



# 2021 Annual Groundwater Monitoring and Corrective Action Report - Revision 1

*Oak Grove Steam Electric Station FGD Ponds - Robertson County, Texas*

Prepared for:

**Oak Grove Management Company LLC**

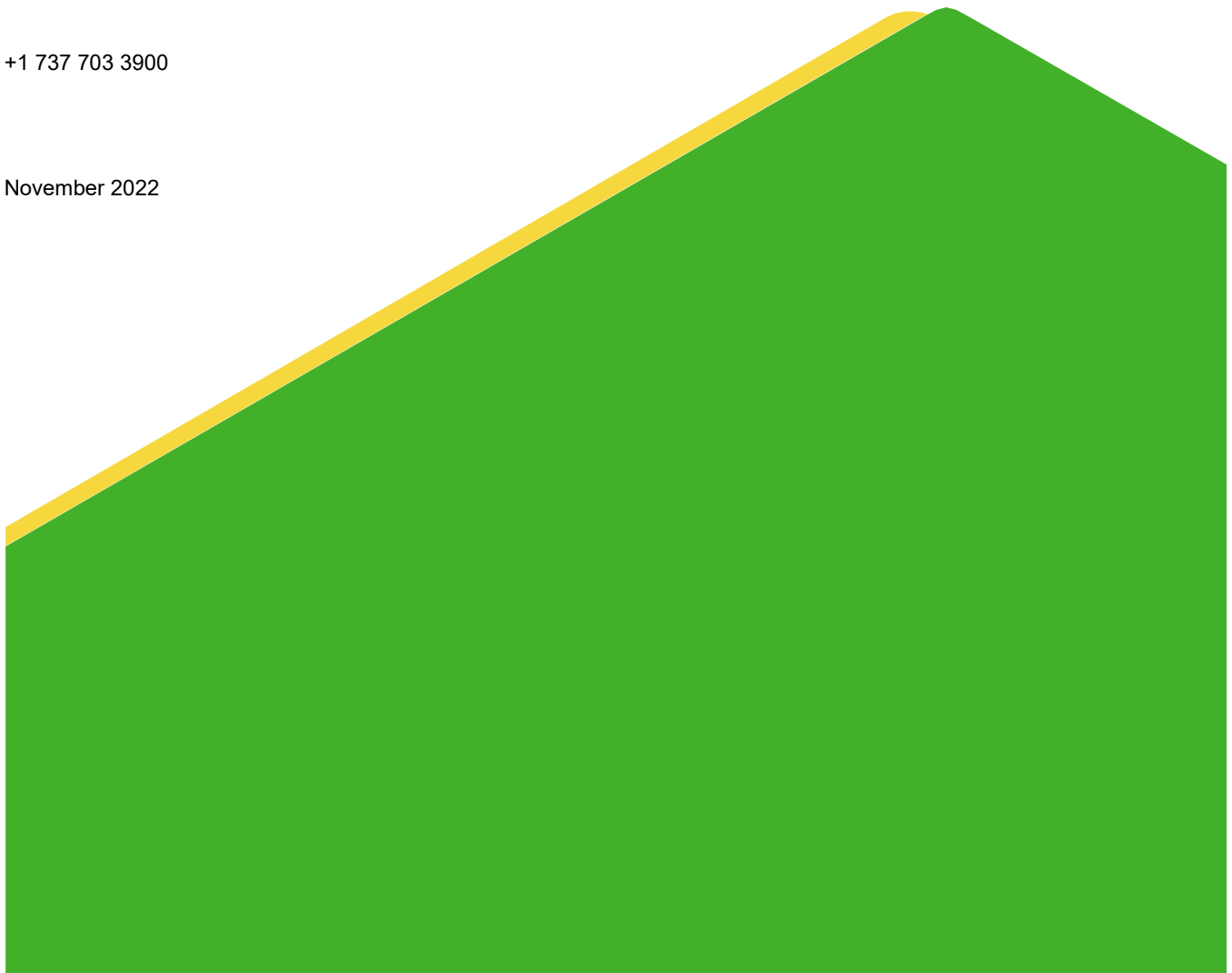
Submitted by:

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November 2022



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## **ACRONYMS AND ABBREVIATIONS**

ASD	Alternate Source Demonstration
CCR	Coal Combustion Residuals
C.F.R.	Code of Federal Regulations
GWPS	Groundwater Protection Standard
MCL	Maximum Concentration Level
mg/L	Milligrams per Liter
MNA	Monitored Natural Attenuation
NA	Not Applicable
OGSES	Oak Grove Steam Electric Station
SSI	Statistically Significant Increase
SSL	Statistically Significant Level
T.A.C.	Texas Administrative Code
USEPA	United States Environmental Protection Agency

## DOCUMENT REVISION RECORD

Issue No.	Date	Details of Revisions
Revision 0	January 31, 2022	Original Document
Revision 1	November 2022	Added laboratory analytical reports, documentation on statistical evaluation of Appendix IV groundwater data, groundwater potentiometric surface maps, and professional seals to figures where applicable

## EXECUTIVE SUMMARY

Golder Associates USA Inc. (Golder), Member of WSP, has prepared this report on behalf of Oak Grove Management Company LLC (Luminant) to satisfy the 2021 annual groundwater monitoring and corrective action reporting requirements of 40 C.F.R. Part 257 and 30 T.A.C. Chapter 352 for the FGD Ponds at the Oak Grove Steam Electric Station (OGSES) in Robertson County, Texas. The CCR units and CCR monitoring well network are shown on Figure 1.

At the beginning and end of the 2021 reporting period, the CCR units were operating under an Assessment Monitoring Program as described in §257.95. The Assessment Monitoring Program was established on July 16, 2018. Concentrations of Appendix IV constituents at statistically significant levels (SSLs) above groundwater protection standards (GWPSs) were initially identified in January 2019 for cobalt and lithium. Notification of these SSLs was placed in the operating record on February 6, 2019 and was subsequently placed on the public website in accordance with §257.107(d). An Assessment of Corrective Measures (ACM) was initiated on April 8, 2019 pursuant to §257.95(g) and was completed on September 5, 2019. A public meeting was held on October 29, 2019 at the Pidgeon Center in Franklin, Texas to discuss the results of the ACM in accordance with § 257.96(e). The ACM evaluated various source control and groundwater response technologies to address the cobalt and lithium SSLs. An Alternate Source Demonstration (ASD) was completed in accordance with § 257.95(g)(3)(ii) in October 2020 (Golder 2020), which indicated that a source other than the FGD Ponds caused the SSLs for lithium. The ACM was updated in May 2021 (Golder 2021a) to remove lithium from the list of constituents evaluated in the ACM. In addition, updated statistical analyses for cobalt that incorporated assessment monitoring data collected from 2019 to 2021 indicate that cobalt is no longer present at SSLs above the GWPS; however, for the purposes of the ACM and remedy selection, Luminant continued to evaluate potential groundwater remedies for cobalt based on the 2018 SSL to address potential cobalt SSLs that may occur in the future.

A Remedy Selection Report (Golder 2022) was completed in January 2022 in accordance with the requirements of §257.97. Monitored natural attenuation (MNA) with source control measures was selected as the remedy to address the Appendix IV constituents observed at SSLs. A Site-specific feasibility study to evaluate MNA as a potential groundwater remedy for the Appendix IV constituents observed at SSLs was performed in accordance with guidance and best practices promulgated by the USEPA (USEPA 2007a and 2007b) and Interstate Technology and Regulatory Council (ITRC 2010). Summary reports documenting the MNA feasibility study were included as attachments to the Remedy Selection Report.

## 1.0 INTRODUCTION

The CCR Rule (40 C.F.R. 257 Subpart D - *Standards for the Receipt of Coal Combustion Residuals in Landfills and Surface Impoundments*) has been promulgated by the United States Environmental Protection Agency (USEPA) to regulate the management and disposal of CCRs as solid waste under Resource Conservation and Recovery Act (RCRA) Subtitle D. TCEQ has adopted portions of the federal CCR rule at 30 TAC Chapter 352 (Texas CCR Rule), and USEPA published its final approval of the Texas CCR rule on June 28, 2021. See 86 Fed. Reg. 33,892 (June 28, 2021). The Texas CCR Rule became effective on July 28, 2021, and it adopts and incorporates by reference the requirements for the annual groundwater monitoring report located at § 257.90. See 30 TAC § 352.901. It further adopts and incorporates by reference the Federal CCR Program requirements for detection and assessment monitoring in 30 TAC §352.941 and 30 TAC §352.951, respectively. Pursuant to 30 TAC § 352.902, this report will be submitted to TCEQ for review no later than 30 days after the report has been placed in the facility's operating record. For existing CCR landfills and surface impoundments, the CCR Rule requires that the owner or operator prepare an annual groundwater monitoring and corrective action report to document the status of the groundwater monitoring and corrective action program for the CCR unit for the previous calendar year. Per §257.90(e) of the CCR Rule, the report should contain the following information, to the extent available:

- (1) A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;
- (2) Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;
- (3) In addition to all the monitoring data obtained under §§ 257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;
- (4) A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels); and
- (5) Other information required to be included in the annual report as specified in §§ 257.90 through 257.98.
- (6) A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:
  - (i) At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95;

- (ii) At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95;
- (iii) If it was determined that there was a statistically significant increase over background for one or more constituents listed in appendix III to this part pursuant to § 257.94(e):
  - (A) Identify those constituents listed in appendix III to this part and the names of the monitoring wells associated with such an increase; and
  - (B) Provide the date when the assessment monitoring program was initiated for the CCR unit.
- (iv) If it was determined that there was a SSL above the groundwater protection standard for one or more constituents listed in appendix IV to this part pursuant to § 257.95(g) include all of the following:
  - (A) Identify those constituents listed in appendix IV to this part and the names of the monitoring wells associated with such an increase;
  - (B) Provide the date when the assessment of corrective measures was initiated for the CCR unit;
  - (C) Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and
  - (D) Provide the date when the assessment of corrective measures was completed for the CCR unit.
- (v) Whether a remedy was selected pursuant to § 257.97 during the current annual reporting period, and if so, the date of remedy selection; and
- (vi) Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.

## 2.0 MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

Golder collected the initial Detection Monitoring Program groundwater samples from the FGD Ponds CCR monitoring well network in October 2017. The evaluation of those data was completed in 2018 using procedures described in the Statistical Analysis Plan (PBW, 2017) to identify statistically significant increases (SSIs) of Appendix III parameters over background concentrations. The Detection Monitoring Program sampling dates and parameters are summarized in the following table:

**Detection Monitoring Program Summary**

Sampling Dates	Parameters	SSIs	Assessment Monitoring Program Established
October 3, 2017	Appendix III	Yes	July 16, 2018

Alternate source evaluations were inconclusive for one or more of the SSIs. Consequently, an Assessment Monitoring Program was initiated and established for the FGD Pond CCR units in 2018 in accordance with §257.94(e)(2). Golder collected the initial Assessment Monitoring Program groundwater samples in June 2018. Subsequent Assessment Monitoring Program sampling events have been conducted on a semi-annual basis, as required by the CCR Rule.

The statistical background prediction limits used to assess Appendix III data and the GWPSs used to assess Appendix IV data are summarized in Tables 1 and 2, respectively. Appendix III and Appendix IV analytical data are summarized in Tables 3 and 4, respectively, and the laboratory analytical reports are provided in Attachment 1. The initial assessment monitoring event was conducted in June 2018 and a subsequent semi-annual assessment monitoring event was conducted in September 2018 in accordance with §257.95(a) and §257.95(d). Using the Appendix IV data collected during the assessment monitoring period through September 2018, SSLs above GWPSs were initially identified in January 2019 for cobalt and lithium. Notification of these SSLs was placed in the operating record on February 6, 2019 and was subsequently placed on the public website in accordance with §257.107(d). An ACM was initiated on April 8, 2019 pursuant to §257.95(g). A justification letter for a 60-day extension due to site-specific circumstances that delayed work on the ACM was certified on July 3, 2019 in accordance with §257.96(a). A copy of the extension justification letter was provided in the 2019 Annual Groundwater Monitoring and Corrective Action Report. The ACM was completed in September 2019 (Golder 2019) for the parameters detected at SSLs above GWPSs during the 2018 Assessment Monitoring period (cobalt and lithium), pursuant to §257.96.

Additional semi-annual Assessment Monitoring events were conducted in 2019 through 2021. Statistical analysis of the 2019 through 2021 data was performed in accordance with the USEPA Statistical Analysis of Groundwater



Monitoring Data at RCRA Facilities-Unified Guidance (USEPA 2009). The statistical analysis included an evaluation of confidence intervals for each of the Appendix IV parameter data sets to evaluate whether constituent concentrations were present at concentrations above GWPSs. There were no Appendix IV parameters identified at SSLs above GWPSs during the 2019 Assessment Monitoring period; however, an SSL for lithium was identified at one well (FGD-5) during the 2020 and 2021 sampling events. An Alternate Source Demonstration (ASD) was completed in October 2020, which indicated that a source other than the CCR units caused the lithium SSLs at FGD-5. A copy of the ASD is presented in Attachment 2 of this report as required by §257.94(e)(2). Assessment monitoring data collected from 2019 to 2021 indicate that cobalt is no longer present at SSLs above the GWPS. Graphical representations of the statistical analysis performed on the 2021 data are provided in Attachment 3. The following table provides a summary of the Assessment Monitoring Program sampling events:

#### Assessment Monitoring Program Summary

Sampling Dates	Analytical Data Receipt Date	Parameters Collected	SSL(s)	SSL(s) Determination Date	Alternate Source Demonstration	Corrective Measures Assessment Initiated
June 4-5, 2018	July 11, 2018	Appendix III Appendix IV	NA	NA	NA	NA
September 5-6, 2018	October 11, 2018	Appendix III Appendix IV	Co and Li	January 7, 2019	No	April 8, 2019
May 16, 2019	June 5, 2019	Appendix III Appendix IV	None	NA	NA	NA
August 19, 2019	September 25, 2019	Appendix III Appendix IV	None	NA	NA	NA
May 6-11, 2020	June 12, 2020	Appendix III Appendix IV	Li	July 22, 2020	October 20, 2020	NA
September 10-15, 2020	October 12, 2020	Appendix III Appendix IV	Li	December 7, 2020	Previous ASD applies	NA
June 16-17, 2021	July 22, 2021	Appendix III Appendix IV	Li	July 22, 2021	Previous ASD applies	NA
October 11-12, 2021	November 19, 2021	Appendix III Appendix IV	Li	January 10, 2022	Previous ASD applies	NA

Notes:

NA: Not Applicable

### 3.0 KEY ACTIONS COMPLETED IN 2021

Assessment Monitoring Program groundwater monitoring events were conducted in June and October 2021. The number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and the analytical results for the groundwater samples are summarized in Table 3 (Appendix III parameters) and Table 4 (Appendix IV parameters). A map showing the CCR units and monitoring wells is provided as Figure 1. No wells were installed or decommissioned in 2021.

Water elevations measured in the CCR wells during the semi-annual groundwater sampling events were used to develop groundwater potentiometric surface maps, which are presented in Attachment 4. The inferred direction of groundwater flow was generally to the northeast during both semi-annual ground sampling events in 2021.

Lithium SSLs were observed in samples from monitoring well FGD-5 in 2021 like in previous years. An ASD has been completed which indicates that a source other than the CCR units is responsible for the lithium SSLs at FGD-5. A copy of the ASD is presented in Attachment 2.

Updated statistical analyses for cobalt that incorporated assessment monitoring data collected through 2021 indicate that cobalt is no longer present at SSLs above the GWPS; however, for the purposes of the ACM and remedy selection, Luminant continued to evaluate potential groundwater remedies for cobalt based on the 2018 SSL to address potential cobalt SSLs that may occur in the future. A Remedy Selection Report (Golder 2022) was completed in January 2022 in accordance with the requirements of §257.97. MNA with source control measures was selected as the remedy to address the Appendix IV constituents observed at SSLs. A Site-specific feasibility study to evaluate MNA as a potential groundwater remedy for the Appendix IV constituents observed at SSLs was performed in accordance with guidance and best practices promulgated by the USEPA (USEPA 2007a and 2007b) and ITRC (ITRC 2010). Summary reports documenting the MNA feasibility study were included as attachments to the Remedy Selection Report.

As previously noted, cobalt is not currently present at SSLs at the FGD Ponds; therefore, implementation of an MNA program or other remedy option is not currently necessary. Cobalt concentrations in groundwater will continue to be monitored in accordance with the CCR rule to confirm that cobalt concentrations remain below the GWPS. An MNA program will be implemented to address cobalt SSLs or SSLs for other constituents if they are identified in future.

## **4.0 PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS**

No problems were encountered with the CCR groundwater monitoring program in 2021.

## 5.0 KEY ACTIVITIES PLANNED FOR 2022

The following key activities are planned for 2022:

- Luminant submitted a registration application to TCEQ under the Texas CCR Rule for the Oak Grove FGD Ponds on January 24, 2022.
- Continue the Assessment Monitoring Program in accordance with applicable provisions of §257.95 and 30 T.A.C. §352.951.

## 6.0 REFERENCES


- Golder, 2019. CCR Assessment of Corrective Measures, Oak Grove Steam Electric Station – FGD Ponds, Robertson County, Texas. September.
- Golder, 2021. CCR Assessment of Corrective Measures, Revision 1, Oak Grove Steam Electric Station – FGD Ponds, Robertson County, Texas. May.
- Golder, 2022. Remedy Selection Report, Oak Grove Steam Electric Station – FGD Ponds, Robertson County, Texas. January 18.
- Interstate Technology and Regulatory Council (ITRC), 2010. A Decision Framework for Applying Monitored Natural Attenuation Processes to Metals and Radionuclides in Groundwater. Technical/Regulatory Guidance, December 2010.
- Pastor, Behling & Wheeler, LLC, 2017. Coal Combustion Residual Rule Statistical Analysis Plan, Oak Grove Steam Electric Station, FGD Pond Area, Robertson County, Texas.
- USEPA, 2007a. Monitored Natural Attenuation of Inorganic Contaminants in Ground Water. Volume 1. Technical Basis for Assessment. EPA/600/R-07/139.
- USEPA, 2007b. Monitored Natural Attenuation of Inorganic Contaminants in Ground Water. Volume 2. Assessment for Non-Radionuclides Including Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Nitrate, Perchlorate, and Selenium. EPA/600/R-07/140.
- USEPA, 2009. Unified Guidance Document: Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, EPA 530-R-09-007, March 2009.

## Signature Page

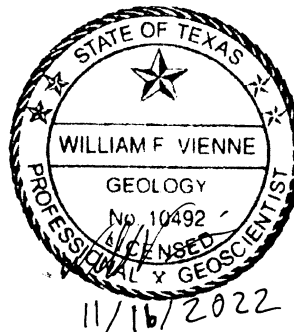
### Golder Associates Inc.



Patrick J. Behling  
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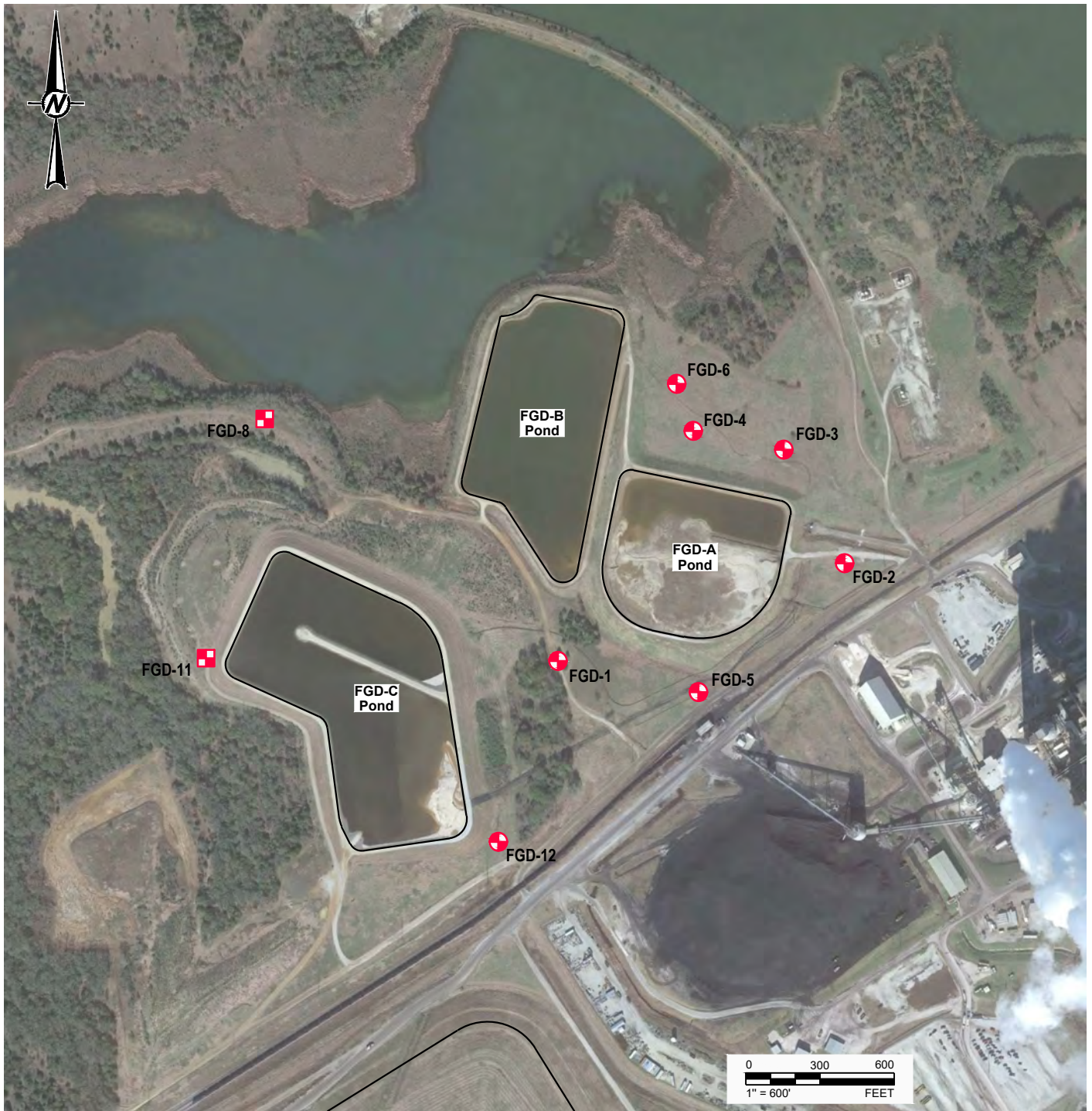


