COAL COMBUSTION RESIDUAL LANDFILL

ANNUAL GROUNDWATER MONITORING REPORT

Calendar Year 2020

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Fayette Power Plant Project
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EXECUTIVE SUMMARY

The LCRA Fayette Power Project (FPP) is a coal-fired power plant located east of La Grange in Fayette County, Texas. Coal Combustion Residuals (CCRs) generated at the facility are disposed of in the Combustion Byproducts Landfill (CBL) which is an existing landfill CCR Unit under the U.S. Environmental Protection Agency's Coal Combustion Residuals (CCR) Rules as codified in Title 40 of the Code of Federal Regulations (CFR), Chapter 257, Subpart D and the Texas Commission of Environmental Quality 30 Texas Administrative Code Chapter 352, Subchapter H.

At the beginning of calendar year 2020, the CBL was operating under detection monitoring. All groundwater sampling was conducted in accordance with 40 CFR § 257.93/30 TAC Chapter 352, Subchapter H - Groundwater sampling and analysis requirements and 40 CFR § 257.94. - Detection Monitoring. At the end of calendar year 2020, the CBL was operating under detection monitoring. The CBL will remain in detection monitoring for 2021.

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1.0 BACKGROUND

The LCRA Fayette Power Project (FPP) is a coal-fired power plant located east of La Grange in Fayette County, Texas. Coal Combustion Residuals (CCRs) generated at the facility are disposed of in the Combustion Byproducts Landfill (CBL) located south of the power plant and north of the railroad that borders the FPP site (Figure 1). The existing CBL consists of Cell 1 and Sub-cell 2D. Cell 1 was constructed in 1988 and sub-cell 2 D in 2015; therefore, both active cells are considered existing landfill units under the U.S. Environmental Protection Agency's Coal Combustion Residuals (CCR) Rules as codified in Title 40 of the Code of Federal Regulations (CFR), Chapter 257, Subpart D.

2.0 PURPOSE

This report was prepared pursuant to 40 CFR § 257.90(e), as amended on Aug. 28, 2020, and 30 Texas Administrative Code Chapter 352, Subchapter H which requires the owner or operator of an existing CCR landfill to prepare an annual groundwater monitoring report for the preceding calendar year.

3.0 GROUNDWATER MONITORING SYSTEM

The groundwater monitoring well network for 2020 consisted of six wells as described below and additionally in Table 1:

- Background – CBL-340I
- Down-gradient - CBL-301I, CBL-302I, CBL-306I, CBL-308I and CBL-341I

No groundwater monitoring wells were installed or decommissioned in 2020. The locations of the monitoring wells are shown on Figure 1.

In accordance with 40 CFR § 257.93(c), groundwater elevations were measured in each monitoring well prior to purging and sampling for each semi-annual sampling event. Consistent with prior CBL potentiometric surface elevation maps, the inferred groundwater flow direction is towards the south-southwest. Groundwater flow rates were estimated along two transects for each groundwater sampling event. The western area transect has an approximate flow rate of 19-

21 feet per year and the eastern area transect has an approximate flow rate of 50-51 feet per year. Detailed information is contained in the December 11, 2020 Technical Memorandum prepared by Wood Environmental and Infrastructure Solutions, Inc. (Wood), which is included in Appendix A.

4.0 STATUS OF THE GROUNDWATER MONITORING PROGRAM

At the beginning of calendar year 2020, the CBL was operating under detection monitoring. All groundwater sampling was conducted in accordance with 40 CFR § 257.93 - Groundwater sampling and analysis requirements and § 257.94. - Detection Monitoring. Table 2 summarizes the sampling events. At the end of calendar year 2020, the CBL was operating under detection monitoring. As discussed in Section 5, the CBL will remain in detection monitoring for 2021. Table 3 contains a summary of the analytical data collected in 2020. In accordance with 30 TAC § 352.901, Table 3 also contains a summary of all groundwater monitoring data collected since October 19, 2015.

5.0 STATISTICAL EVALUATIONS AND ALTERNATE SOURCE DETERMINATION

5.1 Statistical Analysis of First Quarter 2020 Data

In June 2020, Wood completed the statistical analysis of the first quarter detection monitoring Appendix III constituent data utilizing the prediction limit intrawell method. Samples were collected on January 29-30, 2020. The field parameters and analytical results were consistent with historic analytical results. The results indicated that there were no SSIs for any constituents in any well. Detailed information is contained the June 15, 2020 Technical Memorandum prepared by Wood which is included in Appendix B.

5.2 Statistical Analysis Third Quarter 2020 Data

In December 2020, Wood completed the statistical analysis of the third quarter detection monitoring Appendix III constituent data utilizing the prediction limit intrawell method. Third quarter samples were collected between July 29-31, 2020. Initial analysis for these samples indicated anomalous and uncharacteristic values. The laboratory conducted a non-conformance and Laboratory Corrective Action Investigation and concluded that an error occurred in the in preparation of the samples resulting in an incorrect dilution factor. Therefore, the whole sample

set was deemed unrepresentative and the wells were resampled on September 17-19, 2020, within the third quarter.

Based on the September 2020 sampling data, there is evidence at this time to declare an initial exceedance for boron in CBL-301I and CBL-341I. Because these are initial exceedances in a 1 of 2 resampling method, there is not sufficient evidence to declare a statistically significant increase in these two wells. Detailed information is contained in the December 17, 2020 Technical Memorandum prepared by Wood which is included in Appendix C. Historically, both wells' boron analyses have regularly been below detection limits with occasional detections., followed by the subsequent sample being below detection limit again (See Table 3)..

6.0 KEY ACTIONS

Key actions for 2020 are detailed in Section 5. Key actions for 2021 include continued semi-annual detection monitoring with associated statistical analysis and responding in accordance with the CCR rules as new information is developed.

TABLE 1

MONITOR WELL DETAILS

Well ID	CBL-340I (Background Well)	CBL-301I	CBL-302I	CBL-306I	CBL-308I	CBL -341I
Installation Date	12/17/2015	5/23/2011	5/24/2011	6/3/2011	12/20/2011	11/14/2016
Hydrogeologic Unit Monitored	Intermediate Sand	Intermediate Sand	Intermediate Sand	Intermediate Sand	Intermediate Sand	Intermediate Sand
Casing Type	2" PVC	2" PVC	2" PVC	2" PVC	2" PVC	2" PVC
Total Well Depth (ft bgs)	37	51	24	14	32	43
Screened Interval (ft bgs)	22-37	41-51	14-24	9-14	22-32	33-43
Ground Surface Elevation (ft MSL)	374.69	369.75	355.99	337.93	364.93	364.03
TOC Elevation (ft MSL)	376.98	372.11	358.99	339.96	368.67	366.65
Northing	9949069.45	9946563.44	9947806.017	9946445.582	9947619.46	9947139.86
Easting	3428311.38	3429862.181	3429260.844	3428730.533	3428574.38	3429525.31
Survey Datum	Horizontal Datum: NAD83/2011-EPOCH 2012 Vertical Datum: NAVD88-GEOIDIZA	Horizontal Datum: NAD83/NSRS 2007 Vertical Datum: NAVD88	Horizontal Datum: NAD83/NSRS 2007 Vertical Datum: NAVD88	Horizontal Datum: NAD83/NSRS 2007 Vertical Datum: NAVD88	Horizontal Datum: NAD83/NSRS 2007 Vertical Datum: NAVD88	Horizontal Datum: NAD83/2011-EPOCH 2012 Vertical Datum: NAVD88-GEOIDIZA

TABLE 2

2020 CCR GROUNDWATER MONITORING EVENTS

Well #	Date of sample collection	# samples collected for analysis	Monitoring program
CBL 340I	1/30/2020	1	Detection monitoring
	9/18/2020	1	Detection monitoring
CBL 301I	1/28/2020	1	Detection monitoring
	9/17/2020	1	Detection monitoring
CBL 302I	1/30/2020	1	Detection monitoring
	9/17/2020	1	Detection monitoring
CBL 306I	1/29/2020	1	Detection monitoring
	9/18/2020	1	Detection monitoring
CBL 308I	1/29/2020	1	Detection monitoring
	9/18/2020	1	Detection monitoring
CBL 341I	1/30/2020	1	Detection monitoring
	9/17/2020	1	Detection monitoring

TABLE 3
GROUNDWATER MONITORING RESULTS SUMMARY

Monitoring Well	Sample Date	Regulatory Phase	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids (Residue Filterable)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Temp C	DO mg/L	DO %	Specific Conductivity
MCL including EPA Phase 1			NE	NE	NE	4.0	NE	NE	NE	0.006	0.010	2.000	0.004	0.005	0.100	0.006	0.015	0.040	0.002	0.1	0.05	0.002	--	5 pCi/l	NE	NE	NE	NE
Analytical Method			SW3010A	SW3010A	E300.0	E300.0	SM4500H+ B	E300.0	DM2450C	SW6020	SW6020	SW6010B	SW6010B	SW6020	SW6020	SW6020	SW6020	SW6020	SM2540C	SW6020	SW6020	SW6020	E903.0	E904.0	--	--	--	--
Method Detection Limit			0.02	0.35	20	0.2	--	20	250	0.0004	0.0007	0.004	0.001	0.0004	0.0004	0.0004	0.0004	0.0004	0.07 ug/L	0.0004	0.0017	0.0004	1	1	--	--	--	--
Practical Quantitation Limit			0.05	1	50	0.5	--	50	250	0.001	0.002	0.01	0.004	0.001	0.001	0.001	0.001	0.001	0.2 ug/L	0.001	0.005	0.001	1	1	--	--	--	--
CBL Background/Up-gradient Well																												
CBL-340I	1/21/2016	B	<0.0500	564	2370	1.09	6.52	652	4990	<0.001	<0.002	0.0267	<0.004	<0.001	0.00116	<0.00100	<0.00100	0.0885	<0.0002	0.00304	<0.005	<0.001	<1.0	1.45	22.47	4.42	52.4	8121
CBL-340I	5/4/2016	B	0.0832	560	2260	1.92	6.13	616	5230	<0.00100	<0.00200	0.0235	<0.004	<0.001	0.00114	<0.00100	<0.00100	0.085	<0.0002	0.00309	<0.005	<0.001	<1.0	1.22	22.96	4.12	49.3	8159
CBL-340I	7/27/2016	B	0.081	575	2350	1.06	6.95	668	6250	<0.001	<0.002	0.0271	<0.004	<0.001	0.00146	<0.001	<0.001	0.0711	<0.0002	0.00301	<0.005	<0.001	1.89	1.16	24.72	6.99	84.4	1272
CBL-340I	10/24/2016	B	0.158	607	2380	1.26	6.19	675	5670	<0.001	<0.002	0.0303	<0.004	<0.001	0.00176	<0.001	<0.001	0.0843	<0.0002	0.00334	0.00725	<0.001	1.47	1.39	22.76	3.34	39.8	8427
CBL-340I	1/23/2017	B	<0.050	627	2070	0.84	5.46	571	6230	<0.001	<0.002	0.0275	<0.004	<0.001	0.00179	<0.001	<0.001	0.0887	<0.0002	0.00284	<0.005	<0.001	<1.00	<1.00	22.79	NA	NA	8259
CBL-340I	3/22/2017	B	0.174	581	2280	8.44	6.49	635	5480	<0.001	<0.002	0.0259	<0.004	<0.001	<0.0001	<0.001	<0.001	0.0684	<0.0002	0.00229	<0.005	<0.001	<1.00	2.71	22.37	NA	NA	7900
CBL-340I	5/16/2017	B	0.104	584	2520	1.01	5.77	715	5470	<0.001	<0.002	0.027	<0.004	<0.001	0.001	<0.001	<0.001	0.101	<0.0002	0.00248	<0.005	<0.001	<1.00	<1.00	22.51	NA	NA	8286
CBL-340I	7/27/2017	B	0.0816	571	2380	0.85	6.42	685	4880	<0.001	<0.002	0.0272	<0.004	<0.001	<0.001	<0.001	<0.001	0.0875	<0.0002	0.00261	<0.005	<0.001	NA	NA	22.73	NA	NA	8292
CBL-340I	2/8/2018	B	0.0638	555	2730	1.00	6.41	752	5290	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.61	NA	NA	NA
CBL-340I	7/27/2018	B	<0.0500	544	2450	1.3	6.25	711	5100	NA	NA	NA	NA	NA	NA	NA	NA	0.0968	NA	NA	NA	NA	NA	NA	23.2	NA	NA	8131
CBL-340I	1/22/2019	B	<0.0500	518	2250	0.83	6.59	639	4720	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-340I	7/31/2019	B	0.124	518	2280	0.88	6.45	684	5560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-340I	1/30/2020	B	0.0562	539	2240	0.87	6.49	637	5080	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-340I	9/18/2020	B	0.146	547	2130	0.725	6.32	608	5430	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL Down-gradient Wells																												
CBL-301I	1/21/2016	DM	<0.05	905	2300	<0.250	6.33	336	4380	<0.001	<0.002	0.0436	<0.004	<0.001	0.00371	<0.001	0.00105	0.0949	<0.0002	0.00124	<0.005	<0.001	<1.0	<1.0	24.12	0.41	5.0	7133
CBL-301I	5/4/2016	DM	<0.0500	949	2160	<0.500	6.26	311	5050	<0.00100	<0.00200	0.0423	<0.00400	<0.00100	0.00867	<0.00100	0.00153	0.0847	<0.0002	0.00189	<0.00500	<0.00100	<1.0	<1.0	25.02	1.21	15	7202
CBL-301I	7/27/2016	DM	<0.05	925	2290	<0.01	5.95	336	6020	<0.001	<0.002	0.0661	<0.004	<0.001	0.0101	<0.001	0.00171	0.0869	<0.0002	0.00156	<0.005	<0.001	<1.0	<1.0	23.47	3.08	37.3	9807
CBL-301I	10/24/2016	DM	<0.05	978	2250	<0.250	6.23	326	4570	<0.001	<0.002	0.0907	<0.004	<0.001	0.0142	<0.001	0.00168	0.0932	<0.0002	0.00252	<0.005	<0.001	<1.0	1.15	25.09	0.77	9.6	7261
CBL-301I	1/23/2017	DM	<0.05	1000	3200	0.312	6.26	488	6140	<0.001	<0.002	0.0497	<0.004	<0.001	<0.001	<0.001	<0.001	0.091	<0.0002	<0.001	<0.005	<0.001	<1.0	<1.0	23.83	NA	NA	7532
CBL-301I	3/22/2017	DM	<0.05	1030	2390	<0.500	6.31	337	6570	<0.001	<0.002	0.0662	<0.004	<0.001	0.00546	<0.001	<0.001	0.095	<0.0002	0.00137	<0.005	<0.001	<1.0	<1.0	24.93	NA	NA	7495
CBL-301I	5/18/2017	DM	0.0707	1060	2420	<0.500	5.95	342	6430	<0.001	<0.002	0.0774	<0.004	<0.001	0.0165	0.00133	0.00186	0.116	<0.0002	0.0024	<0.005	<0.001	<1.0	<1.0	25.92	NA	NA	7532
CBL-301I	7/26/2017	DM	<0.05	961	2500	<0.01	6.02	381	4290	<0.001	<0.002	0.0467	<0.004	<0.001	0.0022	<0.001	<0.001	0.0941	<0.0002	0.00109	<0.005	<0.001	NA	NA	24.95	NA	NA	7365
CBL-301I	2/8/2018	DM	<0.05	873	2480	<0.01	6.17	344	5120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.37	NA	NA	NA
CBL-301I	7/25/2018	DM	<0.05	993	1330	<0.500	6.04	196	5390	NA	NA	NA	NA	NA	NA	NA	NA	0.0971	NA	NA	NA	NA	NA	NA	24.46	NA	NA	7446
CBL-301I	1/17/2019	DM	<0.05	156	619	0.219	7.16	104	1460	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-301I	5/2/2019	DM	<0.05	762	1910	0.112	6.14	398	5650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-301I	7/31/2019	DM	<0.05	783	2240	0.051	6.19	332	6040	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-301I	1/28/2020	DM	<0.05	851	2360	0.13	6.26	349	4790	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-301I	9/17/2020	DM	0.0801	1060	2270	<.25	6.13	350	6340	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-302I	1/22/2016	DM	<0.05	1030	2190	<0.250	6.29	1020	5500	<0.001	<0.002	0.0226	<0.004	<0.001	<0.001	<0.001	<0.001	0.0487	<0.0002	<0.001	<0.005	<0.001	<1.0	1.98	20.93	1.42	16.4	7835
CBL-302I	5/4/2016	DM	<0.05	1010	2130	<0.500	6.01	993	5390	<0.001	<0.002	0.0218	<0.004	<0.001	<0.001	<0.001	<0.001	0.042	<0.0002	<0.001	<0.005	<0.001	<1.0	<1.0	20.84	1.51	17.3	7911
CBL-302I	7/27/2016	DM	<0.05	1030	2210	<0.500	5.17	1090	6850	<0.001	<0.002	0.0251	<0.004	<0.001	<0.001	<0.001	<0.001	0.0411	<0.0002	<0.001	<0.005	<0.001	<1.0	<1.0	21.98	1.13	13.3	7906
CBL-302I	10/24/2016	DM	0.156	1070	2170	<0.250	7.75	1180	4210	<0.001	<0.002	0.0269	<0.004	<0.001	<0.001	<0.001	<0.001	0.0483	<0.0002	<0.001	<0.005	<0.001	<1.0	1.13	22.00	8.71	103.3	11017
CBL-302I	1/23/2017	DM	<0.05	1100	2080	0.332	5.36	1150	6430	<0.001	<0.002	0.0269	<0.004	<0.001	<0.001	<0.001	<0.001	0.0402	<0.0002	0.00286	<0.005	<0.001	<1.0	<1.0	22.13	NA	NA	7723
CBL-302I	3/22/2017	DM	0.297	1090	2050	<0.500	5.40	1120	6460	<0.001	<0.002	0.0277	<0.004	<0.001	<0.001	<0.001	<0.001	0.0558	<0.0002	<0.001	<0.005	<0.001	<1.0	<1.0	21.79	NA	NA	7753
CBL-302I	5/16/2017	DM	<0.05	1100	2230	<0.500	4.94	1230	5860	<0.001	<0.002	0.0275	<0.004	<0.001	<0.001	<0.001	<0.001	0.0611	<0.0002	<0.001	<0.005	<0.001	<1.0	<1.0	21.52	NA	NA	7777
CBL-302I	7/27/2017	DM	<0.05	1040	2040	<0.02	6.20	1180	5120	<0.001	<0.002	0.0260	<0.004	<0.001	<0.001	<0.001	<0.001	0.0534	<0.0002	<0.001	<0.005	<0.001	NA	NA	22.10	NA	NA	7753
CBL-302I	2/8/2018	DM	<0.05	934	2080	0.112	6.21	1240	6010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20.47	NA	NA	NA
CBL-302I	7/27/2018	DM	<0.05	995	1980	<0.500	5.77	1390	5510	NA	NA	NA	NA	NA	NA	NA	NA	0.0489	NA	NA	NA	NA	NA	NA	22.20	NA	NA	NA
CBL-302I	1/22/2019	DM	<0.05	855	1960	0.0402	6.44	1250	5060	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-302I	7/31/2019	DM	<0.05	914	1540	.0605	6.15	1260	4190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-302I	1/30/2020	DM	<0.05	838	1540	0.193	6.34	1350	4790	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-302I	9/17/2020	DM	<0.05	853	1410	<0.25	6.2	1280	4990	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 3
GROUNDWATER MONITORING RESULTS SUMMARY

