4	8/15/2019	<0.5
LALF13	8/8/2019	11
LALF24	8/8/2019	<0.5

Notes: Non-detects are shown as less than half the detection limit
µg/l = micrograms per liter

Table 8
Annual Soil Vapor Probe Sampling Analytical Detections

	Location ID	M20	M21
Analyte	Sample Date	9/12/2019	9/12/2019
1,2,4-Trimethylbenzene	ug/m3	10	6.7
1,3,5-Trimethylbenzene	ug/m3	3.2	1.8
1,4-Dichlorobenzene	ug/m3	3	2.4
2,2,4-Trimethylphentane	ug/m3	10	54
2-BUTANONE (MEK)	ug/m3	16	ND
2-Propanol	ug/m3	49	5.6
4-Ethyltoluene	ug/m3	6.9	3.8
ACETONE	ug/m3	49	ND
Benzene	ug/m3	3.1	ND
CARBON DISULFIDE	ug/m3	14	0.76
CHLOROMETHANE	ug/m3	3.8	ND
Cyclohexane	ug/m3	7.1	3.8
DICHLORODIFLUOROMETHANE	ug/m3	41	4.6
Ethanol	ug/m3	220	20
Ethylbenzene	ug/m3	23	2.7
Freon 113	ug/m3	ND	3.4
Freon 114 Dichlorotetrafluoroethane	ug/m3	4.5	ND
Heptane	ug/m3	8.1	1.1
ISOPROPYLBENZENE	ug/m3	ND	1.7
m,p-Xylene	ug/m3	42	6.6
Methylene chloride	ug/m3	13	0.96
n-Hexane	ug/m3	15	1.6
ORTHO-XYLENE (1,2-Dimethylbenzene)	ug/m3	12	2.4
Propene	ug/m3	22	0.92
Tetrachloroethene	ug/m3	22	6.5
Tetrahydrofuran	ug/m3	5.3	ND
Toluene	ug/m3	80	5.4
TPH	ug/m3	1800	1200
Trichloroethene	ug/m3	4.4	2.2
TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	5.3	1.8
Vinyl chloride	ug/m3	14	ND

ND=Non detect

Table 9
Annual SVE and Flare Analytical Detections

		FLARESTATION	SVEINLET
	Sample Date	9/12/2019	9/12/2019
1,1,1-Trichloroethane	ug/m3	ND	4.1
1,1-DICHLOROETHANE	ug/m3	340	200
1,1-Dichloroethene	ug/m3	50	78
1,2,4-Trimethylbenzene	ug/m3	3200	200
1,2-Dichlorobenzene	ug/m3	160	9.5
1,2-Dichloroethane	ug/m3	ND	7.3
1,2-Dichloropropane	ug/m3	ND	230
1,3,5-Trimethylbenzene	ug/m3	1100	100
1,4-Dichlorobenzene	ug/m3	1200	200
2,2,4-Trimethylphentane	ug/m3	900	140
2-BUTANONE (MEK)	ug/m3	3600	ND
2-Propanol	ug/m3	7400	9.4
4-Ethyltoluene	ug/m3	2300	120
4-METHYL-2-PENTANONE	ug/m3	1600	ND
ACETONE	ug/m3	5000	20
Benzene	ug/m3	600	94
CARBON DISULFIDE	ug/m3	ND	4.8
CHLOROETHANE	ug/m3	79	6.7
CHLOROFORM	ug/m3	ND	13
CHLOROMETHANE	ug/m3	23	ND
cis-1,2-Dichloroethene	ug/m3	ND	640
Cyclohexane	ug/m3	1200	430
DICHLORODIFLUOROMETHANE	ug/m3	3400	1700
Ethanol	ug/m3	35000	30
Ethylbenzene	ug/m3	6700	1000
Freon 113	ug/m3	120	270
Freon 114 Dichlorotetrafluoroethane	ug/m3	1100	120
Heptane	ug/m3	2900	500
ISOPROPYLBENZENE	ug/m3	ND	100
m,p-Xylene	ug/m3	12000	1300
Methyl T-Butyl Ether (MTBE)	ug/m3	ND	4.8
Methylene chloride	ug/m3	670	48
NAPHTHALENE	ug/m3	100	4.1
n-Hexane	ug/m3	1300	170
ORTHO-XYLENE (1,2-Dimethylbenzene)	ug/m3	3300	300
Propene	ug/m3	2700	ND
Tetrachloroethene	ug/m3	5600	1100
Tetrahydrofuran	ug/m3	2300	290
Toluene	ug/m3	ND	1600
TPH	ug/m3	330000	61000
trans-1,2-Dichloroethene	ug/m3	170	39
Trichloroethene	ug/m3	2400	240
TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	160	52
Vinyl chloride	ug/m3	4200	940