William F. Vienne  
Senior Hydrogeologist





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## FIGURES



**LEGEND**

-  DOWNGRADIENT CCR MONITORING WELL
-  BACKGROUND CCR MONITORING WELL

CLIENT  
**LUMINANT**

PROJECT  
**OAK GROVE STEAM ELECTRIC STATION  
ROBERTSON COUNTY, TEXAS**

TITLE  
**DETAILED SITE PLAN - FGD POND AREA**

CONSULTANT	YYYY-MM-DD	2020-01-23
	DESIGNED	AJD
	PREPARED	AJD
	REVIEWED	WVW
	APPROVED	WVW

**REFERENCE(S)**  
BASE MAP TAKEN FROM GOOGLE EARTH, IMAGERY DATED 12/9/18.

PROJECT NO.  
**19122262**

REV.  
**0**

FIGURE  
**1**



## TABLES

**Table 1**  
**Statistical Background Values**  
**OGSES FGD Ponds**

<b>Parameter</b>	<b>Statistical Background Value</b>
Boron (mg/L)	0.141
Calcium (mg/L)	471
Chloride (mg/L)	6,340
Fluoride (mg/L)	0.781
field pH (s.u.)	6.10 7.23
Sulfate (mg/L)	409
Total Dissolved Solids (mg/L)	13,000

**Table 2**  
**Groundwater Protection Standards**  
**OGSES FGD Ponds**

<b>Parameter</b>	<b>Groundwater Protection Standard</b>
Antimony (mg/L)	0.006
Arsenic (mg/L)	0.0146
Barium (mg/L)	2
Beryllium (mg/L)	0.004
Cadmium (mg/L)	0.005
Chromium (mg/L)	0.1
Cobalt (mg/L)	0.0158
Fluoride (mg/L)	4
Lead (mg/L)	0.015
Lithium (mg/L)	0.149
Mercury (mg/L)	0.002
Molybdenum (mg/L)	0.1
Selenium (mg/L)	0.05
Thallium (mg/L)	0.002
Radium 226+228 (pCi/L)	11.2

**TABLE 3**  
**APPENDIX III ANALYTICAL DATA**  
**OGSES FGD PONDS**

Sample Location	Date Sampled	B (mg/L)	Ca (mg/L)	Cl (mg/L)	F (mg/L)	pH (s.u.)	SO <sub>4</sub> (mg/L)	TDS (mg/L)
<b>Upgradient Wells</b>								
FGD-8	11/04/15	0.0843	69.2	271	0.173 J	6.92	24.4	803
	12/17/15	0.0791	65.2	248	0.361 J	6.67	50.1	721
	02/09/16	0.0721	296	1,910	0.331 J	6.14	110	5,100
	04/14/16	0.0805	323	1,920	0.218	6.39	68	6,210
	06/14/16	0.0869	336	2,070	<0.100	6.57	476	6,130
	08/24/16	0.119	21.1	107	0.186 J	6.92	41.6	400
	10/05/16	0.0794	394	1,890	0.413	6.68	184	4,470
	12/23/16	0.069	340	1,990	<0.100	6.83	144	4,330
	10/03/17	0.1	378	1,140	<0.100	6.83	9.72	2,550
	06/05/18	0.0826	409	2,180	<0.100	6.12	538	4,450
	09/06/18	0.635	395	2,330	0.362 J	5.93	670	4,910
	05/16/19	0.0687	314	2,040	<0.100	6.67	173	3,970
	08/19/19	0.0756	427	2,260	<0.100	6.89	452	4,600
	05/11/20	0.129	381	2,240	<0.100	6.69	188	4,090
	09/09/20	0.101	329	2,220	<0.100	6.87	58.9	3,890
06/17/21	0.0816	353	2,230	<0.100	6.82	310	4,870	
10/11/21	0.0779	362	2,040	<0.100	6.49	63.9	3,790	
FGD-11	11/04/15	0.048	9.57	15	<0.100	6.58	9.96	145
	12/17/15	0.0544	10.7	9.85	0.13 J	6.74	11	115
	02/09/16	0.0912	71.5	438	0.548	6.9	37.5	1,160
	04/14/16	0.0963	72.5	393	0.671	6.34	32.9	1,120
	06/15/16	0.0979	55.1	356	0.331 J	6.57	32.4	900
	08/25/16	0.103	154	759	0.128 J	6.76	68.8	1,960
	10/04/16	0.127	181	894	0.579	6.78	71.8	2,130
	12/22/16	0.125	201	1,150	0.127 J	6.85	89.5	2,870
	10/03/17	0.155	254	1,830	<0.100	6.85	142	4,010
	06/05/18	0.162	170	954	0.836	6.28	82.2	2,240
	09/06/18	0.149	194	1,140	1.09	6.43	93.9	2,770
	05/16/19	0.108	85	566	0.38 J	6.83	50.9	1,350
	08/19/19	0.12	92.5	535	0.63	6.71	44.7	1,430
	05/11/20	0.166	103	560	0.365 J	6.74	43.3	1,300
	09/09/20	0.242	101	573	0.575	6.79	44.0	1,320
06/17/21	0.116	90.4	440	0.471	6.72	33.8	1,160	
10/11/21	0.124	81.8	376	0.453	6.73	35.2	1,040	
<b>Downgradient Wells</b>								
FGD-1	11/03/15	0.065	11	36.4	0.363 J	6.31	32	245
	12/17/15	0.0706	10.6	37.7	0.384 J	6.33	33.3	224
	02/09/16	0.0539	11.4	38.9	0.383 J	6.81	36.3	235
	04/14/16	0.0867	12.2	38.6	0.229	6.24	35.7	77
	06/15/16	0.066	12	39	0.302 J	6.75	41.2	258
	08/24/16	0.0601	13.5	42.1	0.225 J	6.58	46.6	193
	10/05/16	0.0629	14.2	38.7	0.483	6.78	44.2	266
	12/22/16	0.058	13.7	42.6	0.326 J	5.79	49.3	271
	10/03/17	0.0973	18.5	40	0.276 J	6.91	64.7	239
	06/05/18	0.0686	18.3	44.7	0.206 J	5.58	68.6	277
	09/06/18	0.0738	19.9	52.5	0.228 J	5.78	80.8	281
	05/15/19	0.0803	19.5	62.4	0.362 J	6.63	78.7	320
	08/19/19	0.0864	26.1	69.3	0.486	6.49	80.9	328
	05/11/20	0.121	37.8	146	0.231 J	6.95	79.5	448
	09/09/20	0.0871	36.0	320	0.215 J	6.73	158	875
	06/17/21	0.0843	35.7	299	0.356 J	6.89	140	935
	6/17/21 DUP	0.0808	35.7	304	0.352 J	6.79	143	960
10/12/21	0.103	31.9	244	0.295 J	6.72	133	897	

**TABLE 3**  
**APPENDIX III ANALYTICAL DATA**  
**OGSES FGD PONDS**

Sample Location	Date Sampled	B (mg/L)	Ca (mg/L)	Cl (mg/L)	F (mg/L)	pH (s.u.)	SO <sub>4</sub> (mg/L)	TDS (mg/L)
FGD-2	11/03/15	0.1	77.1	460	0.224 J	6.47	147	1,370
	12/17/15	0.0636	24.8	133	0.347 J	6.77	53.2	515
	02/09/16	0.0885	44.6	250	0.315 J	7.06	98.9	750
	04/14/16	0.136	53.8	285	0.192	6.54	103	924
	06/14/16	0.0729	26.8	138	0.122 J	6.73	62.2	564
	08/24/16	0.219	79.9	421	<0.100	6.75	158	1,060
	10/05/16	0.182	58.3	310	0.243 J	6.76	114	910
	12/22/16	0.251	95.3	570	<0.100	6.70	174	1,450
	10/03/17	0.362	151	813	<0.100	6.81	222	1,920
	06/05/18	0.352	91.6	465	0.185 J	6.1	148	1,190
	09/06/18	0.35	154	902	0.32 J	6.11	196	1,860
	05/16/19	0.105	38.9	260	0.383 J	6.86	70.7	729
	08/19/19	0.192	167	863	0.413	6.88	218	1,890
	05/11/20	0.605	217	1,150	<0.100	6.61	286	2,300
	09/09/20	0.567	193	1,030	<0.100	6.57	301	2,150
	06/17/21	0.195	76.4	422	<0.100	6.84	133	1,030
10/12/21	0.473	245	950	<0.100	6.57	467	2,630	
10/21/21 DUP	0.492	249	921	<0.100	6.57	477	2,460	
FGD-3	11/03/15	0.343	108	439	0.505	6.51	479	1,950
	12/17/15	0.255	109	399	<0.100	6.64	478	1,640
	02/09/16	0.214	91.4	326	0.74	6.76	474	1,610
	04/14/16	0.231	98.1	314	0.69	6.59	396	1,980
	06/14/16	0.207	80.1	267	0.173 J	6.59	338	1,440
	08/24/16	0.112	90.4	279	0.463	6.89	357	1,490
	10/05/16	0.212	88.1	264	0.723	6.85	324	1,370
	12/22/16	0.196	82.6	290	1.32	6.1	392	1,490
	10/03/17	0.244	97	245	0.457	6.75	317	1,190
	06/05/18	0.199	82.7	234	1.06	5.99	319	1,260
	09/05/18	0.0379	73.9	227	1.03	6.21	306	1,260
	05/16/19	0.117	60.1	117	0.776	6.73	182	1,100
	08/19/19	0.134	51.1	84.9	0.874	6.72	150	882
	05/06/20	0.152	42.3	70.2	0.8	6.62	129	777
	09/09/20	0.130	36.8	58.5	0.772	6.82	122	709
	06/16/21	0.121	39	64.1	1.2	6.87	130	741
10/11/21	0.0956	35.3	42.5	1.08	6.69	105	671	
FGD-4	11/03/15	0.0694	46.1	200	0.294 J	6.71	37.8	679
	12/17/15	0.0777	47.8	211	0.295 J	6.44	38.2	647
	02/09/16	0.0581	45.3	195	0.32 J	6.85	45	653
	04/14/16	0.0726	50.3	182	0.323	6.59	55.4	726
	06/14/16	0.0728	47.5	210	<0.100	6.68	37.9	689
	08/24/16	0.343	52.5	208	0.148 J	6.74	53.3	704
	10/05/16	0.0672	48.1	182	0.376 J	6.85	56	672
	12/22/16	0.0628	44.5	181	0.251 J	6.29	65.4	676
	10/03/17	0.225	54.9	182	0.219 J	6.82	69.8	659
	06/05/18	0.0839	49.4	200	0.297 J	6.15	46.6	648
	09/05/18	0.108	40.9	193	0.353 J	6.29	55.8	672
	05/16/19	0.0733	41.7	205	0.327 J	6.57	41.7	651
	08/19/19	0.085	42.5	188	0.67	6.69	5.4	681
	05/11/20	0.145	40.6	198	0.3 J	6.62	52.9	702
	09/15/20	0.109	33.6	197	<0.100	6.87	50.1	674
	06/16/21	0.0932	36.6	198	0.517	6.92	45.9	654
10/11/21	0.0801	32.9	185	0.398	6.69	47.6	670	

**TABLE 3**  
**APPENDIX III ANALYTICAL DATA**  
**OGSES FGD PONDS**

Sample Location	Date Sampled	B (mg/L)	Ca (mg/L)	Cl (mg/L)	F (mg/L)	pH (s.u.)	SO <sub>4</sub> (mg/L)	TDS (mg/L)
FGD-5	11/04/15	0.0719	30.2	230	0.334 J	6.92	54.7	1,040
	12/17/15	0.0798	32.5	254	0.333 J	6.74	56.1	845
	02/09/16	0.0926	89.5	356	0.495	6.6	62.8	942
	04/14/16	0.107	101	359	0.491	6.71	50.8	1,510
	06/15/16	0.11	88.9	368	0.284 J	6.73	55.1	735
	08/24/16	0.0394	102	372	0.168 J	6.89	58.8	770
	10/05/16	0.0995	99.9	344	0.38 J	6.92	57.3	1,260
	12/22/16	0.0982	90.6	301	0.291 J	6.1	65.5	893
	10/03/17	0.211	100	309	0.211 J	6.76	60.2	826
	06/05/18	0.11	100	303	0.511	6.13	61.2	795
	09/06/18	0.215	93.1	317	0.548	6.17	64.8	840
	05/16/19	0.108	77.7	287	0.579	6.46	67.2	801
	08/19/19	0.114	90.7	283	0.863	6.76	70.7	816
	05/11/20	0.165	100	307	0.413	6.82	83.8	836
	09/10/20	0.154	96.6	310	0.617	6.84	95.9	845
06/17/21	0.116	103	308	0.593	6.84	107	795	
10/11/21	0.0957	114	290	0.459	6.53	107	898	
FGD-6	11/03/15	0.0968	79.3	355	0.227 J	6.92	33.8	1,070
	12/17/15	0.103	89.9	342	0.469	6.52	65.9	940
	02/09/16	0.0791	31.8	252	0.354 J	7.12	59.5	940
	04/14/16	0.0936	36.4	259	0.442	6.71	57.9	1,140
	06/14/16	0.0955	33.9	237	<0.100	6.48	49.8	813
	08/24/16	0.0355	35.6	285	0.147 J	6.95	64.7	750
	10/05/16	0.102	35.3	275	0.364 J	6.94	60.2	1,010
	12/22/16	0.0847	35.6	286	0.204 J	6.34	64.4	905
	10/03/17	0.139	40.4	255	0.143 J	6.64	58.4	855
	06/05/18	0.0948	36.3	246	0.361 J	6.35	51.7	895
	09/05/18	0.0824	30.4	230	0.405	6.4	51.4	833
	05/16/19	0.116	20.3	170	0.669	6.85	51.3	710
	08/19/19	0.102	23.6	158	0.741	6.72	60.3	754
	05/06/20	0.109	27.4	189	0.292	6.75	70.7	746
	09/15/20	0.112	20.2	144	0.354 J	6.77	89.6	688
06/16/21	0.0854	29	222	0.452	6.80	76.3	799	
10/11/21	0.105	19.1	130	0.616	6.57	73.2	656	
FGD-12	11/04/15	0.0651	16.6	19.4	<0.100	6.68	20	217
	12/17/15	0.0671	13.2	15.5	0.159 J	6.47	16.6	161
	02/09/16	0.065	11.1	13.5	0.157 J	6.99	14.1	179
	04/14/16	0.0753	14.7	25.4	0.109	6.47	15.8	163
	06/15/16	0.0711	11.2	19.5	0.101 J	6.52	13.4	253
	08/25/16	0.0858	52.8	296	<0.100	6.86	33.8	817
	10/04/16	0.0682	12.5	17.8	0.129 J	6.74	10.5	142
	12/23/16	0.0512	260	1,250	0.112 J	6.95	174	3,270
	10/03/17	0.0731	10.4	10	0.154 J	6.76	10.8	134
	06/05/18	0.0812	8.74	12	0.137 J	6.37	13.7	196
	09/06/18	0.0698	6.78	14	<0.100	5.60	13.1	134
	05/16/19	0.0723	6.79	16	<0.100	6.52	15	140
	08/19/19	0.0794	10.5	16	0.145 J	6.71	17.1	209
	05/11/20	0.149	15.6	19.3	<0.100	6.59	19.9	198
	09/09/20	0.120	9.34	13.0	<0.100	6.82	14.1	166
06/17/21	0.102	12.3	16.1	<0.100	6.97	18.3	202	
10/12/21	0.0759	8.69	12.5	0.101 J	6.53	18.1	195	

Notes:

1. Abbreviations: mg/L - milligrams per liter; TDS - total dissolved solids; s.u. - standard units.
2. J - Concentration is below method quantitation limit; result is an estimate.

**TABLE 4  
APPENDIX IV ANALYTICAL DATA  
OGSES FGD PONDS**

Sample Location	Date Sampled	Sb (mg/L)	As (mg/L)	Ba (mg/L)	Be (mg/L)	Cd (mg/L)	Cr (mg/L)	Co (mg/L)	F (mg/L)	Pb (mg/L)	Li (mg/L)	Hg (mg/L)	Mo (mg/L)	Se (mg/L)	TI (mg/L)	Ra 226 (pCi/L)	Ra 228 (pCi/L)	Ra 226/228 Combined <sup>A</sup> (pCi/L)
<b>Upgradient Wells</b>																		
FGD-8	11/04/15	<0.0008	<0.002	0.119	<0.0003	<0.0003	0.00542	<0.003	0.173 J	<0.0003	0.149	<0.00008	0.0261	<0.002	<0.0005	0.671	1.38	2.05
	12/17/15	<0.0008	<0.002	0.179	<0.0003	<0.0003	0.00373 J	0.00646	0.361 J	<0.0003	0.116	<0.00008	0.00404 J	<0.002	<0.0005	<0.609	1.32	1.93
	02/09/16	<0.0008	0.0115	0.892	<0.0003	<0.0003	0.00234 J	0.00609	0.331 J	0.000406 J	0.0104	<0.00008	<0.002	0.00231 J	<0.0005	1.77	3.55	5.32
	04/14/16	<0.0008	0.0146	0.965	<0.0003	<0.0003	0.00202 J	0.00876	0.218 J	0.0016	0.016	<0.00008	<0.002	0.00211 J	<0.0005	0.973	8.34	9.31
	06/14/16	<0.0008	0.00639	0.792	<0.0003	<0.0003	<0.002	0.0158	<0.100	0.00137	0.015	<0.00008	<0.002	<0.002	<0.0005	1.93	2.30	4.23
	08/24/16	<0.0008	<0.002	0.102	0.000417 J	<0.0003	0.0107	0.015	0.186 J	0.00381	0.0265	<0.00008	<0.002	<0.002	<0.0005	0.778	<0.491	1.27
	10/05/16	<0.0008	0.00661	0.753	<0.0003	<0.0003	0.00672	0.00899	0.413	0.000908 J	0.0224	<0.00008	<0.002	<0.002	<0.0005	1.35	5.96	7.31
	12/23/16	<0.0008	0.0119	0.894	<0.0003	<0.0003	0.00259 J	0.00745	<0.100	0.00228	0.0185	<0.00008	<0.002	0.00217 J	<0.0005	2.17	3.70	5.87
	06/05/18	<0.0008	0.00839	0.834	<0.0003	<0.0003	<0.002	0.0193	<0.100	0.00039 J	0.0128	<0.00008	<0.002	<0.002	<0.0005	1.5	5.13	6.63
	09/06/18	NA	0.0137	0.635	<0.0003	<0.0003	<0.002	0.0243	0.362 J	<0.0003	0.009 J	NA	<0.002	0.0025 J	<0.0005	0.349	1.4	1.75
	05/16/19	<0.0008	0.0126	0.864	<0.0003	<0.0003	0.003 J	0.0146	<0.100	<0.00194	0.009 J	<0.00008	<0.002	0.0027 J	<0.0005	3.14	5.27	8.41
	08/19/19	<0.0008	0.00645	0.608	<0.0003	<0.0003	<0.002	0.0135	<0.100	0.00134	0.0144	<0.00008	<0.002	0.00252	<0.0005	1.79	6.82	8.61
	05/11/20	<0.000800	0.00663	0.732	<0.000300	<0.000300	<0.00200	0.0084	<0.100	0.000415 J	0.0152	<0.0000800	<0.00200	0.0021 J	<0.000500	2.07	6.58	8.65
	09/15/20	NA	0.00796	0.777	<0.000300	NA	0.00287 J	0.00379 J	<0.100	0.00107	0.00864 J	NA	<0.00200	<0.00200	<0.000500	2.5	6.2	8.7
	06/17/21	<0.0008	0.00749	1.1	<0.0003	<0.0003	<0.002	0.0067	<0.100	0.000766 J	0.0125	<0.00008	<0.002	<0.002	<0.0005	2.69	5.14	7.83
	10/11/21	<0.000800	0.00786	0.994	<0.000300	<0.000300	<0.00200	0.00312 J	<0.100	0.00119	0.00851 J	<0.0000800	<0.00200	0.00265 J	<0.000500	1.20	6.78	7.98
FGD-11	11/04/15	<0.0008	<0.002	0.0527	<0.0003	<0.0003	<0.002	<0.003	<0.1	0.000727 J	0.0144	<0.00008	<0.002	<0.002	<0.0005	0.928	<1.41	2.34
	12/17/15	<0.0008	<0.002	0.0676	0.000303 J	<0.0003	<0.002	<0.003	0.13 J	0.000987 J	0.016	<0.00008	<0.002	<0.002	<0.0005	0.786	<1.63	2.42
	02/09/16	<0.0008	<0.002	0.271	<0.0003	<0.0003	<0.002	<0.003	0.548	<0.0003	0.011	<0.00008	<0.002	<0.002	<0.0005	1.39	2.64	4.03
	04/14/16	<0.0008	<0.002	0.26	<0.0003	<0.0003	0.00222 J	<0.003	0.671	0.0012	0.011	<0.00008	<0.002	<0.002	<0.0005	1.69	2.43	4.12
	06/15/16	<0.0008	<0.002	0.216	<0.0003	<0.0003	<0.002	<0.003	0.331 J	0.000407 J	0.0126	<0.00008	0.00238 J	<0.002	<0.0005	2.34	2.06	4.40
	08/25/16	<0.0008	<0.002	0.439	<0.0003	<0.0003	0.00465 J	<0.003	0.128 J	0.00179	0.011	<0.00008	<0.002	<0.002	<0.0005	4.23	3.58	7.81
	10/04/16	<0.0008	<0.002	0.55	<0.0003	<0.0003	<0.002	<0.003	0.579	0.000618 J	0.0124	<0.00008	<0.002	<0.002	<0.0005	1.73	2.53	4.26
	12/22/16	<0.0008	<0.002	0.734	<0.0003	<0.0003	0.00258 J	<0.003	0.127 J	0.000635 J	0.0124	<0.00008	<0.002	<0.002	<0.0005	3.94	5.09	9.03
	06/05/18	<0.0008	<0.002	0.520	<0.0003	<0.0003	0.0372	0.007	0.836	0.00891 J	0.0102	<0.00008	0.00266 J	<0.002	<0.0005	4.64	4.22	8.86
	09/06/18	NA	<0.002	0.702	<0.0003	<0.0003	0.0039 J	<0.003	1.09	<0.0003	0.0121	NA	<0.002	<0.002	<0.0005	6.24	6.47	12.71
	05/16/19	<0.0008	<0.002	0.347	<0.0003	<0.0003	0.028	<0.003	0.38 J	0.000576 J	0.0145	<0.00008	0.00358 J	<0.002	<0.0005	2.39	2.75	5.14
	08/19/19	<0.0008	<0.002	0.310	<0.0003	<0.0003	0.00391 J	<0.003	0.63	<0.0003	0.0136	<0.00008	0.00238 J	<0.002	<0.0005	1.39	2.55	3.95
	05/11/20	<0.000800	<0.00200	0.347	<0.000300	<0.000300	0.0146	<0.00300	0.365 J	0.000658 J	0.0132	<0.0000800	<0.00200	<0.00200	<0.000500	2.39	4.00	6.39
	09/10/20	NA	<0.00200	0.330	<0.000300	NA	0.0158	<0.00300	0.575	0.000706 J	0.0121	NA	<0.00200	<0.00200	<0.000500	3.35	4.69	8.04
	06/17/21	<0.0008	<0.002	0.3	<0.0003	<0.0003	0.00633	<0.00300	0.471	<0.0003	0.0149	<0.00008	0.00235 J	<0.002	<0.0005	2.23	2.29	4.52
	10/11/21	<0.000800	<0.00200	0.231	<0.000300	<0.000300	0.0158	<0.00300	0.453	0.000332	0.0126	<0.0000800	0.00276	<0.00200	<0.000500	1.11	3.33	4.45
<b>Downgradient Wells</b>																		
FGD-1	11/03/15	<0.0008	<0.002	0.0311	<0.0003	<0.0003	<0.002	<0.003	0.363 J	<0.0003	0.034	<0.00008	<0.002	<0.002	<0.0005	0.718	<1.40	2.12
	12/17/15	<0.0008	<0.002	0.0263	<0.0003	<0.0003	<0.002	<0.003	0.384 J	<0.0003	0.0306	<0.00008	<0.002	<0.002	<0.0005	0.919	<1.43	2.35
	02/09/16	<0.0008	<0.002	0.0315	<0.0003	<0.0003	0.00437 J	0.0033 J	0.383 J	0.000379 J	0.0314	<0.00008	<0.002	<0.002	<0.0005	<0.318	1.42	1.74
	04/14/16	<0.0008	<0.002	0.0296	<0.0003	<0.0003	<0.002	<0.003	0.229 J	<0.0003	0.0338	<0.00008	<0.002	<0.002	<0.0005	<0.439	<1.28	<1.719
	06/15/16	<0.0008	<0.002	0.0276	<0.0003	<0.0003	<0.002	<0.003	0.302 J	<0.0003	0.0321	<0.00008	<0.002	<0.002	<0.0005	<0.258	1.66	1.92
	08/24/16	<0.0008	<0.002	0.0294	<0.0003	<0.0003	<0.002	<0.003	0.225 J	<0.0003	0.033	<0.00008	<0.002	<0.002	<0.0005	0.188	2.24	2.43
	10/05/16	<0.0008	<0.002	0.0319	<0.0003	<0.0003	<0.002	0.00447 J	0.483	<0.0003	0.0331	<0.00008	<0.002	<0.002	<0.0005	0.430	0.507	0.94
	12/22/16	<0.0008	<0.002	0.0418	<0.0003	<0.0003	<0.002	<0.003	0.326 J	<0.0003	0.0385	<0.00008	<0.002	<0.002	<0.0005	<0.273	<0.645	<0.918
	06/05/18	<0.0008	<0.002	0.0422	<0.0003	<0.0003	<0.002	<0.003	0.206 J	<0.0003	0.0426	<0.00008	<0.002	<0.002	<0.0005	0.194	<0.7680	0.962
	09/06/18	NA	<0.002	0.0417	<0.0003	<0.0003	<0.002	0.0033 J	0.228 J	<0.0003	0.0436	NA	<0.002	<0.002	0.0005	0.209	<0.53	0.739
	05/16/19	<0.0008	<0.002	0.0485	<0.0003	<0.0003	<0.002	<0.003	0.362 J	<0.0003	0.0442	<0.00008	<0.002	<0.002	<0.0005	0.33	<0.59	0.923
	08/19/19	<0.0008	<0.002	0.0538	<0.0003	<0.0003	<0.002	<0.003	0.486	<0.0003	0.0441	<0.00008	<0.002	<0.002	<0.0005	0.489	1.09	1.57
	05/11/20	<0.000800	<0.00200	0.131	<0.000300	<0.000300	<0.00200	0.0495	0.231 J	<0.000300	0.0548	<0.0000800	<0.00200	<0.00200	<0.000500	1.08	0.808	1.89
	09/15/20	NA	<0.00200	0.162	<0.000300	NA	<0.00200	<0.00300	0.215 J	0.000342 J	0.0233	NA	<0.00200	<0.00200	<0.000500	0.664	1.66	2.32
	06/17/21	<0.0008	<0.002	0.174	<0.0003	<0.0003	<0.002	0.00441 J	0.356 J	<0.0003	0.0225	<0.00008	<0.002	<0.002	<0.0005	0.712	1.64	2.36
	6/17/21 DUP	<0.0008	<0.002	0.168	<0.0003	<0.0003	<0.002	0.00423 J	0.352 J	<0.0003	0.0221	<0.00008	<0.002	<0.002	<0.0005	0.609	1.90	2.51
10/12/21	<0.000800	<0.00200	0.132	<0.000300	<0.000300	<0.00200	<0.00300	0.295 J	<0.000300	0.0182	<0.0000800	<0.00200	<0.00200	<0.000500	0.362	1.85	2.21	