Monitoring Well	Sample Date	Regulatory Phase	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids (Residue Filterable)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Temp C	DO mg/L	DO %	Specific Conductivity
MCL including EPA Phase 1			NE	NE	NE	4.0	NE	NE	NE	0.006	0.010	2.000	0.004	0.005	0.100	0.006	0.015	0.040	0.002	0.1	0.05	0.002	--	5 pCi/l	NE	NE	NE	NE
Analytical Method			SW3010A	SW3010A	E300.0	E300.0	SM4500H+ B	E300.0	DM2450C	SW6020	SW6020	SW6010B	SW6010B	SW6020	SW6020	SW6020	SW6020	SW6020	SM2540C	SW6020	SW6020	SW6020	E903.0	E904.0	--	--	--	--
Method Detection Limit			0.02	0.35	20	0.2	--	20	250	0.0004	0.0007	0.004	0.001	0.0004	0.0004	0.0004	0.0004	0.0004	0.07 ug/L	0.0004	0.0017	0.0004	1	1	--	--	--	--
Practical Quantitation Limit			0.05	1	50	0.5	--	50	250	0.001	0.002	0.01	0.004	0.001	0.001	0.001	0.001	0.001	0.2 ug/L	0.001	0.005	0.001	1	1	--	--	--	--
CBL-306I	1/21/2016	DM	<0.0500	137	155	2.5	7.09	266	1280	<0.001	<0.002	0.0512	<0.004	<0.001	<0.001	<0.001	<0.001	0.0239	<0.0002	0.00532	<0.005	<0.001	<1.0	<1.0	20.4	6.6	73.5	1854
CBL-306I	5/4/2016	DM	0.0717	47.2	20.0	1.00	6.69	29.5	431	<0.001	<0.002	0.0313	<0.004	<0.001	<0.001	<0.001	<0.001	0.006	<0.0002	0.00305	<0.005	<0.001	<1.0	<1.0	21.13	6.14	69.1	672
CBL-306I	7/26/2016	DM	0.0998	105	114	1.37	6.95	139	790	<0.001	<0.002	0.0976	<0.004	<0.001	<0.001	0.00123	<0.001	0.0127	<0.0002	0.00234	<0.005	<0.001	<1.0	<1.0	24.72	6.99	84.4	1272
CBL-306I	10/24/2016	DM	0.0556	198	330	2.38	6.72	432	1150	<0.001	<0.002	0.0841	<0.004	<0.001	<0.001	0.00287	<0.001	0.0265	<0.0002	0.00327	<0.005	<0.001	<1.0	1.05	26.13	7.93	98.6	2423
CBL-306I	1/19/2017	DM	<0.05	174	197	1.85	7.29	270	1320	<0.001	<0.002	0.0706	<0.004	<0.001	<0.001	<0.001	<0.001	0.0281	<0.0002	<0.001	0.00652	<0.001	<1.0	<1.0	20.83	NA	NA	1422
CBL-306I	3/22/2017	DM	0.124	204	231	12.6	4.41	340	1460	<0.001	<0.002	0.0688	<0.004	<0.001	<0.001	<0.001	<0.001	0.0229	<0.0002	0.00266	<0.005	<0.001	<1.0	<1.0	22.38	NA	NA	2176
CBL-306I	5/18/2017	DM	0.0832	205	289	2.20	5.61	412	1440	<0.001	<0.002	0.0577	<0.004	<0.001	<0.001	<0.001	<0.001	0.0325	<0.0002	0.00195	<0.005	<0.001	<1.0	<1.0	23.60	NA	NA	2151
CBL-306I	7/27/2017	DM	0.0531	234	350	2.91	6.94	513	1280	<0.001	<0.002	0.0648	<0.004	<0.001	<0.001	<0.001	<0.001	0.0332	<0.0002	0.00352	<0.005	<0.001	NA	NA	23.89	NA	NA	2687
CBL-306I	2/8/2018	DM	<0.0500	230	385	2.81	6.67	493	1760	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19.32	NA	NA	NA
CBL-306I	7/27/2018	DM	<0.0500	275	283	2.95	6.86	406	1450	NA	NA	NA	NA	NA	NA	NA	NA	0.0298	NA	NA	NA	NA	NA	NA	24.05	NA	NA	1996
CBL-306I	1/16/2019	DM	<0.0500	180	215	1.98	6.78	292	1220	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-306I	7/31/2019	DM	0.0824	106	538	9.26	6.92	816	676	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-306I	8/23/2019	DM	0.05	226	318	2.66	6.83	387	1710	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.48	NA	NA	2478
CBL-306I	1/29/2020	DM	<0.0500	247	445	2.83	6.70	561	1830	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-306I	9/19/2020	DM	0.0773	260	420	2.72	7.16	506	1730	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-308I	1/22/2016	DM	<0.0500	903	2760	1.49	6.36	1490	6820	<0.00100	<0.00200	0.0413	<0.00400	<0.00100	<0.00100	<0.001	<0.00100	0.116	<0.0002	0.00106	0.00693	<0.00100	<1.0	1.11	21.45	2.82	32.9	9772
CBL-308I	5/4/2016	DM	0.121	870	2580	2.3	6.13	1410	6120	<0.00100	<0.00200	0.0395	<0.00400	<0.00100	<0.00100	<0.001	<0.00100	0.134	<0.0002	0.00113	0.00823	<0.00100	<1.0	<1.0	22.87	2.81	33.8	9726
CBL-308I	7/26/2016	DM	0.186	911	2680	1.64	5.95	1490	7890	<0.001	<0.002	0.0462	<0.004	<0.001	<0.001	<0.001	<0.001	0.0854	<0.0002	<0.001	0.00793	<0.001	<1.0	1.21	23.47	3.08	37.3	9807
CBL-308I	10/24/2016	DM	0.256	939	2870	1.59	6.27	1550	10200	<0.001	<0.002	<0.05	<0.004	<0.001	<0.001	<0.001	<0.001	0.106	<0.0002	0.00104	0.00887	<0.001	<1.0	1.66	23.06	1.6	19.3	10000
CBL-308I	1/19/2017	DM	<0.05	919	2360	1.33	6.83	1320	9620	<0.001	<0.002	0.0458	<0.004	<0.001	<0.001	<0.001	<0.001	0.106	<0.0002	0.0013	0.00995	<0.001	<1.0	1.41	22.11	NA	NA	9681
CBL-308I	3/22/2017	DM	0.545	947	2530	9.05	6.27	1470	7260	<0.001	<0.002	0.0495	<0.004	<0.001	<0.001	<0.001	<0.001	0.123	<0.0002	0.00105	0.00761	<0.001	<1.0	1.37	22.67	NA	NA	9659
CBL-308I	5/16/2017	DM	0.109	954	2740	1.7	5.54	1580	6590	<0.001	<0.002	0.0494	<0.004	<0.001	<0.001	<0.001	<0.001	0.13	<0.0002	0.001	0.00779	<0.001	<1.0	1.15	23.1	NA	NA	9697
CBL-308I	7/26/2017	DM	0.0799	878	2760	1.9	6.27	1550	6480	<0.001	<0.002	0.0436	<0.004	<0.001	<0.001	<0.001	<0.001	0.125	<0.0002	0.00106	0.00769	<0.001	NA	NA	24.75	NA	NA	9929
CBL-308I	2/6/2018	DM	<0.0500	859	2750	1.76	6.26	1570	6200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.73	NA	NA	NA
CBL-308I	7/25/2018	DM	<0.0500	863	2680	2.1	6.07	1540	6320	NA	NA	NA	NA	NA	NA	NA	NA	0.109	NA	NA	NA	NA	NA	NA	23.43	NA	NA	9313
CBL-308I	1/18/2019	DM	<0.0500	760	2240	1.68	6.39	1520	4760	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-308I	7/31/2019	DM	<0.0500	840	2290	1.62	6.25	1420	5820	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-308I	1/29/2020	DM	<0.0500	745	2110	1.6	6.37	1340	5980	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-308I	9/18/2020	DM	0.103	838	2410	1.33	6.22	1310	6860	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-341I	1/23/2017	DM	<0.05	854	1600	0.53	5.74	307	5000	<0.001	<0.002	0.0703	<0.004	<0.001	<0.001	<0.001	<0.001	0.0858	<0.0002	0.00112	<0.005	<0.001	<1.0	1.23	21.95	NA	NA	6053
CBL-341I	2/23/2017	DM	<0.05	870	2000	<0.50	5.23	404	4520	<0.001	<0.002	0.0733	<0.004	<0.001	<0.001	<0.001	<0.001	0.0840	<0.0002	<0.001	<0.005	<0.001	1.53	2.19	22.14	NA	NA	6030
CBL-341I	3/22/2017	DM	<0.05	906	1780	<0.50	5.72	346	5110	<0.001	<0.002	0.0739	<0.004	<0.001	<0.001	<0.001	<0.001	0.0895	<0.0002	<0.001	<0.005	<0.001	<1.00	2.62	22.08	NA	NA	6014
CBL-341I	4/20/2017	DM	0.0587	898	1770	<0.50	5.73	336	4240	<0.001	<0.002	0.0747	<0.004	<0.001	<0.001	<0.001	<0.001	0.0856	<0.0002	0.00116	<0.005	<0.001	2.21	1.90	21.88	NA	NA	6038
CBL-341I	5/16/2017	DM	0.0896	860	1900	<0.50	5.54	369	4840	<0.001	<0.002	0.0706	<0.004	<0.001	<0.001	<0.001	<0.001	0.0835	<0.0002	<0.001	<0.005	<0.001	<1.00	1.29	22.18	NA	NA	6108
CBL-341I	6/20/2017	DM	0.0668	950	1820	0.335	6.19	363	5940	<0.001	<0.002	0.0693	<0.004	<0.001	<0.001	0.00163	<0.001	0.0825	<0.0002	0.00328	0.00692	<0.001	NA	NA	22.86	NA	NA	5931
CBL-341I	7/27/2017	DM	0.0507	829	1970	0.055	6.21	419	4150	<0.001	<0.002	0.0685	<0.004	<0.001	<0.001	<0.001	<0.001	0.0912	<0.0002	<0.001	<0.005	<0.001	NA	NA	23.17	NA	NA	6036
CBL-341I	2/862018	DM	<0.05	810	2110	0.106	6.18	383	4320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.52	NA	NA	4320
CBL-341I	8/24/2018	DM	<0.05	824	1910	0.114	5.82	376	4800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.85	NA	NA	6076
CBL-341I	1/22/2019	DM	<0.05	782	1790	0.0546	6.38	358	3870	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-341I	7/31/2019	DM	<0.05	714	1650	0.1	6.23	329	5370	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-341I	1/30/2020	DM	<0.05	767	1780	0.153	6.27	351	4900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-341I	9/17/2020	DM	0.102	814	1700	<0.25	6.14	336	4930	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Regulatory Phase: Background (B), Detection Monitoring (DM), Assessment Monitoring (AM), Corrective Action (CA)

All concentrations reported in mg/L (milligrams per liter)

NE = Not established, EPA considers these compounds are not a concern from a human health standpoint

All concentrations reported in mg/L (milligrams per liter)

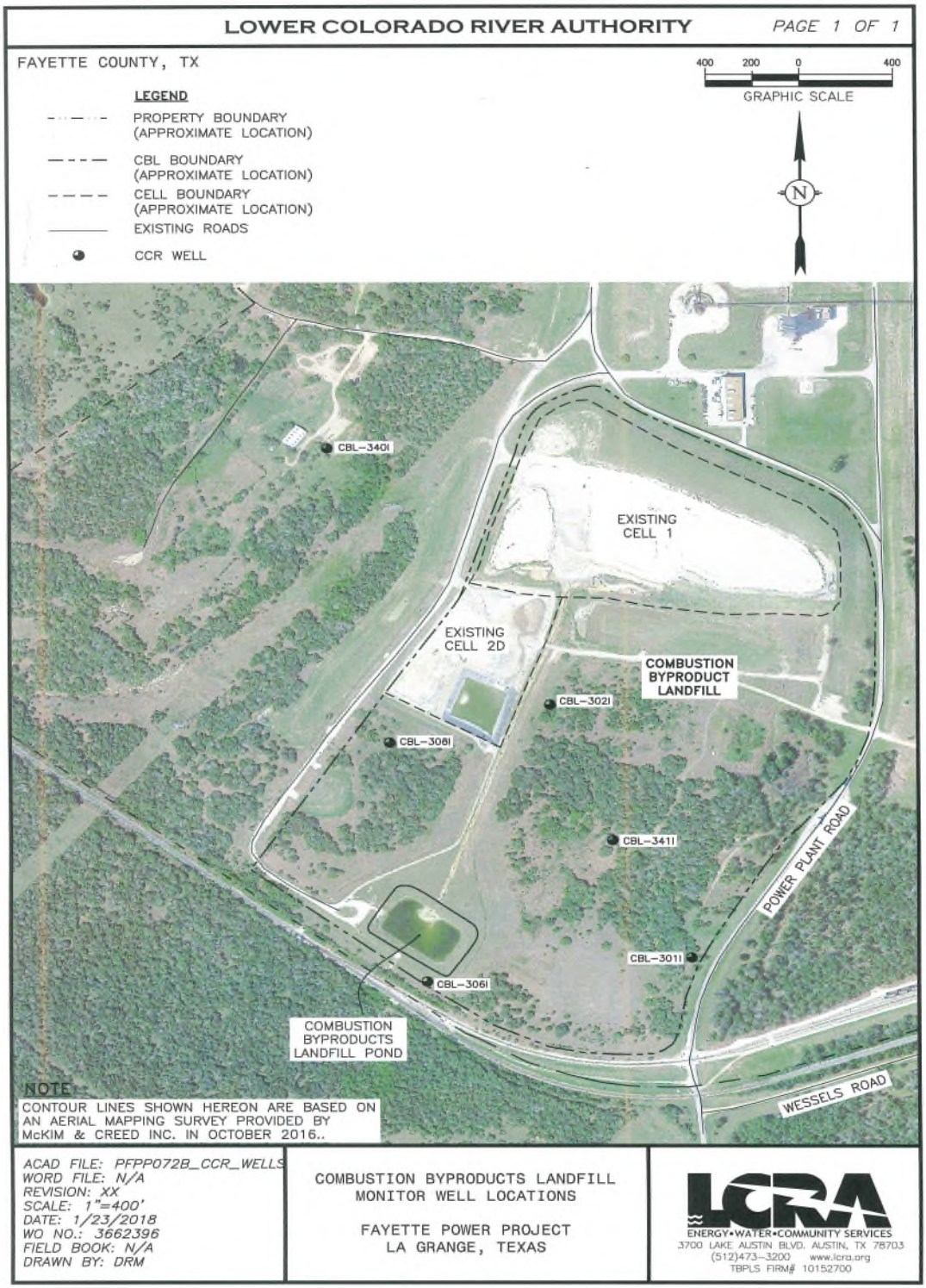
NA = Not analyzed in accordance with 40 CFR 257.94

Appendix III to Part 257 Constituents for Detection Monitoring

Appendix IV to Part 257 Constituents for Assessment Monitoring

FIGURE 1

MONITOR WELL LOCATION MAP



Appendix A

CCR Groundwater Detection Monitoring Program
Evaluation of First and Third Quarter 2020
Potentiometric Surface Data Collected from the CBL,
Wood Environmental and Infrastructure Solutions, Inc,
December 11, 2020

Technical Memorandum

To:	Nancy Overesch, PG	**File No:**	6706200031
From:	Carl A. Teinert, PG	**cc:**	File
Date:	December 11, 2020		

Subject: **CCR GROUNDWATER DETECTION MONITORING PROGRAM**
EVALUATION OF FIRST AND THIRD QUARTER 2020 POTENTIOMETRIC SURFACE DATA COLLECTED FROM THE CBL
FAYETTE POWER PROJECT – LA GRANGE, TEXAS

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) documents the evaluation of the Intermediate Sand groundwater bearing unit potentiometric surface data obtained during completion of the first quarter and third quarter 2020 groundwater monitoring events. The monitoring is being performed as part of the Combustion Byproducts Landfill (CBL) Groundwater Monitoring Program (GMP) pursuant to the Coal Combustion Residuals (CCR) regulations as codified in 40 Code of Federal Regulations (CFR) 257.93. The CBL is located at the Lower Colorado River Authority's (LCRA's) Fayette Power Project (FPP) facility near La Grange, Texas. This potentiometric surface evaluation, and subsequent determination of groundwater flow rate and direction, is conducted for each groundwater monitoring event pursuant to the GMP requirements of 40 CFR 257.93(c).

2.0 POTENTIOMETRIC SURFACE DATA COLLECTION AND MAPPING

All groundwater monitoring and sampling activities were performed by an LCRA technician. Prior to conducting well purging and collection of groundwater samples for chemical analysis, the technician used an electronic well probe to determine depth to the Intermediate Sand groundwater surface below the surveyed top of casing elevation. Table 1 presents the summary of groundwater measurements obtained from the CBL Groundwater Monitoring Well network in 2020.

Based on the measured groundwater elevations, potentiometric surface maps were prepared to document the January-First Quarter 2020 monitoring event (Figure 1) and the September-Third Quarter 2020 monitoring event (Figure 2). These maps show a relatively consistent groundwater potentiometric surface and are like those presented for the January 2019 and September 2019 monitoring events.

3.0 GROUNDWATER FLOW DIRECTION AND FLOW RATE CALCULATION

Consistent with prior CBL GMP maps, a groundwater flow direction inferred by potentiometric surface elevation, is toward the south-southwest (Figures 1 and 2). The inferred groundwater gradient is slightly less to the west, consistent with past findings.