ND=Non detect

Table 11
Annual SVE Wells Analytical Detections

		SVE-01D	SVE-01S	SVE-02D
	Sample Date	9/12/2019	9/12/2019	9/12/2019
1,1,1-Trichloroethane	ug/m3	2.5	ND	3.2
1,1,2-Trichloroethane	ug/m3	ND	ND	ND
1,1-DICHLOROETHANE	ug/m3	250	290	1000
1,1-Dichloroethene	ug/m3	350	160	1600
1,2,4-Trimethylbenzene	ug/m3	4.1	100	4.3
1,2-Dichlorobenzene	ug/m3	ND	ND	ND
1,2-Dichloroethane	ug/m3	1.4	ND	2.9
1,2-Dichloropropane	ug/m3	44	660	110
1,3,5-Trimethylbenzene	ug/m3	1.1	120	1.2
1,4-Dichlorobenzene	ug/m3	3	200	2.1
2,2,4-Trimethylphentane	ug/m3	ND	610	1.4
2-BUTANONE (MEK)	ug/m3	ND	ND	ND
2-Propanol	ug/m3	ND	ND	ND
4-Ethyltoluene	ug/m3	2.5	65	2.5
ACETONE	ug/m3	21	140	22
Benzene	ug/m3	7.8	250	4.5
BROMODICHLOROMETHANE	ug/m3	ND	ND	ND
CARBON DISULFIDE	ug/m3	ND	ND	ND
Carbon tetrachloride	ug/m3	ND	ND	ND
Chlorobenzene	ug/m3	ND	ND	1.7
CHLOROETHANE	ug/m3	ND	34	ND
CHLOROFORM	ug/m3	11	33	20
CHLOROMETHANE	ug/m3	1.7	ND	ND
cis-1,2-Dichloroethene	ug/m3	69	820	130
Cyclohexane	ug/m3	10	440	46
DICHLORODIFLUOROMETHANE	ug/m3	250	980	3700
Ethanol	ug/m3	37	41	42
Ethylbenzene	ug/m3	1.3	140	1.3
Freon 113	ug/m3	1300	1000	6800
Freon 114 Dichlorotetrafluoroethane	ug/m3	14	360	260
Heptane	ug/m3	0.92	460	0.96
ISOPROPYLBENZENE	ug/m3	ND	ND	ND
m,p-Xylene	ug/m3	3.6	590	3.9
Methyl T-Butyl Ether (MTBE)	ug/m3	1.1	22	2.8
Methylene chloride	ug/m3	16	440	84
NAPHTHALENE	ug/m3	ND	ND	ND
n-Hexane	ug/m3	9.6	580	3
ORTHO-XYLENE (1,2-Dimethylbenzene)	ug/m3	1.4	150	1.6
Propene	ug/m3	ND	730	ND
Styrene	ug/m3	ND	ND	ND
Tetrachloroethene	ug/m3	330	1000	2100
Tetrahydrofuran	ug/m3	4	ND	16
Toluene	ug/m3	7	280	7.3
TPH	ug/m3	1800	34000	6400
trans-1,2-Dichloroethene	ug/m3	2.3	81	24
Trichloroethene	ug/m3	250	840	1100
TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	35	160	360
Vinyl chloride	ug/m3	8	1000	110