TABLE 4  
APPENDIX IV ANALYTICAL DATA  
OGSES FGD PONDS

Sample Location	Date Sampled	Sb (mg/L)	As (mg/L)	Ba (mg/L)	Be (mg/L)	Cd (mg/L)	Cr (mg/L)	Co (mg/L)	F (mg/L)	Pb (mg/L)	Li (mg/L)	Hg (mg/L)	Mo (mg/L)	Se (mg/L)	TI (mg/L)	Ra 226 (pCi/L)	Ra 228 (pCi/L)	Ra 226/228 Combined <sup>A</sup> (pCi/L)
FGD-2	11/03/15	<0.0008	<0.002	0.146	<0.0003	<0.0003	0.00244 J	<0.003	0.224 J	<0.0003	0.0224	<0.00008	<0.002	0.0203	<0.0005	<0.249	1.97	2.22
	12/17/15	<0.0008	<0.002	0.103	<0.0003	<0.0003	0.00386 J	<0.003	0.347 J	0.00145	0.0183	<0.00008	<0.002	0.0127	<0.0005	1.030	<1.24	2.27
	02/09/16	<0.0008	<0.002	0.133	<0.0003	<0.0003	0.00426 J	<0.003	0.315 J	<0.0003	0.0221	<0.00008	<0.002	0.0181	<0.0005	0.669	1.81	2.48
	04/14/16	<0.0008	<0.002	0.129	<0.0003	<0.0003	<0.002	<0.003	0.192 J	<0.0003	0.0196	<0.00008	<0.002	0.0166	<0.0005	0.198	<2.03	2.23
	06/14/16	<0.0008	<0.002	0.091	<0.0003	<0.0003	<0.002	<0.003	0.122 J	<0.0003	0.0243	<0.00008	<0.002	0.0189	<0.0005	0.275	1.66	1.94
	08/24/16	<0.0008	<0.002	0.144	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.019	<0.00008	<0.002	0.0185	<0.0005	2.47	0.769	3.24
	10/05/16	<0.0008	<0.002	0.129	<0.0003	<0.0003	0.00549	<0.003	0.243 J	0.000693 J	0.0199	<0.00008	<0.002	0.0176	<0.0005	0.716	1.70	2.42
	12/22/16	<0.0008	<0.002	0.158	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0217	<0.00008	<0.002	0.022	<0.0005	0.345	1.79	2.14
	06/05/18	<0.0008	<0.002	0.108	<0.0003	<0.0003	<0.002	<0.003	0.185 J	<0.0003	0.0226	<0.00008	<0.002	0.0185	<0.0005	0.505	1.12	1.63
	09/06/18	NA	<0.002	0.125	<0.0003	<0.0003	<0.002	<0.003	0.32 J	<0.0003	0.0253	NA	<0.002	0.0204	<0.0005	0.641	0.822	1.46
	05/16/19	<0.0008	<0.002	0.0993	<0.0003	<0.0003	0.003 J	<0.003	0.383 J	<0.0003	0.0228	0.00008	<0.002	0.0214	<0.0005	0.648	0.588	1.24
	08/19/19	<0.0008	<0.002	0.181	<0.0003	<0.0003	<0.002	<0.003	0.413	<0.0003	0.0257	<0.00008	<0.002	0.0249	<0.0005	0.456	2.8	3.26
	05/11/20	<0.000800	<0.00200	0.108	<0.000300	<0.000300	0.00234 J	<0.00300	<0.100	<0.000300	0.028	<0.0000800	<0.00200	0.0208	<0.000500	0.677	2.08	2.76
	09/10/20	NA	<0.00200	0.104	<0.000300	NA	0.00239 J	<0.00300	<0.100	<0.000300	0.0250	NA	<0.00200	0.0217	<0.000500	0.744	0.29	1.03
	06/17/21	<0.0008	<0.002	0.108	<0.0003	<0.0003	<0.002	<0.00300	<0.100	<0.0003	0.023	<0.00008	<0.002	0.0233	<0.0005	0.440	0.774	1.21
	10/12/21	<0.000800	<0.00200	0.0823	<0.000300	<0.000300	<0.00200	<0.00300	<0.100	<0.000300	0.0259	<0.0000800	<0.00200	0.0185	<0.000500	593	0.922	1.52
	10/12/21	<0.0008	<0.002	0.0814	<0.0003	<0.0003	<0.002	<0.003	<0.100	<0.0003	0.0263	<0.00008	<0.002	0.0194	<0.0005	0.324	1.50	1.82
FGD-3	11/03/15	<0.0008	0.00226 J	0.0417	<0.0003	0.00492	<0.002	0.0436	0.505	<0.0003	0.176	<0.00008	<0.002	0.0881	0.0017	0.930	3.18	4.11
	12/17/15	<0.0008	0.00215 J	0.0371	0.000475 J	0.00372	<0.002	0.0399	<0.1	<0.0003	0.14	<0.00008	<0.002	0.0798	0.0016	1.70	2.66	4.36
	02/09/16	<0.0008	0.00206 J	0.0407	<0.0003	0.00343	<0.002	0.0417	0.74	0.000438 J	0.13	<0.00008	<0.002	0.0907	0.0015 J	1.04	3.37	4.41
	04/14/16	<0.0008	0.00218 J	0.0371	<0.0003	0.00212	<0.002	0.0326	0.69	<0.0003	0.119	<0.00008	<0.002	0.064	0.00137 J	0.276	<1.35	<1.626
	06/14/16	<0.0008	0.00205 J	0.0392	<0.0003	0.00156	<0.002	0.0261	0.173 J	<0.0003	0.107	<0.00008	<0.002	0.0447	0.00126 J	0.754	1.56	2.31
	08/24/16	<0.0008	0.00221 J	0.0387	<0.0003	0.00146	<0.002	0.0232	0.463	<0.0003	0.0974	<0.00008	<0.002	0.0272	0.00123 J	0.416	2.60	3.02
	10/05/16	<0.0008	0.00225 J	0.039	<0.0003	0.00152	<0.002	0.0226	0.723	<0.0003	0.113	<0.00008	<0.002	0.0276	0.00114 J	0.455	2.44	2.90
	12/22/16	<0.0008	0.00226 J	0.0437	<0.0003	0.00173	<0.002	0.0266	1.32	<0.0003	0.11	<0.00008	<0.002	0.0245	0.00124 J	<0.352	2.46	2.81
	06/05/18	<0.0008	0.00236 J	0.0391	<0.0003	0.00152	<0.002	0.0207	1.06	<0.0003	0.0975	<0.00008	0.00212 J	0.0192	0.000985 J	0.528	2.19	2.72
	09/05/18	NA	0.00208 J	0.0379	<0.0003	0.00146	<0.002	0.0192	1.03	<0.0003	0.0955	NA	0.0021 J	0.0213	0.000925 J	<0.323	0.704	1.03
	05/16/19	<0.0008	0.0023 J	0.051	<0.0003	<0.0003	<0.002	0.0052	0.776	<0.0003	0.057	<0.00008	0.0031 J	0.0423	0.0006 J	<0.403	<0.638	<1.041
	08/19/19	<0.0008	0.00248 J	0.0365	<0.0003	<0.0003	<0.002	0.00364 J	0.874	<0.0003	0.0546	<0.00008	0.00231 J	0.0245	0.000588 J	0.523	0.858	1.38
	05/06/20	<0.000800	0.00209 J	0.0353	<0.000300	<0.000300	0.0117	0.00332 J	0.8	<0.000300	0.0498	<0.0000800	0.00284 J	0.00993	0.000556 J	0.394	0.463	0.857
	09/15/20	NA	0.00225 J	0.0326	<0.000300	NA	<0.00200	<0.00300	0.772	<0.000300	0.0416	NA	0.00245 J	0.00646	0.000534 J	0.257	0.484	0.711
	06/16/21	<0.0008	0.00217	0.0343 J	<0.0003	<0.0003	<0.002	0.00624	1.2	0.000491 J	0.0426	0.000094 J	0.00336 J	0.00752	0.000528 J	0.246	0.808	1.05
	10/11/21	<0.000800	<0.00200	0.0322	<0.000300	<0.000300	<0.00200	<0.00300	1.08	0.000494 J	0.0296	<0.0000800	0.00370 J	0.00748	<0.000500	0.223 J	1.02	1.25
	FGD-4	11/03/15	<0.0008	<0.002	0.126	<0.0003	<0.0003	<0.002	<0.003	0.294 J	<0.0003	0.0433	<0.00008	<0.002	<0.002	<0.0005	1.01	<1.39
12/17/15		<0.0008	<0.002	0.105	<0.0003	<0.0003	<0.002	<0.003	0.295 J	<0.0003	0.0436	0.000229	0.00211 J	0.00214 J	<0.0005	<0.361	<1.73	<2.091
02/09/16		<0.0008	<0.002	0.113	<0.0003	<0.0003	<0.002	<0.003	0.32 J	<0.0003	0.0419	0.000288	<0.002	<0.0005	<0.332	<1.11	<1.442	
04/14/16		<0.0008	<0.002	0.12	<0.0003	<0.0003	0.00208 J	<0.003	0.323 J	0.0271	0.0357	0.000232	<0.002	<0.002	<0.0005	0.560	<1.21	1.77
06/14/16		<0.0008	<0.002	0.128	<0.0003	0.000561 J	<0.002	<0.003	<0.1	<0.0003	0.0477	<0.00008	<0.002	<0.002	<0.0005	0.437	<0.975	1.41
08/24/16		<0.0008	<0.002	0.111	<0.0003	<0.0003	<0.002	<0.003	0.148 J	0.000578 J	0.0383	<0.00008	<0.002	<0.002	<0.0005	<0.199	0.625	0.82
10/05/16		<0.0008	<0.002	0.106	<0.0003	<0.0003	<0.002	<0.003	0.376 J	0.000489 J	0.0353	<0.00008	<0.002	<0.002	<0.0005	0.308	1.30	1.61
12/22/16		<0.0008	<0.002	0.114	<0.0003	<0.0003	0.0023 J	<0.003	0.251 J	<0.0003	0.0273	<0.00008	<0.002	<0.002	<0.0005	0.227	<0.667	0.89
06/04/18		<0.0008	<0.002	0.119	<0.0003	<0.0003	<0.002	<0.003	0.297 J	<0.0003	0.0265	<0.00008	<0.002	<0.002	<0.0005	0.261	<0.923	1.184
09/05/18		NA	<0.002	0.108	<0.0003	<0.0003	<0.002	<0.003	0.353 J	<0.0003	0.0199	NA	<0.002	<0.002	<0.0005	<0.39	0.673	1.063
05/16/19		<0.0008	<0.002	0.117	<0.0003	<0.0003	<0.002	<0.003	0.327 J	<0.0003	0.0325	<0.00008	<0.002	<0.002	<0.0005	0.627	0.745	1.372
08/19/19		<0.0008	<0.002	0.1	<0.0003	<0.0003	<0.002	<0.003	0.67	<0.0003	0.019	<0.00008	<0.002	<0.002	<0.0005	0.39	1.58	1.97
05/11/20		<0.000800	<0.00200	0.104	<0.000300	<0.000300	<0.00200	<0.00300	0.3 J	<0.000300	0.0166	<0.0000800	<0.00200	<0.00200	<0.000500	0.15	1.2	1.35
09/15/20		NA	<0.00200	0.0899	<0.000300	NA	<0.00200	<0.00300	<0.100	<0.000300	0.0140	NA	<0.00200	<0.00200	<0.000500	0.498	<1.27	0.498
06/16/21		<0.0008	<0.002	0.103	<0.0003	<0.0003	<0.002	<0.00300	0.517	<0.0003	0.0137	<0.00008	<0.002	<0.002	<0.0005	0.283	0.000 U	0.283 U
10/11/21		<0.000800	<0.00200	0.0796	<0.000300	<0.000300	<0.00200	<0.00300	0.398	<0.000300	0.00984 J	<0.0000800	<0.00200	<0.00200	<0.000500	0.169 J	1.27	1.44