Groundwater flow rate was estimated along two transects for each event, one along the western area having a lesser gradient, and one along the eastern area having a greater gradient. As documented in the CBL Hydrogeology Report (Amec, 2013), a hydraulic conductivity value (K) of 6.3×10^{-4} centimeters per second (cm/sec) has been estimated for the Intermediate Sand, based on rising-head slug test data obtained from

Wood Environment and Infrastructure Solutions, Inc.
3755 S. Capital of Texas Highway, Suite 375
Austin, TX 78704

monitoring well CBL-302I. In calculating groundwater flow rate, this hydraulic conductivity value was used for the January 2020 and September 2020 events, consistent with past evaluations of the Intermediate Sand. In addition, also consistent with past evaluations, an assumed porosity value of 0.30 was used.

Groundwater gradients for the January 2020 and September 2020 events are estimated as follows:

January 2020 Event
Eastern Transect: 0.0237 foot/foot (ft/ft)
Western Transect: 0.0087 ft/ft

September 2020 Event
Eastern Transect: 0.023 ft/ft
Western Transect: 0.0095 ft/ft

Given the constants K= 6.3 x 10^{-4} cm/sec (= 648.9 ft/year) and Porosity = 0.30, the following groundwater flow velocities are calculated:

January 2020 Event
Eastern Transect: 51 feet per year (ft/yr)
Western Transect: 19 ft/yr

September 2020 Event
Eastern Tract: 50 ft/yr
Western Transect: 21 ft/yr

4.0 REFERENCES

Amec Environment & Infrastructure, Inc. (Amec), 2013: *Hydrogeologic Evaluation of Combustion Byproducts Landfill (CBL) Area Report, Fayette Power Project*, December 2013.

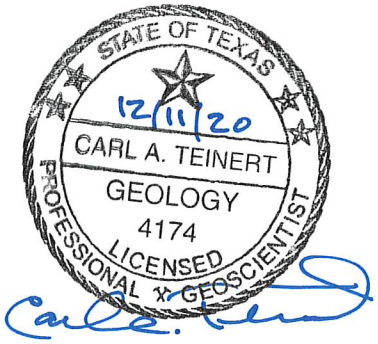


TABLE 1
Combustion Byproducts Landfill
Groundwater Monitoring Well System
2020 Potentiometric Surface Data
Fayette Power Project
La Grange, Texas

Well ID	CBL-340I		CBL-301I		CBL-302I		CBL-306I		CBL-308I		CBL-341I	
Well Top of Casing Elevation	376.98		372.11		358.99		339.96		368.67		366.65	
Date	DTW (ft btoc)	Elevation (ft NGVD)	DTW (ft btoc)	Elevation (ft NGVD)	DTW (ft btoc)	Elevation (ft NGVD)	DTW (ft btoc)	Elevation (ft NGVD)	DTW (ft btoc)	Elevation (ft NGVD)	DTW (ft btoc)	Elevation (ft NGVD)
1/28/2020	NM	NM	34.36	337.75	NM	NM	NM	NM	NM	NM	NM	NM
1/29/2020	NM	NM	NM	NM	NM	NM	8.34	331.62	24.48	344.19	NM	NM
1/30/2020	24.14	352.84	NM	NM	10.56	348.43	NM	NM	NM	NM	16.24	350.41
9/17/2020	NM	NM	35.22	336.89	12.55	346.44	NM	NM	NM	NM	17.10	349.55
9/18/2020	25.91	351.07	NM	NM	NM	NM	13.45	326.51	25.25	343.42	NM	NM
9/19/2020	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

Notes: NM = Not Measured
ft btoc = feet below top of casing
ft NGVD = feet above National Geodetic Vertical Datum

CBL-340I
352.84

N 9947000
N 9948000
N 9949000
E 3428000
E 3429000

335
340
345
350

BYPRODUCTS ROAD

SUBCELL 2D CONTACT
WATER RETENTION POND

CBL-308I
344.19

SUBCELL 3C

SUBCELL 2D (WASTE
STORAGE / PRODUCT
PREPARATION AREA)

APPROXIMATE LOCATION OF
CELL 1 FINAL COVER LIMITS

EXISTING FINAL
COVER

EXISTING
CELL 1

PROPOSED
CELL 3

PROPOSED
CELL 2

CBL-302I
348.43

EXISTING
RUNOFF
RETENTION
POND

CBL-306I
331.62

APPROXIMATE LOCATION OF
CELL 1 LIMITS

AUSTIN LOOP

SUBCELL 3B
SUBCELL 3A
SUBCELL 2C
SUBCELL 2A

CBL-341I
350.41

CBL-301I
337.75

POWER PLANT ROAD

LEGEND

- CBL UNIT BOUNDARY
- EXISTING GROUND ELEVATION (FT,MSL) (NOTES 1,2)
- EXISTING TOP OF CLAY LINER ELEVATION (FT,MSL) (NOTE 2)
- EXISTING ROAD
- EXISTING BUILDING
- EXISTING RAILROAD
- COORDINATE GRID (NOTE 2)
- EXISTING FENCE
- PROPOSED PHASE BOUNDARY
- PROPOSED LIMIT OF WASTE
- POWER LINE
- WELLS
- CBL GROUNDWATER MONITORING WELL WITH POTENTIOMETRIC SURFACE ELEVATION INDICATED IN FEET ABOVE NAVD 1988.
- POTENTIOMETRIC SURFACE CONTOUR LINE
- INFERRED GROUNDWATER FLOW DIRECTION

NOTES:

1. THE EXISTING CONTOUR BASE MAP SHOWN ON THIS DRAWING WAS COMPILED USING AN AERIAL SURVEY BASED ON PHOTOGRAPHY PERFORMED ON 23 OCTOBER 2013 BY SURDEX CORPORATION AND LIDAR DATA PUBLISHED DECEMBER 2008 AND PROVIDED BY LCRA SURVEYING, MAPPING, AND GIS.
2. ELEVATIONS ARE IN FEET (FT) AS DEFINED BY THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988. STATE PLANE COORDINATE GRID CORRESPONDS TO TEXAS STATE PLANE COORDINATE SYSTEM, TEXAS CENTRAL ZONE (4203), NORTH AMERICAN DATUM 83 (NAD-83) 1983.

STATE OF TEXAS
11/3/20
CARL A. TEINERT
GEOLOGY
4174
LICENSED
PROFESSIONAL GEOSCIENTIST

0 140 280
SCALE IN FEET

wood.
Environment & Infrastructure Solutions, Inc.
TX Engineering Firm #F-0012

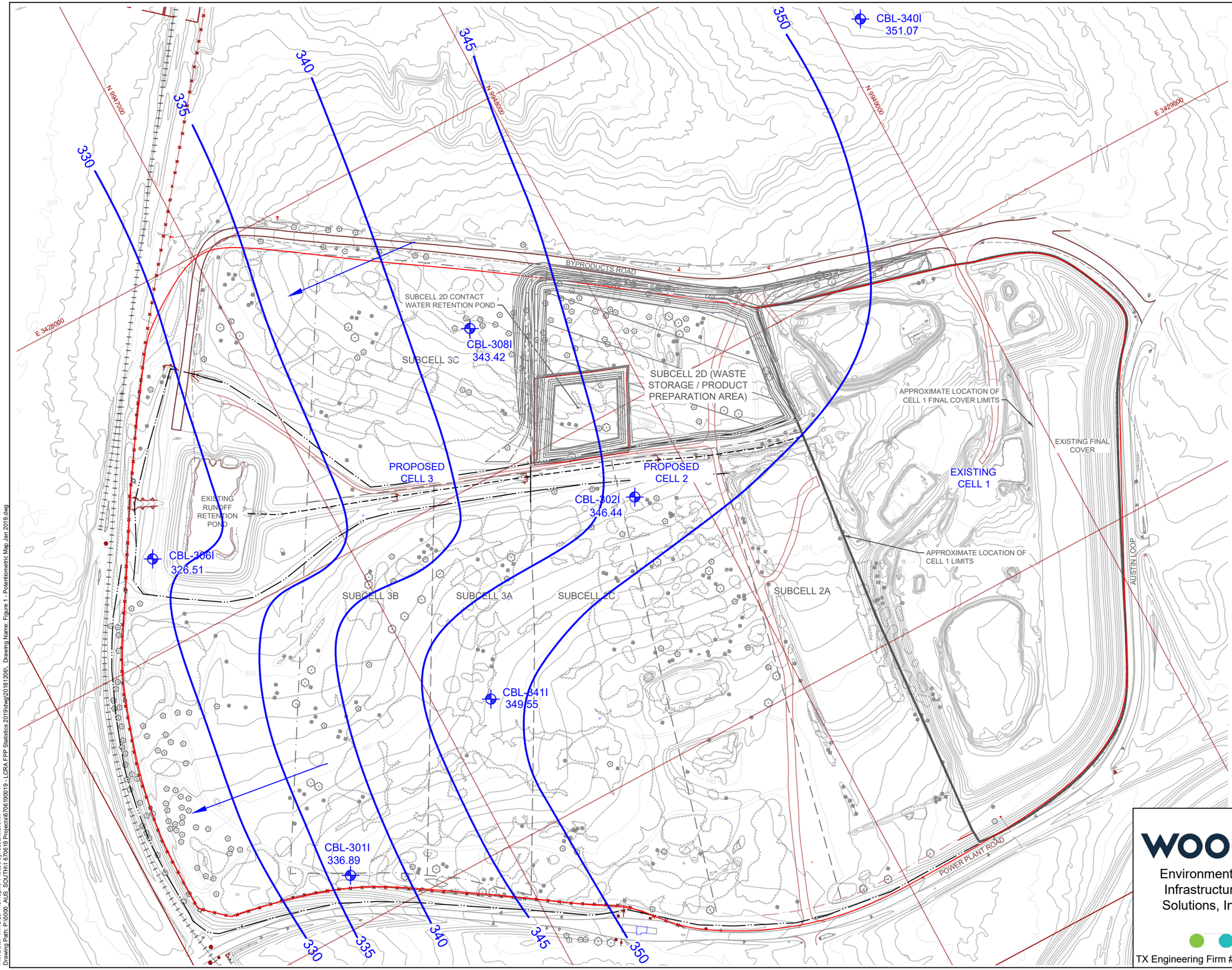
POTENTIOMETRIC SURFACE MAP JANUARY 2020 OF THE INTERMEDIATE SAND

COMBUSTION BYPRODUCTS LANDFILL
FAYETTE POWER PROJECT
LA GRANGE, TEXAS

Project No.: 6706200031
Date: 10/19/2020 By: SLB

FIGURE 1

Plot Date: 11/04/20 - 9:50am Plotted by: susan.l.brown
Drawing Path: P:\0000_AUS_SOUTH_67\6619 Projects\6706190019 - LCRA FPP Statistics 2019\dwg\20181206_Drawing Name: Figure 1 - Potentiometric Map Jan 2019.dwg



LEGEND

- CBL UNIT BOUNDARY
- EXISTING GROUND ELEVATION (FT,MSL) (NOTES 1,2)
- EXISTING TOP OF CLAY LINER ELEVATION (FT,MSL) (NOTE 2)
- EXISTING ROAD
- EXISTING BUILDING
- EXISTING RAILROAD
- COORDINATE GRID (NOTE 2)
- EXISTING FENCE
- PROPOSED PHASE BOUNDARY
- PROPOSED LIMIT OF WASTE
- POWER LINE
- WELLS
- CBL GROUNDWATER MONITORING WELL WITH POTENTIOMETRIC SURFACE ELEVATION INDICATED IN FEET ABOVE NAVD 1988.
- POTENTIOMETRIC SURFACE CONTOUR LINE
- INFERRED GROUNDWATER FLOW DIRECTION

NOTES:

1. THE EXISTING CONTOUR BASE MAP SHOWN ON THIS DRAWING WAS COMPILED USING AN AERIAL SURVEY BASED ON PHOTOGRAPHY PERFORMED ON 23 OCTOBER 2013 BY SURDEX CORPORATION AND LIDAR DATA PUBLISHED DECEMBER 2008 AND PROVIDED BY LCRA SURVEYING, MAPPING, AND GIS.
2. ELEVATIONS ARE IN FEET (FT) AS DEFINED BY THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988. STATE PLANE COORDINATE GRID CORRESPONDS TO TEXAS STATE PLANE COORDINATE SYSTEM, TEXAS CENTRAL ZONE (4203), NORTH AMERICAN DATUM 83 (NAD-83) 1983.

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11/3/20
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4174
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PROFESSIONAL GEOSCIENTIST

0 140 280
SCALE IN FEET

wood.
Environment & Infrastructure Solutions, Inc.
TX Engineering Firm #F-0012

POTENTIOMETRIC SURFACE MAP SEPTEMBER 2020 OF THE INTERMEDIATE SAND
COMBUSTION BYPRODUCTS LANDFILL
FAYETTE POWER PROJECT
LA GRANGE, TEXAS

Project No.: 6706200031
Date: 10/19/2020 By: SLB
FIGURE 2

Plot Date: 11/19/20 - 10:45pm, Plotted by: susan.l.brown
Drawing Path: P:\0000_AUS_SOUTH\1 670619 Projects\6706190019 - LCRA FPP Statistics 2019\dwg\20181206\, Drawing Name: Figure 1 - Potentiometric Map Jan 2019.dwg

APPENDIX B

CCR Groundwater Detection Monitoring Evaluation of First Quarter 2020 Data Collected form the CBL, Wood Environmental and Infrastructure Solutions, Inc,
June 15, 2020

Technical Memorandum

To:	Charlie Macon, PG	**File No:**	6706200031
From:	Tim Glover, Senior Scientist	**cc:**	File
Date:	June 15, 2020		

Subject: **CCR GROUNDWATER DETECTION MONITORING**
EVALUATION OF FIRST QUARTER 2020 DATA COLLECTED FROM THE CBL
Fayette Power Project – La Grange, Texas

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) documents an evaluation of detection monitoring data collected in the first quarter of 2020 (1Q 2020) from the Combustion Byproducts Landfill (CBL) located at the Lower Colorado River Authority's (LCRA) Fayette Power Project (FPP) facility. The evaluation consists of comparing CBL compliance (i.e., downgradient) sample data to Appendix III baseline threshold values (BTVs) using the intrawell prediction limit statistical method declared in the *Statistical Analysis Updates of Detection Monitoring Appendix III Constituent Data* (2018 Tech Memo) (AMECFW, 2018b). Therefore, CBL 340I is sampled as required by 40 CFR 257.94 but is not included in the intrawell statistical comparison. The 3Q 2018 Tech Memo is in support of the initial detection monitoring assessment results documented for the CBL (AMECFW, 2018b). This Tech Memo was prepared pursuant to 40 CFR § 257.93. Statistical comparisons and checks for statistically significant increases were completed within 90 days of receipt of laboratory data.

2.0 EVALUATION

The 1Q 2020 sampling event constitutes the 13th sampling round for the detection monitoring program for the CBL. Wells were initially sampled January 28-30, 2020. Table 1 presents the 1Q 2020 sample results for Appendix III constituents. Screening level statistical analyses were completed on June 5, 2020.

Table 1 presents the sample concentrations of Appendix III constituents collected from CBL compliance monitoring wells CBL-301I, CBL-302I, CBL-306I and CBL-308I on January 28-30, 2020. Applicable BTVs are presented in Table 1 for this first quarter 2020 statistical comparison.

2.1 Updates to Temporal Trends and Background Threshold Values

The BTVs presented in Table 1 reflect those previously declared in the 2018 Tech Memo for the CBL with the following exceptions: calcium for monitoring well CBL-306I; chloride for monitoring well CBL-306I; and sulfate for monitoring wells CBL-302I and CBL-306I. New significant temporal trends for fluoride and TDS for monitoring well CBL-306I are noted. In these specific cases, the prediction limits are time-dependent and are calculated around a persistent and statistically significant ($p<0.05$) temporal trend; thereby, requiring the inclusion of the **11th** sampling event **(1Q 2019**) to generate a BTV representative of the temporally variable intrinsic groundwater conditions. These are the same BTV reported in the 3Q 2019 report. This update is conditional upon the 1Q 2020 sampling event not exhibiting a statistically significant increase (SSI) over its respective BTV (Wood, 2018). For reference, the results of the 3Q 2018 detection

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monitoring statistical evaluation are documented in the *CCR Groundwater Detection Monitoring Evaluation of Third Quarter 2018 Data Collected from the CBL* Technical Memorandum (3Q 2018 Tech Memo) (Wood, 2018). A discussion of updates to temporal trend significance and BTVs (by constituent) follows.

To provide context regarding the consistency of temporal trends over time, the initial detection monitoring trends (AMECFW, 2018a) and 1Q 2019 temporal trends are referenced below.

Temporal Trends. The premise of intrawell comparisons is to evaluate if constituent concentrations at a geographic location downgradient of the CBL are, in part, changing over time respective to a baseline concentration calculated for that specific geographic location. On this basis, intrawell statistical comparisons should consider the presence of statistically significant ($p<0.05$) temporal trends to interpret if there is a release from the CBL, particularly if the temporal trend is: 1) increasing, 2) incongruent with the conceptual site model as it relates to alternative source demonstration(s) and/or 3) inconsistent with past temporal trend analyses. Using nonparametric Mann-Kendal trend testing, (3Q 2019) found the presence of statistically significant ($p<0.05$) temporal trends in the following monitoring wells (constituent/trend direction):

- CBL-302I
  - Chloride/decreasing
  - Sulfate/increasing

- CBL-306I
  - Calcium/increasing
  - Chloride/increasing
  - Sulfate/increasing
  - Fluoride/increasing
  - TDS/increasing.

- CBL-308I
  - Calcium decreasing
  - Chloride decreasing
  - TDS/decreasing

- CBL-341I
  - Calcium/decreasing
  - Fluoride/decreasing
  - pH/increasing

Recommendations follow to help manage changes in temporal trend significance over time. Reference to the conceptual site model and professional judgement/interpretation are necessary to confirm if the temporal trends in the downgradient monitoring wells indicate there is a release from the CBL.

Calcium. Monitoring well CBL-306I continues to exhibit a statistically significant ($p<0.05$) increasing temporal trend for calcium. The temporal trend significance and direction maintain consistency for the initial 8 detection monitoring sampling events and subsequent inclusion of events. The upper prediction limit in Table 1 for calcium in monitoring well CBL-306I reflects the trend for the 11th sampling event. The upper prediction limit calculation honors a 1 of 2 resampling strategy and Equation 10-13 in the ProUCL Technical Guide (U.S. EPA, 2013).