ND=Non detect

Table 11
Annual SVE Wells Analytical Detections

		SVE-02S	SVE-03D
	Sample Date	9/12/2019	9/12/2019
1,1,1-Trichloroethane	ug/m3	ND	ND
1,1,2-Trichloroethane	ug/m3	ND	ND
1,1-DICHLOROETHANE	ug/m3	2600	71
1,1-Dichloroethene	ug/m3	82	120
1,2,4-Trimethylbenzene	ug/m3	460	3.8
1,2-Dichlorobenzene	ug/m3	39	ND
1,2-Dichloroethane	ug/m3	ND	ND
1,2-Dichloropropane	ug/m3	670	6.7
1,3,5-Trimethylbenzene	ug/m3	410	1.1
1,4-Dichlorobenzene	ug/m3	830	1.2
2,2,4-Trimethylphentane	ug/m3	1300	1.1
2-BUTANONE (MEK)	ug/m3	ND	ND
2-Propanol	ug/m3	ND	4.8
4-Ethyltoluene	ug/m3	150	2.1
ACETONE	ug/m3	1300	24
Benzene	ug/m3	520	1.6
BROMODICHLOROMETHANE	ug/m3	ND	ND
CARBON DISULFIDE	ug/m3	96	ND
Carbon tetrachloride	ug/m3	ND	ND
Chlorobenzene	ug/m3	330	ND
CHLOROETHANE	ug/m3	35	ND
CHLOROFORM	ug/m3	ND	3.5
CHLOROMETHANE	ug/m3	ND	0.71
cis-1,2-Dichloroethene	ug/m3	700	19
Cyclohexane	ug/m3	1900	3.7
DICHLORODIFLUOROMETHANE	ug/m3	3700	250
Ethanol	ug/m3	53	40
Ethylbenzene	ug/m3	240	1.2
Freon 113	ug/m3	7300	940
Freon 114 Dichlorotetrafluoroethane	ug/m3	1600	14
Heptane	ug/m3	3300	2.4
ISOPROPYLBENZENE	ug/m3	420	ND
m,p-Xylene	ug/m3	960	3.5
Methyl T-Butyl Ether (MTBE)	ug/m3	19	ND
Methylene chloride	ug/m3	92	3.2
NAPHTHALENE	ug/m3	ND	ND
n-Hexane	ug/m3	1400	3.5
ORTHO-XYLENE (1,2-Dimethylbenzene)	ug/m3	64	1.2
Propene	ug/m3	1300	ND
Styrene	ug/m3	ND	ND
Tetrachloroethene	ug/m3	1600	170
Tetrahydrofuran	ug/m3	ND	ND
Toluene	ug/m3	150	6.4
TPH	ug/m3	97000	990
trans-1,2-Dichloroethene	ug/m3	220	0.85
Trichloroethene	ug/m3	660	61
TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	220	36
Vinyl chloride	ug/m3	2500	4.2