**TABLE 4  
APPENDIX IV ANALYTICAL DATA  
OGSES FGD PONDS**

Sample Location	Date Sampled	Sb (mg/L)	As (mg/L)	Ba (mg/L)	Be (mg/L)	Cd (mg/L)	Cr (mg/L)	Co (mg/L)	F (mg/L)	Pb (mg/L)	Li (mg/L)	Hg (mg/L)	Mo (mg/L)	Se (mg/L)	TI (mg/L)	Ra 226 (pCi/L)	Ra 228 (pCi/L)	Ra 226/228 Combined <sup>^</sup> (pCi/L)
FGD-5	11/04/15	<0.0008	<0.002	0.13	<0.0003	0.000557 J	0.0121	<0.003	0.334 J	<0.0003	0.17	<0.00008	0.0445	<0.002	<0.0005	0.449	1.52	1.97
	12/17/15	<0.0008	<0.002	0.237	<0.0003	0.000593 J	0.0391	0.0164	0.333 J	0.000369 J	0.156	<0.00008	0.0203	<0.002	<0.0005	1.23	3.63	4.86
	02/09/16	<0.0008	<0.002	0.261	<0.0003	<0.0003	<0.002	0.00441 J	0.495	<0.0003	0.158	<0.00008	<0.002	<0.002	<0.0005	1.99	1.50	3.49
	04/14/16	<0.0008	<0.002	0.224	<0.0003	0.000392 J	0.00477 J	<0.003	0.491	<0.0003	0.164	<0.00008	0.0183	<0.002	<0.0005	0.951	<1.24	2.19
	06/15/16	<0.0008	<0.002	0.174	<0.0003	<0.0003	0.00599	<0.003	0.284 J	<0.0003	0.162	<0.00008	0.0144	<0.002	<0.0005	0.429	1.25	1.68
	08/24/16	<0.0008	<0.002	0.173	<0.0003	<0.0003	0.0189	<0.003	0.168 J	0.00045 J	0.145	<0.00008	0.00814	<0.002	<0.0005	0.398	<0.643	1.04
	10/05/16	<0.0008	<0.002	0.229	<0.0003	<0.0003	0.00304 J	<0.003	0.38 J	<0.0003	0.153	<0.00008	0.00355 J	<0.002	<0.0005	0.877	1.16	2.04
	12/22/16	<0.0008	<0.002	0.261	<0.0003	<0.0003	<0.002	0.00471 J	0.291 J	<0.0003	0.152	<0.00008	<0.002	<0.002	<0.0005	0.579	<0.76	1.34
	06/05/18	<0.0008	<0.002	0.136	<0.0003	<0.0003	0.00935	<0.003	0.511	<0.0003	0.154	<0.00008	<0.002	<0.002	<0.0005	0.705	<0.765	1.47
	09/06/18	NA	<0.002	0.215	<0.0003	<0.0003	<0.002	<0.003	0.548	<0.0003	0.155	NA	<0.002	<0.002	<0.0005	0.535	1.31	1.845
	05/16/19	<0.0008	<0.002	0.0926	<0.0003	<0.0003	0.024	<0.003	0.579	<0.0003	0.145	<0.00008	0.003 J	<0.002	<0.0005	0.342	<0.506	0.848
	08/19/19	<0.0008	<0.002	0.106	<0.0003	<0.0003	0.0103	<0.003	0.863	<0.0003	0.152	<0.00008	<0.002	<0.002	<0.0005	0.551	0.659	1.21
	05/11/20	<0.000800	<0.00200	0.0959	<0.000300	<0.000300	0.0374	<0.00300	0.413	<0.000300	0.156	<0.0000800	0.00561	<0.00200	<0.000500	0.0983	5.18	5.28
	09/10/20	NA	<0.00200	0.0929	<0.000300	NA	0.0307	<0.00300	0.617	<0.000300	0.150	NA	0.00362 J	<0.00200	<0.000500	0.132	<1.11	0.132
	06/17/21	<0.0008	<0.002	0.111	<0.0003	<0.0003	0.0376	<0.00300	0.593	<0.0003	0.147	<0.00008	0.00504	<0.002	<0.0005	0.173 J	0.546	0.719 J
	10/11/21	<0.000800	<0.00200	0.0995	<0.000300	<0.000300	0.0549	<0.00300	0.459	<0.000300	0.139	<0.0000800	0.00669	<0.00200	<0.000500	0.0902 U	0.203 U	0.293 U
FGD-6	11/03/15	<0.0008	<0.002	0.124	<0.0003	<0.0003	0.00253 J	<0.003	0.227 J	<0.0003	0.0112	<0.00008	<0.002	<0.002	<0.0005	0.470	<1.70	2.17
	12/17/15	<0.0008	<0.002	0.135	<0.0003	<0.0003	<0.002	<0.003	0.469	<0.0003	0.00964 J	<0.00008	<0.002	<0.002	<0.0005	1.03	<2.13	3.16
	02/09/16	<0.0008	<0.002	0.132	<0.0003	<0.0003	<0.002	<0.003	0.354 J	<0.0003	0.0105	<0.00008	<0.002	<0.002	<0.0005	0.801	<1.71	2.51
	04/14/16	<0.0008	<0.002	0.122	<0.0003	<0.0003	0.0568	<0.003	0.442	<0.0003	0.011	<0.00008	<0.002	<0.002	<0.0005	0.484	2.08	2.56
	06/14/16	<0.0008	<0.002	0.16	0.000309 J	0.000404 J	<0.002	0.00657	<0.1	0.00132	0.0092 J	<0.00008	<0.002	<0.002	<0.0005	1.31	2.16	3.47
	08/24/16	<0.0008	0.00725	0.127	<0.0003	<0.0003	0.00334 J	0.00399 J	0.147 J	0.000656 J	0.00885 J	<0.00008	0.00244 J	<0.002	<0.0005	0.465	0.896	1.36
	10/05/16	<0.0008	0.00536	0.117	<0.0003	<0.0003	0.00427 J	0.00414 J	0.364 J	<0.0003	0.00985 J	<0.00008	<0.002	<0.002	<0.0005	0.489	1.69	2.18
	12/22/16	<0.0008	0.00458 J	0.129	<0.0003	<0.0003	<0.002	0.00352 J	0.204 J	<0.0003	0.0102	<0.00008	<0.002	<0.002	<0.0005	0.349	0.917	1.27
	06/04/18	<0.0008	0.0021 J	0.0854	<0.0003	<0.0003	<0.002	<0.003	0.361 J	<0.0003	0.0098 J	<0.00008	<0.002	<0.002	<0.0005	<0.277	<0.964	<1.241
	09/05/18	NA	<0.002	0.0824	<0.0003	<0.0003	<0.002	<0.003	0.405	<0.0003	0.0094 J	NA	<0.002	<0.002	<0.0005	<0.336	<0.677	<1.013
	05/16/19	<0.0008	0.0294	0.107	<0.0003	<0.0003	<0.002	0.0132	0.669	<0.0003	0.0068 J	<0.00008	0.0077	<0.002	<0.0005	1.43	1.67	3.1
	08/19/19	<0.0008	0.0146	0.0903	<0.0003	<0.0003	<0.002	0.00493 J	0.741	<0.0003	0.0082 J	<0.00008	0.00332 J	<0.002	<0.0005	0.385	2.55	2.93
	05/11/20	<0.000800	0.00286 J	0.0814	<0.000300	<0.000300	<0.00200	<0.00300	0.292 J	<0.000300	0.00877 J	<0.0000800	0.00205 J	<0.00200	<0.000500	0.513	0.845	1.36
	09/15/20	NA	0.00651	0.0695	<0.000300	NA	<0.00200	0.00615	0.354 J	<0.000300	0.00669 J	NA	<0.00200	<0.00200	<0.000500	0.485	1.08	1.57
	06/16/21	<0.0008	0.00232 J	0.0769	<0.0003	<0.0003	<0.002	<0.00300	0.452	<0.0003	0.00824 J	<0.00008	<0.002	<0.002	<0.0005	0.322	1.54	1.86
	10/11/21	<0.000800	0.00696	0.0507	<0.000300	<0.000300	<0.00200	<0.00300	0.616	<0.000300	0.00641 J	<0.0000800	0.00222 J	<0.00200	<0.000500	0.0567 U	1.39	1.44
FGD-12	11/04/15	<0.0008	<0.002	0.0884	<0.0003	<0.0003	0.0124	<0.003	<0.1	0.000678 J	0.0234	<0.00008	0.00221 J	<0.002	<0.0005	1.07	<1.55	2.62
	12/17/15	<0.0008	<0.002	0.0781	<0.0003	<0.0003	<0.002	<0.003	0.159 J	0.000775 J	0.022	<0.00008	<0.002	<0.002	<0.0005	1.32	<2.57	3.89
	2/9/2016	<0.0008	<0.002	0.0664	<0.0003	<0.0003	<0.002	<0.003	0.157 J	0.000339 J	0.0211	<0.00008	<0.002	<0.002	<0.0005	0.771	<1.53	2.30
	04/14/16	<0.0008	<0.002	0.104	<0.0003	<0.0003	0.00425 J	<0.003	0.109 J	0.00371	0.0255	<0.00008	<0.002	<0.002	<0.0005	0.560	1.46	2.02
	06/15/16	<0.0008	<0.002	0.107	0.00039 J	<0.0003	0.00269 J	0.00323 J	0.101 J	0.00513	0.0192	0.000134 J	<0.002	<0.002	<0.0005	2.01	2.06	4.07
	08/25/16	<0.0008	0.00451 J	0.262	0.000629 J	<0.0003	0.0135	0.00412 J	<0.1	0.00842	0.0204	<0.00008	<0.002	<0.002	<0.0005	1.59	1.84	3.43
	10/04/16	<0.0008	0.00402 J	0.122	0.00062 J	<0.0003	0.0133	0.00395 J	0.129 J	0.0084	0.0259	<0.00008	<0.002	0.00292 J	<0.0005	1.41	<0.76	2.17
	12/23/16	<0.0008	0.00938	0.557	<0.0003	<0.0003	0.00435 J	0.00609	0.112 J	0.00216	0.0755	<0.00008	<0.002	0.00786	<0.0005	1.89	3.54	5.43
	06/05/18	<0.0008	<0.002	0.0777	0.00031	<0.0003	0.00578	<0.003	0.137 J	0.0029	0.0213	<0.00008	<0.002	<0.002	<0.0005	1.68	<0.526	2.206
	09/06/18	NA	<0.002	0.0517	<0.0003	<0.0003	0.0024 J	<0.003	<0.10	0.0005 J	0.0188	NA	<0.002	<0.002	<0.0005	<0.304	<0.5450	<0.849
	05/16/19	0.0008	<0.002	0.0474	<0.0003	<0.0003	0.0030 J	<0.003	<0.10	0.0003 J	0.0221	<0.00008	<0.002	<0.002	<0.0005	0.385	1.43	1.82
	08/19/19	<0.0008	<0.002	0.0631	<0.0003	<0.0003	0.00218 J	<0.003	0.145 J	0.00139	0.0251	<0.00008	<0.002	<0.002	<0.0005	1.12	3.52	4.64
	05/11/20	<0.000800	0.0116	0.23	0.00166	<0.000300	0.037	0.00883	<0.100	0.0249	0.0371	<0.0000800	<0.00200	0.00678	0.000651	5.96	10.7	16.6
	09/10/20	NA	0.00252 J	0.0922	0.000375 J	NA	0.00723	<0.00300	<0.100	0.00402	0.0235	NA	<0.00200	0.00254 J	<0.000500	2.59	6.72	9.31
	06/17/21	<0.0008	<0.002	0.0817	0.000504 J	<0.0003	0.00273 J	<0.00300	<0.100	0.00317	0.0239	<0.00008	<0.002	<0.002	<0.0005	0.861	4.67	5.53
	10/12/21	<0.000800	<0.00200	0.0613	<0.000300	<0.000300	0.00387 J	<0.00300	0.101 J	0.00255	0.0222	<0.0000800	<0.00200	0.00255 J	<0.000500	1.84	1.94	3.78

Notes:

1. Abbreviations: mg/l - milligrams per liter; pCi/L - picocuries per liter.
2. ^ - Sum of Ra 226 and Ra 228 concentrations.
3. J - Concentration is below method quantitation limit; result is an estimate.
4. NA - not analyzed. Groundwater sample analyses for the second semi-annual sampling events were in some instances limited to Appendix IV parameters detected during the preceding first semi-annual sampling event in accordance with 40 CFR § 257.95(d)(1).

**ATTACHMENT 1**  
**LABORATORY ANALYTICAL REPORTS**



July 22, 2021

Will Vienne  
Golder  
2201 Double Creek Dr #4004  
Round Rock, Texas 78664  
TEL: (512) 671-3434  
FAX (512) 671-3446  
RE: Luminant-OGSES-CCR-FGD Ponds

Order No.: 2106122

Dear Will Vienne:

DHL Analytical, Inc. received 10 sample(s) on 6/18/2021 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAP except where noted in the Case Narrative. All non-NELAP methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

A handwritten signature in red ink, appearing to read "John DuPont", is written in a cursive style.

John DuPont  
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-21-27



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<b>PrepDatesReport 2106122 .....</b>	<b>14</b>
<b>AnalyticalDatesReport 2106122 .....</b>	<b>17</b>
<b>Analytical Report 2106122 .....</b>	<b>20</b>
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## Eric Lau

---

**From:** John DuPont  
**Sent:** Tuesday, May 28, 2019 11:35 AM  
**To:** Eric Lau  
**Subject:** FW: CCR Analysis

Appendix III Parameters:

Metals (Ca and B)  
Anions (Cl, F, and SO4)  
TDS

Appendix IV Parameters:

Metals (As, Ba, Be, Cd, Co, Cr, Hg, Li, Mo, Pb, Sb, Se, and Tl)  
Ra-226  
Ra-228

---

**From:** Vienne, Will [mailto:William\_Vienne@golder.com]  
**Sent:** Tuesday, April 09, 2019 12:48 PM  
**To:** John DuPont <dupont@dhlanalytical.com>  
**Subject:** CCR Analysis

ORIGIN ID:FWHA (512) 671-3434  
GOLDER ASSOCIATES  
2201 DOUBLE CREEK DR STE 4004  
ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 17JUN21  
ACTWGT: 54.40 LB  
CAD: 6996427/SSFE2202  
DIMS: 24x14x13 IN  
BILL THIRD PARTY

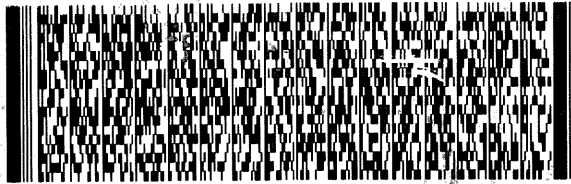
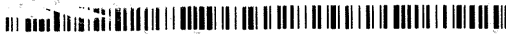
Part # 1562974435, BBD/VA-EXP 04/22

TO  
**DHL**  
**2300 DOUBLE CREEK DR**  
**ROUND ROCK TX 78664**

(612) 388-8222

REF:

DEPT:



**FedEx**  
Express



AN11680 2112F

2 of 6  
MPS# 2805 2123 9066  
0263

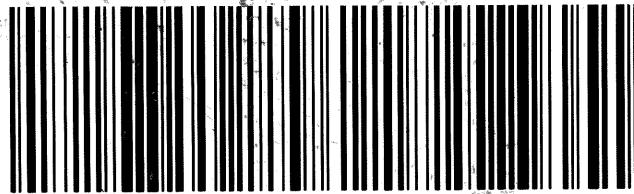
Mstr# 2805 2123 9055

0201

FRI - 10:30A  
PRIORITY OVERNIGHT

**A8 BSMA**

78664  
TX-US AUS

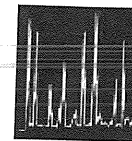


**CUSTODY SE**

DATE 6-17-21

SIGNATURE [Signature]

**AL**



**DHL**  
ANALYTICAL

CG

ORIGIN ID:FWHA (512) 671-3434

GOLDER ASSOCIATES  
2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 17JUN21  
ACTWGT: 48.55 LB  
CAD: 6996427/SSFE2202  
DIMS: 24x14x13 IN

BILL THIRD PARTY

Part # 1562974935 JARDW2EXP 04/22

TO

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**2300 DOUBLE CREEK DR**

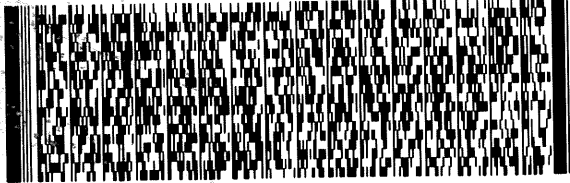
**ROUND ROCK TX 78664**

(612) 388-8222

REF:

INV:

DEPT:



**FedEx**  
Express



AN 1018301231127

3 of 6

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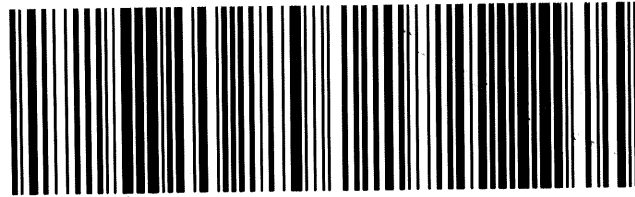
0263 Mstr# 2805 2123 9055

0201

FDI 18 JUN 10:30A  
PRIORITY OVERNIGHT

**A8 BSMA**

78664  
TX-US AUS



**CUSTODY SEAL**

DATE

6-17-21

SIGNATURE

*[Handwritten Signature]*



**DHL**  
ANALYTICAL



ORIGIN ID:FWHA (512) 671-3434

GOLDER ASSOCIATES  
2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 17JUN21  
ACTWGT: 56.45 LB  
CAD: 6996427/SSFE2202  
DIMS: 24x14x13 IN

BILL THIRD PARTY

Part # 156297/635/EBB/DUN/EXP 04/22

TO

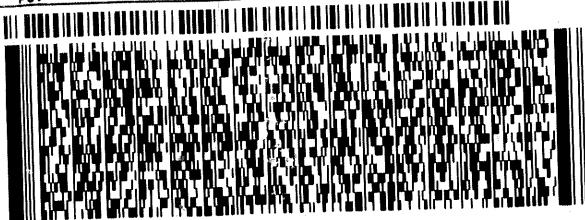
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**2300 DOUBLE CREEK DR**

**ROUND ROCK TX 78664**

(512) 388-8222

REF:

DEPT:



**FedEx**  
Express



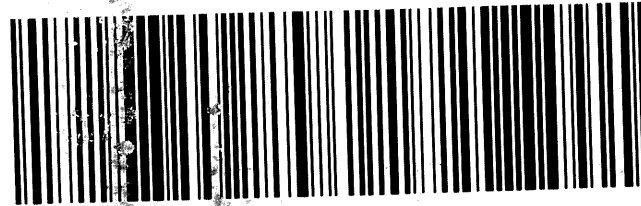
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4 of 6  
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0263  
Mstr# 2805 2123 9055

**FRI - 18 JUN 10:30A**  
**PRIORITY OVERNIGHT**

**A8 BSMA**

**78664**  
**TX-US AUG**



**CUSTODY SEAL**

DATE

6-17-21

SIGNATURE



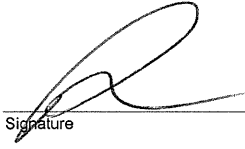
Sample Receipt Checklist


Client Name **Golder**

Date Received: **6/18/2021**

Work Order Number **2106122**

Received by: **EL**

Checklist completed by:  6/18/2021  
Signature Date

Reviewed by:  6/18/2021  
Initials Date

Carrier name: FedEx 1day

- Shipping container/cooler in good condition? Yes  No  Not Present
- Custody seals intact on shipping container/cooler? Yes  No  Not Present
- Custody seals intact on sample bottles? Yes  No  Not Present
- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Samples in proper container/bottle? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No
- All samples received within holding time? Yes  No
- Container/Temp Blank temperature in compliance? Yes  No  **4.8 °C / 2.8 °C / 5.0 °C**
- Water - VOA vials have zero headspace? Yes  No  No VOA vials submitted
- Water - pH<2 acceptable upon receipt? Yes  No  NA  LOT # 13171
- Adjusted? NO Checked by R.A.
- Water - pH>9 (S) or pH>10 (CN) acceptable upon receipt? Yes  No  NA  LOT #
- Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_

Any No response must be detailed in the comments section below.

Client contacted: \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action: \_\_\_\_\_

<b>Laboratory Name: DHL Analytical, Inc.</b>							
<b>Laboratory Review Checklist: Reportable Data</b>							
<b>Project Name:</b> Luminant-OGSES-CCR-FGD Ponds				<b>LRC Date:</b> 7/22/21			
<b>Reviewer Name:</b> Carlos Castro				<b>Laboratory Work Order:</b> 2106122			
<b>Prep Batch Number(s):</b> See Prep Dates Report				<b>Run Batch:</b> See Analytical Dates Report			
# <sup>1</sup>	A <sup>2</sup>	Description	Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER# <sup>5</sup>
		<b>Chain-of-Custody (C-O-C)</b>					
<b>R1</b>	OI	<b>1) Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?</b>	X				<b>R1-01</b>
		<b>2) Were all departures from standard conditions described in an exception report?</b>			X		
<b>R2</b>	OI	<b>Sample and Quality Control (QC) Identification</b>					
		<b>1) Are all field sample ID numbers cross-referenced to the laboratory ID numbers?</b>	X				
		<b>2) Are all laboratory ID numbers cross-referenced to the corresponding QC data?</b>	X				
<b>R3</b>	OI	<b>Test Reports</b>					
		<b>1) Were all samples prepared and analyzed within holding times?</b>	X				
		<b>2) Other than those results &lt; MQL, were all other raw values bracketed by calibration standards?</b>	X				
		<b>3) Were calculations checked by a peer or supervisor?</b>	X				
		<b>4) Were all analyte identifications checked by a peer or supervisor?</b>	X				
		<b>5) Were sample detection limits reported for all analytes not detected?</b>	X				
		<b>6) Were all results for soil and sediment samples reported on a dry weight basis?</b>			X		
		<b>7) Were % moisture (or solids) reported for all soil and sediment samples?</b>			X		
		<b>8) Were bulk soils/solids samples for volatile analysis extracted with methanol per EPA Method 5035?</b>			X		
		<b>9) If required for the project, TICs reported?</b>			X		
<b>R4</b>	O	<b>Surrogate Recovery Data</b>					
		<b>1) Were surrogates added prior to extraction?</b>			X		
		<b>2) Were surrogate percent recoveries in all samples within the laboratory QC limits?</b>			X		
<b>R5</b>	OI	<b>Test Reports/Summary Forms for Blank Samples</b>					
		<b>1) Were appropriate type(s) of blanks analyzed?</b>	X				
		<b>2) Were blanks analyzed at the appropriate frequency?</b>	X				
		<b>3) Where method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?</b>	X				
		<b>4) Were blank concentrations &lt; MDL?</b>	X				
		<b>5) For analyte(s) detected in a blank sample, was the concentration, unadjusted for sample specific factors, in all associated field samples, <b>greater</b> than 10 times the concentration in the blank sample?</b>			X		
<b>R6</b>	OI	<b>Laboratory Control Samples (LCS):</b>					
		<b>1) Were all COCs included in the LCS?</b>	X				
		<b>2) Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?</b>	X				
		<b>3) Were LCSs analyzed at the required frequency?</b>	X				
		<b>4) Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?</b>	X				
		<b>5) Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?</b>	X				
		<b>6) Was the LCSD RPD within QC limits (if applicable)?</b>	X				
<b>R7</b>	OI	<b>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Data</b>					
		<b>1) Were the project/method specified analytes included in the MS and MSD?</b>	X				
		<b>2) Were MS/MSD analyzed at the appropriate frequency?</b>	X				
		<b>3) Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?</b>		X			<b>R7-03</b>
		<b>4) Were MS/MSD RPDs within laboratory QC limits?</b>	X				
<b>R8</b>	OI	<b>Analytical Duplicate Data</b>					
		<b>1) Were appropriate analytical duplicates analyzed for each matrix?</b>	X				
		<b>2) Were analytical duplicates analyzed at the appropriate frequency?</b>	X				
		<b>3) Were RPDs or relative standard deviations within the laboratory QC limits?</b>	X				
<b>R9</b>	OI	<b>Method Quantitation Limits (MQLs):</b>					
		<b>1) Are the MQLs for each method analyte included in the laboratory data package?</b>	X				
		<b>2) Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?</b>	X				
		<b>3) Are unadjusted MQLs and DCSs included in the laboratory data package?</b>	X				
<b>R10</b>	OI	<b>Other Problems/Anomalies</b>					
		<b>1) Are all known problems/anomalies/special conditions noted in this LRC and ER?</b>	X				
		<b>2) Was applicable and available technology used to lower the SDL to minimize the matrix interference affects on the sample results?</b>	X				
		<b>3) Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?</b>	X				

<b>Laboratory Name: DHL Analytical, Inc.</b>							
<b>Laboratory Review Checklist (continued): Supporting Data</b>							
<b>Project Name:</b> Luminant-OGSES-CCR-FGD Ponds				<b>LRC Date:</b> 7/22/21			
<b>Reviewer Name:</b> Carlos Castro				<b>Laboratory Work Order:</b> 2106122			
<b>Prep Batch Number(s):</b> See Prep Dates Report				<b>Run Batch:</b> See Analytical Dates Report			
# <sup>1</sup>	A <sup>2</sup>	Description	Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER# <sup>5</sup>
S1	OI	<b>Initial Calibration (ICAL)</b>					
		1) Were response factors and/or relative response factors for each analyte within QC limits?	X				
		2) Were percent RSDs or correlation coefficient criteria met?	X				
		3) Was the number of standards recommended in the method used for all analytes?	X				
		4) Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		5) Are ICAL data available for all instruments used?	X				
		6) Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	<b>Initial and Continuing calibration Verification (ICCV and CCV) and Continuing Calibration blank (CCB):</b>					
		1) Was the CCV analyzed at the method-required frequency?	X				
		2) Were percent differences for each analyte within the method-required QC limits?...	X				
		3) Was the ICAL curve verified for each analyte?	X				
		4) Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	<b>Mass Spectral Tuning:</b>					
		1) Was the appropriate compound for the method used for tuning?	X				
		2) Were ion abundance data within the method-required QC limits?	X				
S4	O	<b>Internal Standards (IS):</b>					
		1) Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	<b>Raw Data (NELAC Section 5.5.10)</b>					
		1) Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		2) Were data associated with manual integrations flagged on the raw data?	X				
S6	O	<b>Dual Column Confirmation</b>					
		1) Did dual column confirmation results meet the method-required QC?			X		
S7	O	<b>Tentatively Identified Compounds (TICs):</b>					
		1) If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	<b>Interference Check Sample (ICS) Results:</b>					
		1) Were percent recoveries within method QC limits?	X				
S9	I	<b>Serial Dilutions, Post Digestion Spikes, and Method of Standard Additions</b>					
		1) Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	<b>Method Detection Limit (MDL) Studies</b>					
		1) Was a MDL study performed for each reported analyte?	X				
		2) Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	<b>Proficiency Test Reports:</b>					
		1) Was the lab's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	<b>Standards Documentation</b>					
		1) Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	<b>Compound/Analyte Identification Procedures</b>					
		1) Are the procedures for compound/analyte identification documented?	X				
S14	OI	<b>Demonstration of Analyst Competency (DOC)</b>					
		1) Was DOC conducted consistent with NELAC Chapter 5 – Appendix C?	X				
		2) Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	<b>Verification/Validation Documentation for Methods (NELAC Chapter 5)</b>					
		1) Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	<b>Laboratory Standard Operating Procedures (SOPs):</b>					
		1) Are laboratory SOPs current and on file for each method performed?	X				

- 1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
- 2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
- 3 NA = Not applicable.
- 4 NR = Not Reviewed.
- 5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

# Laboratory Data Package Signature Page – RG-366/TRRP-13

This data package consists of:

This signature page, the laboratory review checklist, and the following reportable data:

- R1 Field chain-of-custody documentation;
- R2 Sample identification cross-reference;
- R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - a) Items consistent with NELAC Chapter 5,
  - b) dilution factors,
  - c) preparation methods,
  - d) cleanup methods, and
  - e) if required for the project, tentatively identified compounds (TICs).
- R4 Surrogate recovery data including:
  - a) Calculated recovery (%R), and
  - b) The laboratory's surrogate QC limits.
- R5 Test reports/summary forms for blank samples;
- R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - a) LCS spiking amounts,
  - b) Calculated %R for each analyte, and
  - c) The laboratory's LCS QC limits.
- R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a) Samples associated with the MS/MSD clearly identified,
  - b) MS/MSD spiking amounts,
  - c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d) Calculated %Rs and relative percent differences (RPDs), and
  - e) The laboratory's MS/MSD QC limits
- R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - a) The amount of analyte measured in the duplicate,
  - b) The calculated RPD, and
  - c) The laboratory's QC limits for analytical duplicates.
- R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;
- R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in the Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory is not accredited under the Texas Laboratory Accreditation Program.