Chloride. Monitoring well CBL-306I continues to exhibit a statistically significant ($p<0.05$) increasing temporal trend for chloride. The temporal trend significance and direction maintain consistency for the initial 8 detection monitoring sampling events and subsequent inclusion of events. The upper prediction limit in Table 1 for chloride in monitoring well CBL-306I reflects the temporal trend for the 11th sampling event. The upper prediction limit calculation honors a 1 of 2 resampling strategy and Equation 10-13 in the ProUCL Technical Guide (U.S. EPA, 2013).

Sulfate. Monitoring wells CBL-302I and CBL-306I continue to exhibit statistically significant increasing temporal trends for sulfate. The temporal trend significance and direction maintain consistency for the initial 8 detection monitoring sampling events and subsequent inclusion of events. The upper prediction limit in Table 1 for sulfate in monitoring wells CBL-302I and CBL-306I reflect the temporal trend for the 11th sampling event. The upper prediction limit calculation honors a 1 of 2 resampling strategy and Equation 10-13 in the ProUCL Technical Guide (U.S. EPA, 2013).

Fluoride and TDS. Monitoring well CBL-306I exhibits a statistically significant ($p<0.05$) increasing temporal trend for fluoride and TDS. The temporal trends' significance and direction maintain consistency for the initial 8 detection monitoring sampling events and subsequent inclusion of events. The upper prediction limit in Table 1 for fluoride and TDS in monitoring well CBL-306I reflects the temporal trend for the 11th sampling event. The upper prediction limit calculation honors a 1 of 2 resampling strategy and Equation 10-13 in the ProUCL Technical Guide (U.S. EPA, 2013).

2.2 Exceedance Assessment

As indicated in Table 1, there is insufficient evidence at this time to declare an initial exceedance for calcium, chloride, fluoride, pH, or total dissolved solids because the 3Q 2019 sample concentrations are less than their respective BTVs in the initial sampling.

3.0 RECOMMENDATIONS

There is no evidence of initial exceedances in any well or analyte at this time.

For the majority of monitoring well/constituent pairs, the initial detection monitoring sample events (AMECFW, 2018b) represent a non-trending (i.e. stationary) BTV and these BTVs remain constant for each statistical comparison test. A sample size equal to eight is relatively small and likely underrepresents long-term temporal variability in constituent concentrations beneath the CBL. Wood recommends updating the intrawell BTVs in Table 1 for the 3Q 2020 sampling event, which will incorporate sampling events between 1Q 2018 and 1Q 2020 into the intrawell BTV calculations. This recommendation is conditional upon the absence of initial exceedances in constituent concentrations above their respective BTVs. Updating BTVs to reflect larger sample sizes over time will improve the overall power of future statistical tests.

For a few monitoring well/constituent pairs the temporal trend is inconsistent over time. In general, this is expected since the trends are characterized by relatively few samples. Trend definition and significance will improve as sample datasets build over time. Wood recommends testing the significance of temporal trends after each sampling event (e.g. semiannually).

Wood maintains the recommendation put forth in the 2018 Tech Memo declaring the reiterative calculation of the prediction limit around a temporal trend for each statistical evaluation, assuming the temporal trend remains statistically significant over time and the dataset meet the method assumptions (AMECFW, 2018b).

4.0 REFERENCES

Amec Foster Wheeler (AMECFW), 2018a. Technical Memorandum – Client Draft. Statistical Analysis of Initial Detection Monitoring Appendix III Constituent Data. Fayette Power Project – La Grange, Texas. Technical Memorandum dated January 14, 2018.

Amec Foster Wheeler (AMECFW), 2018b. Technical Memorandum – Client Draft. Statistical Analysis Updates of Detection Monitoring Appendix III Constituent Data. Fayette Power Project – La Grange, Texas. Technical Memorandum dated April 6, 2018.

U.S. Environmental Protection Agency (U.S. EPA), 2013. ProUCL (Version 5.0.00) User Guide, Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations. EPA/600/R-07/041. Washington D.C. September.

U.S. Environmental Protection Agency (U.S. EPA), 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance. EPA 530/R-09-007. Environmental Protection Agency Office of Resource Conservation and Recovery.

Table 1 Statistical Results Summary - LCRA Combustion Byproducts Landfill 1Q2020
Appendix III Statistical Comparison

301I							
	Boron	Calcium	Chloride	Fluoride	pH*	Sulfate	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U)	(mg/L)	(mg/L)
Intrawell Statistical Test	NP-UPL	P-UPLT	P-UPL	NP-UPL	NP-UPL/NP-LPL	P-UPLT	P-UPL
BTV	0.07	1135	2676	0.3	6.33/5.95	410	7905
Compliance Sample	<0.05	851	2390	0.13	6.26	349	4790

302I							
	Boron	Calcium	Chloride	Fluoride	pH*	Sulfate	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U)	(mg/L)	(mg/L)
Intrawell Statistical Test	NP-UPL	P-UPLT	P-UPL	NP-UPL	NP-UPL/NP-LPL	P-UPLT	P-UPL
BTV	0.3	1154	2328	0.3	8.21/3.57	1772	7940
Compliance Sample	<0.05	838	1540	0.193	6.34	1350	4790

306I							
	Boron	Calcium	Chloride	Fluoride	pH*	Sulfate	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U)	(mg/L)	(mg/L)
Intrawell Statistical Test	NP-UPL	P-UPLT	P-UPLT	P-UPLT	NP-UPL/NP-LPL	P-UPLT	P-UPL
BTV	0.2	628	1416	4.89	7.29/4.41	967	2064
Compliance Sample	<0.05	247	445	2.83	6.70	561	1836

308I							
	Boron	Calcium	Chloride	Fluoride	pH*	Sulfate	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U)	(mg/L)	(mg/L)
Intrawell Statistical Test	NP-UPL	P-UPLT	P-UPL	NP-UPL	NP-UPL/NP-LPL	P-UPLT	P-UPL
BTV	0.7	995	3079	3	7.15/5.26	1702	12186
Compliance Sample	<0.05	745	2110	1.6	6.37	1340	5980

341I							
	Boron	Calcium	Chloride	Fluoride	pH*	Sulfate	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U)	(mg/L)	(mg/L)
Intrawell Statistical Test	NP-UPL	P-UPLT	P-UPL	NP-UPL	NP-UPL/NP-LPL	P-UPLT	P-UPL
BTV	0.09	981	2661	0.53	6.69/4.93	466	6295
Compliance Sample	<0.05	767	1780	0.153	6.27	351	4900

*pH represents an upper and lower limit (upper limit method/lower limit method)
Green highlights - sample below or within limits
Yellow highlights - sample potentially exceeds limits

NP-LPL: Non-Parametric Lower Prediction Limit
NP-UPL: Non-Parametric Upper Prediction Limit
P-UPL: Parametric Upper Prediction Limit
P-LPL: Parametric Lower Prediction Limit
P-UPLT: Parametric Upper Prediction Limit with a Trend

APPENDIX C

CCR Groundwater Detection Monitoring Evaluation of
Third Quarter 2020, Wood Environmental and Infrastructure Solutions, Inc,
December 17, 2020

Technical Memorandum

To:	Carl A. Teinert, PG	**File No:**	6706200031
From:	Tim Glover, Senior Scientist	**cc:**	File
Date:	December 17, 2020		

Subject: **CCR GROUNDWATER DETECTION MONITORING**
EVALUATION OF THIRD QUARTER 2020 DATA COLLECTED FROM THE CBL
Fayette Power Project – La Grange, Texas

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) documents an evaluation of detection monitoring data collected in the third quarter of 2020 (3Q 2020) from the Combustion Byproducts Landfill (CBL) located at the Lower Colorado River Authority's (LCRA) Fayette Power Project (FPP) facility. The evaluation consists of comparing CBL compliance (i.e., downgradient) sample data to Appendix III baseline threshold values (BTVs) using the intrawell prediction limit statistical method declared in the *Statistical Analysis Updates of Detection Monitoring Appendix III Constituent Data* (2018 Tech Memo) (AMECFW, 2018b). Therefore, CBL 340I is sampled as required by 40 CFR 257.94 but is not included in the intrawell statistical comparison. The 3Q 2020 Tech Memo is in support of the initial detection monitoring assessment results documented for the CBL (AMECFW, 2018b). This Tech Memo was prepared pursuant to 40 CFR § 257.93. Statistical comparisons and checks for statistically significant increases were completed within 90 days of receipt of laboratory data.

2.0 EVALUATION

The 3Q 2020 sampling event constitutes the fourteenth sampling round for the detection monitoring program for the CBL. Wells were sampled September 17-19, 2020. Table 1 presents the 3Q 2020 sample results for Appendix III constituents. Screening level statistical analyses were completed on November 11, 2020. Applicable BTVs are presented in Table 1 for this statistical comparison.

2.1 Updates to Temporal Trends and Background Threshold Values

The BTVs presented in Table 1 reflect those previously declared in the 2018 Tech Memo for the CBL with the following exceptions: calcium for monitoring well CBL-306I; chloride for monitoring well CBL-306I; and sulfate for monitoring wells CBL-302I and CBL-306I. In these specific cases, the prediction limits are time-dependent and are calculated around a persistent and statistically significant ($p<0.05$) temporal trend. A discussion of updates to temporal trend significance and BTVs (by constituent) follows.

Temporal Trends. The premise of intrawell comparisons is to evaluate if constituent concentrations at a geographic location downgradient of the CBL are changing over time respective to a baseline concentration calculated for that specific geographic location. On this basis, intrawell statistical comparisons should consider the presence of statistically significant ($p<0.05$) temporal trends to interpret if there is a release from the CBL, particularly if the temporal trend is: 1) increasing, 2) incongruent with the conceptual site model as it relates to alternative source demonstration(s) and/or 3) inconsistent with past temporal trend

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analyses. Using nonparametric Mann-Kendal trend testing, (3Q 2020) found the presence of statistically significant ($p<0.05$) temporal trends in the following monitoring wells (constituent/trend direction):

- CBL-302I
  - Chloride/decreasing
  - Sulfate/increasing

- CBL-306I
  - Calcium/increasing
  - Chloride/increasing
  - Sulfate/increasing
  - Fluoride/increasing
  - TDS/increasing.

- CBL-308I
  - Calcium decreasing
  - Chloride decreasing
  - TDS/decreasing

- CBL-341I
  - Calcium/decreasing
  - Fluoride/decreasing
  - pH/increasing

2.2 Exceedance Assessment

As indicated in Table 1, there is evidence at this time to declare an initial exceedance for boron in 301I and 341I. Because these are initial exceedances in a 1 of 2 resampling method, there is not sufficient evidence to declare a statistically significant increase in these two wells. Historically, both wells' boron analyses have regularly been below detection limits with occasional detections, followed by the subsequent sample being below detection limit again.

3.0 RECOMMENDATIONS

There are only the two initial exceedances listed in section 2.2 at this time.

For the majority of monitoring well/constituent pairs, the initial detection monitoring sample events (AMECFW, 2018b) represent a non-trending (i.e., stationary) BTV and these BTVs remain constant for each statistical comparison test. A sample size equal to eight is relatively small and likely underrepresents long-term temporal variability in constituent concentrations in groundwater beneath the CBL. Wood recommends updating the intrawell BTVs in Table 1 for the 1Q 2021 sampling event, which will incorporate sampling events between 1Q 2018 and 1Q 2021 into the intrawell BTV calculations. This recommendation is conditional upon the absence of initial exceedances in constituent concentrations above their respective BTVs. Updating BTVs to reflect larger sample sizes over time will improve the overall power of future statistical tests.

For a few monitoring well/constituent pairs the temporal trend is inconsistent over time. In general, this is expected since the trends are characterized by relatively few samples. Trend definition and significance will improve as sample datasets build over time. Wood recommends testing the significance of temporal trends after 1Q 2021 sampling when re-assessing intrawell BTV calculations (during preparation of 1Q 2021 Evaluation report)

Wood maintains the recommendation put forth in the 2018 Tech Memo declaring the calculation of the prediction limit around a temporal trend for each statistical evaluation, assuming the temporal trend remains statistically significant over time and the dataset meet the method assumptions (AMECFW, 2018b).

4.0 REFERENCES

Amec Foster Wheeler (AMECFW), 2018a. Technical Memorandum – Client Draft. Statistical Analysis of Initial Detection Monitoring Appendix III Constituent Data. Fayette Power Project – La Grange, Texas. Technical Memorandum dated January 14, 2018.

Amec Foster Wheeler (AMECFW), 2018b. Technical Memorandum – Client Draft. Statistical Analysis Updates of Detection Monitoring Appendix III Constituent Data. Fayette Power Project – La Grange, Texas. Technical Memorandum dated April 6, 2018.

U.S. Environmental Protection Agency (U.S. EPA), 2013. ProUCL (Version 5.0.00) User Guide, Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations. EPA/600/R-07/041. Washington D.C. September.

U.S. Environmental Protection Agency (U.S. EPA), 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance. EPA 530/R-09-007. Environmental Protection Agency Office of Resource Conservation and Recovery.

Table 1 Statistical Results Summary - LCRA Combustion Byproducts Landfill 3Q 2020
Appendix III Statistical Comparison

301I							
	Boron	Calcium	Chloride	Fluoride	pH*	Sulfate	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U)	(mg/L)	(mg/L)
Intrawell Statistical Test	NP-UPL	P-UPLT	P-UPL	NP-UPL	NP-UPL/NP-LPL	P-UPLT	P-UPL
BTV	0.07	1135	2676	0.3	6.33/5.95	410	7905
Compliance Sample	0.0801	1060	2270	<0.25	6.13	350	6340

302I							
	Boron	Calcium	Chloride	Fluoride	pH*	Sulfate	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U)	(mg/L)	(mg/L)
Intrawell Statistical Test	NP-UPL	P-UPLT	P-UPL	NP-UPL	NP-UPL/NP-LPL	P-UPLT	P-UPL
BTV	0.3	1154	2328	0.3	8.21/3.57	1503	7940
Compliance Sample	<0.05	853	1410	<0.25	6.2	1280	4990

306I							
	Boron	Calcium	Chloride	Fluoride	pH*	Sulfate	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U)	(mg/L)	(mg/L)
Intrawell Statistical Test	NP-UPL	P-UPLT	P-UPL	NP-UPL	NP-UPL/NP-LPL	P-UPLT	P-UPL
BTV	0.2	1293	1796	3.46	7.29/4.41	2615	5419
Compliance Sample	0.0773	260	420	2.72	7.16	506	1730

308I							
	Boron	Calcium	Chloride	Fluoride	pH*	Sulfate	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U)	(mg/L)	(mg/L)
Intrawell Statistical Test	NP-UPL	P-UPLT	P-UPL	NP-UPL	NP-UPL/NP-LPL	P-UPLT	P-UPL
BTV	0.7	995	3079	3	7.15/5.26	1702	12186
Compliance Sample	0.103	838	2410	1.33	6.22	1310	6860

341I							
	Boron	Calcium	Chloride	Fluoride	pH*	Sulfate	TDS
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U)	(mg/L)	(mg/L)
Intrawell Statistical Test	NP-UPL	P-UPLT	P-UPL	NP-UPL	NP-UPL/NP-LPL	P-UPLT	P-UPL
BTV	0.09	981	2661	0.53	6.69/4.93	466	6295
Compliance Sample	0.102	814	1700	<0.25	6.14	336	4930

*pH represents an upper and lower limit (upper limit method/lower limit method)
Green highlights - sample below or within limits
Yellow highlights - sample potentially exceeds limits

NP-LPL: Non-Parametric Lower Prediction Limit
NP-UPL: Non-Parametric Upper Prediction Limit
P-UPL: Parametric Upper Prediction Limit
P-LPL: Parametric Lower Prediction Limit
P-UPLT: Parametric Upper Prediction Limit with a Trend

APPENDIX D

Analytical Data for Calendar Year 2020

DATA USABILITY SUMMARY

LCRA has reviewed the data packages included in Appendix D of the Coal Combustion Residual Landfill 2020 Annual Groundwater Monitoring Report (Annual Groundwater Report) that were produced by LCRA Environmental Laboratory Services (ELS) for the analysis of groundwater samples collected in January 2020 and September 2020 at the Fayette Power Project (FPP) site. The Data were reviewed for conformance to the groundwater sampling and analysis requirements of 40 CFR § 257.93/30 TAC 352.931 and adherence to project objectives.

Objectives of the Data: To provide current data on concentrations of COCs in groundwater at the site for purposes of comparing Combustion Byproducts Landfill (CBL) compliance sample data to Appendix III baseline threshold values (BTVs). To accomplish the stated data objectives, all field and laboratory procedures were performed in accordance with industry-established protocol, the FPP Sampling and Analysis Plan, and appropriate quality assurance/quality control (QA/QC) measures wer e utilized. As described within the body of the Annual Groundwater Report, field QA/QC protocols integrated into this project followed industry standards and involved, among ot her factors:

- Use of sampling equipment decontamination protocol;
- Proper sample handling, preservation, and shipping procedures; and
- Maintenance of the sample chain of custody.

Also, as presented in the individual laboratory data packages, laboratory QA/QC procedures integrated into this project followed industry standards and involved, among others:

- Maintenance of sample custody;
- Application of laboratory cross references to field sample identifications and to specific QC samples;
- Use of laboratory control samples (LCSs);
- Use of matrix spike/matrix duplicate spikes;
- Use of appropriate method or sample quantitation limits (SQL);
- Reporting of non-detect results as less than the value of the SQL;
- Use of surrogate recoveries;
- Calculation of relative percent differences (RPDs);
- Use of method and preparation blanks; and
- The application of data qualifiers.

Data Reviewed: The data reviewed consisted of laboratory submittals and field data as follows:

- Project Objectives (i.e. recoveries and relative percent differences);
- Analytical Results, including, as applicable, data qualifiers;
- Documentation of preservation and holding times;
- Field and laboratory equipment calibrations;
- Laboratory blanks;

- Internal Laboratory Control Standards and Surrogate Recoveries;
- Laboratory Control Samples;
- Matrix Spike/Matrix Spike Duplicates;
- Field Precision as determined by duplicate samples collected in the field; and
- Field Procedures.

The results of the supporting quality control analyses for each of these QC factors were summarized in Quality Control narratives provided by the laboratory, and field/laboratory-completed chain of custody forms, the field forms, and the LCRA standard operational field procedures and the Groundwater Sampling Procedures. A review of each of these was included in this Data Usability Review.