ND=Non detect

Table 11
Annual SVE Wells Analytical Detections

		SVE-03S	SVE-04D	SVE-04S
	Sample Date	9/12/2019	9/12/2019	9/12/2019
1,1,1-Trichloroethane	ug/m3	1.7	ND	ND
1,1,2-Trichloroethane	ug/m3	ND	ND	ND
1,1-DICHLOROETHANE	ug/m3	200	200	110
1,1-Dichloroethene	ug/m3	24	58	ND
1,2,4-Trimethylbenzene	ug/m3	7.7	5	800
1,2-Dichlorobenzene	ug/m3	11	ND	ND
1,2-Dichloroethane	ug/m3	ND	5	ND
1,2-Dichloropropane	ug/m3	65	180	850
1,3,5-Trimethylbenzene	ug/m3	2.1	1.4	370
1,4-Dichlorobenzene	ug/m3	7	14	140
2,2,4-Trimethylphentane	ug/m3	5.1	ND	370
2-BUTANONE (MEK)	ug/m3	ND	ND	ND
2-Propanol	ug/m3	ND	ND	7500
4-Ethyltoluene	ug/m3	5	3	610
ACETONE	ug/m3	35	16	960
Benzene	ug/m3	13	11	390
BROMODICHLOROMETHANE	ug/m3	3	ND	ND
CARBON DISULFIDE	ug/m3	ND	ND	ND
Carbon tetrachloride	ug/m3	ND	ND	ND
Chlorobenzene	ug/m3	ND	ND	ND
CHLOROETHANE	ug/m3	ND	ND	ND
CHLOROFORM	ug/m3	42	14	ND
CHLOROMETHANE	ug/m3	1.5	0.73	ND
cis-1,2-Dichloroethene	ug/m3	110	130	1200
Cyclohexane	ug/m3	70	11	2100
DICHLORODIFLUOROMETHANE	ug/m3	530	170	7000
Ethanol	ug/m3	26	47	530
Ethylbenzene	ug/m3	3.3	1.5	3200
Freon 113	ug/m3	290	82	ND
Freon 114 Dichlorotetrafluoroethane	ug/m3	92	6.9	220
Heptane	ug/m3	ND	1.1	1400
ISOPROPYLBENZENE	ug/m3	ND	ND	ND
m,p-Xylene	ug/m3	9.4	4.3	4100
Methyl T-Butyl Ether (MTBE)	ug/m3	3.8	3.6	ND
Methylene chloride	ug/m3	4	21	200
NAPHTHALENE	ug/m3	ND	ND	ND
n-Hexane	ug/m3	4.8	5.4	1900
ORTHO-XYLENE (1,2-Dimethylbenzene)	ug/m3	3.5	1.6	910
Propene	ug/m3	ND	ND	1700
Styrene	ug/m3	2.2	ND	ND
Tetrachloroethene	ug/m3	950	510	180
Tetrahydrofuran	ug/m3	ND	ND	1300
Toluene	ug/m3	8.6	7.9	12000
TPH	ug/m3	2700	1900	200000
trans-1,2-Dichloroethene	ug/m3	2	4.6	90
Trichloroethene	ug/m3	180	200	460
TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	25	20	ND
Vinyl chloride	ug/m3	8.9	13	6900