**Release Statement:** I am responsible for the release of this laboratory data package. This laboratory is accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge that all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information or data affecting the quality of the data has been knowingly withheld.

This laboratory was last inspected by TCEQ on February 23-26, 2021. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Name: John DuPont  
Official Title: General Manager

  
Signature

07/22/21  
Date

Name: Dr. Derhsing Luu  
Official Title: Technical Director

---

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Lab Order:** 2106122

---

**CASE NARRATIVE**

Samples were analyzed using the methods outlined in the following references:

- Method SW6020B - Metals Analysis
  - Method SW7470A - Mercury Analysis
  - Method E300 - Anions Analysis
  - Method M2540C - TDS Analysis
  - Sub-contract - Radium-228 and Radium-226 analyses by methods E904 and SM 7500 Ra B M.
- Analyzed at Pace Analytical.

Exception Report R1-01

The samples were received and log-in performed on 6/18/21. A total of 10 samples were received. The samples arrived in good condition and were properly packaged.

Exception Report R7-03

For Anions analysis performed on 6/21/21 the matrix spikes and matrix spike duplicate recoveries (2106122-04 MS/MSD & 2106122-08 MS/MSD) were slightly below control limits for Chloride and/or Sulfate. These are flagged accordingly in the QC summary report. The samples selected for the matrix spikes and matrix spike duplicates (2106122-04 MS/MSD & 2106122-08 MS/MSD) were from this work order. The LCS was within control limits for these analytes. No further corrective actions were taken.

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**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Lab Order:** 2106122

**Work Order Sample Summary**

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<b>Lab Smp ID</b>	<b>Client Sample ID</b>	<b>Tag Number</b>	<b>Date Collected</b>	<b>Date Recved</b>
2106122-01	FGD-6		06/16/21 05:45 PM	6/18/2021
2106122-02	FGD-4		06/16/21 06:35 PM	6/18/2021
2106122-03	FGD-3		06/16/21 07:25 PM	6/18/2021
2106122-04	FGD-2		06/17/21 07:35 AM	6/18/2021
2106122-05	FGD-5		06/17/21 08:25 AM	6/18/2021
2106122-06	FGD-1		06/17/21 09:15 AM	6/18/2021
2106122-07	DUP-1		06/17/21 09:15 AM	6/18/2021
2106122-08	FGD-8		06/17/21 11:45 AM	6/18/2021
2106122-09	FGD-11		06/17/21 01:30 PM	6/18/2021
2106122-10	FGD-12		06/17/21 02:25 PM	6/18/2021

**Lab Order:** 2106122  
**Client:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Pon

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
2106122-01A	FGD-6	06/16/21 05:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-6	06/16/21 05:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-6	06/16/21 05:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-6	06/16/21 05:45 PM	Aqueous	SW7470A	Mercury Aq Prep	06/24/21 09:38 AM	101016
2106122-01B	FGD-6	06/16/21 05:45 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	FGD-6	06/16/21 05:45 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	FGD-6	06/16/21 05:45 PM	Aqueous	M2540C	TDS Preparation	06/18/21 09:30 AM	100948
2106122-02A	FGD-4	06/16/21 06:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-4	06/16/21 06:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-4	06/16/21 06:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-4	06/16/21 06:35 PM	Aqueous	SW7470A	Mercury Aq Prep	06/24/21 09:38 AM	101016
2106122-02B	FGD-4	06/16/21 06:35 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	FGD-4	06/16/21 06:35 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	FGD-4	06/16/21 06:35 PM	Aqueous	M2540C	TDS Preparation	06/18/21 09:30 AM	100948
2106122-03A	FGD-3	06/16/21 07:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-3	06/16/21 07:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-3	06/16/21 07:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-3	06/16/21 07:25 PM	Aqueous	SW7470A	Mercury Aq Prep	06/24/21 09:38 AM	101016
2106122-03B	FGD-3	06/16/21 07:25 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	FGD-3	06/16/21 07:25 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	FGD-3	06/16/21 07:25 PM	Aqueous	M2540C	TDS Preparation	06/18/21 09:30 AM	100948
2106122-04A	FGD-2	06/17/21 07:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-2	06/17/21 07:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-2	06/17/21 07:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-2	06/17/21 07:35 AM	Aqueous	SW7470A	Mercury Aq Prep	06/24/21 09:38 AM	101016
2106122-04B	FGD-2	06/17/21 07:35 AM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	FGD-2	06/17/21 07:35 AM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	FGD-2	06/17/21 07:35 AM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964



Lab Order: 2106122  
 Client: Golder  
 Project: Luminant-OGSES-CCR-FGD Pon

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
2106122-04B	FGD-2	06/17/21 07:35 AM	Aqueous	M2540C	TDS Preparation	06/18/21 09:30 AM	100948
2106122-05A	FGD-5	06/17/21 08:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-5	06/17/21 08:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-5	06/17/21 08:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-5	06/17/21 08:25 AM	Aqueous	SW7470A	Mercury Aq Prep	06/24/21 09:38 AM	101016
2106122-05B	FGD-5	06/17/21 08:25 AM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	FGD-5	06/17/21 08:25 AM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	FGD-5	06/17/21 08:25 AM	Aqueous	M2540C	TDS Preparation	06/18/21 09:30 AM	100948
2106122-06A	FGD-1	06/17/21 09:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-1	06/17/21 09:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-1	06/17/21 09:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-1	06/17/21 09:15 AM	Aqueous	SW7470A	Mercury Aq Prep	06/24/21 09:38 AM	101016
2106122-06B	FGD-1	06/17/21 09:15 AM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	FGD-1	06/17/21 09:15 AM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	FGD-1	06/17/21 09:15 AM	Aqueous	M2540C	TDS Preparation	06/18/21 09:30 AM	100948
2106122-07A	DUP-1	06/17/21 09:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	DUP-1	06/17/21 09:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	DUP-1	06/17/21 09:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	DUP-1	06/17/21 09:15 AM	Aqueous	SW7470A	Mercury Aq Prep	06/24/21 09:38 AM	101016
2106122-07B	DUP-1	06/17/21 09:15 AM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	DUP-1	06/17/21 09:15 AM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	DUP-1	06/17/21 09:15 AM	Aqueous	M2540C	TDS Preparation	06/18/21 09:30 AM	100948
2106122-08A	FGD-8	06/17/21 11:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-8	06/17/21 11:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-8	06/17/21 11:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-8	06/17/21 11:45 AM	Aqueous	SW7470A	Mercury Aq Prep	06/24/21 09:38 AM	101016
2106122-08B	FGD-8	06/17/21 11:45 AM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	FGD-8	06/17/21 11:45 AM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964

**Lab Order:** 2106122  
**Client:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Pon

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
2106122-08B	FGD-8	06/17/21 11:45 AM	Aqueous	M2540C	TDS Preparation	06/21/21 09:12 AM	100962
2106122-09A	FGD-11	06/17/21 01:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-11	06/17/21 01:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-11	06/17/21 01:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-11	06/17/21 01:30 PM	Aqueous	SW7470A	Mercury Aq Prep	06/24/21 09:38 AM	101016
2106122-09B	FGD-11	06/17/21 01:30 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	FGD-11	06/17/21 01:30 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	FGD-11	06/17/21 01:30 PM	Aqueous	M2540C	TDS Preparation	06/21/21 09:12 AM	100962
2106122-10A	FGD-12	06/17/21 02:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-12	06/17/21 02:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/21 09:10 AM	100982
	FGD-12	06/17/21 02:25 PM	Aqueous	SW7470A	Mercury Aq Prep	06/24/21 09:38 AM	101016
2106122-10B	FGD-12	06/17/21 02:25 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	FGD-12	06/17/21 02:25 PM	Aqueous	M2540C	TDS Preparation	06/21/21 09:12 AM	100962

Lab Order: 2106122  
 Client: Golder  
 Project: Luminant-OGSES-CCR-FGD Pon

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2106122-01A	FGD-6	Aqueous	SW7470A	Mercury Total: Aqueous	101016	1	06/24/21 03:53 PM	CETAC2_HG_210624 D
	FGD-6	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 12:58 PM	ICP-MS4_210623A
	FGD-6	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	10	06/23/21 03:05 PM	ICP-MS4_210623A
	FGD-6	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 11:55 AM	ICP-MS5_210623B
2106122-01B	FGD-6	Aqueous	E300	Anions by IC method - Water	100964	10	06/21/21 07:22 PM	IC2_210621A
	FGD-6	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 12:42 AM	IC2_210621A
	FGD-6	Aqueous	M2540C	Total Dissolved Solids	100948	1	06/18/21 03:15 PM	WC_210618B
2106122-02A	FGD-4	Aqueous	SW7470A	Mercury Total: Aqueous	101016	1	06/24/21 03:55 PM	CETAC2_HG_210624 D
	FGD-4	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 11:58 AM	ICP-MS5_210623B
	FGD-4	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 01:00 PM	ICP-MS4_210623A
	FGD-4	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	10	06/23/21 03:07 PM	ICP-MS4_210623A
2106122-02B	FGD-4	Aqueous	E300	Anions by IC method - Water	100964	10	06/21/21 07:38 PM	IC2_210621A
	FGD-4	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 12:58 AM	IC2_210621A
	FGD-4	Aqueous	M2540C	Total Dissolved Solids	100948	1	06/18/21 03:15 PM	WC_210618B
2106122-03A	FGD-3	Aqueous	SW7470A	Mercury Total: Aqueous	101016	1	06/24/21 03:57 PM	CETAC2_HG_210624 D
	FGD-3	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 12:01 PM	ICP-MS5_210623B
	FGD-3	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	10	06/23/21 03:09 PM	ICP-MS4_210623A
	FGD-3	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 01:02 PM	ICP-MS4_210623A
2106122-03B	FGD-3	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 02:34 AM	IC2_210621A
	FGD-3	Aqueous	E300	Anions by IC method - Water	100964	10	06/21/21 07:54 PM	IC2_210621A
	FGD-3	Aqueous	M2540C	Total Dissolved Solids	100948	1	06/18/21 03:15 PM	WC_210618B
2106122-04A	FGD-2	Aqueous	SW7470A	Mercury Total: Aqueous	101016	1	06/24/21 03:59 PM	CETAC2_HG_210624 D
	FGD-2	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 12:03 PM	ICP-MS5_210623B
	FGD-2	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 01:04 PM	ICP-MS4_210623A
	FGD-2	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	10	06/23/21 03:11 PM	ICP-MS4_210623A
2106122-04B	FGD-2	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 02:50 AM	IC2_210621A

Lab Order: 2106122  
 Client: Golder  
 Project: Luminant-OGSES-CCR-FGD Pon

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2106122-04B	FGD-2	Aqueous	E300	Anions by IC method - Water	100964	100	06/21/21 05:46 PM	IC2_210621A
	FGD-2	Aqueous	E300	Anions by IC method - Water	100964	10	06/21/21 08:10 PM	IC2_210621A
	FGD-2	Aqueous	M2540C	Total Dissolved Solids	100948	1	06/18/21 03:15 PM	WC_210618B
2106122-05A	FGD-5	Aqueous	SW7470A	Mercury Total: Aqueous	101016	1	06/24/21 04:02 PM	CETAC2_HG_210624 D
	FGD-5	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 01:06 PM	ICP-MS4_210623A
	FGD-5	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	10	06/23/21 03:13 PM	ICP-MS4_210623A
	FGD-5	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 12:06 PM	ICP-MS5_210623B
2106122-05B	FGD-5	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 03:06 AM	IC2_210621A
	FGD-5	Aqueous	E300	Anions by IC method - Water	100964	10	06/21/21 08:26 PM	IC2_210621A
	FGD-5	Aqueous	M2540C	Total Dissolved Solids	100948	1	06/18/21 03:15 PM	WC_210618B
2106122-06A	FGD-1	Aqueous	SW7470A	Mercury Total: Aqueous	101016	1	06/24/21 04:04 PM	CETAC2_HG_210624 D
	FGD-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 01:08 PM	ICP-MS4_210623A
	FGD-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	10	06/23/21 03:15 PM	ICP-MS4_210623A
	FGD-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 12:08 PM	ICP-MS5_210623B
2106122-06B	FGD-1	Aqueous	E300	Anions by IC method - Water	100964	10	06/21/21 08:42 PM	IC2_210621A
	FGD-1	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 03:22 AM	IC2_210621A
	FGD-1	Aqueous	M2540C	Total Dissolved Solids	100948	1	06/18/21 03:15 PM	WC_210618B
2106122-07A	DUP-1	Aqueous	SW7470A	Mercury Total: Aqueous	101016	1	06/24/21 04:06 PM	CETAC2_HG_210624 D
	DUP-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	10	06/23/21 03:17 PM	ICP-MS4_210623A
	DUP-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 12:11 PM	ICP-MS5_210623B
	DUP-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 01:10 PM	ICP-MS4_210623A
2106122-07B	DUP-1	Aqueous	E300	Anions by IC method - Water	100964	10	06/21/21 08:58 PM	IC2_210621A
	DUP-1	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 03:38 AM	IC2_210621A
	DUP-1	Aqueous	M2540C	Total Dissolved Solids	100948	1	06/18/21 03:15 PM	WC_210618B
2106122-08A	FGD-8	Aqueous	SW7470A	Mercury Total: Aqueous	101016	1	06/24/21 04:17 PM	CETAC2_HG_210624 D
	FGD-8	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 12:14 PM	ICP-MS5_210623B

Lab Order: 2106122  
 Client: Golder  
 Project: Luminant-OGSES-CCR-FGD Pon

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2106122-08A	FGD-8	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	50	06/23/21 03:19 PM	ICP-MS4_210623A
	FGD-8	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 01:12 PM	ICP-MS4_210623A
2106122-08B	FGD-8	Aqueous	E300	Anions by IC method - Water	100964	100	06/21/21 06:34 PM	IC2_210621A
	FGD-8	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 03:54 AM	IC2_210621A
	FGD-8	Aqueous	M2540C	Total Dissolved Solids	100962	1	06/21/21 02:10 PM	WC_210621B
2106122-09A	FGD-11	Aqueous	SW7470A	Mercury Total: Aqueous	101016	1	06/24/21 04:19 PM	CETAC2_HG_210624 D
	FGD-11	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	10	06/23/21 03:21 PM	ICP-MS4_210623A
	FGD-11	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 12:16 PM	ICP-MS5_210623B
	FGD-11	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 01:14 PM	ICP-MS4_210623A
2106122-09B	FGD-11	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 04:10 AM	IC2_210621A
	FGD-11	Aqueous	E300	Anions by IC method - Water	100964	100	06/21/21 10:34 PM	IC2_210621A
	FGD-11	Aqueous	M2540C	Total Dissolved Solids	100962	1	06/21/21 02:10 PM	WC_210621B
2106122-10A	FGD-12	Aqueous	SW7470A	Mercury Total: Aqueous	101016	1	06/24/21 04:21 PM	CETAC2_HG_210624 D
	FGD-12	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 01:27 PM	ICP-MS4_210623A
	FGD-12	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100982	1	06/23/21 12:34 PM	ICP-MS5_210623B
2106122-10B	FGD-12	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 04:26 AM	IC2_210621A
	FGD-12	Aqueous	M2540C	Total Dissolved Solids	100962	1	06/21/21 02:10 PM	WC_210621B

**DHL Analytical, Inc.**

**Date:** 22-Jul-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2106122

**Client Sample ID:** FGD-6  
**Lab ID:** 2106122-01  
**Collection Date:** 06/16/21 05:45 PM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>			Analyst: <b>SP</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/23/21 11:55 AM
Arsenic	0.00232	0.00200	0.00500	J	mg/L	1	06/23/21 11:55 AM
Barium	0.0769	0.00300	0.0100		mg/L	1	06/23/21 11:55 AM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 11:55 AM
Boron	0.0854	0.0100	0.0300		mg/L	1	06/23/21 12:58 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 11:55 AM
Calcium	29.0	1.00	3.00		mg/L	10	06/23/21 03:05 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 11:55 AM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/23/21 11:55 AM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 11:55 AM
Lithium	0.00824	0.00500	0.0100	J	mg/L	1	06/23/21 11:55 AM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 11:55 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 11:55 AM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/23/21 11:55 AM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>JVR</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/24/21 03:53 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>BM</b>		
Chloride	222	3.00	10.0		mg/L	10	06/21/21 07:22 PM
Fluoride	0.452	0.100	0.400		mg/L	1	06/22/21 12:42 AM
Sulfate	76.3	1.00	3.00		mg/L	1	06/22/21 12:42 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>JS</b>		
Total Dissolved Solids (Residue, Filterable)	799	10.0	10.0		mg/L	1	06/18/21 03:15 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**DHL Analytical, Inc.**

**Date:** 22-Jul-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2106122

**Client Sample ID:** FGD-4  
**Lab ID:** 2106122-02  
**Collection Date:** 06/16/21 06:35 PM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>		Analyst: <b>SP</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/23/21 11:58 AM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 11:58 AM
Barium	0.103	0.00300	0.0100		mg/L	1	06/23/21 11:58 AM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 11:58 AM
Boron	0.0932	0.0100	0.0300		mg/L	1	06/23/21 01:00 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 11:58 AM
Calcium	36.6	1.00	3.00		mg/L	10	06/23/21 03:07 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 11:58 AM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/23/21 11:58 AM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 11:58 AM
Lithium	0.0137	0.00500	0.0100		mg/L	1	06/23/21 11:58 AM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 11:58 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 11:58 AM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/23/21 11:58 AM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>JVR</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/24/21 03:55 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>BM</b>			
Chloride	198	3.00	10.0		mg/L	10	06/21/21 07:38 PM
Fluoride	0.517	0.100	0.400		mg/L	1	06/22/21 12:58 AM
Sulfate	45.9	1.00	3.00		mg/L	1	06/22/21 12:58 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>JS</b>			
Total Dissolved Solids (Residue, Filterable)	654	10.0	10.0		mg/L	1	06/18/21 03:15 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**DHL Analytical, Inc.**

**Date:** 22-Jul-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2106122

**Client Sample ID:** FGD-3  
**Lab ID:** 2106122-03  
**Collection Date:** 06/16/21 07:25 PM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>		Analyst: <b>SP</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/23/21 12:01 PM
Arsenic	0.00217	0.00200	0.00500	J	mg/L	1	06/23/21 12:01 PM
Barium	0.0343	0.00300	0.0100		mg/L	1	06/23/21 12:01 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:01 PM
Boron	0.121	0.0100	0.0300		mg/L	1	06/23/21 01:02 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:01 PM
Calcium	39.0	1.00	3.00		mg/L	10	06/23/21 03:09 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:01 PM
Cobalt	0.00624	0.00300	0.00500		mg/L	1	06/23/21 12:01 PM
Lead	0.000491	0.000300	0.00100	J	mg/L	1	06/23/21 12:01 PM
Lithium	0.0426	0.00500	0.0100		mg/L	1	06/23/21 12:01 PM
Molybdenum	0.00336	0.00200	0.00500	J	mg/L	1	06/23/21 12:01 PM
Selenium	0.00752	0.00200	0.00500		mg/L	1	06/23/21 12:01 PM
Thallium	0.000528	0.000500	0.00150	J	mg/L	1	06/23/21 12:01 PM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>JVR</b>			
Mercury	0.0000940	0.0000800	0.000200	J	mg/L	1	06/24/21 03:57 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>BM</b>			
Chloride	64.1	3.00	10.0		mg/L	10	06/21/21 07:54 PM
Fluoride	1.20	0.100	0.400		mg/L	1	06/22/21 02:34 AM
Sulfate	130	1.00	3.00		mg/L	1	06/22/21 02:34 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>JS</b>			
Total Dissolved Solids (Residue, Filterable)	741	10.0	10.0		mg/L	1	06/18/21 03:15 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern



**DHL Analytical, Inc.**

**Date:** 22-Jul-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2106122

**Client Sample ID:** FGD-2  
**Lab ID:** 2106122-04  
**Collection Date:** 06/17/21 07:35 AM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>		Analyst: <b>SP</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/23/21 12:03 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:03 PM
Barium	0.108	0.00300	0.0100		mg/L	1	06/23/21 12:03 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:03 PM
Boron	0.195	0.0100	0.0300		mg/L	1	06/23/21 01:04 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:03 PM
Calcium	76.4	1.00	3.00		mg/L	10	06/23/21 03:11 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:03 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/23/21 12:03 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:03 PM
Lithium	0.0230	0.00500	0.0100		mg/L	1	06/23/21 12:03 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:03 PM
Selenium	0.0233	0.00200	0.00500		mg/L	1	06/23/21 12:03 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/23/21 12:03 PM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>JVR</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/24/21 03:59 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>BM</b>			
Chloride	422	3.00	10.0		mg/L	10	06/21/21 08:10 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/22/21 02:50 AM
Sulfate	133	1.00	3.00		mg/L	1	06/22/21 02:50 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>JS</b>			
Total Dissolved Solids (Residue, Filterable)	1030	50.0	50.0		mg/L	1	06/18/21 03:15 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2106122