Based on the Data Usability Review, the groundwater data are usable for their intended purpose. All samples were collected in the field using industry-standard operating procedures (SOPs), including decontamination protocol, sample preservation, and chain of custody.

Also, as presented in detail in the attached laboratory data packages, all appropriate QA/QC protocol were accomplished by the analytical laboratory. Where applicable, data have been appropriately qualified in the laboratory reports and the data, therefore, have been used accordingly. All exceptions were documented and described in the Quality Control narratives and no conditions with regard to laboratory control samples, matrix spike/matrix spike duplicates, sample preservation and holding times, or equipment calibrations were identified that would cause any of the data not to be useable.

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March 17, 2020

BECKIE LOEVE
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RE: Final Analytical Report Q2003808

Attn: BECKIE LOEVE

Enclosed are the analytical results for sample(s) received by LCRA Environmental Laboratory Services. Results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report. This final report provides results related only to the sample(s) as received for the above referenced work order.

Thank you for selecting ELS for your analytical needs. If you have any questions regarding this report, please contact us at (512) 730-6022. We look forward to assisting you again.

Authorized for release by:

Account Manager
jason.woods@lcra.org

Enclosures:

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LCRA Environmental Laboratory Services
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Sample Summary

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received
Q2003808001	CBL - 301I	AQ	E300.0, Anions	1/28/2020 13:12	1/30/2020 16:02
Q2003808001	CBL - 301I	AQ	Field pH SM4500H+B TCEQ VOL 1	1/28/2020 13:12	1/30/2020 16:02
Q2003808001	CBL - 301I	AQ	SM2540C, TDS	1/28/2020 13:12	1/30/2020 16:02
Q2003808001	CBL - 301I	AQ	SW6010B ICP-AES	1/28/2020 13:12	1/30/2020 16:02
Q2003808002	CBL - 302I	AQ	E300.0, Anions	1/30/2020 11:50	1/30/2020 16:02
Q2003808002	CBL - 302I	AQ	Field pH SM4500H+B TCEQ VOL 1	1/30/2020 11:50	1/30/2020 16:02
Q2003808002	CBL - 302I	AQ	SM2540C, TDS	1/30/2020 11:50	1/30/2020 16:02
Q2003808002	CBL - 302I	AQ	SW6010B ICP-AES	1/30/2020 11:50	1/30/2020 16:02
Q2003808003	CBL - 306I	AQ	E300.0, Anions	1/29/2020 10:28	1/30/2020 16:02
Q2003808003	CBL - 306I	AQ	Field pH SM4500H+B TCEQ VOL 1	1/29/2020 10:28	1/30/2020 16:02
Q2003808003	CBL - 306I	AQ	SM2540C, TDS	1/29/2020 10:28	1/30/2020 16:02
Q2003808003	CBL - 306I	AQ	SW6010B ICP-AES	1/29/2020 10:28	1/30/2020 16:02
Q2003808004	CBL - 308I	AQ	E300.0, Anions	1/29/2020 11:52	1/30/2020 16:02
Q2003808004	CBL - 308I	AQ	Field pH SM4500H+B TCEQ VOL 1	1/29/2020 11:52	1/30/2020 16:02
Q2003808004	CBL - 308I	AQ	SM2540C, TDS	1/29/2020 11:52	1/30/2020 16:02
Q2003808004	CBL - 308I	AQ	SW6010B ICP-AES	1/29/2020 11:52	1/30/2020 16:02
Q2003808005	CBL - 340I	AQ	E300.0, Anions	1/30/2020 13:35	1/30/2020 16:02
Q2003808005	CBL - 340I	AQ	Field pH SM4500H+B TCEQ VOL 1	1/30/2020 13:35	1/30/2020 16:02

Report Definitions

MRL - Minimum Reporting Limit
LOD - Limit of Detection
ML - Maximum Limit - Client Specified
MCL - Maximum Contaminant Level
MDL - Method Detection Limit
LOQ - Limit of Quantitation - Client Specified
DF - Dilution Factor
Qual - Qualifier
(S) - Surrogate Spike
QC Qual - red font indicates Result Value outside acceptable range
B- Analyte detected in method blank
S - Spike recovery outside limit
R - RPD outside duplicate precision limit
J - Analyte detected below quantitation limit
RPD - Relative Percent Difference
SL - Spike Recovery Low
SH - Spike Recovery High

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Sample Summary (cont.)

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received
Q2003808005	CBL - 340I	AQ	SM2540C, TDS	1/30/2020 13:35	1/30/2020 16:02
Q2003808005	CBL - 340I	AQ	SW6010B ICP-AES	1/30/2020 13:35	1/30/2020 16:02
Q2003808006	CBL - 341I	AQ	E300.0, Anions	1/30/2020 10:29	1/30/2020 16:02
Q2003808006	CBL - 341I	AQ	Field pH SM4500H+B TCEQ VOL 1	1/30/2020 10:29	1/30/2020 16:02
Q2003808006	CBL - 341I	AQ	SM2540C, TDS	1/30/2020 10:29	1/30/2020 16:02
Q2003808006	CBL - 341I	AQ	SW6010B ICP-AES	1/30/2020 10:29	1/30/2020 16:02
Q2003808007	CBL - 641I	AQ	E300.0, Anions	1/30/2020 10:29	1/30/2020 16:02
Q2003808007	CBL - 641I	AQ	SM2540C, TDS	1/30/2020 10:29	1/30/2020 16:02
Q2003808007	CBL - 641I	AQ	SW6010B ICP-AES	1/30/2020 10:29	1/30/2020 16:02
Q2003808008	EQB	AQ	E300.0, Anions	1/30/2020 12:00	1/30/2020 16:02
Q2003808008	EQB	AQ	SM2540C, TDS	1/30/2020 12:00	1/30/2020 16:02
Q2003808008	EQB	AQ	SW6010B ICP-AES	1/30/2020 12:00	1/30/2020 16:02
Q2003808009	FB	AQ	E300.0, Anions	1/30/2020 14:47	1/30/2020 16:02
Q2003808009	FB	AQ	SM2540C, TDS	1/30/2020 14:47	1/30/2020 16:02
Q2003808009	FB	AQ	SW6010B ICP-AES	1/30/2020 14:47	1/30/2020 16:02

Report Definitions

MRL - Minimum Reporting Limit
LOD - Limit of Detection
ML - Maximum Limit - Client Specified
MCL - Maximum Contaminant Level
MDL - Method Detection Limit
LOQ - Limit of Quantitation - Client Specified
DF - Dilution Factor
Qual - Qualifier
(S) - Surrogate Spike
QC Qual - red font indicates Result Value outside acceptable range
B- Analyte detected in method blank
S - Spike recovery outside limit
R - RPD outside duplicate precision limit
J - Analyte detected below quantitation limit
RPD - Relative Percent Difference
SL - Spike Recovery Low
SH - Spike Recovery High

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Project Summary

Sample Analysis Comments

Lab ID: Q2003808001 **Sample ID:** CBL - 301I

- Not Accredited - pH

Lab ID: Q2003808002 **Sample ID:** CBL - 302I

- Not Accredited - pH

Lab ID: Q2003808003 **Sample ID:** CBL - 306I

- Not Accredited - pH

Lab ID: Q2003808004 **Sample ID:** CBL - 308I

- Not Accredited - pH

Lab ID: Q2003808005 **Sample ID:** CBL - 340I

- Not Accredited - pH

Lab ID: Q2003808006 **Sample ID:** CBL - 341I

- Not Accredited - pH

Lab ID: Q2003808008 **Sample ID:** EQB

- Analyzed Past Hold Time - Total Dissolved Solids(TDS)

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Analytical Results

Lab ID: Q2003808001 Date Received: 1/30/2020 16:02 Matrix: Aqueous
Sample ID: CBL - 301I Date Collected: 1/28/2020 13:12 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
Field Parameters (Field pH SM4500H+B TCEQ VOL 1)											
pH	6.26	pH				1			01/28/20 13:12	CCP	*
INORGANICS (E300.0, Anions)											
Chloride	2390	mg/L	50.0	20.0		50			02/01/20 06:39	ML	
Fluoride	0.130	mg/L	0.100	0.0400		10			02/04/20 11:30	ML	
Sulfate	349	mg/L	50.0	20.0		50			02/01/20 06:39	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	02/03/20 10:39	ME	02/04/20 13:13	FM	
Calcium Total	851	mg/L	1.00	0.350		5	02/03/20 10:39	ME	02/04/20 14:45	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	4790	mg/L	250	250		100			02/03/20 14:21	ERR	

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Analytical Results (cont.)

Lab ID: Q2003808002 Date Received: 1/30/2020 16:02 Matrix: Aqueous
Sample ID: CBL - 302I Date Collected: 1/30/2020 11:50 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
Field Parameters (Field pH SM4500H+B TCEQ VOL 1)											
pH	6.34	pH				1			01/30/20 11:50	CCP	*
INORGANICS (E300.0, Anions)											
Chloride	1540	mg/L	50.0	20.0		50			02/01/20 06:56	ML	
Fluoride	0.193	mg/L	0.100	0.0400		10			02/04/20 11:47	ML	
Sulfate	1350	mg/L	50.0	20.0		50			02/01/20 06:56	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	02/03/20 10:39	ME	02/04/20 13:19	FM	
Calcium Total	838	mg/L	1.00	0.350		5	02/03/20 10:39	ME	02/04/20 14:40	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	4790	mg/L	250	250		100			02/03/20 14:21	ERR	

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Analytical Results (cont.)

Lab ID: Q2003808003 Date Received: 1/30/2020 16:02 Matrix: Aqueous
Sample ID: CBL - 306I Date Collected: 1/29/2020 10:28 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
Field Parameters (Field pH SM4500H+B TCEQ VOL 1)											
pH	6.70	pH				1			01/29/20 10:28	CCP	*
INORGANICS (E300.0, Anions)											
Chloride	445	mg/L	10.0	4.00		10			02/01/20 07:14	ML	
Fluoride	2.83	mg/L	0.100	0.0400		10			02/01/20 07:14	ML	
Sulfate	561	mg/L	10.0	4.00		10			02/01/20 07:14	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	02/03/20 10:39	ME	02/04/20 13:25	FM	
Calcium Total	247	mg/L	0.200	0.0700		1	02/03/20 10:39	ME	02/04/20 13:25	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	1830	mg/L	125	125		50			02/03/20 14:21	ERR	

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Analytical Results (cont.)

Lab ID: Q2003808004 Date Received: 1/30/2020 16:02 Matrix: Aqueous
Sample ID: CBL - 308I Date Collected: 1/29/2020 11:52 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
Field Parameters (Field pH SM4500H+B TCEQ VOL 1)											
pH	6.37	pH				1			01/29/20 11:52	CCP	*
INORGANICS (E300.0, Anions)											
Chloride	2110	mg/L	50.0	20.0		50			02/01/20 09:16	ML	
Fluoride	1.60	mg/L	0.500	0.200		50			02/01/20 09:16	ML	
Sulfate	1340	mg/L	50.0	20.0		50			02/01/20 09:16	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	02/03/20 10:39	ME	02/04/20 13:30	FM	
Calcium Total	745	mg/L	1.00	0.350		5	02/03/20 10:39	ME	02/04/20 14:35	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	5980	mg/L	500	500		200			02/03/20 14:21	ERR	

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Analytical Results (cont.)

Lab ID: Q2003808005 Date Received: 1/30/2020 16:02 Matrix: Aqueous
Sample ID: CBL - 340I Date Collected: 1/30/2020 13:35 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
Field Parameters (Field pH SM4500H+B TCEQ VOL 1)											
pH	6.49	pH				1			01/30/20 13:35	CCP	*
INORGANICS (E300.0, Anions)											
Chloride	2240	mg/L	50.0	20.0		50			02/01/20 09:34	ML	
Fluoride	0.870	mg/L	0.500	0.200		50			02/01/20 09:34	ML	
Sulfate	637	mg/L	50.0	20.0		50			02/01/20 09:34	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	0.0562	mg/L	0.0500	0.0200		1	02/03/20 10:39	ME	02/04/20 13:36	FM	
Calcium Total	539	mg/L	0.400	0.140		2	02/03/20 10:39	ME	02/04/20 14:29	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	5080	mg/L	250	250		100			02/03/20 14:21	ERR	

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Analytical Results (cont.)

Lab ID: Q2003808006 Date Received: 1/30/2020 16:02 Matrix: Aqueous
Sample ID: CBL - 341I Date Collected: 1/30/2020 10:29 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
Field Parameters (Field pH SM4500H+B TCEQ VOL 1)											
pH	6.27	pH				1			01/30/20 10:29	CCP	*
INORGANICS (E300.0, Anions)											
Chloride	1780	mg/L	25.0	10.0		25			02/01/20 09:52	ML	
Fluoride	0.153	mg/L	0.100	0.0400		10			02/04/20 12:05	ML	
Sulfate	351	mg/L	25.0	10.0		25			02/01/20 09:52	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	02/03/20 10:39	ME	02/04/20 13:42	FM	
Calcium Total	767	mg/L	1.00	0.350		5	02/03/20 10:39	ME	02/04/20 14:23	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	4900	mg/L	250	250		100			02/03/20 16:34	ERR	

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Analytical Results (cont.)

Lab ID: Q2003808007 Date Received: 1/30/2020 16:02 Matrix: Aqueous
Sample ID: CBL - 641I Date Collected: 1/30/2020 10:29 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
INORGANICS (E300.0, Anions)											
Chloride	1690	mg/L	25.0	10.0		25			02/01/20 10:09	ML	
Fluoride	0.151	mg/L	0.100	0.0400		10			02/04/20 12:22	ML	
Sulfate	334	mg/L	25.0	10.0		25			02/01/20 10:09	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	02/03/20 10:39	ME	02/04/20 13:47	FM	
Calcium Total	856	mg/L	1.00	0.350		5	02/03/20 10:39	ME	02/04/20 14:18	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	4050	mg/L	250	250		100			02/03/20 16:34	ERR	

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Analytical Results (cont.)

Lab ID: Q2003808008 Date Received: 1/30/2020 16:02 Matrix: Aqueous
Sample ID: EQB Date Collected: 1/30/2020 12:00 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
INORGANICS (E300.0, Anions)											
Chloride	<1.00	mg/L	1.00	0.400		1			02/01/20 10:27	ML	
Fluoride	<0.0100	mg/L	0.0100	0.0040		1			02/01/20 10:27	ML	
Sulfate	<1.00	mg/L	1.00	0.400		1			02/01/20 10:27	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	02/03/20 10:39	ME	02/04/20 13:53	FM	
Calcium Total	<0.200	mg/L	0.200	0.0700		1	02/03/20 10:39	ME	02/04/20 13:53	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	25.0		10			03/02/20 14:57	ERR	*

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Analytical Results (cont.)

Lab ID: Q2003808009 Date Received: 1/30/2020 16:02 Matrix: Aqueous
Sample ID: FB Date Collected: 1/30/2020 14:47 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
INORGANICS (E300.0, Anions)											
Chloride	<1.00	mg/L	1.00	0.400		1			02/01/20 10:44	ML	
Fluoride	<0.0100	mg/L	0.0100	0.0040		1			02/01/20 10:44	ML	
Sulfate	<1.00	mg/L	1.00	0.400		1			02/01/20 10:44	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	02/03/20 10:39	ME	02/04/20 13:58	FM	
Calcium Total	<0.200	mg/L	0.200	0.0700		1	02/03/20 10:39	ME	02/04/20 13:58	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	<500	mg/L	500	500		200			02/03/20 16:34	ERR	

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Quality Control

Preparation Batch: MEP / 9899 **Analysis Method:** SW6010B ICP-AES
Preparation Method: SW3010A, Metals Prep
Associated Lab IDs: Q2003808001, Q2003808002, Q2003808003, Q2003808004, Q2003808005, Q2003808006, Q2003808007, Q2003808008, Q2003808009

Lab Control Sample (1398109); Lab Control Sample Duplicate (1398110)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	Qual
Boron Total	mg/L	1	1.05	105	80 - 120	1.04	104	.957	20	
Calcium Total	mg/L	10	10.2	102	80 - 120	10.2	102	0	20	

Method Blank (1398111)

Parameter	Results	Units	MRL	LOD	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200	
Calcium Total	<0.200	mg/L	0.200	0.0700	

Matrix Spike (1398112) Original: Q2003808001; Matrix Spike Duplicate (1398113)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	Qual
Boron Total	mg/L	1	1.01	101	75 - 125	.992	99.2	1.8	20	
Calcium Total	mg/L	10	994	**1420**	75 - 125	977	**1250**	1.73	20	S

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Quality Control (cont.)

Preparation Batch: WET / 21276 **Analysis Method:** SM2540C, TDS
Preparation Method: SM2540C, TDS
Associated Lab IDs: Q2003808006, Q2003808007, Q2003808008, Q2003808009

Method Blank (1398197)

Parameter	Results	Units	MRL	LOD	Qualifier
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	25.0	

Lab Control Sample (1398198)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Total Dissolved Solids(TDS)	mg/L	400	369	92.2	80 - 120	

Matrix Spike (1398199) Original: Q2003931003

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Total Dissolved Solids(TDS)	mg/L	400	594	92.8	70 - 130	

Duplicate (1398200); Original: Q2003931003

Parameter	Original	Duplicate	Units	RPD %	Limit	Qual
Total Dissolved Solids(TDS)	223	224	mg/L	.447	20	

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Quality Control (cont.)

Preparation Batch: WET / 21275 **Analysis Method:** SM2540C, TDS
Preparation Method: SM2540C, TDS
Associated Lab IDs: Q2003808001, Q2003808002, Q2003808003, Q2003808004, Q2003808005

Method Blank (1398184)

Parameter	Results	Units	MRL	LOD	Qualifier
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	25.0	

Lab Control Sample (1398185)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Total Dissolved Solids(TDS)	mg/L	400	360	90	80 - 120	

Duplicate (1398186); Original: Q2003540001

Parameter	Original	Duplicate	Units	RPD %	Limit	Qual
Total Dissolved Solids(TDS)	415	442	mg/L	6.3	20	

Matrix Spike (1398187) Original: Q2003540001

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Total Dissolved Solids(TDS)	mg/L	400	852	109	70 - 130	

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Quality Control (cont.)