ND=Non detect

Table 11
Annual SVE Wells Analytical Detections

		SVE-05D	SVE-05S	SVE-06D
	Sample Date	9/12/2019	9/12/2019	9/12/2019
1,1,1-Trichloroethane	ug/m3	ND	ND	1.6
1,1,2-Trichloroethane	ug/m3	ND	ND	ND
1,1-DICHLOROETHANE	ug/m3	ND	560	130
1,1-Dichloroethene	ug/m3	ND	86	19
1,2,4-Trimethylbenzene	ug/m3	3.8	180	5.5
1,2-Dichlorobenzene	ug/m3	ND	ND	ND
1,2-Dichloroethane	ug/m3	ND	ND	ND
1,2-Dichloropropane	ug/m3	ND	2200	13
1,3,5-Trimethylbenzene	ug/m3	1.1	130	1.4
1,4-Dichlorobenzene	ug/m3	ND	140	ND
2,2,4-Trimethylphentane	ug/m3	5.1	1100	ND
2-BUTANONE (MEK)	ug/m3	ND	ND	ND
2-Propanol	ug/m3	4.2	3400	5.9
4-Ethyltoluene	ug/m3	2.2	ND	3.2
ACETONE	ug/m3	18	1400	31
Benzene	ug/m3	2.3	560	2.2
BROMODICHLOROMETHANE	ug/m3	ND	ND	ND
CARBON DISULFIDE	ug/m3	ND	ND	ND
Carbon tetrachloride	ug/m3	ND	ND	ND
Chlorobenzene	ug/m3	ND	ND	ND
CHLOROETHANE	ug/m3	ND	ND	ND
CHLOROFORM	ug/m3	ND	ND	4.4
CHLOROMETHANE	ug/m3	1.2	ND	1.1
cis-1,2-Dichloroethene	ug/m3	ND	6900	33
Cyclohexane	ug/m3	4.6	2200	2.8
DICHLORODIFLUOROMETHANE	ug/m3	7.5	4600	620
Ethanol	ug/m3	36	ND	42
Ethylbenzene	ug/m3	26	ND	1.4
Freon 113	ug/m3	ND	230	93
Freon 114 Dichlorotetrafluoroethane	ug/m3	6.9	680	37
Heptane	ug/m3	10	2200	1.1
ISOPROPYLBENZENE	ug/m3	3.1	ND	ND
m,p-Xylene	ug/m3	6	740	3.9
Methyl T-Butyl Ether (MTBE)	ug/m3	ND	ND	ND
Methylene chloride	ug/m3	10	290	18
NAPHTHALENE	ug/m3	ND	ND	ND
n-Hexane	ug/m3	10	1500	5.6
ORTHO-XYLENE (1,2-Dimethylbenzene)	ug/m3	2.6	ND	1.6
Propene	ug/m3	ND	6400	ND
Styrene	ug/m3	ND	ND	ND
Tetrachloroethene	ug/m3	8.6	4700	770
Tetrahydrofuran	ug/m3	2.8	ND	ND
Toluene	ug/m3	6.5	470	6.5
TPH	ug/m3	1200	220000	1700
trans-1,2-Dichloroethene	ug/m3	ND	260	2.3
Trichloroethene	ug/m3	ND	2000	86
TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	1.2	360	80
Vinyl chloride	ug/m3	7	15000	5

ND=Non detect

Table 11
Annual SVE Wells Analytical Detections

		SVE-06S	SVE-07D	SVE-07S
	Sample Date	9/12/2019	9/12/2019	9/12/2019
1,1,1-Trichloroethane	ug/m3	ND	ND	ND
1,1,2-Trichloroethane	ug/m3	ND	ND	ND
1,1-DICHLOROETHANE	ug/m3	96	130	190
1,1-Dichloroethene	ug/m3	2.3	110	38
1,2,4-Trimethylbenzene	ug/m3	8.3	7.1	24
1,2-Dichlorobenzene	ug/m3	ND	ND	ND
1,2-Dichloroethane	ug/m3	ND	1.7	ND
1,2-Dichloropropane	ug/m3	44	75	700
1,3,5-Trimethylbenzene	ug/m3	2.6	1.8	29
1,4-Dichlorobenzene	ug/m3	20	7.8	150
2,2,4-Trimethylphentane	ug/m3	16	ND	280
2-BUTANONE (MEK)	ug/m3	7.6	ND	ND
2-Propanol	ug/m3	ND	ND	ND
4-Ethyltoluene	ug/m3	4.9	4.1	ND
ACETONE	ug/m3	37	12	100
Benzene	ug/m3	4.8	1.8	120
BROMODICHLOROMETHANE	ug/m3	ND	ND	ND
CARBON DISULFIDE	ug/m3	ND	ND	ND
Carbon tetrachloride	ug/m3	ND	ND	ND
Chlorobenzene	ug/m3	ND	ND	ND
CHLOROETHANE	ug/m3	ND	ND	ND
CHLOROFORM	ug/m3	19	2.8	ND
CHLOROMETHANE	ug/m3	1.6	0.56	ND
cis-1,2-Dichloroethene	ug/m3	34	43	1100
Cyclohexane	ug/m3	49	10	380
DICHLORODIFLUOROMETHANE	ug/m3	380	190	1400
Ethanol	ug/m3	59	32	67
Ethylbenzene	ug/m3	2.8	1.7	26
Freon 113	ug/m3	10	8.1	ND
Freon 114 Dichlorotetrafluoroethane	ug/m3	49	12	300
Heptane	ug/m3	3.2	ND	550
ISOPROPYLBENZENE	ug/m3	3.5	ND	120
m,p-Xylene	ug/m3	8.3	4.7	84
Methyl T-Butyl Ether (MTBE)	ug/m3	2.3	1.9	ND
Methylene chloride	ug/m3	7.8	4.6	130
NAPHTHALENE	ug/m3	ND	ND	ND
n-Hexane	ug/m3	12	1.9	550
ORTHO-XYLENE (1,2-Dimethylbenzene)	ug/m3	5	1.9	18
Propene	ug/m3	ND	ND	2100
Styrene	ug/m3	ND	ND	ND
Tetrachloroethene	ug/m3	630	450	3200
Tetrahydrofuran	ug/m3	7.7	ND	110
Toluene	ug/m3	18	5.4	34
TPH	ug/m3	5500	1300	77000
trans-1,2-Dichloroethene	ug/m3	1.6	ND	85
Trichloroethene	ug/m3	60	48	490
TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	25	22	37
Vinyl chloride	ug/m3	10	2	2600