**Client Sample ID:** FGD-5  
**Lab ID:** 2106122-05  
**Collection Date:** 06/17/21 08:25 AM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>			Analyst: <b>SP</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/23/21 12:06 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:06 PM
Barium	0.111	0.00300	0.0100		mg/L	1	06/23/21 12:06 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:06 PM
Boron	0.116	0.0100	0.0300		mg/L	1	06/23/21 01:06 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:06 PM
Calcium	103	1.00	3.00		mg/L	10	06/23/21 03:13 PM
Chromium	0.0376	0.00200	0.00500		mg/L	1	06/23/21 12:06 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/23/21 12:06 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:06 PM
Lithium	0.147	0.00500	0.0100		mg/L	1	06/23/21 12:06 PM
Molybdenum	0.00504	0.00200	0.00500		mg/L	1	06/23/21 12:06 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:06 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/23/21 12:06 PM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>JVR</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/24/21 04:02 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>BM</b>		
Chloride	308	3.00	10.0		mg/L	10	06/21/21 08:26 PM
Fluoride	0.593	0.100	0.400		mg/L	1	06/22/21 03:06 AM
Sulfate	107	1.00	3.00		mg/L	1	06/22/21 03:06 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>JS</b>		
Total Dissolved Solids (Residue, Filterable)	795	50.0	50.0		mg/L	1	06/18/21 03:15 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2106122

**Client Sample ID:** FGD-1  
**Lab ID:** 2106122-06  
**Collection Date:** 06/17/21 09:15 AM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>			Analyst: <b>SP</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/23/21 12:08 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:08 PM
Barium	0.174	0.00300	0.0100		mg/L	1	06/23/21 12:08 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:08 PM
Boron	0.0843	0.0100	0.0300		mg/L	1	06/23/21 01:08 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:08 PM
Calcium	35.7	1.00	3.00		mg/L	10	06/23/21 03:15 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:08 PM
Cobalt	0.00441	0.00300	0.00500	J	mg/L	1	06/23/21 12:08 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:08 PM
Lithium	0.0225	0.00500	0.0100		mg/L	1	06/23/21 12:08 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:08 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:08 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/23/21 12:08 PM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>JVR</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/24/21 04:04 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>BM</b>		
Chloride	299	3.00	10.0		mg/L	10	06/21/21 08:42 PM
Fluoride	0.356	0.100	0.400	J	mg/L	1	06/22/21 03:22 AM
Sulfate	140	10.0	30.0		mg/L	10	06/21/21 08:42 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>JS</b>		
Total Dissolved Solids (Residue, Filterable)	935	50.0	50.0		mg/L	1	06/18/21 03:15 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**DHL Analytical, Inc.**

**Date:** 22-Jul-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2106122

**Client Sample ID:** DUP-1  
**Lab ID:** 2106122-07  
**Collection Date:** 06/17/21 09:15 AM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>			Analyst: <b>SP</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/23/21 12:11 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:11 PM
Barium	0.168	0.00300	0.0100		mg/L	1	06/23/21 12:11 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:11 PM
Boron	0.0808	0.0100	0.0300		mg/L	1	06/23/21 01:10 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:11 PM
Calcium	35.7	1.00	3.00		mg/L	10	06/23/21 03:17 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:11 PM
Cobalt	0.00423	0.00300	0.00500	J	mg/L	1	06/23/21 12:11 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:11 PM
Lithium	0.0221	0.00500	0.0100		mg/L	1	06/23/21 12:11 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:11 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:11 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/23/21 12:11 PM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>JVR</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/24/21 04:06 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>BM</b>		
Chloride	304	3.00	10.0		mg/L	10	06/21/21 08:58 PM
Fluoride	0.352	0.100	0.400	J	mg/L	1	06/22/21 03:38 AM
Sulfate	143	10.0	30.0		mg/L	10	06/21/21 08:58 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>JS</b>		
Total Dissolved Solids (Residue, Filterable)	960	50.0	50.0		mg/L	1	06/18/21 03:15 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**DHL Analytical, Inc.**

**Date:** 22-Jul-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2106122

**Client Sample ID:** FGD-8  
**Lab ID:** 2106122-08  
**Collection Date:** 06/17/21 11:45 AM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>			Analyst: <b>SP</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/23/21 12:14 PM
Arsenic	0.00749	0.00200	0.00500		mg/L	1	06/23/21 12:14 PM
Barium	1.10	0.00300	0.0100		mg/L	1	06/23/21 12:14 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:14 PM
Boron	0.0816	0.0100	0.0300		mg/L	1	06/23/21 01:12 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:14 PM
Calcium	353	5.00	15.0		mg/L	50	06/23/21 03:19 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:14 PM
Cobalt	0.00670	0.00300	0.00500		mg/L	1	06/23/21 12:14 PM
Lead	0.000766	0.000300	0.00100	J	mg/L	1	06/23/21 12:14 PM
Lithium	0.0125	0.00500	0.0100		mg/L	1	06/23/21 12:14 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:14 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:14 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/23/21 12:14 PM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>JVR</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/24/21 04:17 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>BM</b>		
Chloride	2230	30.0	100		mg/L	100	06/21/21 06:34 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/22/21 03:54 AM
Sulfate	310	100	300		mg/L	100	06/21/21 06:34 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>JS</b>		
Total Dissolved Solids (Residue, Filterable)	4870	50.0	50.0		mg/L	1	06/21/21 02:10 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2106122

**Client Sample ID:** FGD-11  
**Lab ID:** 2106122-09  
**Collection Date:** 06/17/21 01:30 PM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>			Analyst: <b>SP</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/23/21 12:16 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:16 PM
Barium	0.300	0.00300	0.0100		mg/L	1	06/23/21 12:16 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:16 PM
Boron	0.116	0.0100	0.0300		mg/L	1	06/23/21 01:14 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:16 PM
Calcium	90.4	1.00	3.00		mg/L	10	06/23/21 03:21 PM
Chromium	0.00633	0.00200	0.00500		mg/L	1	06/23/21 12:16 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/23/21 12:16 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:16 PM
Lithium	0.0149	0.00500	0.0100		mg/L	1	06/23/21 12:16 PM
Molybdenum	0.00235	0.00200	0.00500	J	mg/L	1	06/23/21 12:16 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:16 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/23/21 12:16 PM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>JVR</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/24/21 04:19 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>BM</b>		
Chloride	440	30.0	100		mg/L	100	06/21/21 10:34 PM
Fluoride	0.471	0.100	0.400		mg/L	1	06/22/21 04:10 AM
Sulfate	33.8	1.00	3.00		mg/L	1	06/22/21 04:10 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>JS</b>		
Total Dissolved Solids (Residue, Filterable)	1160	50.0	50.0		mg/L	1	06/21/21 02:10 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**DHL Analytical, Inc.**

**Date:** 22-Jul-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2106122

**Client Sample ID:** FGD-12  
**Lab ID:** 2106122-10  
**Collection Date:** 06/17/21 02:25 PM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>			Analyst: <b>SP</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/23/21 12:34 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:34 PM
Barium	0.0817	0.00300	0.0100		mg/L	1	06/23/21 12:34 PM
Beryllium	0.000504	0.000300	0.00100	J	mg/L	1	06/23/21 12:34 PM
Boron	0.102	0.0100	0.0300		mg/L	1	06/23/21 01:27 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/23/21 12:34 PM
Calcium	12.3	0.100	0.300		mg/L	1	06/23/21 12:34 PM
Chromium	0.00273	0.00200	0.00500	J	mg/L	1	06/23/21 12:34 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/23/21 12:34 PM
Lead	0.00317	0.000300	0.00100		mg/L	1	06/23/21 12:34 PM
Lithium	0.0239	0.00500	0.0100		mg/L	1	06/23/21 12:34 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:34 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/23/21 12:34 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/23/21 12:34 PM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>JVR</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/24/21 04:21 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>BM</b>		
Chloride	16.1	0.300	1.00		mg/L	1	06/22/21 04:26 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/22/21 04:26 AM
Sulfate	18.3	1.00	3.00		mg/L	1	06/22/21 04:26 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>JS</b>		
Total Dissolved Solids (Residue, Filterable)	202	10.0	10.0		mg/L	1	06/21/21 02:10 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

**ANALYTICAL QC SUMMARY REPORT**

**RunID:** CETAC2\_HG\_210511A

Sample ID: <b>DCS-100518</b>	Batch ID: <b>100518</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>DCS</b>	Run ID: <b>CETAC2_HG_210511A</b>	Analysis Date: <b>5/11/2021 1:32:27 PM</b>	Prep Date: <b>5/10/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.000165	0.000200	0.000200	0	82.5	82	119	0	0	

**Qualifiers:** B Analyte detected in the associated Method Blank  
 J Analyte detected between MDL and RL  
 ND Not Detected at the Method Detection Limit  
 RL Reporting Limit  
 J Analyte detected between SDL and RL

DF Dilution Factor  
 MDL Method Detection Limit  
 R RPD outside accepted control limits  
 S Spike Recovery outside control limits  
 N Parameter not NELAP certified



**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: CETAC2\_HG\_210624D**

The QC data in batch 101016 applies to the following samples: 2106122-01A, 2106122-02A, 2106122-03A, 2106122-04A, 2106122-05A, 2106122-06A, 2106122-07A, 2106122-08A, 2106122-09A, 2106122-10A

Sample ID: <b>MB-101016</b>	Batch ID: <b>101016</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>CETAC2_HG_210624D</b>	Analysis Date: <b>6/24/2021 3:32:48 PM</b>	Prep Date: <b>6/24/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	<0.0000800	0.000200								

Sample ID: <b>LCS-101016</b>	Batch ID: <b>101016</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>CETAC2_HG_210624D</b>	Analysis Date: <b>6/24/2021 3:37:20 PM</b>	Prep Date: <b>6/24/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00205	0.000200	0.00200	0	103	85	115			

Sample ID: <b>LCSD-101016</b>	Batch ID: <b>101016</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>CETAC2_HG_210624D</b>	Analysis Date: <b>6/24/2021 3:39:36 PM</b>	Prep Date: <b>6/24/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00203	0.000200	0.00200	0	102	85	115	0.980	15	

Sample ID: <b>2106132-01C MS</b>	Batch ID: <b>101016</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>CETAC2_HG_210624D</b>	Analysis Date: <b>6/24/2021 3:44:08 PM</b>	Prep Date: <b>6/24/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0104	0.00100	0.0100	0	104	80	120			

Sample ID: <b>2106132-01C MSD</b>	Batch ID: <b>101016</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>CETAC2_HG_210624D</b>	Analysis Date: <b>6/24/2021 3:46:23 PM</b>	Prep Date: <b>6/24/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0102	0.00100	0.0100	0	102	80	120	1.94	15	

Sample ID: <b>2106132-01C SD</b>	Batch ID: <b>101016</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>CETAC2_HG_210624D</b>	Analysis Date: <b>6/24/2021 3:48:39 PM</b>	Prep Date: <b>6/24/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	<0.00200	0.00500	0	0				0	10	

Sample ID: <b>2106132-01C PDS</b>	Batch ID: <b>101016</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>CETAC2_HG_210624D</b>	Analysis Date: <b>6/24/2021 3:50:55 PM</b>	Prep Date: <b>6/24/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0122	0.00100	0.0125	0	98.0	85	115			

**Qualifiers:** B Analyte detected in the associated Method Blank      DF Dilution Factor  
J Analyte detected between MDL and RL      MDL Method Detection Limit  
ND Not Detected at the Method Detection Limit      R RPD outside accepted control limits  
RL Reporting Limit      S Spike Recovery outside control limits  
J Analyte detected between SDL and RL      N Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: CETAC2\_HG\_210624D**

Sample ID: <b>ICV-210624</b>	Batch ID: <b>R115939</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>CETAC2_HG_210624D</b>	Analysis Date: <b>6/24/2021 1:57:16 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00396	0.000200	0.00400	0	99.0	90	110			
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Sample ID: <b>CCV2-210624</b>	Batch ID: <b>R115939</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_210624D</b>	Analysis Date: <b>6/24/2021 3:23:39 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00203	0.000200	0.00200	0	102	90	110			
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Sample ID: <b>CCV3-210624</b>	Batch ID: <b>R115939</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_210624D</b>	Analysis Date: <b>6/24/2021 4:09:05 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00201	0.000200	0.00200	0	101	90	110			
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Sample ID: <b>CCV4-210624</b>	Batch ID: <b>R115939</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_210624D</b>	Analysis Date: <b>6/24/2021 4:32:58 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00199	0.000200	0.00200	0	99.5	90	110			
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<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAP certified</p>
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**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_210428A**

Sample ID: <b>DCS2-100323</b>	Batch ID: <b>100323</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>DCS2</b>	Run ID: <b>ICP-MS4_210428A</b>	Analysis Date: <b>4/28/2021 10:34:00 AM</b>	Prep Date: <b>4/27/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.302	0.300	0.300	0	101	70	130	0	0	

Sample ID: <b>DCS4-100323</b>	Batch ID: <b>100323</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>DCS4</b>	Run ID: <b>ICP-MS4_210428A</b>	Analysis Date: <b>4/28/2021 10:39:00 AM</b>	Prep Date: <b>4/27/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0310	0.0300	0.0300	0	103	70	130	0	0	

**Qualifiers:** B Analyte detected in the associated Method Blank      DF Dilution Factor  
                   J Analyte detected between MDL and RL                    MDL Method Detection Limit  
                   ND Not Detected at the Method Detection Limit            R RPD outside accepted control limits  
                   RL Reporting Limit    S Spike Recovery outside control limits  
                   J Analyte detected between SDL and RL                        N Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_210623A**

The QC data in batch 100982 applies to the following samples: 2106122-01A, 2106122-02A, 2106122-03A, 2106122-04A, 2106122-05A, 2106122-06A, 2106122-07A, 2106122-08A, 2106122-09A, 2106122-10A

Sample ID: <b>MB-100982</b>	Batch ID: <b>100982</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_210623A</b>	Analysis Date: <b>6/23/2021 12:46:00 PM</b>	Prep Date: <b>6/22/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	<0.0100	0.0300								

Sample ID: <b>LCS-100982</b>	Batch ID: <b>100982</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_210623A</b>	Analysis Date: <b>6/23/2021 12:48:00 PM</b>	Prep Date: <b>6/22/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.205	0.0300	0.200	0	103	80	120			

Sample ID: <b>LCSD-100982</b>	Batch ID: <b>100982</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_210623A</b>	Analysis Date: <b>6/23/2021 12:50:00 PM</b>	Prep Date: <b>6/22/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.211	0.0300	0.200	0	105	80	120	2.73	15	

Sample ID: <b>2106129-04A SD</b>	Batch ID: <b>100982</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_210623A</b>	Analysis Date: <b>6/23/2021 12:56:00 PM</b>	Prep Date: <b>6/22/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0727	0.150	0	0.0683				6.21	20	

Sample ID: <b>2106129-04A PDS</b>	Batch ID: <b>100982</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_210623A</b>	Analysis Date: <b>6/23/2021 1:16:00 PM</b>	Prep Date: <b>6/22/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.262	0.0300	0.200	0.0683	96.7	75	125			

Sample ID: <b>2106129-04A MS</b>	Batch ID: <b>100982</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_210623A</b>	Analysis Date: <b>6/23/2021 1:18:00 PM</b>	Prep Date: <b>6/22/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.266	0.0300	0.200	0.0683	98.9	75	125			

Sample ID: <b>2106129-04A MSD</b>	Batch ID: <b>100982</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_210623A</b>	Analysis Date: <b>6/23/2021 1:20:00 PM</b>	Prep Date: <b>6/22/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.285	0.0300	0.200	0.0683	108	75	125	6.96	15	

**Qualifiers:** B Analyte detected in the associated Method Blank  
 J Analyte detected between MDL and RL  
 ND Not Detected at the Method Detection Limit  
 RL Reporting Limit  
 J Analyte detected between SDL and RL  
 DF Dilution Factor  
 MDL Method Detection Limit  
 R RPD outside accepted control limits  
 S Spike Recovery outside control limits  
 N Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_210623A**

Sample ID: <b>ICV-210623</b>	Batch ID: <b>R115915</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_210623A</b>	Analysis Date: <b>6/23/2021 11:54:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.101	0.0300	0.100	0	101	90	110			
Calcium	2.55	0.300	2.50	0	102	90	110			

Sample ID: <b>LCVL-210623</b>	Batch ID: <b>R115915</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_210623A</b>	Analysis Date: <b>6/23/2021 12:30:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0207	0.0300	0.0200	0	104	80	120			
Calcium	0.103	0.300	0.100	0	103	80	120			

Sample ID: <b>CCV1-210623</b>	Batch ID: <b>R115915</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_210623A</b>	Analysis Date: <b>6/23/2021 1:22:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.199	0.0300	0.200	0	99.4	90	110			

Sample ID: <b>CCV2-210623</b>	Batch ID: <b>R115915</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_210623A</b>	Analysis Date: <b>6/23/2021 1:46:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.211	0.0300	0.200	0	105	90	110			

Sample ID: <b>CCV4-210623</b>	Batch ID: <b>R115915</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_210623A</b>	Analysis Date: <b>6/23/2021 2:55:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.83	0.300	5.00	0	96.6	90	110			

Sample ID: <b>CCV5-210623</b>	Batch ID: <b>R115915</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_210623A</b>	Analysis Date: <b>6/23/2021 3:23:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.86	0.300	5.00	0	97.2	90	110			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAP certified

CLIENT: Golder  
 Work Order: 2106122  
 Project: Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5\_210428A

Sample ID: <b>DCS1-100323</b>	Batch ID: <b>100323</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>DCS</b>	Run ID: <b>ICP-MS5_210428A</b>	Analysis Date: <b>4/28/2021 10:49:00 AM</b>	Prep Date: <b>4/27/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00105	0.00250	0.00100	0	105	70	130	0	0	
Beryllium	0.000505	0.00100	0.000500	0	101	70	130	0	0	
Cadmium	0.000461	0.00100	0.000500	0	92.2	70	130	0	0	
Lead	0.000474	0.00100	0.000500	0	94.8	70	130	0	0	
Thallium	0.000452	0.00150	0.000500	0	90.4	70	130	0	0	

Sample ID: <b>DCS2-100323</b>	Batch ID: <b>100323</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>DCS2</b>	Run ID: <b>ICP-MS5_210428A</b>	Analysis Date: <b>4/28/2021 10:53:00 AM</b>	Prep Date: <b>4/27/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.302	0.300	0.300	0	101	70	130	0	0	

Sample ID: <b>DCS3-100323</b>	Batch ID: <b>100323</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>DCS3</b>	Run ID: <b>ICP-MS5_210428A</b>	Analysis Date: <b>4/28/2021 10:56:00 AM</b>	Prep Date: <b>4/27/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00467	0.00500	0.00500	0	93.3	70	130	0	0	
Barium	0.00472	0.0100	0.00500	0	94.4	70	130	0	0	
Chromium	0.00490	0.00500	0.00500	0	97.9	70	130	0	0	
Cobalt	0.00473	0.00500	0.00500	0	94.5	70	130	0	0	
Lithium	0.00495	0.0100	0.00500	0	99.0	70	130	0	0	
Molybdenum	0.00482	0.00500	0.00500	0	96.4	70	130	0	0	
Selenium	0.00498	0.00500	0.00500	0	99.5	70	130	0	0	

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS5\_210623B**

The QC data in batch 100982 applies to the following samples: 2106122-01A, 2106122-02A, 2106122-03A, 2106122-04A, 2106122-05A, 2106122-06A, 2106122-07A, 2106122-08A, 2106122-09A, 2106122-10A

Sample ID: <b>MB-100982</b>	Batch ID: <b>100982</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS5_210623B</b>	Analysis Date: <b>6/23/2021 11:39:00 AM</b>	Prep Date: <b>6/22/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.000800	0.00250								
Arsenic	<0.00200	0.00500								
Barium	<0.00300	0.0100								
Beryllium	<0.000300	0.00100								
Cadmium	<0.000300	0.00100								
Calcium	<0.100	0.300								
Chromium	<0.00200	0.00500								
Cobalt	<0.00300	0.00500								
Lead	<0.000300	0.00100								
Lithium	<0.00500	0.0100								
Molybdenum	<0.00200	0.00500								
Selenium	<0.00200	0.00500								
Thallium	<0.000500	0.00150								

Sample ID: <b>LCS-100982</b>	Batch ID: <b>100982</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>ICP-MS5_210623B</b>	Analysis Date: <b>6/23/2021 11:42:00 AM</b>	Prep Date: <b>6/22/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.200	0.00250	0.200	0	100	80	120			
Arsenic	0.209	0.00500	0.200	0	104	80	120			
Barium	0.202	0.0100	0.200	0	101	80	120			
Beryllium	0.207	0.00100	0.200	0	103	80	120			
Cadmium	0.207	0.00100	0.200	0	103	80	120			
Calcium	5.08	0.300	5.00	0	102	80	120			
Chromium	0.204	0.00500	0.200	0	102	80	120			
Cobalt	0.210	0.00500	0.200	0	105	80	120			
Lead	0.196	0.00100	0.200	0	98.2	80	120			
Lithium	0.205	0.0100	0.200	0	102	80	120			
Molybdenum	0.206	0.00500	0.200	0	103	80	120			
Selenium	0.204	0.00500	0.200	0	102	80	120			
Thallium	0.198	0.00150	0.200	0	98.8	80	120			

Sample ID: <b>LCSD-100982</b>	Batch ID: <b>100982</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS5_210623B</b>	Analysis Date: <b>6/23/2021 11:45:00 AM</b>	Prep Date: <b>6/22/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.197	0.00250	0.200	0	98.5	80	120	1.54	15	
Arsenic	0.208	0.00500	0.200	0	104	80	120	0.204	15	
Barium	0.204	0.0100	0.200	0	102	80	120	1.08	15	

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAP certified</p>
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**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS5\_210623B**

Sample ID: <b>LCSD-100982</b>	Batch ID: <b>100982</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS5_210623B</b>	Analysis Date: <b>6/23/2021 11:45:00 AM</b>	Prep Date: <b>6/22/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.204	0.00100	0.200	0	102	80	120	1.46	15	
Cadmium	0.208	0.00100	0.200	0	104	80	120	0.350	15	
Calcium	5.11	0.300	5.00	0	102	80	120	0.488	15	
Chromium	0.206	0.00500	0.200	0	103	80	120	1.10	15	
Cobalt	0.208	0.00500	0.200	0	104	80	120	1.11	15	
Lead	0.196	0.00100	0.200	0	98.1	80	120	0.129	15	
Lithium	0.203	0.0100	0.200	0	102	80	120	0.789	15	
Molybdenum	0.203	0.00500	0.200	0	102	80	120	1.39	15	
Selenium	0.204	0.00500	0.200	0	102	80	120	0.109	15	
Thallium	0.197	0.00150	0.200	0	98.7	80	120	0.041	15	