Preparation Batch: WET / 21279 **Analysis Method:** E300.0, Anions
Preparation Method: E300.0, Anions
Associated Lab IDs: Q2003808001, Q2003808002, Q2003808006, Q2003808007

Laboratory Reagent Blank (1398280)

Parameter	Results	Units	MRL	LOD	Qualifier
Fluoride	<0.0100	mg/L	0.0100	0.00400	

Method Reporting Limit Check (1398282)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Fluoride	mg/L	.01	.0095	95	50 - 150	

Laboratory Fortified Blank (1398283)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Fluoride	mg/L	1	1.01	101	90 - 110	

Limit of Quantitation Check (1398284)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Fluoride	mg/L	.02	.0189	94.5	70 - 130	

Laboratory Fortified Matrix (1399043) Original: Q2003984001; Lab Fortified Matrix Duplicate (1399044)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %			Qual
Fluoride	mg/L					0	20	

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Quality Control (cont.)

Preparation Batch: WET / 21272 **Analysis Method:** E300.0, Anions

Preparation Method: E300.0, Anions

Associated Lab IDs: Q2003808001, Q2003808002, Q2003808003, Q2003808004, Q2003808005, Q2003808006, Q2003808007, Q2003808008, Q2003808009

Method Reporting Limit Check (1397875)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Chloride	mg/L	1	.715	71.5	50 - 150	
Fluoride	mg/L	.01	.011	110	50 - 150	
Sulfate	mg/L	1	.834	83.4	50 - 150	

Limit of Quantitation Check (1397877)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Chloride	mg/L	5	4.16	83.1	70 - 130	
Fluoride	mg/L	.02	.0212	106	70 - 130	
Sulfate	mg/L	5	4.33	86.6	70 - 130	

Laboratory Reagent Blank (1397887)

Parameter	Results	Units	MRL	LOD	Qualifier
Chloride	<1.00	mg/L	1.00	0.400	
Fluoride	<0.0100	mg/L	0.0100	0.00400	
Sulfate	<1.00	mg/L	1.00	0.400	

Laboratory Fortified Blank (1397888)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Chloride	mg/L	30	30.4	101	90 - 110	
Fluoride	mg/L	1	1.02	102	90 - 110	
Sulfate	mg/L	30	30.1	100	90 - 110	

Laboratory Fortified Matrix (1397900) Original: Q2003954009; Lab Fortified Matrix Duplicate (1397901)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	Qual
Chloride	mg/L	20	37.6	101	80 - 120	37.6	101	0	20	
Fluoride	mg/L	1	2.08	96.8	80 - 120	2.08	96.8	0	20	
Sulfate	mg/L	20	62.3	93	80 - 120	62.3	93	0	20	

Laboratory Reagent Blank (1397894)

Parameter	Results	Units	MRL	LOD	Qualifier
Chloride	<1.00	mg/L	1.00	0.400	
Fluoride	<0.0100	mg/L	0.0100	0.00400	
Sulfate	<1.00	mg/L	1.00	0.400	

Laboratory Fortified Blank (1397895)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Chloride	mg/L	30	29.8	99.3	90 - 110	
Fluoride	mg/L	1	1.07	107	90 - 110	
Sulfate	mg/L	30	29.5	98.4	90 - 110	

Laboratory Fortified Matrix (1397902) Original: Q2003959001; Lab Fortified Matrix Duplicate (1397903)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	Qual
Chloride	mg/L	20	19.9	99.3	80 - 120	19.5	97.5	2.03	20	
Fluoride	mg/L	1	1.07	98.5	80 - 120	1.04	95.9	2.84	20	

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LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone: (512) 730-6022
Fax: (512) 730-6021

Quality Control (cont.)

Preparation Batch: WET / 21272 **Analysis Method:** E300.0, Anions

Preparation Method: E300.0, Anions

Associated Lab IDs: Q2003808001, Q2003808002, Q2003808003, Q2003808004, Q2003808005, Q2003808006, Q2003808007, Q2003808008, Q2003808009

(continued)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	Qual
Sulfate	mg/L	20	19.3	96.3	80 - 120	18.5	92.7	4.23	20	

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The Solution Lab

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Fax: (512) 730-6021

Quality Control (cont.)

Preparation Batch: WET / 21466 **Analysis Method:** SM2540C, TDS
Preparation Method: SM2540C, TDS
Associated Lab IDs: Q2003808008

Method Blank (1410881)

Parameter	Results	Units	MRL	LOD	Qualifier
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	25.0	

Lab Control Sample (1410882)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Total Dissolved Solids(TDS)	mg/L	400	365	91.2	80 - 120	

Duplicate (1410883); Original: Q2007163024

Parameter	Original	Duplicate	Units	RPD %	Limit	Qual
Total Dissolved Solids(TDS)	250	230	mg/L	8.33	20	

Matrix Spike (1410884) Original: Q2007163024

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Total Dissolved Solids(TDS)	mg/L	400	636	96.5	70 - 130	

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Fax: (512) 730-6021

Quality Control Cross Reference

MET/7595 - SW6010B ICP-AES

Lab ID	Sample ID	Prep Batch	Prep Method
Q2003808001	CBL - 301I	MEP/9899	SW3010A, Metals Prep
Q2003808002	CBL - 302I	MEP/9899	SW3010A, Metals Prep
Q2003808003	CBL - 306I	MEP/9899	SW3010A, Metals Prep
Q2003808004	CBL - 308I	MEP/9899	SW3010A, Metals Prep
Q2003808005	CBL - 340I	MEP/9899	SW3010A, Metals Prep
Q2003808006	CBL - 341I	MEP/9899	SW3010A, Metals Prep
Q2003808007	CBL - 641I	MEP/9899	SW3010A, Metals Prep
Q2003808008	EQB	MEP/9899	SW3010A, Metals Prep
Q2003808009	FB	MEP/9899	SW3010A, Metals Prep

WET/21272 - E300.0, Anions

Lab ID	Sample ID	Prep Batch	Prep Method
Q2003808001	CBL - 301I		
Q2003808002	CBL - 302I		
Q2003808003	CBL - 306I		
Q2003808004	CBL - 308I		
Q2003808005	CBL - 340I		
Q2003808006	CBL - 341I		
Q2003808007	CBL - 641I		
Q2003808008	EQB		
Q2003808009	FB		

WET/21275 - SM2540C, TDS

Lab ID	Sample ID	Prep Batch	Prep Method
Q2003808001	CBL - 301I		
Q2003808002	CBL - 302I		
Q2003808003	CBL - 306I		
Q2003808004	CBL - 308I		
Q2003808005	CBL - 340I		

WET/21276 - SM2540C, TDS

Lab ID	Sample ID	Prep Batch	Prep Method
Q2003808006	CBL - 341I		
Q2003808007	CBL - 641I		
Q2003808008	EQB		
Q2003808009	FB		

WET/21279 - E300.0, Anions

Lab ID	Sample ID	Prep Batch	Prep Method
Q2003808001	CBL - 301I		
Q2003808002	CBL - 302I		
Q2003808006	CBL - 341I		
Q2003808007	CBL - 641I		

WET/21466 - SM2540C, TDS

Lab ID	Sample ID	Prep Batch	Prep Method
Q2003808008	EQB		

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LCRA Environmental Laboratory Services

Request for Analysis Chain-of-Custody Record

LCRA - Environmental Lab
3505 Montopolis Dr.
Austin, TX 78744

Phone: (512) 730-6022 or 1-800-776-5272
Fax: (512) 356-6021
https://els.lcra.org

Lab ID#: Q2003808

Client PO:

Project:	FPP - CCR - Groundwater	**Client:**	LCRA
Collector:	CollPetri / Veronica Baty	**Contact:**	Jason Woods
Event#:	1521545 / 9986	**Phone:**	(512)730-5339

Report To: BECKIE LOEVE
FAYETTE POWER PLANT
6549 POWER PLANT RD
MAIL STOP FPP
La Grange, TX 78945

Invoice To: BECKIE LOEVE
FAYETTE POWER PLANT
6549 POWER PLANT RD
MAIL STOP FPP
La Grange, TX 78945

LAB USE ONLY	Sample ID *	Collected * Date*	Collected * Time * HH:MM	Matrix* (AQ = Aqueous, S = Solid, T = Tissue, DW = Drinking Water)	Container(s) Type/Preservative/Number * COMPOSITE Y/N	FILTERED Y/N	1LPU	250PHNO3	Requested Analysis * 2540-AMTDS	6010-AM	F-pH	300.0AM-28
1	CBL - 301I	1/28/20	1312	AQ	N	N	1	1	X	X	X	X
2	CBL - 302I	1/30/20	1150	AQ			1	1	X	X	X	X
3	CBL - 306I	1/29/20	1028	AQ			1	1	X	X	X	X
4	CBL - 308I	1/29/20	1152	AQ			1	1	X	X	X	X
5	CBL - 340I	1/30/20	1335	AQ			1	1	X	X	X	X
6	CBL - 341I	1/30/20	1029	AQ			1	1	X	X	X	X
7	CBL - 641I	1/30/20	1025	AQ			1	1	X	X		X
8	EQB	1/30/20	1200	AQ			1	1	X	X		X
9	FB	1/30/20	1447	AQ	↓	↓	1	1	X	X		X

Transfers	Relinquished By	Date/Time	Received By	Date/Time
1	CollPetri	1/30/20 1602	[signature]	1/30/20 1602
2				
3				

Cooler Temp: #	T#	Obs.	Corr.
1	IR6	1.5°C	1.5°C
2			

Client Special Instructions:

Lab Use Only:

Q2003808
447107

Note: Relinquishing sample(s) and signing the COC, client agrees to accept and is bound by the ELS Standard Terms and Conditions. All fields with an asterisk (*) are required to be completed.

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Field Information Form

Sample Date: 1/29/20 (D)

Sample Time: 1152

Sample ID: CBL3081

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	V= WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
200129	1100	18	53	7

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) I N I Sampling Equipment ..... Dedicated (Y) I N I

Purging Device / Sampling Device	[B] / [B]	A-Submersible Pump; B-Perisataltic Pump; C-Bladder Pump	D-Gas Litf Pump; E-Venturi Pump; F-Dipper/Bottle	G-Bailer; H-Scoop/Shovel; I-Piston Pump
Purging Material / Sampling Material	[E] / [E]	A-Teflon; B-Stainless Steel	C-Polypropylene; D-PVC	E-Polyethylene
Tubing-Purging / Tubing-Sampling	[E] / [E]	A-Teflon; B-Tygon	D-Polypropylene; E-Polyethylene	F-Silicon; G-Combination teflon/Polypropylene

C-Rope X- _____ (Specify)

X- _____ Purging Other (Specify)

X- _____ Sampling Other (Specify)

X- _____ Purging Other (Specify)

X- _____ Sampling Other (Specify)

X- _____ Purging Other (Specify)

X- _____ Sampling Other (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =Dw	24.48 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	35.25 (ft)	Pump Placement	31 (ft)

6.37 (STD) PH 8981 uS/cm Specific Conductivity Sample Temp. 22.29 (°C)

Bottle Type	Bottle Size	Bottle Preservative	Analysis	Field Filt. Y/N
P	250mL	HNO_3	Metals	N
P	250mL	HNO_3	Metals	N
P	250mL	HNO_3	Metals Dup 6081	N
P	250mL	ICE	Anions	N
P	1L	ICE	Anions	N

Sample Appearance: Clear Odor: none Color: Clear Turbidity: 0.40

Weather Conditions: Partly Cloudy North wind 10-15mph 55°

Other: Purge water is clear with no odor. Collected Sample once parameter were stable.

WELL VOLUME CALCULATION

$V=(D-D_w)(A)(7.48\ gal/ft^3)$ where

V= volume of standing water in well

D= depth to bottom of well below measuring point

D_w=depth to water below measuring point

A= ~~cross sectional~~ area

2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____

If No, Explain _____

Procedure: ELS Groundwater SOP 5-70

Date: 1/29/20

Sampler: CP/VB

Employer: LCRA

(10)

LCRA ENERGY • WATER • COMMUNITY SERVICES

Field Information Form

Sample Date: 1/29/20

Sample Time: 1028

Sample ID: CBL36 61

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	V= WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
20 01 29	0955	1.11	3.32	5

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) I N I Sampling Equipment ..... Dedicated (Y) I N I

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	X- Sampling Other (Specify)
Purging Material	F	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	F	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	F	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Specify)
Tubing-Sampling	F	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	8.34 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	14.8 (ft)	Pump Placement	12 (ft)

6.70 (STD) PH

2792 uS/cm Specific Conductivity

Sample Temp. ~~20.5~~ 20.05 (°C) cp 1/29/20

Bottle			Analysis	Field Filt. Y/N
Type	Size	Preservative		
P	250mL	HNO_3	Metals	N
P	250mL	HNO_3	Metals	N
P	250mL	ICE	Anions	N
P	1L	ICE	Anions	N

Sample Appearance: Clear Odor: none Color: Clear Turbidity: 2.90

Weather Conditions: Partly Cloudy North wind 10-15mph 48°

Other: Purge water is clear with no odor. Samples collected once parameters were stable

WELL VOLUME CALCULATION

$V=(D-D_w)(A)(7.48\ gal/ft^3)$ where

V= volume of standing water in well

D= depth to bottom of well below measuring point

D_w=depth to water below measuring point

A= cross sectional area

2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____

If No, Explain _____

Procedure: ELS Groundwater SOP 5-20

Date: 1/29/20

Sampler: CP/VB

Employer: LCRA

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Field Information Form

Sample Date: 1/28/20 (8)

Sample Time: 1312

Sample ID: CBC3012

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	V= WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
200128	1207	13.2	9.7	25

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated I Y I (N)

Sampling Equipment ..... Dedicated I Y I (N)

Purging Device	A	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	A	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	E	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	E	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	E	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Specify)
Tubing-Sampling	E	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	34.36 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	54.1 (ft)	Pump Placement	46 (ft)

6.26 (STD) PH

7725 uS/cm Specific Conductivity

Sample Temp. 23.94 (°C)

Bottle			Analysis	Field Filt.Y/N
Type	Size	Preservative		
P	250mL	HNO_3	Metals	N
P	250mL	ICE	Anions	N
P	250mL	HNO_3	Metals EQ Blank	N
P	250mL	HNO_3	Metals Field Blank #3	N
P	1L	ICE		

Sample Appearance: Clear Odor: None Color: Clear Turbidity: 1.24

Weather Conditions: Partly Cloudy with East wind 0-5mph 62°

Other: Purge water is milky white clearing after 1gallon. Sample was clear with no odor

WELL VOLUME CALCULATION

$V=(D-D_w)(A)(7.48\ gal/ft^3)$ where

V= volume of standing water in well

D= depth to bottom of well below measuring point

D_w=depth to water below measuring point

A= cross sectional area

2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____

If No, Explain _____

Procedure: ELS Ground water SOP 5-70

Date: 1/28/20

Sampler: CP

Employer: LCRA

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Field Information Form

Sample Date: 1/30/20
Sample Time: 1335
Sample ID: CBL3401

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
20 01 30	12 25	V= 2.6	7.8	9

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) I I N I Sampling Equipment ..... Dedicated (Y) I I N I

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	F	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	F	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	F	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Specify)
Tubing-Sampling	F	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	24.14 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	40.14 (ft)	Pump Placement	36 (ft)

PH: 6.49 (STD) Specific Conductivity: 801.2 uS/cm Sample Temp.: 22.18 (°C)

Bottle			Analysis	Field Filt. Y/N
Type	Size	Preservative		
P	250mL	HNO_3	Metals	N
P	1L	ICE	Anions	N
P	1L	ICE	EQ Blank Anions 1300	N

Sample Appearance: Clear Odor: None Color: Clear Turbidity: 0.87
Weather Conditions: Overcast North wind 10-15mph 52°
Other: Purge water is clear with no odor. Collected samples once parameters were stable.

WELL VOLUME CALCULATION

$V=(D-D_w)(A)(7.48\ gal/ft^3)$ where
V= volume of standing water in well
D= depth to bottom of well below measuring point
D_w=depth to water below measuring point
A= cross sectional area
2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____
If No, Explain _____

Procedure: ELS Groundwater SOP 5-7D
Date: 1/30/20
Sampler: CP
Employer: LCRA

(16)

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Field Information Form

Sample Date: 1/30/20

Sample Time: 1150

Sample ID: CBL3012

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
200130	1103	V= 2.7	8.1	7

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) I N I Sampling Equipment ..... Dedicated (Y) I N I

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	E	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	E	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	E	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Specify)
Tubing-Sampling	E	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =Dw	10.56 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	27.11 (ft)	Pump Placement	24 (ft)

PH: 6.34 (STD) Specific Conductivity: 670.6 uS/cm Sample Temp.: 21.46 (°C)

Bottle			Analysis	Field Filt.Y/N
Type	Size	Preservative		
P	250mL	HNO_3	Metals	N
P	1L	ICE	Anions	N

Sample Appearance: clear Odor: none Color: Clear Turbidity: 0.29

Weather Conditions: Overcast North wind 10-15mph 52°

Other: Purge water is clear with no odor, Collected Sample once parameter were stable.

WELL VOLUME CALCULATION

$V=(D-D_w)(A)(7.48\ gal/ft^3)$ where

V= volume of standing water in well

D= depth to bottom of well below measuring point

D_w=depth to water below measuring point

A= cross-sectional area

2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____

If No, Explain _____

Procedure: ELS Groundwater SOP 5-20

Date: 1/30/20

Sampler: CP

Employer: LCRA

(15)

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Field Information Form

Sample Date: 1/30/20

Sample Time: 1029

Sample ID: CBK13411

PURGING INFORMATION

200130	0933	V= 14.9	14.8	9
PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) I N I Sampling Equipment ..... Dedicated (Y) I N I

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump
Purging Material	F	A-Teflon	C-Polypropylene	E-Polyethylene
Sampling Material	F	B-Stainless Steel	D-PVC	
Tubing-Purging	F	A-Teflon	D-Polypropylene	F-Silicon
Tubing-Sampling	F	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene

X- _____ Purging Other (Specify)

X- _____ Sampling Other (Specify)

X- _____ Purging Other (Specify)

X- _____ Sampling Other (Specify)

X- _____ Purging Other (Specify)

X- _____ Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	16.24 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	146.43 (ft)	Pump Placement	40 (ft)

6.27 (STD) PH 1715 uS/cm Specific Conductivity Sample Temp. 20.85 (°C)

Bottle			Analysis	Field Filt. Y/N
Type	Size	Preservative		
P	250mL	HNO_3	Metals	N
P	1L	ICE	Anions	N
P	250mL	HNO_3	Metals CBL641	N
P	1L	ICE	Anion CBL641	N

Sample Appearance: Cloud Odor: None Color: Clear Turbidity: 0.25

Weather Conditions: Overcast North wind 10-15mph 52°

Other: Purge water is clear with no odor. Collected samples once parameters were stable

WELL VOLUME CALCULATION

$V=(D-D_w)(A)(7.48\ gal/ft^3)$ where

V= volume of standing water in well

D= depth to bottom of well below measuring point

D_w=depth to water below measuring point

A= cross sectional area

2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____

If No, Explain _____

Procedure: ELS Ground Water SOP 5-20

Date: 1/30/20

Sampler: CP

Employer: LCRA

LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
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Fax: (512) 730-6021

October 13, 2020

BECKIE LOEVE
FAYETTE POWER PLANT
6549 POWER PLANT RD
MAIL STOP FPP
La Grange, TX 78945
BECKIE.LOEVE@LCRA.ORG

RE: Final Analytical Report Q2037306

Attn: BECKIE LOEVE

Enclosed are the analytical results for sample(s) received by LCRA Environmental Laboratory Services. Results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report. This final report provides results related only to the sample(s) as received for the above referenced work order.