ND=Non detect

Table 11
Annual SVE Wells Analytical Detections

		SVE-08D	SVE-08S	SVE-09D
	Sample Date	9/12/2019	9/12/2019	9/12/2019
1,1,1-Trichloroethane	ug/m3	ND	ND	33
1,1,2-Trichloroethane	ug/m3	1.4	ND	ND
1,1-DICHLOROETHANE	ug/m3	72	96	42
1,1-Dichloroethene	ug/m3	4.3	ND	650
1,2,4-Trimethylbenzene	ug/m3	3.5	720	5.9
1,2-Dichlorobenzene	ug/m3	ND	ND	ND
1,2-Dichloroethane	ug/m3	1.3	ND	ND
1,2-Dichloropropane	ug/m3	7.2	210	7.7
1,3,5-Trimethylbenzene	ug/m3	ND	360	1.6
1,4-Dichlorobenzene	ug/m3	ND	300	2.1
2,2,4-Trimethylphentane	ug/m3	ND	220	ND
2-BUTANONE (MEK)	ug/m3	ND	ND	ND
2-Propanol	ug/m3	4.2	ND	ND
4-Ethyltoluene	ug/m3	2.1	520	3.5
ACETONE	ug/m3	26	ND	17
Benzene	ug/m3	0.95	230	1.4
BROMODICHLOROMETHANE	ug/m3	ND	ND	ND
CARBON DISULFIDE	ug/m3	ND	ND	ND
Carbon tetrachloride	ug/m3	ND	ND	1.9
Chlorobenzene	ug/m3	ND	ND	ND
CHLOROETHANE	ug/m3	ND	11	ND
CHLOROFORM	ug/m3	ND	ND	9.6
CHLOROMETHANE	ug/m3	0.93	ND	0.67
cis-1,2-Dichloroethene	ug/m3	12	64	16
Cyclohexane	ug/m3	1.5	300	2.8
DICHLORODIFLUOROMETHANE	ug/m3	20	1100	580
Ethanol	ug/m3	42	25	40
Ethylbenzene	ug/m3	0.96	3700	3.1
Freon 113	ug/m3	ND	ND	21
Freon 114 Dichlorotetrafluoroethane	ug/m3	ND	210	19
Heptane	ug/m3	ND	890	1.5
ISOPROPYLBENZENE	ug/m3	ND	380	ND
m,p-Xylene	ug/m3	2.6	4500	6.5
Methyl T-Butyl Ether (MTBE)	ug/m3	ND	ND	ND
Methylene chloride	ug/m3	8.3	26	5.3
NAPHTHALENE	ug/m3	ND	ND	ND
n-Hexane	ug/m3	3.5	380	3
ORTHO-XYLENE (1,2-Dimethylbenzene)	ug/m3	1.1	1000	2.1
Propene	ug/m3	ND	ND	ND
Styrene	ug/m3	ND	ND	ND
Tetrachloroethene	ug/m3	98	33	1700
Tetrahydrofuran	ug/m3	ND	600	ND
Toluene	ug/m3	5.7	3300	7
TPH	ug/m3	590	150000	2100
trans-1,2-Dichloroethene	ug/m3	1	99	0.88
Trichloroethene	ug/m3	17	140	45
TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	3.7	30	96
Vinyl chloride	ug/m3	0.55	3500	3.2