Sample ID: <b>2106129-04A SD</b>	Batch ID: <b>100982</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS5_210623B</b>	Analysis Date: <b>6/23/2021 11:53:00 AM</b>	Prep Date: <b>6/22/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.00400	0.0125	0	0				0	20	
Arsenic	<0.0100	0.0250	0	0				0	20	
Barium	0.0429	0.0500	0	0.0428				0.180	20	
Beryllium	<0.00150	0.00500	0	0				0	20	
Cadmium	<0.00150	0.00500	0	0				0	20	
Calcium	14.6	1.50	0	15.1				3.52	20	
Chromium	<0.0100	0.0250	0	0				0	20	
Cobalt	<0.0150	0.0250	0	0				0	20	
Lead	<0.00150	0.00500	0	0.000404				0	20	
Lithium	<0.0250	0.0500	0	0.00804				0	20	
Molybdenum	<0.0100	0.0250	0	0				0	20	
Selenium	<0.0100	0.0250	0	0				0	20	
Thallium	<0.00250	0.00750	0	0				0	20	

Sample ID: <b>2106129-04A PDS</b>	Batch ID: <b>100982</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS5_210623B</b>	Analysis Date: <b>6/23/2021 12:19:00 PM</b>	Prep Date: <b>6/22/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.175	0.00250	0.200	0	87.7	75	125			
Arsenic	0.189	0.00500	0.200	0	94.5	75	125			
Barium	0.242	0.0100	0.200	0.0428	99.8	75	125			
Beryllium	0.193	0.00100	0.200	0	96.5	75	125			
Cadmium	0.205	0.00100	0.200	0	102	75	125			
Calcium	19.4	0.300	5.00	15.1	87.3	75	125			
Chromium	0.209	0.00500	0.200	0	104	75	125			
Cobalt	0.195	0.00500	0.200	0	97.5	75	125			

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAP certified



**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS5\_210623B**

Sample ID: <b>2106129-04A PDS</b>	Batch ID: <b>100982</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS5_210623B</b>	Analysis Date: <b>6/23/2021 12:19:00 PM</b>	Prep Date: <b>6/22/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.196	0.00100	0.200	0.000404	98.0	75	125			
Lithium	0.197	0.0100	0.200	0.00804	94.5	75	125			
Molybdenum	0.198	0.00500	0.200	0	98.8	75	125			
Selenium	0.197	0.00500	0.200	0	98.7	75	125			
Thallium	0.196	0.00150	0.200	0	98.0	75	125			

Sample ID: <b>2106129-04A MS</b>	Batch ID: <b>100982</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>ICP-MS5_210623B</b>	Analysis Date: <b>6/23/2021 12:21:00 PM</b>	Prep Date: <b>6/22/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.201	0.00250	0.200	0	100	75	125			
Arsenic	0.200	0.00500	0.200	0	100	75	125			
Barium	0.247	0.0100	0.200	0.0428	102	75	125			
Beryllium	0.198	0.00100	0.200	0	99.1	75	125			
Cadmium	0.210	0.00100	0.200	0	105	75	125			
Calcium	20.0	0.300	5.00	15.1	97.6	75	125			
Chromium	0.207	0.00500	0.200	0	103	75	125			
Cobalt	0.201	0.00500	0.200	0	100	75	125			
Lead	0.198	0.00100	0.200	0.000404	98.9	75	125			
Lithium	0.207	0.0100	0.200	0.00804	99.4	75	125			
Molybdenum	0.206	0.00500	0.200	0	103	75	125			
Selenium	0.203	0.00500	0.200	0	102	75	125			
Thallium	0.198	0.00150	0.200	0	99.2	75	125			

Sample ID: <b>2106129-04A MSD</b>	Batch ID: <b>100982</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS5_210623B</b>	Analysis Date: <b>6/23/2021 12:24:00 PM</b>	Prep Date: <b>6/22/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.203	0.00250	0.200	0	102	75	125	1.33	15	
Arsenic	0.201	0.00500	0.200	0	100	75	125	0.135	15	
Barium	0.250	0.0100	0.200	0.0428	104	75	125	1.20	15	
Beryllium	0.200	0.00100	0.200	0	99.8	75	125	0.707	15	
Cadmium	0.211	0.00100	0.200	0	105	75	125	0.533	15	
Calcium	19.6	0.300	5.00	15.1	91.4	75	125	1.58	15	
Chromium	0.209	0.00500	0.200	0	104	75	125	1.00	15	
Cobalt	0.203	0.00500	0.200	0	102	75	125	1.28	15	
Lead	0.201	0.00100	0.200	0.000404	100	75	125	1.44	15	
Lithium	0.210	0.0100	0.200	0.00804	101	75	125	1.35	15	
Molybdenum	0.208	0.00500	0.200	0	104	75	125	1.25	15	
Selenium	0.207	0.00500	0.200	0	104	75	125	1.93	15	
Thallium	0.202	0.00150	0.200	0	101	75	125	1.72	15	

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS5\_210623B**

Sample ID: <b>ICV-210623</b>	Batch ID: <b>R115914</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS5_210623B</b>	Analysis Date: <b>6/23/2021 10:44:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0990	0.00250	0.100	0	99.0	90	110			
Arsenic	0.102	0.00500	0.100	0	102	90	110			
Barium	0.102	0.0100	0.100	0	102	90	110			
Beryllium	0.0978	0.00100	0.100	0	97.8	90	110			
Cadmium	0.102	0.00100	0.100	0	102	90	110			
Calcium	2.58	0.300	2.50	0	103	90	110			
Chromium	0.105	0.00500	0.100	0	105	90	110			
Cobalt	0.104	0.00500	0.100	0	104	90	110			
Lead	0.0978	0.00100	0.100	0	97.8	90	110			
Lithium	0.0956	0.0100	0.100	0	95.6	90	110			
Molybdenum	0.0992	0.00500	0.100	0	99.2	90	110			
Selenium	0.0989	0.00500	0.100	0	98.9	90	110			
Thallium	0.0972	0.00150	0.100	0	97.2	90	110			

Sample ID: <b>LCVL-210623</b>	Batch ID: <b>R115914</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS5_210623B</b>	Analysis Date: <b>6/23/2021 10:50:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00197	0.00250	0.00200	0	98.7	80	120			
Arsenic	0.00491	0.00500	0.00500	0	98.2	80	120			
Barium	0.00505	0.0100	0.00500	0	101	80	120			
Beryllium	0.00110	0.00100	0.00100	0	110	80	120			
Cadmium	0.000937	0.00100	0.00100	0	93.7	80	120			
Calcium	0.113	0.300	0.100	0	113	80	120			
Chromium	0.00500	0.00500	0.00500	0	100	80	120			
Cobalt	0.00476	0.00500	0.00500	0	95.2	80	120			
Lead	0.00102	0.00100	0.00100	0	102	80	120			
Lithium	0.00989	0.0100	0.0100	0	98.9	80	120			
Molybdenum	0.00513	0.00500	0.00500	0	103	80	120			
Selenium	0.00489	0.00500	0.00500	0	97.8	80	120			
Thallium	0.000979	0.00150	0.00100	0	97.9	80	120			

Sample ID: <b>CCV1-210623</b>	Batch ID: <b>R115914</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS5_210623B</b>	Analysis Date: <b>6/23/2021 11:30:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.197	0.00250	0.200	0	98.7	90	110			
Arsenic	0.199	0.00500	0.200	0	99.4	90	110			
Barium	0.200	0.0100	0.200	0	100	90	110			
Beryllium	0.199	0.00100	0.200	0	99.6	90	110			
Cadmium	0.199	0.00100	0.200	0	99.6	90	110			

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAP certified

CLIENT: Golder  
 Work Order: 2106122  
 Project: Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5\_210623B

Sample ID: <b>CCV1-210623</b>	Batch ID: <b>R115914</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS5_210623B</b>	Analysis Date: <b>6/23/2021 11:30:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.18	0.300	5.00	0	104	90	110			
Chromium	0.201	0.00500	0.200	0	100	90	110			
Cobalt	0.203	0.00500	0.200	0	101	90	110			
Lead	0.195	0.00100	0.200	0	97.4	90	110			
Lithium	0.204	0.0100	0.200	0	102	90	110			
Molybdenum	0.199	0.00500	0.200	0	99.3	90	110			
Selenium	0.197	0.00500	0.200	0	98.3	90	110			
Thallium	0.193	0.00150	0.200	0	96.4	90	110			

Sample ID: <b>CCV2-210623</b>	Batch ID: <b>R115914</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS5_210623B</b>	Analysis Date: <b>6/23/2021 12:27:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.198	0.00250	0.200	0	99.2	90	110			
Arsenic	0.202	0.00500	0.200	0	101	90	110			
Barium	0.199	0.0100	0.200	0	99.7	90	110			
Beryllium	0.193	0.00100	0.200	0	96.5	90	110			
Cadmium	0.201	0.00100	0.200	0	101	90	110			
Calcium	5.04	0.300	5.00	0	101	90	110			
Chromium	0.202	0.00500	0.200	0	101	90	110			
Cobalt	0.202	0.00500	0.200	0	101	90	110			
Lead	0.195	0.00100	0.200	0	97.5	90	110			
Lithium	0.196	0.0100	0.200	0	98.2	90	110			
Molybdenum	0.199	0.00500	0.200	0	99.3	90	110			
Selenium	0.199	0.00500	0.200	0	99.3	90	110			
Thallium	0.194	0.00150	0.200	0	97.2	90	110			

Sample ID: <b>CCV3-210623</b>	Batch ID: <b>R115914</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS5_210623B</b>	Analysis Date: <b>6/23/2021 12:58:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.197	0.00250	0.200	0	98.6	90	110			
Arsenic	0.196	0.00500	0.200	0	98.1	90	110			
Barium	0.200	0.0100	0.200	0	99.8	90	110			
Beryllium	0.188	0.00100	0.200	0	94.0	90	110			
Cadmium	0.201	0.00100	0.200	0	100	90	110			
Calcium	5.20	0.300	5.00	0	104	90	110			
Chromium	0.203	0.00500	0.200	0	102	90	110			
Cobalt	0.198	0.00500	0.200	0	99.2	90	110			
Lead	0.195	0.00100	0.200	0	97.3	90	110			
Lithium	0.190	0.0100	0.200	0	95.1	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS5\_210623B

Sample ID: <b>CCV3-210623</b>	Batch ID: <b>R115914</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS5_210623B</b>	Analysis Date: <b>6/23/2021 12:58:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.199	0.00500	0.200	0	99.4	90	110			
Selenium	0.199	0.00500	0.200	0	99.4	90	110			
Thallium	0.193	0.00150	0.200	0	96.5	90	110			

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAP certified</p>
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**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID:** IC2\_210527A

Sample ID: <b>DCS3-100738</b>	Batch ID: <b>100738</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>DCS3</b>	Run ID: <b>IC2_210527A</b>	Analysis Date: <b>5/27/2021 4:13:05 PM</b>	Prep Date: <b>5/27/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	1.25	1.00	1.000	0	125	70	130	0	0	
Fluoride	0.408	0.400	0.4000	0	102	70	130	0	0	
Sulfate	3.03	3.00	3.000	0	101	70	130	0	0	

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAP certified</p>
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**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_210621A**

The QC data in batch 100964 applies to the following samples: 2106122-01B, 2106122-02B, 2106122-03B, 2106122-04B, 2106122-05B, 2106122-06B, 2106122-07B, 2106122-08B, 2106122-09B, 2106122-10B

Sample ID: <b>MB-100964</b>	Batch ID: <b>100964</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>IC2_210621A</b>	Analysis Date: <b>6/21/2021 12:06:40 PM</b>	Prep Date: <b>6/21/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								
Fluoride	<0.100	0.400								
Sulfate	<1.00	3.00								

Sample ID: <b>LCS-100964</b>	Batch ID: <b>100964</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>IC2_210621A</b>	Analysis Date: <b>6/21/2021 12:22:40 PM</b>	Prep Date: <b>6/21/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.89	1.00	10.00	0	98.9	90	110			
Fluoride	3.72	0.400	4.000	0	93.0	90	110			
Sulfate	29.3	3.00	30.00	0	97.5	90	110			

Sample ID: <b>LCSD-100964</b>	Batch ID: <b>100964</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>IC2_210621A</b>	Analysis Date: <b>6/21/2021 12:38:40 PM</b>	Prep Date: <b>6/21/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.89	1.00	10.00	0	98.9	90	110	0.056	20	
Fluoride	3.71	0.400	4.000	0	92.7	90	110	0.260	20	
Sulfate	29.3	3.00	30.00	0	97.6	90	110	0.114	20	

Sample ID: <b>2106122-04BMS</b>	Batch ID: <b>100964</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>IC2_210621A</b>	Analysis Date: <b>6/21/2021 6:02:58 PM</b>	Prep Date: <b>6/21/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2380	100	2000	416.3	98.3	90	110			
Fluoride	1960	40.0	2000	0	97.9	90	110			
Sulfate	1810	300	2000	145.8	83.2	90	110			S

Sample ID: <b>2106122-04BMSD</b>	Batch ID: <b>100964</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>IC2_210621A</b>	Analysis Date: <b>6/21/2021 6:18:58 PM</b>	Prep Date: <b>6/21/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2370	100	2000	416.3	97.9	90	110	0.307	20	
Fluoride	1960	40.0	2000	0	97.8	90	110	0.024	20	
Sulfate	1810	300	2000	145.8	83.4	90	110	0.233	20	S

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAP certified</p>
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**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_210621A**

Sample ID: <b>2106122-08BMS</b>	Batch ID: <b>100964</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>IC2_210621A</b>	Analysis Date: <b>6/21/2021 6:50:58 PM</b>	Prep Date: <b>6/21/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	3950	100	2000	2228	86.0	90	110			S
Fluoride	1930	40.0	2000	0	96.6	90	110			
Sulfate	1960	300	2000	310.0	82.3	90	110			S

Sample ID: <b>2106122-08BMSD</b>	Batch ID: <b>100964</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>IC2_210621A</b>	Analysis Date: <b>6/21/2021 7:06:58 PM</b>	Prep Date: <b>6/21/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	3990	100	2000	2228	88.3	90	110	1.17	20	S
Fluoride	1960	40.0	2000	0	97.8	90	110	1.31	20	
Sulfate	1980	300	2000	310.0	83.7	90	110	1.35	20	S

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_210621A**

Sample ID: <b>ICV-210621</b>	Batch ID: <b>R115881</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>IC2_210621A</b>	Analysis Date: <b>6/21/2021 11:34:40 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	25.2	1.00	25.00	0	101	90	110			
Fluoride	9.67	0.400	10.00	0	96.7	90	110			
Sulfate	76.5	3.00	75.00	0	102	90	110			

Sample ID: <b>CCV1-210621</b>	Batch ID: <b>R115881</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC2_210621A</b>	Analysis Date: <b>6/21/2021 10:02:58 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.75	1.00	10.00	0	97.5	90	110			
Fluoride	3.83	0.400	4.000	0	95.8	90	110			
Sulfate	28.9	3.00	30.00	0	96.4	90	110			

Sample ID: <b>CCV2-210621</b>	Batch ID: <b>R115881</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC2_210621A</b>	Analysis Date: <b>6/22/2021 2:02:58 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.97	1.00	10.00	0	99.7	90	110			
Fluoride	3.94	0.400	4.000	0	98.6	90	110			
Sulfate	29.4	3.00	30.00	0	98.2	90	110			

Sample ID: <b>CCV3-210621</b>	Batch ID: <b>R115881</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC2_210621A</b>	Analysis Date: <b>6/22/2021 6:02:58 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.97	1.00	10.00	0	99.7	90	110			
Fluoride	3.96	0.400	4.000	0	99.1	90	110			
Sulfate	29.2	3.00	30.00	0	97.2	90	110			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAP certified



**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: WC\_210618B**

The QC data in batch 100948 applies to the following samples: 2106122-01B, 2106122-02B, 2106122-03B, 2106122-04B, 2106122-05B, 2106122-06B, 2106122-07B

Sample ID: <b>MB-100948</b>	Batch ID: <b>100948</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>WC_210618B</b>	Analysis Date: <b>6/18/2021 3:15:00 PM</b>	Prep Date: <b>6/18/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		<10.0	10.0							

Sample ID: <b>LCS-100948</b>	Batch ID: <b>100948</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>WC_210618B</b>	Analysis Date: <b>6/18/2021 3:15:00 PM</b>	Prep Date: <b>6/18/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		754	10.0	745.6	0	101	90	113		

Sample ID: <b>2106110-02B-DUP</b>	Batch ID: <b>100948</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_210618B</b>	Analysis Date: <b>6/18/2021 3:15:00 PM</b>	Prep Date: <b>6/18/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		1680	50.0	0	1695			0.889	5	

Sample ID: <b>2106110-03B-DUP</b>	Batch ID: <b>100948</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_210618B</b>	Analysis Date: <b>6/18/2021 3:15:00 PM</b>	Prep Date: <b>6/18/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		2270	50.0	0	2250			0.664	5	

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAP certified</p>
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**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: WC\_210621B**

The QC data in batch 100962 applies to the following samples: 2106122-08B, 2106122-09B, 2106122-10B

Sample ID: <b>MB-100962</b>	Batch ID: <b>100962</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>WC_210621B</b>	Analysis Date: <b>6/21/2021 2:10:00 PM</b>	Prep Date: <b>6/21/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		<10.0	10.0							

Sample ID: <b>LCS-100962</b>	Batch ID: <b>100962</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>WC_210621B</b>	Analysis Date: <b>6/21/2021 2:10:00 PM</b>	Prep Date: <b>6/21/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		774	10.0	745.6	0	104	90	113		

Sample ID: <b>2106122-08B-DUP</b>	Batch ID: <b>100962</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_210621B</b>	Analysis Date: <b>6/21/2021 2:10:00 PM</b>	Prep Date: <b>6/21/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		4810	50.0	0	4870			1.34	5	

Sample ID: <b>2106122-09B-DUP</b>	Batch ID: <b>100962</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_210621B</b>	Analysis Date: <b>6/21/2021 2:10:00 PM</b>	Prep Date: <b>6/21/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		1140	50.0	0	1155			1.75	5	

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAP certified</p>
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**CLIENT:** Golder  
**Work Order:** 2106122  
**Project:** Luminant-OGSES-CCR-FGD Ponds

**MQL SUMMARY REPORT**

<b>TestNo: E300</b>	<b>MDL</b>	<b>MQL</b>
<b>Analyte</b>	<b>mg/L</b>	<b>mg/L</b>
Chloride	0.300	1.00
Fluoride	0.100	0.400
Sulfate	1.00	3.00

<b>TestNo: SW6020B</b>	<b>MDL</b>	<b>MQL</b>
<b>Analyte</b>	<b>mg/L</b>	<b>mg/L</b>
Antimony	0.000800	0.00250
Arsenic	0.00200	0.00500
Barium	0.00300	0.0100
Beryllium	0.000300	0.00100
Boron	0.0100	0.0300
Cadmium	0.000300	0.00100
Calcium	0.100	0.300
Chromium	0.00200	0.00500
Cobalt	0.00300	0.00500
Lead	0.000300	0.00100
Lithium	0.00500	0.0100
Molybdenum	0.00200	0.00500
Selenium	0.00200	0.00500
Thallium	0.000500	0.00150

<b>TestNo: SW7470A</b>	<b>MDL</b>	<b>MQL</b>
<b>Analyte</b>	<b>mg/L</b>	<b>mg/L</b>
Mercury	0.0000800	0.000200

<b>TestNo: M2540C</b>	<b>MDL</b>	<b>MQL</b>
<b>Analyte</b>	<b>mg/L</b>	<b>mg/L</b>
Total Dissolved Solids (Residue, Filt	10.0	10.0

**Qualifiers:** MQL -Method Quantitation Limit as defined by TRRP  
MDL -Method Detection Limit as defined by TRRP

July 22, 2021

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

**DHL Analytical, Inc.**

Sample Delivery Group: L1370027

Samples Received: 06/23/2021

Project Number: 2106122

Description:

Report To: John DuPont  
2300 Double Creek Drive  
Round Rock, TX 78664

Entire Report Reviewed By:

Donna Eidson  
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

**Pace Analytical National**12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 [www.pacenational.com](http://www.pacenational.com)

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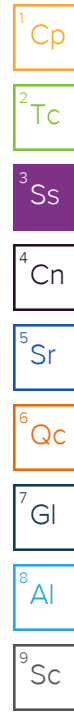
# SAMPLE SUMMARY

## FGD-6 L1370027-01 Non-Potable Water

Collected by  
Collected date/time  
Received date/time

06/16/21 17:45  
06/23/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1704947	1	07/15/21 14:30	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1694790	1	07/19/21 10:54	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1694790	1	07/19/21 10:54	07/19/21 21:34	RGT	Mt. Juliet, TN



## FGD-4 L1370027-02 Non-Potable Water

Collected by  
Collected date/time  
Received date/time

06/16/21 18:35  
06/23/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1704947	1	07/15/21 14:30	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1694790	1	07/19/21 10:54	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1694790	1	07/19/21 10:54	07/19/21 21:34	RGT	Mt. Juliet, TN

## FGD-3 L1370027-03 Non-Potable Water

Collected by  
Collected date/time  
Received date/time

06/16/21 19:25  
06/23/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1704947	1	07/15/21 14:30	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1694790	1	07/19/21 10:54	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1694790	1	07/19/21 10:54	07/19/21 21:34	RGT	Mt. Juliet, TN

## FGD-2 L1370027-04 Non-Potable Water

Collected by  
Collected date/time  
Received date/time

06/17/21 07:35  
06/23/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1704947	1	07/15/21 14:30	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1694790	1	07/19/21 10:54	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1694790	1	07/19/21 10:54	07/19/21 21:34	RGT	Mt. Juliet, TN

## FGD-5 L1370027-05 Non-Potable Water

Collected by  
Collected date/time  
Received date/time

06/17/21 08:25  
06/23/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1704947	1	07/15/21 14:30	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1694790	1	07/19/21 10:54	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1694790	1	07/19/21 10:54	07/19/21 21:34	RGT	Mt. Juliet, TN