Thank you for selecting ELS for your analytical needs. If you have any questions regarding this report, please contact us at (512) 730-6022. We look forward to assisting you again.

Authorized for release by:

Jason Woods
Account Manager
jason.woods@lcra.org

Enclosures:

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The Solution Lab

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Austin, TX 78744
Phone: (512) 730-6022
Fax: (512) 730-6021

Sample Summary

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received
Q2037306001	CBL - 301I	AQ	E300.0, Anions	9/17/2020 10:48	9/21/2020 08:30
Q2037306001	CBL - 301I	AQ	Field pH SM4500H+B TCEQ VOL 1	9/17/2020 10:48	9/21/2020 08:30
Q2037306001	CBL - 301I	AQ	SM2540C, TDS	9/17/2020 10:48	9/21/2020 08:30
Q2037306001	CBL - 301I	AQ	SW6010B ICP-AES	9/17/2020 10:48	9/21/2020 08:30
Q2037306002	CBL - 302I	AQ	E300.0, Anions	9/17/2020 14:28	9/21/2020 08:30
Q2037306002	CBL - 302I	AQ	Field pH SM4500H+B TCEQ VOL 1	9/17/2020 14:28	9/21/2020 08:30
Q2037306002	CBL - 302I	AQ	SM2540C, TDS	9/17/2020 14:28	9/21/2020 08:30
Q2037306002	CBL - 302I	AQ	SW6010B ICP-AES	9/17/2020 14:28	9/21/2020 08:30
Q2037306003	CBL - 306I	AQ	E300.0, Anions	9/19/2020 17:10	9/21/2020 08:30
Q2037306003	CBL - 306I	AQ	Field pH SM4500H+B TCEQ VOL 1	9/19/2020 17:10	9/21/2020 08:30
Q2037306003	CBL - 306I	AQ	SM2540C, TDS	9/19/2020 17:10	9/21/2020 08:30
Q2037306003	CBL - 306I	AQ	SW6010B ICP-AES	9/19/2020 17:10	9/21/2020 08:30
Q2037306004	CBL - 308I	AQ	E300.0, Anions	9/18/2020 10:33	9/21/2020 08:30
Q2037306004	CBL - 308I	AQ	Field pH SM4500H+B TCEQ VOL 1	9/18/2020 10:33	9/21/2020 08:30
Q2037306004	CBL - 308I	AQ	SM2540C, TDS	9/18/2020 10:33	9/21/2020 08:30
Q2037306004	CBL - 308I	AQ	SW6010B ICP-AES	9/18/2020 10:33	9/21/2020 08:30
Q2037306005	CBL - 340I	AQ	E300.0, Anions	9/18/2020 12:52	9/21/2020 08:30
Q2037306005	CBL - 340I	AQ	Field pH SM4500H+B TCEQ VOL 1	9/18/2020 12:52	9/21/2020 08:30

Report Definitions

MRL - Minimum Reporting Limit
LOD - Limit of Detection
ML - Maximum Limit - Client Specified
MCL - Maximum Contaminant Level
MDL - Method Detection Limit
LOQ - Limit of Quantitation - Client Specified
DF - Dilution Factor
Qual - Qualifier
(S) - Surrogate Spike
QC Qual - red font indicates Result Value outside acceptable range
B- Analyte detected in method blank
S - Spike recovery outside limit
R - RPD outside duplicate precision limit
J - Analyte detected below quantitation limit
RPD - Relative Percent Difference
SL - Spike Recovery Low
SH - Spike Recovery High

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Sample Summary (cont.)

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received
Q2037306005	CBL - 340I	AQ	SM2540C, TDS	9/18/2020 12:52	9/21/2020 08:30
Q2037306005	CBL - 340I	AQ	SW6010B ICP-AES	9/18/2020 12:52	9/21/2020 08:30
Q2037306006	CBL - 341I	AQ	E300.0, Anions	9/17/2020 12:45	9/21/2020 08:30
Q2037306006	CBL - 341I	AQ	Field pH SM4500H+B TCEQ VOL 1	9/17/2020 12:45	9/21/2020 08:30
Q2037306006	CBL - 341I	AQ	SM2540C, TDS	9/17/2020 12:45	9/21/2020 08:30
Q2037306006	CBL - 341I	AQ	SW6010B ICP-AES	9/17/2020 12:45	9/21/2020 08:30
Q2037306007	CBL - 640I	AQ	E300.0, Anions	9/18/2020 12:52	9/21/2020 08:30
Q2037306007	CBL - 640I	AQ	SM2540C, TDS	9/18/2020 12:52	9/21/2020 08:30
Q2037306007	CBL - 640I	AQ	SW6010B ICP-AES	9/18/2020 12:52	9/21/2020 08:30
Q2037306008	FB #1	AQ	E300.0, Anions	9/17/2020 14:21	9/21/2020 08:30
Q2037306008	FB #1	AQ	SM2540C, TDS	9/17/2020 14:21	9/21/2020 08:30
Q2037306008	FB #1	AQ	SW6010B ICP-AES	9/17/2020 14:21	9/21/2020 08:30
Q2037306009	FB # 2	AQ	E300.0, Anions	9/18/2020 09:20	9/21/2020 08:30
Q2037306009	FB # 2	AQ	SM2540C, TDS	9/18/2020 09:20	9/21/2020 08:30
Q2037306009	FB # 2	AQ	SW6010B ICP-AES	9/18/2020 09:20	9/21/2020 08:30
Q2037306010	EQ Blank	AQ	E300.0, Anions	9/18/2020 10:40	9/21/2020 08:30
Q2037306010	EQ Blank	AQ	SM2540C, TDS	9/18/2020 10:40	9/21/2020 08:30
Q2037306010	EQ Blank	AQ	SW6010B ICP-AES	9/18/2020 10:40	9/21/2020 08:30

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MRL - Minimum Reporting Limit
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Project Summary

Sample Analysis Comments

Lab ID: Q2037306001 **Sample ID:** CBL - 301I

- Not Accredited - pH

Lab ID: Q2037306002 **Sample ID:** CBL - 302I

- Not Accredited - pH

Lab ID: Q2037306003 **Sample ID:** CBL - 306I

- Not Accredited - pH

Lab ID: Q2037306004 **Sample ID:** CBL - 308I

- Not Accredited - pH

Lab ID: Q2037306005 **Sample ID:** CBL - 340I

- Not Accredited - pH

Lab ID: Q2037306006 **Sample ID:** CBL - 341I

- Not Accredited - pH

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Analytical Results

Lab ID: Q2037306001 Date Received: 9/21/2020 08:30 Matrix: Aqueous
Sample ID: CBL - 301I Date Collected: 9/17/2020 10:48 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
Field Parameters (Field pH SM4500H+B TCEQ VOL 1)											
pH	6.13	pH				1			09/17/20 10:48	CCP	*
INORGANICS (E300.0, Anions)											
Chloride	2270	mg/L	50.0	20.0		50			09/21/20 18:45	ML	
Fluoride	<0.250	mg/L	0.250	0.100		25			10/09/20 10:27	ML	
Sulfate	350	mg/L	50.0	20.0		50			09/21/20 18:45	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	0.0801	mg/L	0.0500	0.0200		1	09/22/20 09:51	ME	09/24/20 09:08	FM	
Calcium Total	1060	mg/L	4.00	1.40		20	09/22/20 09:51	ME	09/24/20 09:15	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	6340	mg/L	250	250		100			09/23/20 19:36	ERR	

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Analytical Results (cont.)

Lab ID: Q2037306002 Date Received: 9/21/2020 08:30 Matrix: Aqueous
Sample ID: CBL - 302I Date Collected: 9/17/2020 14:28 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
Field Parameters (Field pH SM4500H+B TCEQ VOL 1)											
pH	6.20	pH				1			09/17/20 14:28	CCP	*
INORGANICS (E300.0, Anions)											
Chloride	1410	mg/L	50.0	20.0		50			09/21/20 19:04	ML	
Fluoride	<0.250	mg/L	0.250	0.100		25			10/09/20 10:04	ML	
Sulfate	1280	mg/L	50.0	20.0		50			09/21/20 19:04	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	09/22/20 09:51	ME	09/24/20 09:20	FM	
Calcium Total	853	mg/L	4.00	1.40		20	09/22/20 09:51	ME	09/24/20 09:26	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	4990	mg/L	250	250		100			09/23/20 19:36	ERR	

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Analytical Results (cont.)

Lab ID: Q2037306003 Date Received: 9/21/2020 08:30 Matrix: Aqueous
Sample ID: CBL - 306I Date Collected: 9/19/2020 17:10 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
Field Parameters (Field pH SM4500H+B TCEQ VOL 1)											
pH	7.16	pH				1			09/19/20 17:10	CCP	*
INORGANICS (E300.0, Anions)											
Chloride	420	mg/L	25.0	10.0		25			09/21/20 20:20	ML	
Fluoride	2.72	mg/L	0.250	0.100		25			09/21/20 20:20	ML	
Sulfate	506	mg/L	25.0	10.0		25			09/21/20 20:20	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	0.0773	mg/L	0.0500	0.0200		1	09/22/20 09:51	ME	09/24/20 09:32	FM	
Calcium Total	260	mg/L	0.200	0.0700		1	09/22/20 09:51	ME	09/24/20 09:32	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	1730	mg/L	125	125		50			09/24/20 18:07	ERR	

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Analytical Results (cont.)

Lab ID: Q2037306004 Date Received: 9/21/2020 08:30 Matrix: Aqueous
Sample ID: CBL - 308I Date Collected: 9/18/2020 10:33 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
Field Parameters (Field pH SM4500H+B TCEQ VOL 1)											
pH	6.22	pH				1			09/18/20 10:33	CCP	*
INORGANICS (E300.0, Anions)											
Chloride	2410	mg/L	50.0	20.0		50			09/21/20 19:23	ML	
Fluoride	1.33	mg/L	0.500	0.200		50			09/21/20 19:23	ML	
Sulfate	1310	mg/L	50.0	20.0		50			09/21/20 19:23	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	0.103	mg/L	0.0500	0.0200		1	09/22/20 09:51	ME	09/24/20 09:38	FM	
Calcium Total	838	mg/L	4.00	1.40		20	09/22/20 09:51	ME	09/24/20 09:44	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	6860	mg/L	500	500		200			09/23/20 19:36	ERR	

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Analytical Results (cont.)

Lab ID: Q2037306005 Date Received: 9/21/2020 08:30 Matrix: Aqueous
Sample ID: CBL - 340I Date Collected: 9/18/2020 12:52 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
Field Parameters (Field pH SM4500H+B TCEQ VOL 1)											
pH	6.32	pH				1			09/18/20 12:52	CCP	*
INORGANICS (E300.0, Anions)											
Chloride	2130	mg/L	50.0	20.0		50			09/21/20 19:42	ML	
Fluoride	0.725	mg/L	0.500	0.200		50			09/21/20 19:42	ML	
Sulfate	608	mg/L	50.0	20.0		50			09/21/20 19:42	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	0.146	mg/L	0.0500	0.0200		1	09/22/20 09:51	ME	09/24/20 09:50	FM	
Calcium Total	547	mg/L	4.00	1.40		20	09/22/20 09:51	ME	09/24/20 09:56	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	5430	mg/L	250	250		100			09/23/20 19:36	ERR	

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Analytical Results (cont.)

Lab ID: Q2037306006 | Date Received: 9/21/2020 08:30 | Matrix: Aqueous
Sample ID: CBL - 341I | Date Collected: 9/17/2020 12:45 | Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
Field Parameters (Field pH SM4500H+B TCEQ VOL 1)											
pH	6.14	pH				1			09/17/20 12:45	CCP	*
INORGANICS (E300.0, Anions)											
Chloride	1700	mg/L	25.0	10.0		25			09/21/20 20:39	ML	
Fluoride	<0.250	mg/L	0.250	0.100		25			09/21/20 20:39	ML	
Sulfate	336	mg/L	25.0	10.0		25			09/21/20 20:39	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	0.102	mg/L	0.0500	0.0200		1	09/22/20 09:51	ME	09/24/20 10:02	FM	
Calcium Total	814	mg/L	4.00	1.40		20	09/22/20 09:51	ME	09/24/20 10:08	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	4930	mg/L	250	250		100			09/23/20 19:36	ERR	

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Analytical Results (cont.)

Lab ID: Q2037306007 Date Received: 9/21/2020 08:30 Matrix: Aqueous
Sample ID: CBL - 640I Date Collected: 9/18/2020 12:52 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
INORGANICS (E300.0, Anions)											
Chloride	2260	mg/L	50.0	20.0		50			09/21/20 20:01	ML	
Fluoride	0.895	mg/L	0.500	0.200		50			09/21/20 20:01	ML	
Sulfate	648	mg/L	50.0	20.0		50			09/21/20 20:01	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	0.153	mg/L	0.0500	0.0200		1	09/22/20 09:51	ME	09/24/20 10:13	FM	
Calcium Total	566	mg/L	4.00	1.40		20	09/22/20 09:51	ME	09/24/20 10:19	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	5120	mg/L	250	250		100			09/24/20 18:07	ERR	

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Analytical Results (cont.)

Lab ID: Q2037306008 Date Received: 9/21/2020 08:30 Matrix: Aqueous
Sample ID: FB #1 Date Collected: 9/17/2020 14:21 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
INORGANICS (E300.0, Anions)											
Chloride	<1.00	mg/L	1.00	0.400		1			09/21/20 18:26	ML	
Fluoride	<0.0100	mg/L	0.0100	0.0040		1			09/21/20 18:26	ML	
Sulfate	<1.00	mg/L	1.00	0.400		1			09/21/20 18:26	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	09/22/20 09:51	ME	09/24/20 10:25	FM	
Calcium Total	<0.200	mg/L	0.200	0.0700		1	09/22/20 09:51	ME	09/24/20 10:25	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	26.0	mg/L	25.0	25.0		10			09/23/20 19:36	ERR	

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Analytical Results (cont.)

Lab ID: Q2037306009 Date Received: 9/21/2020 08:30 Matrix: Aqueous
Sample ID: FB # 2 Date Collected: 9/18/2020 09:20 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
INORGANICS (E300.0, Anions)											
Chloride	<1.00	mg/L	1.00	0.400		1			09/21/20 23:15	ML	
Fluoride	<0.0100	mg/L	0.0100	0.0040		1			09/21/20 23:15	ML	
Sulfate	<1.00	mg/L	1.00	0.400		1			09/21/20 23:15	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	09/22/20 09:51	ME	09/24/20 10:31	FM	
Calcium Total	<0.200	mg/L	0.200	0.0700		1	09/22/20 09:51	ME	09/24/20 10:31	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	25.0		10			09/24/20 18:07	ERR	

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Analytical Results (cont.)

Lab ID: Q2037306010 Date Received: 9/21/2020 08:30 Matrix: Aqueous
Sample ID: EQ Blank Date Collected: 9/18/2020 10:40 Sample Type: SAMPLE
Project ID: FPP GWMP CCR

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
INORGANICS (E300.0, Anions)											
Chloride	<1.00	mg/L	1.00	0.400		1			09/21/20 20:58	ML	
Fluoride	<0.0100	mg/L	0.0100	0.0040		1			09/21/20 20:58	ML	
Sulfate	<1.00	mg/L	1.00	0.400		1			09/21/20 20:58	ML	
INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)											
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	09/22/20 09:51	ME	09/24/20 10:36	FM	
Calcium Total	<0.200	mg/L	0.200	0.0700		1	09/22/20 09:51	ME	09/24/20 10:36	FM	
TOTAL DISSOLVED SOLIDS (SM2540C, TDS)											
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	25.0		10			09/24/20 18:07	ERR	

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Quality Control

Preparation Batch: WET / 22880 **Analysis Method:** SM2540C, TDS
Preparation Method: SM2540C, TDS
Associated Lab IDs: Q2037306003, Q2037306007, Q2037306009, Q2037306010

Method Blank (1513080)

Parameter	Results	Units	MRL	LOD	Qualifier
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	25.0	

Lab Control Sample (1513081)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Total Dissolved Solids(TDS)	mg/L	400	347	86.8	80 - 120	

Duplicate (1513082); Original: Q2037307001

Parameter	Original	Duplicate	Units	RPD %	Limit	Qual
Total Dissolved Solids(TDS)	302	309	mg/L	2.29	20	

Matrix Spike (1513083) Original: Q2037307001

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Total Dissolved Solids(TDS)	mg/L	400	676	93.5	70 - 130	

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Phone: (512) 730-6022
Fax: (512) 730-6021

Quality Control (cont.)

Preparation Batch: WET / 22972 **Analysis Method:** E300.0, Anions
Preparation Method: E300.0, Anions
Associated Lab IDs: Q2037306001, Q2037306002

Method Reporting Limit Check (1520816)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Fluoride	mg/L	.01	.0106	106	50 - 150	

Limit of Quantitation Check (1520818)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Fluoride	mg/L	.02	.019	95	70 - 130	

Laboratory Reagent Blank (1520827)

Parameter	Results	Units	MRL	LOD	Qualifier
Fluoride	<0.0100	mg/L	0.0100	0.00400	

Laboratory Fortified Blank (1520828)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Fluoride	mg/L	1	1.05	105	90 - 110	

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Quality Control (cont.)