ND=Non detect

Table 11
Annual SVE Wells Analytical Detections

		SVE-09S	SVE-10D	SVE-10S
	Sample Date	9/12/2019	9/12/2019	9/12/2019
1,1,1-Trichloroethane	ug/m3	ND	ND	1.9
1,1,2-Trichloroethane	ug/m3	ND	ND	ND
1,1-DICHLOROETHANE	ug/m3	8.4	24	53
1,1-Dichloroethene	ug/m3	1.9	10	28
1,2,4-Trimethylbenzene	ug/m3	3.3	21	51
1,2-Dichlorobenzene	ug/m3	ND	ND	ND
1,2-Dichloroethane	ug/m3	ND	2	6.9
1,2-Dichloropropane	ug/m3	14	43	150
1,3,5-Trimethylbenzene	ug/m3	ND	15	44
1,4-Dichlorobenzene	ug/m3	ND	46	250
2,2,4-Trimethylphentane	ug/m3	ND	27	83
2-BUTANONE (MEK)	ug/m3	ND	18	ND
2-Propanol	ug/m3	ND	7.9	ND
4-Ethyltoluene	ug/m3	2	14	35
ACETONE	ug/m3	16	32	130
Benzene	ug/m3	ND	18	57
BROMODICHLOROMETHANE	ug/m3	ND	ND	ND
CARBON DISULFIDE	ug/m3	ND	ND	ND
Carbon tetrachloride	ug/m3	ND	ND	ND
Chlorobenzene	ug/m3	ND	ND	ND
CHLOROETHANE	ug/m3	ND	0.87	1.9
CHLOROFORM	ug/m3	8.1	ND	ND
CHLOROMETHANE	ug/m3	0.64	1.9	ND
cis-1,2-Dichloroethene	ug/m3	13	110	300
Cyclohexane	ug/m3	1.6	42	130
DICHLORODIFLUOROMETHANE	ug/m3	23	470	1400
Ethanol	ug/m3	54	30	28
Ethylbenzene	ug/m3	1.2	28	95
Freon 113	ug/m3	3.5	14	6.6
Freon 114 Dichlorotetrafluoroethane	ug/m3	ND	100	340
Heptane	ug/m3	1.1	57	180
ISOPROPYLBENZENE	ug/m3	ND	30	96
m,p-Xylene	ug/m3	3.6	70	240
Methyl T-Butyl Ether (MTBE)	ug/m3	0.9	1.6	5.3
Methylene chloride	ug/m3	22	ND	ND
NAPHTHALENE	ug/m3	ND	ND	4
n-Hexane	ug/m3	5.1	31	84
ORTHO-XYLENE (1,2-Dimethylbenzene)	ug/m3	1.3	8	23
Propene	ug/m3	ND	ND	ND
Styrene	ug/m3	ND	ND	ND
Tetrachloroethene	ug/m3	62	880	2900
Tetrahydrofuran	ug/m3	ND	ND	ND
Toluene	ug/m3	7.8	13	30
TPH	ug/m3	420	8800	26000
trans-1,2-Dichloroethene	ug/m3	1.5	6.6	22
Trichloroethene	ug/m3	4.4	130	490
TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	4.9	18	45
Vinyl chloride	ug/m3	ND	190	600

ND=Non detect