Preparation Batch: WET / 22850 **Analysis Method:** E300.0, Anions

Preparation Method: E300.0, Anions

Associated Lab IDs: Q2037306001, Q2037306002, Q2037306003, Q2037306004, Q2037306005, Q2037306006, Q2037306007, Q2037306008, Q2037306009, Q2037306010

Laboratory Reagent Blank (1510672)

Parameter	Results	Units	MRL	LOD	Qualifier
Chloride	<1.00	mg/L	1.00	0.400	
Fluoride	<0.0100	mg/L	0.0100	0.00400	
Sulfate	<1.00	mg/L	1.00	0.400	

Method Reporting Limit Check (1510674)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Chloride	mg/L	1	.725	72.5	50 - 150	
Fluoride	mg/L	.01	.0113	113	50 - 150	
Sulfate	mg/L	1	.702	70.2	50 - 150	

Limit of Quantitation Check (1510676)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Chloride	mg/L	5	4.16	83.3	70 - 130	
Fluoride	mg/L	.02	.0184	92	70 - 130	
Sulfate	mg/L	5	4.37	87.5	70 - 130	

Laboratory Fortified Blank (1510675)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Chloride	mg/L	30	30.6	102	90 - 110	
Fluoride	mg/L	1	1.01	101	90 - 110	
Sulfate	mg/L	30	30.4	101	90 - 110	

Laboratory Fortified Matrix (1510681) Original: Q2037306008; Lab Fortified Matrix Duplicate (1510682)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	Qual
Chloride	mg/L	20	19.6	97.8	80 - 120	19.5	97.6	.512	20	
Fluoride	mg/L	1	.982	98.2	80 - 120	.982	98.2	0	20	
Sulfate	mg/L	20	19.2	95.9	80 - 120	19.2	96.2	0	20	

Laboratory Reagent Blank (1510678)

Parameter	Results	Units	MRL	LOD	Qualifier
Chloride	<1.00	mg/L	1.00	0.400	
Fluoride	<0.0100	mg/L	0.0100	0.00400	
Sulfate	<1.00	mg/L	1.00	0.400	

Laboratory Fortified Blank (1510679)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Chloride	mg/L	30	30.6	102	90 - 110	
Fluoride	mg/L	1	1.01	101	90 - 110	
Sulfate	mg/L	30	30.3	101	90 - 110	

Laboratory Fortified Matrix (1510683) Original: Q2037306009; Lab Fortified Matrix Duplicate (1510684)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	Qual
Chloride	mg/L	20	18.9	94.5	80 - 120	19.5	97.3	3.12	20	
Fluoride	mg/L	1	.94	94	80 - 120	.983	98.3	4.47	20	

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Quality Control (cont.)

Preparation Batch: WET / 22850 **Analysis Method:** E300.0, Anions

Preparation Method: E300.0, Anions

Associated Lab IDs: Q2037306001, Q2037306002, Q2037306003, Q2037306004, Q2037306005, Q2037306006, Q2037306007, Q2037306008, Q2037306009, Q2037306010

(continued)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	Qual
Sulfate	mg/L	20	18.5	92.6	80 - 120	19.1	95.7	3.19	20	

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Quality Control (cont.)

Preparation Batch: WET / 22871 **Analysis Method:** SM2540C, TDS
Preparation Method: SM2540C, TDS
Associated Lab IDs: Q2037306001, Q2037306002, Q2037306004, Q2037306005, Q2037306006, Q2037306008

Method Blank (1512271)

Parameter	Results	Units	MRL	LOD	Qualifier
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	25.0	

Lab Control Sample (1512272)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Total Dissolved Solids(TDS)	mg/L	400	369	92.2	80 - 120	

Duplicate (1512273); Original: Q2037194010

Parameter	Original	Duplicate	Units	RPD %	Limit	Qual
Total Dissolved Solids(TDS)	410	402	mg/L	1.97	20	

Matrix Spike (1512274) Original: Q2037194010

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Qual
Total Dissolved Solids(TDS)	mg/L	400	814	101	70 - 130	

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Quality Control (cont.)

Preparation Batch: MEP / 10486 **Analysis Method:** SW6010B ICP-AES

Preparation Method: SW3010A, Metals Prep

Associated Lab IDs: Q2037306001, Q2037306002, Q2037306003, Q2037306004, Q2037306005, Q2037306006, Q2037306007, Q2037306008, Q2037306009, Q2037306010

Lab Control Sample (1510962); Lab Control Sample Duplicate (1510963)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	Qual
Boron Total	mg/L	1	1.06	106	80 - 120	1.03	103	2.87	20	
Calcium Total	mg/L	10	10.3	103	80 - 120	10.2	102	.976	20	

Method Blank (1510964)

Parameter	Results	Units	MRL	LOD	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200	
Calcium Total	<0.200	mg/L	0.200	0.0700	

Matrix Spike (1510965) Original: Q2037306009; Matrix Spike Duplicate (1510966)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	Qual
Boron Total	mg/L	1	1.07	107	75 - 125	1.07	107	0	20	
Calcium Total	mg/L	10	10.4	104	75 - 125	10.6	106	1.9	20	

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Quality Control Cross Reference

MET/8015 - SW6010B ICP-AES

Lab ID	Sample ID	Prep Batch	Prep Method
Q2037306001	CBL - 301I	MEP/10486	SW3010A, Metals Prep
Q2037306002	CBL - 302I	MEP/10486	SW3010A, Metals Prep
Q2037306003	CBL - 306I	MEP/10486	SW3010A, Metals Prep
Q2037306004	CBL - 308I	MEP/10486	SW3010A, Metals Prep
Q2037306005	CBL - 340I	MEP/10486	SW3010A, Metals Prep
Q2037306006	CBL - 341I	MEP/10486	SW3010A, Metals Prep
Q2037306007	CBL - 640I	MEP/10486	SW3010A, Metals Prep
Q2037306008	FB #1	MEP/10486	SW3010A, Metals Prep
Q2037306009	FB # 2	MEP/10486	SW3010A, Metals Prep
Q2037306010	EQ Blank	MEP/10486	SW3010A, Metals Prep

WET/22850 - E300.0, Anions

Lab ID	Sample ID	Prep Batch	Prep Method
Q2037306001	CBL - 301I		
Q2037306002	CBL - 302I		
Q2037306003	CBL - 306I		
Q2037306004	CBL - 308I		
Q2037306005	CBL - 340I		
Q2037306006	CBL - 341I		
Q2037306007	CBL - 640I		
Q2037306008	FB #1		
Q2037306009	FB # 2		
Q2037306010	EQ Blank		

WET/22871 - SM2540C, TDS

Lab ID	Sample ID	Prep Batch	Prep Method
Q2037306001	CBL - 301I		
Q2037306002	CBL - 302I		
Q2037306004	CBL - 308I		
Q2037306005	CBL - 340I		
Q2037306006	CBL - 341I		
Q2037306008	FB #1		

WET/22880 - SM2540C, TDS

Lab ID	Sample ID	Prep Batch	Prep Method
Q2037306003	CBL - 306I		
Q2037306007	CBL - 640I		
Q2037306009	FB # 2		
Q2037306010	EQ Blank		

WET/22972 - E300.0, Anions

Lab ID	Sample ID	Prep Batch	Prep Method
Q2037306001	CBL - 301I		
Q2037306002	CBL - 302I		

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LCRA Environmental Laboratory Services

Request for Analysis Chain-of-Custody Record

LCRA - Environmental Lab
3505 Montopolis Dr.
Austin, TX 78744

Phone: (512) 730-6022 or 1-800-776-5272
Fax: (512) 356-6021
https://els.lcra.org

11246

Q2037306

Lab ID#:	
Client PO:	
Invoice To:	BECKIE LOEVE FAYETTE POWER PLANT 6549 POWER PLANT RD MAIL STOP FPP La Grange, TX 78945

Project:	FPP - CCR - Groundwater	Client:	LCRA
Collector:	Colt Petri	Contact:	Jason Woods
Event#:	1549014 / 11246	Phone:	(512)730-5339

Report To: BECKIE LOEVE
FAYETTE POWER PLANT
6549 POWER PLANT RD
MAIL STOP FPP
La Grange, TX 78945

LAB USE ONLY		Sample ID *	Collected * Date*	Time * HH:MM	Matrix* (AQ = Aqueous, S = Solid, T = Tissue, DW = Drinking Water)	COMPOSITE Y/N	FILTERED Y/N	500PU	250PHNO3	2540-AMTDS	6010-AM	F-pH	300.0AM-28
001	1	CBL - 301I	9/17/20	1048	AQ	N	N	1	1	X	X	X	X
002	2	CBL - 302I	9/17/20	1428	AQ			1	1	X	X	X	X
003	3	CBL - 306I 9/19/20	~~9/18/20~~	~~[illegible]~~ 1710	AQ			1	1	X	X	X	X
004	4	CBL - 308I	9/18/20	1033	AQ			1	1	X	X	X	X
005	5	CBL - 340I	9/18/20	1252	AQ			1	1	X	X	X	X
006	6	CBL - 341I	9/17/20	1245	AQ			1	1	X	X	X	X
007	7	CBL - 640I	9/18/20	1252	AQ			1	1	X	X	X	X
008	8	FB #1	9/17/20	1421	AQ			1	1	X	X		X
009	9	FB # 2	9/18/20	920	AQ			1	1	X	X		X
010	10	EQ Blank	9/18/20	1040	AQ			1	1	X	X		X

Transfers	Relinquished By	Date/Time	Received By	Date/Time	Cooler Temp: #	T#	Obs.	Corr.
1	Colt Petri	9/18/20 1520	[signature]	9/18/20 15:20				
2	Jason Woods	9/21/20 0830	[signature]	9/21/20 0830	1	IR 6	1.5°	1.5°
3					2			

Client Special Instructions:

Lab Use Only:

Q2037306 480605

Note: Relinquishing sample(s) and signing the COC, client agrees to accept and is bound by the ELS Standard Terms and Conditions. All fields with an asterisk (*) are required to be completed.

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Field Information Form

Sample Date 9/17/20 ①
Sample Time: 1048
Sample ID: GBL301T

PURGING INFORMATION

200917	0903	V= 3.1	9	25
PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated I Y I (N) Sampling Equipment ..... Dedicated I (Y) I N I

Purging Device	A	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	A	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	X- Sampling Other (Specify)
Purging Material	E	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	E	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	E	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Specfy)
Tubing-Sampling	E	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	35.22 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	54.1 (ft)	Pump Placement	49 (ft)

6.13 (STD) PH 7930 uS/cm Specific Conductivity Sample Temp. 24.47 (°C)

Bottle			Analysis	Field Filt.Y/N
Type	Size	Preservative		
P	250mL	HNO3	Metals	N
P	250mL	HNO3	Sub Metals	N
P	500mL	ICE	Anions	N
P	500mL	ICE	Sub Anions	N

Sample Appearance: clear Odor: none Color: clear Turbidity: 6.47
Weather Conditions: Partly Cloudy South west wind 5-10mph 85°
Other: Purge water is cloudy with yellow white sediment, clearing after 1gallon.

WELL VOLUME CALCULATION

V=(D-D_w) (A) (7.48 galtft^3) where
V= volume of standing water in well
D= depth to bottom of well below measuring point
D_w=depth to water below measuring point
A= cross-sectional area
2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____
If No, Explain _____

Procedure: ELS Groundwater SOP 5-7D
Date: 9/17/20
Sampler: CP/ET
Employer: LCRA

(2)

LCRA ENERGY • WATER • COMMUNITY SERVICES

Field Information Form

Sample Date: 9/17/20

Sample Time: 1245

Sample ID: CBL341E

PURGING INFORMATION

200917	1123	V= 4.8	14	16
PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) N I Sampling Equipment ..... Dedicated (Y) I N I

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	F	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	F	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	F	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Specify)
Tubing-Sampling	F	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	17.10 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	46.43 (ft)	Pump Placement	42 (ft)

6.14 (STD) PH 6073 uS/cm Specific Conductivity Sample Temp. 22.94 (°C)

Bottle			Analysis	Field Filt. Y/N
Type	Size	Preservative		
P	250mL	HNO_3	Metals	N
P	250mL	HNO_3	Sub metals	N
P	500mL	Metal ICE	Anions	N
P	500mL	ICE	Sub Anions	N

Sample Appearance: Clear Odor: none Color: clear Turbidity: 0.43

Weather Conditions: Partly Cloudy South west wind 5-10mph 90°

Other: Purge water is clear with no odor.

WELL VOLUME CALCULATION

$V=(D-D_w)(A)(7.48\ gal/ft^3)$ where

V= volume of standing water in well

D= depth to bottom of well below measuring point

D_w=depth to water below measuring point

A= cross sectional area

(2" dia. A= 0.0218) 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____

If No, Explain _____

Procedure: ELS Ground water SOP 5-70

Date: 9/17/20

Sampler: CP/ET

Employer: LCRA

(3)

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Field Information Form

Sample Date: 9/17/20

Sample Time: 1428

Sample ID: CBL302I

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	V= WATER VOL IN CASING (Gallons)	3 X WELL VOL IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
200917	1323	24	7	12

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) I N I Sampling Equipment ..... Dedicated (Y) I N I

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	F	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	F	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	F	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Specify)
Tubing-Sampling	F	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	12.55 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	27.11 (ft)	Pump Placement	24 (ft)

6.20 (STD) PH 6507 uS/cm Specific Conductivity Sample Temp. 22.82 (°C)

Bottle			Analysis	Field Filt. Y/N
Type	Size	Preservative		
P	2x250mL	HNO_3	Metals + Metals Sub	N
P	2x500mL	ICE	Anions + Anions Sub	N
P	2x250mL	HNO_3	Metals Field Blank	N
P	2x500mL	ICE	Anions Field Blank	N

Sample Appearance: Clear Odor: none Color: clear Turbidity: 1.14

Weather Conditions: Partly Cloudy South west wind 5-10mph 95°

Other: Purge water is clean with no odor

WELL VOLUME CALCULATION

$V=(D-D_w)(A)(7.48\ gal/ft^3)$ where

V= volume of standing water in well

D= depth to bottom of well below measuring point

D_w=depth to water below measuring point

A= cross sectional area

(2" dia. A= 0.0218) 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____

If No, Explain _____

Procedure: ELS Ground water SOP 5-7D

Date: 9/17/20

Sampler: CP/ET

Employer: LCRA

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Field Information Form

Sample Date: 9/18/20

Sample Time: 1033

Sample ID: CBL3618T

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
200918	0929	V= 1.16	4.9	8

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) I N I Sampling Equipment ..... Dedicated (Y) I N I

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- _____ Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- _____ Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	E	A-Teflon	C-Polypropylene	E-Polyethylene	X- _____ Purging Other (Specify)
Sampling Material	E	B-Stainless Steel	D-PVC		X- _____ Sampling Other (Specify)
Tubing-Purging	E	A-Teflon	D-Polypropylene	F-Silicon	X- _____ Purging Other (Specfy)
Tubing-Sampling	E	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- _____ Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	25.25 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	35.25 (ft)	Pump Placement	32 (ft)

6.22 (STD) PH 9365 uS/cm Specific Conductivity Sample Temp. 22.6 (°C)

Bottle			Analysis	Field Filt.Y/N
Type	Size	Preservative		
P	2x250mL	HNO_3	Metals + Sub metals	N
P	2x500mL	ICE	Anions + Sub Anions	N
P	2x250mL	HNO_3	EQ Blank metals + Sub EQ Blank metals	N
P	2x500mL	ICE	EQ Blank Anions + Sub EQ Blank Anions	N

Sample Appearance: Clear Odor: non Color: Clear Turbidity: 0.55

Weather Conditions: Clear with North wind 5-10mph 85°

Other: Purge water is clear with no odor

WELL VOLUME CALCULATION

$V=(D-D_w)(A)(7.48\ gal/ft^3)$ where

V= volume of standing water in well

D= depth to bottom of well below measuring point

D_w=depth to water below measuring point

A= cross sectional area

2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____

If No, Explain _____

Procedure: ELS Ground water SOP 5-20

Date: 9/18/20

Sampler: CP

Employer: LCRA

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Field Information Form

Sample Date: 9/18/20
Sample Time: 1252
Sample ID: CBL3410I

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	V= WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
200918	1106	2.3	7	12

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) I N I Sampling Equipment ..... Dedicated (Y) I N I

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	F	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	F	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	F	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Specify)
Tubing-Sampling	F	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	25.91 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	40.14 (ft)	Pump Placement	36 (ft)

6.32 (STD) PH 797.6 uS/cm Specific Conductivity Sample Temp. 24.29 (°C)

Bottle			Analysis	Field Filt. Y/N
Type	Size	Preservative		
P	2x250mL	HNO_3	Metals + Sub Metals	N
P	2x500mL	ICE	Anions + Sub Anions	N
P	2x250mL	HNO_3	Metals Dup + Metals Sub Dup	N
P	2x500mL	ICE	Anions Dup + Anions Sub Dup	N

Sample Appearance: Clear Odor: none Color: Clear Turbidity: 0.22
Weather Conditions: Clear, North wind 10-15mph 89°
Other: Purge water is clear with no odor.

WELL VOLUME CALCULATION

$V=(D-D_w)(A)(7.48\ gal/ft^3)$ where
V= volume of standing water in well
D= depth to bottom of well below measuring point
D_w=depth to water below measuring point
A= cross sectional area
2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____
If No, Explain _____

Procedure: ELS Groundwater SOP 5-7D
Date: 9/18/20
Sampler: CP
Employer: LCRA

LCRA
ENERGY • WATER • COMMUNITY SERVICES

Field Information Form

Sample Date: 9/19/20
Sample Time: 1710
Sample ID: CBL306I

PURGING INFORMATION

20091 8	0850	V= 02	0.6	0.6
PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) I N I Sampling Equipment ..... Dedicated (Y) I N I

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	F	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	F	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	F	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Specify)
Tubing-Sampling	F	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	13.45 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	14.8 (ft)	Pump Placement	14 (ft)

7.16 (STD) PH 3020 uS/cm Specific Conductivity Sample Temp. 25.72 (°C)

Bottle			Analysis	Field Filt. Y/N
Type	Size	Preservative		
P	250mL	HNO_3	Metals	N
P	250mL	HNO_3	Sub Metals	N
P	500mL	ICE	Anions	N
P	500mL	ICE	Sub Anions	N

Sample Appearance: Clear Odor: none Color: Clear Turbidity: 14.5
Weather Conditions: Clear North wind 0-5mph 80°
Other: Purge water is clear with no odor. Well Purged Dry after less than one gallon. Pond next To well has been pumped Dry. Only Could Collect 2 liters water well went Dry

WELL VOLUME CALCULATION

$V=(D-D_w)(A)(7.48\ gal/ft^3)$ where
V= volume of standing water in well
D= depth to bottom of well below measuring point
D_w=depth to water below measuring point
A= cross sectional area
2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____
If No, Explain _____

Procedure: ELS Ground water SOP 5-7P
Date: 9/18/20
Sampler: CP
Employer: LCRA