## FGD-1 L1370027-06 Non-Potable Water

Collected by  
Collected date/time  
Received date/time

06/17/21 09:15  
06/23/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1704947	1	07/15/21 14:30	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1694790	1	07/19/21 10:54	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1694790	1	07/19/21 10:54	07/19/21 21:34	RGT	Mt. Juliet, TN

# SAMPLE SUMMARY

## DUP-1 L1370027-07 Non-Potable Water

Collected by  
Collected date/time  
Received date/time  
06/17/21 09:15      06/23/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1704947	1	07/15/21 14:30	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1694790	1	07/19/21 10:54	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1694790	1	07/19/21 10:54	07/19/21 21:34	RGT	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

## FGD-8 L1370027-08 Non-Potable Water

Collected by  
Collected date/time  
Received date/time  
06/17/21 11:45      06/23/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1704947	1	07/15/21 14:30	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1694790	1	07/19/21 10:54	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1694790	1	07/19/21 10:54	07/19/21 21:34	RGT	Mt. Juliet, TN

4 Cn

5 Sr

6 Qc

## FGD-11 L1370027-09 Non-Potable Water

Collected by  
Collected date/time  
Received date/time  
06/17/21 13:30      06/23/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1704947	1	07/15/21 14:30	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1694790	1	07/19/21 10:54	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1694790	1	07/19/21 10:54	07/19/21 21:34	RGT	Mt. Juliet, TN

7 Gl

8 Al

9 Sc

## FGD-12 L1370027-10 Non-Potable Water

Collected by  
Collected date/time  
Received date/time  
06/17/21 14:45      06/23/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1704947	1	07/15/21 14:30	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1694790	1	07/19/21 10:54	07/20/21 15:40	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1694790	1	07/19/21 10:54	07/19/21 21:34	RGT	Mt. Juliet, TN

# CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Donna Eidson  
Project Manager

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.54		0.426	0.776	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Barium	102			62.0-143	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Yttrium	98.1			79.0-136	07/20/2021 15:40	<a href="#">WG1704947</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.86		0.622	0.939	07/20/2021 15:40	<a href="#">WG1694790</a>

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.322		0.196	0.163	07/19/2021 21:34	<a href="#">WG1694790</a>
(T) Barium-133	100			30.0-143	07/19/2021 21:34	<a href="#">WG1694790</a>

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.000	<u>U</u>	0.391	0.749	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Barium	109			62.0-143	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Yttrium	94.0			79.0-136	07/20/2021 15:40	<a href="#">WG1704947</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.283	<u>U</u>	0.596	0.944	07/20/2021 15:40	<a href="#">WG1694790</a>

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.283		0.205	0.195	07/19/2021 21:34	<a href="#">WG1694790</a>
(T) Barium-133	101			30.0-143	07/19/2021 21:34	<a href="#">WG1694790</a>

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.808		0.354	0.656	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Barium	101			62.0-143	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Yttrium	94.5			79.0-136	07/20/2021 15:40	<a href="#">WG1704947</a>

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.05		0.558	0.891	07/20/2021 15:40	<a href="#">WG1694790</a>

<sup>4</sup>Cn

<sup>5</sup>Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.246		0.204	0.235	07/19/2021 21:34	<a href="#">WG1694790</a>
(T) Barium-133	96.8			30.0-143	07/19/2021 21:34	<a href="#">WG1694790</a>

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.774		0.312	0.577	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Barium	109			62.0-143	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Yttrium	109			79.0-136	07/20/2021 15:40	<a href="#">WG1704947</a>

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.21		0.590	0.866	07/20/2021 15:40	<a href="#">WG1694790</a>

<sup>4</sup>Cn

<sup>5</sup>Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.440		0.278	0.289	07/19/2021 21:34	<a href="#">WG1694790</a>
(T) Barium-133	97.4			30.0-143	07/19/2021 21:34	<a href="#">WG1694790</a>

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.546		0.285	0.531	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Barium	102			62.0-143	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Yttrium	102			79.0-136	07/20/2021 15:40	<a href="#">WG1704947</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.719	J	0.499	0.832	07/20/2021 15:40	<a href="#">WG1694790</a>

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.173	J	0.214	0.301	07/19/2021 21:34	<a href="#">WG1694790</a>
(T) Barium-133	103			30.0-143	07/19/2021 21:34	<a href="#">WG1694790</a>

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.64		0.292	0.505	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Barium	105			62.0-143	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Yttrium	99.3			79.0-136	07/20/2021 15:40	<a href="#">WG1704947</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.36		0.628	0.804	07/20/2021 15:40	<a href="#">WG1694790</a>

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.712		0.336	0.299	07/19/2021 21:34	<a href="#">WG1694790</a>
(T) Barium-133	97.8			30.0-143	07/19/2021 21:34	<a href="#">WG1694790</a>

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.90		0.353	0.617	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Barium	104			62.0-143	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Yttrium	95.1			79.0-136	07/20/2021 15:40	<a href="#">WG1704947</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.51		0.640	0.809	07/20/2021 15:40	<a href="#">WG1694790</a>

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.609		0.287	0.192	07/19/2021 21:34	<a href="#">WG1694790</a>
(T) Barium-133	102			30.0-143	07/19/2021 21:34	<a href="#">WG1694790</a>

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	5.14		0.515	0.839	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Barium	110			62.0-143	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Yttrium	102			79.0-136	07/20/2021 15:40	<a href="#">WG1704947</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	7.83		1.08	1.07	07/20/2021 15:40	<a href="#">WG1694790</a>

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	2.69		0.566	0.234	07/19/2021 21:34	<a href="#">WG1694790</a>
(T) Barium-133	100			30.0-143	07/19/2021 21:34	<a href="#">WG1694790</a>



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.29		0.309	0.517	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Barium	111			62.0-143	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Yttrium	107			79.0-136	07/20/2021 15:40	<a href="#">WG1704947</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	4.52		0.848	0.694	07/20/2021 15:40	<a href="#">WG1694790</a>

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	2.23		0.539	0.177	07/19/2021 21:34	<a href="#">WG1694790</a>
(T) Barium-133	97.6			30.0-143	07/19/2021 21:34	<a href="#">WG1694790</a>

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	4.67		0.516	0.849	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Barium	109			62.0-143	07/20/2021 15:40	<a href="#">WG1704947</a>
(T) Yttrium	99.8			79.0-136	07/20/2021 15:40	<a href="#">WG1704947</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	5.53		0.837	1.03	07/20/2021 15:40	<a href="#">WG1694790</a>

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.861		0.321	0.184	07/19/2021 21:34	<a href="#">WG1694790</a>
(T) Barium-133	91.2			30.0-143	07/19/2021 21:34	<a href="#">WG1694790</a>

Method Blank (MB)

(MB) R3682113-1 07/20/21 15:40

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-228	0.680		0.382
(T) Barium	107		
(T) Yttrium	100		

L1371122-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1371122-01 07/20/21 15:40 • (DUP) R3682113-5 07/20/21 15:40

Analyte	Original Result pCi/l	DUP Result pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	0.163	0.590	1	114	0.480	<u>U</u>	20	3
(T) Barium	117	109						
(T) Yttrium	107	102						

Laboratory Control Sample (LCS)

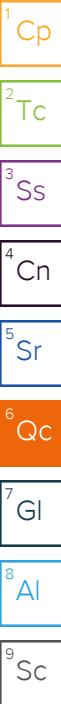
(LCS) R3682113-2 07/20/21 15:40

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.39	108	80.0-120	
(T) Barium			111		
(T) Yttrium			94.8		

L1370097-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1370097-07 07/20/21 15:40 • (MS) R3682113-3 07/20/21 15:40 • (MSD) R3682113-4 07/20/21 15:40

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	16.7	0.669	20.1	18.2	116	105	1	70.0-130			9.45		20
(T) Barium		102			111	106							
(T) Yttrium		101			95.6	98.7							



Method Blank (MB)

(MB) R3682035-1 07/19/21 21:34

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-226	0.00700	<u>U</u>	0.0608
(T) Barium-133	106		

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

L1370437-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1370437-01 07/19/21 21:34 • (DUP) R3682035-5 07/19/21 21:34

Analyte	Original Result pCi/l	DUP Result pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Radium-226	0.168	0.178	1	5.97	0.0400		20	3
(T) Barium-133	105	101						

Laboratory Control Sample (LCS)

(LCS) R3682035-2 07/19/21 21:34

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	4.58	91.3	80.0-120	
(T) Barium-133			98.4		

L1369269-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1369269-21 07/19/21 21:34 • (MS) R3682035-3 07/19/21 21:34 • (MSD) R3682035-4 07/19/21 21:34

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.1	0.305	18.2	22.0	89.0	108	1	75.0-125			19.1		20
(T) Barium-133		94.4			97.8	97.0							

# GLOSSARY OF TERMS

## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

### Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

### Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

# ACCREDITATIONS & LOCATIONS

## Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1,6</sup>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1,4</sup>	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

DHL Analytical, Inc.  
2300 Double Creek Drive  
Round Rock, TX 78664

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 2106122

# CHAIN-OF-CUSTODY RECORD

A035

130007

**Subcontractor:**

Pace Analytical  
12065 Lebanon Rd  
Mt. Juliet, TN 37122

TEL: (615) 773-5923

FAX:

Acct #: DHLRRTX


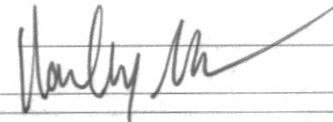
18-Jun-21

Sample ID	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					Ra-228	Ra-226				
					E904.0	M7500 Ra B M				
FGD-6	Aqueous	01C	06/16/21 05:45 PM	1LHDPEHNO3		1				-01
FGD-6	Aqueous	01D	06/16/21 05:45 PM	1LHDPEHNO3	1					-01
FGD-4	Aqueous	02C	06/16/21 06:35 PM	1LHDPEHNO3		1				-02
FGD-4	Aqueous	02D	06/16/21 06:35 PM	1LHDPEHNO3	1					-02
FGD-3	Aqueous	03C	06/16/21 07:25 PM	1LHDPEHNO3		1				-03
FGD-3	Aqueous	03D	06/16/21 07:25 PM	1LHDPEHNO3	1					-03
FGD-2	Aqueous	04C	06/17/21 07:35 AM	1LHDPEHNO3		1				-04
FGD-2	Aqueous	04D	06/17/21 07:35 AM	1LHDPEHNO3	1					-04
FGD-5	Aqueous	05C	06/17/21 08:25 AM	1LHDPEHNO3		1				-05
FGD-5	Aqueous	05D	06/17/21 08:25 AM	1LHDPEHNO3	1					-05
FGD-1	Aqueous	06C	06/17/21 09:15 AM	1LHDPEHNO3		1				-06
FGD-1	Aqueous	06D	06/17/21 09:15 AM	1LHDPEHNO3	1					-06
DUP-1	Aqueous	07C	06/17/21 09:15 AM	1LHDPEHNO3		1				-07
DUP-1	Aqueous	07D	06/17/21 09:15 AM	1LHDPEHNO3	1					-07
FGD-8	Aqueous	08C	06/17/21 11:45 AM	1LHDPEHNO3		1				-08
FGD-8	Aqueous	08D	06/17/21 11:45 AM	1LHDPEHNO3	1					-08
FGD-11	Aqueous	09C	06/17/21 01:30 PM	1LHDPEHNO3		1				-09

**General Comments:**

Please analyze these samples with Normal Turnaround Time.  
Report Ra-226, Ra-228 & Combined per Specs.  
Quality Control Package Needed: Standard - NELAC Rad Test compliant  
Email to cac@dhlanalytical.com & dupont@dhlanalytical.com

22.3 + 1 = 22.4 A60T

Relinquished by: 	Date/Time: 6/21/21 1800	Received by: 	Date/Time: 6/23/21 1000
Relinquished by: _____	Date/Time: 6/21/21	Received by: _____	Date/Time: _____

DHL Analytical, Inc.  
 2300 Double Creek Drive  
 Round Rock, TX 78664

# CHAIN-OF-CUSTODY RECORD

TEL: (512) 388-8222 FAX: (512) 388-8229  
 Work Order: 2106122

**Subcontractor:**

Pace Analytical  
 12065 Lebanon Rd  
 Mt. Juliet, TN 37122

TEL: (615) 773-5923  
 FAX:  
 Acct #: DHLRRTX

*U370027*

18-Jun-21


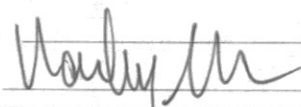
Sample ID	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests							
					Ra-228	Ra-226						
					E904.0	M7500 Ra B M						
FGD-11	Aqueous	09D	06/17/21 01:30 PM	1LHDPEHNO3	1							-09
FGD-12	Aqueous	10C	06/17/21 02:25 PM	1LHDPEHNO3		1						-10
FGD-12	Aqueous	10D	06/17/21 02:25 PM	1LHDPEHNO3	1							-10

**Sample Receipt Checklist**  
 COC Seal Present/Intact:  Y  N If Applicable  
 COC Signed/Accurate:  Y  N VOA Zero Headspace:  Y  N  
 Bottles arrive intact:  Y  N Pres. Correct/Check:  Y  N  
 Correct bottles used:  Y  N  
 Sufficient volume sent:  Y  N  
 RAD Screen <0.5 mR/hr:  Y  N

**General Comments:**

Please analyze these samples with Normal Turnaround Time.  
 Report Ra-226, Ra-228 & Combined per Specs.  
 Quality Control Package Needed: Standard - NELAC Rad Test compliant  
 Email to cac@dhlanalytical.com & dupont@dhlanalytical.com

*22.3 + 1 = 22.4*  
*1607*

Relinquished by: 	Date/Time: <i>6/21/21</i>	Received by: 	Date/Time: _____
	Relinquished by: _____		Date/Time: <i>6/18/21 1800</i>





November 19, 2021

Will Vienne  
Golder  
2201 Double Creek Dr #4004  
Round Rock, Texas 78664  
TEL: (512) 671-3434  
FAX (512) 671-3446  
RE: Luminant-OGSES-CCR-FGD Ponds

Order No.: 2110093

Dear Will Vienne:

DHL Analytical, Inc. received 10 sample(s) on 10/13/2021 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAP except where noted in the Case Narrative. All non-NELAP methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

A handwritten signature in red ink, appearing to read 'John DuPont', is written over the word 'Sincerely,'.

John DuPont  
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-21-27



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Sample Receipt Checklist

Client Name **Golder**

Date Received: **10/13/2021**

Work Order Number **2110093**

Received by: **EL**

Checklist completed by:  10/13/2021  
Signature Date

Reviewed by SH 10/13/2021  
Initials Date

Carrier name: Hand Delivered

- Shipping container/cooler in good condition? Yes  No  Not Present
- Custody seals intact on shipping container/cooler? Yes  No  Not Present
- Custody seals intact on sample bottles? Yes  No  Not Present
- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Samples in proper container/bottle? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No
- All samples received within holding time? Yes  No
- Container/Temp Blank temperature in compliance? Yes  No  1.7 °C / 3.9 °C / 2.6 °C
- Water - VOA vials have zero headspace? Yes  No  No VOA vials submitted
- Water - pH<2 acceptable upon receipt? Yes  No  NA  LOT # 13171
- Adjusted? NO Checked by R.A.
- Water - pH>9 (S) or pH>10 (CN) acceptable upon receipt? Yes  No  NA  LOT #
- Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_

Any No response must be detailed in the comments section below.

Client contacted: \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action: \_\_\_\_\_

<b>Laboratory Name: DHL Analytical, Inc.</b>							
<b>Laboratory Review Checklist: Reportable Data</b>							
<b>Project Name:</b> Luminant-OGSES-CCR-FGD Ponds				<b>LRC Date:</b> 11/19/21			
<b>Reviewer Name:</b> Carlos Castro				<b>Laboratory Work Order:</b> 2110093			
<b>Prep Batch Number(s):</b> See Prep Dates Report				<b>Run Batch:</b> See Analytical Dates Report			
# <sup>1</sup>	A <sup>2</sup>	Description	Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER# <sup>5</sup>
		<b>Chain-of-Custody (C-O-C)</b>					
R1	OI	1) Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				R1-01
		2) Were all departures from standard conditions described in an exception report?			X		
R2	OI	<b>Sample and Quality Control (QC) Identification</b>					
		1) Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		2) Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	<b>Test Reports</b>					
		1) Were all samples prepared and analyzed within holding times?	X				
		2) Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		3) Were calculations checked by a peer or supervisor?	X				
		4) Were all analyte identifications checked by a peer or supervisor?	X				
		5) Were sample detection limits reported for all analytes not detected?	X				
		6) Were all results for soil and sediment samples reported on a dry weight basis?			X		
		7) Were % moisture (or solids) reported for all soil and sediment samples?			X		
		8) Were bulk soils/solids samples for volatile analysis extracted with methanol per EPA Method 5035?			X		
		9) If required for the project, TICs reported?			X		
R4	O	<b>Surrogate Recovery Data</b>					
		1) Were surrogates added prior to extraction?			X		
		2) Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	<b>Test Reports/Summary Forms for Blank Samples</b>					
		1) Were appropriate type(s) of blanks analyzed?	X				
		2) Were blanks analyzed at the appropriate frequency?	X				
		3) Where method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		4) Were blank concentrations < MDL?	X				
		5) For analyte(s) detected in a blank sample, was the concentration, unadjusted for sample specific factors, in all associated field samples, <b>greater</b> than 10 times the concentration in the blank sample?			X		
R6	OI	<b>Laboratory Control Samples (LCS):</b>					
		1) Were all COCs included in the LCS?	X				
		2) Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		3) Were LCSs analyzed at the required frequency?	X				
		4) Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		5) Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		6) Was the LCSD RPD within QC limits (if applicable)?	X				
R7	OI	<b>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Data</b>					
		1) Were the project/method specified analytes included in the MS and MSD?	X				
		2) Were MS/MSD analyzed at the appropriate frequency?	X				
		3) Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			R7-03
		4) Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	<b>Analytical Duplicate Data</b>					
		1) Were appropriate analytical duplicates analyzed for each matrix?	X				
		2) Were analytical duplicates analyzed at the appropriate frequency?	X				
		3) Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	<b>Method Quantitation Limits (MQLs):</b>					
		1) Are the MQLs for each method analyte included in the laboratory data package?	X				
		2) Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		3) Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	<b>Other Problems/Anomalies</b>					
		1) Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		2) Was applicable and available technology used to lower the SDL to minimize the matrix interference affects on the sample results?	X				
		3) Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

<b>Laboratory Name: DHL Analytical, Inc.</b>							
<b>Laboratory Review Checklist (continued): Supporting Data</b>							
<b>Project Name:</b> Luminant-OGSES-CCR-FGD Ponds				<b>LRC Date:</b> 11/19/21			
<b>Reviewer Name:</b> Carlos Castro				<b>Laboratory Work Order:</b> 2110093			
<b>Prep Batch Number(s):</b> See Prep Dates Report				<b>Run Batch:</b> See Analytical Dates Report			
# <sup>1</sup>	A <sup>2</sup>	Description	Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER# <sup>5</sup>
<b>S1</b>	<b>OI</b>	<b>Initial Calibration (ICAL)</b>					
		1) Were response factors and/or relative response factors for each analyte within QC limits?	X				
		2) Were percent RSDs or correlation coefficient criteria met?	X				
		3) Was the number of standards recommended in the method used for all analytes?	X				
		4) Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		5) Are ICAL data available for all instruments used?	X				
		6) Has the initial calibration curve been verified using an appropriate second source standard?	X				
<b>S2</b>	<b>OI</b>	<b>Initial and Continuing calibration Verification (ICCV and CCV) and Continuing Calibration blank (CCB):</b>					
		1) Was the CCV analyzed at the method-required frequency?	X				
		2) Were percent differences for each analyte within the method-required QC limits?	X				
		3) Was the ICAL curve verified for each analyte?	X				
		4) Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
<b>S3</b>	<b>O</b>	<b>Mass Spectral Tuning:</b>					
		1) Was the appropriate compound for the method used for tuning?	X				
		2) Were ion abundance data within the method-required QC limits?	X				
<b>S4</b>	<b>O</b>	<b>Internal Standards (IS):</b>					
		1) Were IS area counts and retention times within the method-required QC limits?	X				
<b>S5</b>	<b>OI</b>	<b>Raw Data (NELAC Section 5.5.10)</b>					
		1) Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		2) Were data associated with manual integrations flagged on the raw data?	X				
<b>S6</b>	<b>O</b>	<b>Dual Column Confirmation</b>					
		1) Did dual column confirmation results meet the method-required QC?			X		
<b>S7</b>	<b>O</b>	<b>Tentatively Identified Compounds (TICs):</b>					
		1) If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
<b>S8</b>	<b>I</b>	<b>Interference Check Sample (ICS) Results:</b>					
		1) Were percent recoveries within method QC limits?	X				
<b>S9</b>	<b>I</b>	<b>Serial Dilutions, Post Digestion Spikes, and Method of Standard Additions</b>					
		1) Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
<b>S10</b>	<b>OI</b>	<b>Method Detection Limit (MDL) Studies</b>					
		1) Was a MDL study performed for each reported analyte?	X				
		2) Is the MDL either adjusted or supported by the analysis of DCSs?	X				
<b>S11</b>	<b>OI</b>	<b>Proficiency Test Reports:</b>					
		1) Was the lab's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
<b>S12</b>	<b>OI</b>	<b>Standards Documentation</b>					
		1) Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
<b>S13</b>	<b>OI</b>	<b>Compound/Analyte Identification Procedures</b>					
		1) Are the procedures for compound/analyte identification documented?	X				
<b>S14</b>	<b>OI</b>	<b>Demonstration of Analyst Competency (DOC)</b>					
		1) Was DOC conducted consistent with NELAC Chapter 5 – Appendix C?	X				
		2) Is documentation of the analyst's competency up-to-date and on file?	X				
<b>S15</b>	<b>OI</b>	<b>Verification/Validation Documentation for Methods (NELAC Chapter 5)</b>					
		1) Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
<b>S16</b>	<b>OI</b>	<b>Laboratory Standard Operating Procedures (SOPs):</b>					
		1) Are laboratory SOPs current and on file for each method performed?	X				

- 1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
- 2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
- 3 NA = Not applicable.
- 4 NR = Not Reviewed.
- 5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

# Laboratory Data Package Signature Page – RG-366/TRRP-13

This data package consists of:

This signature page, the laboratory review checklist, and the following reportable data:


- R1 Field chain-of-custody documentation;
- R2 Sample identification cross-reference;
- R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - a) Items consistent with NELAC Chapter 5,
  - b) dilution factors,
  - c) preparation methods,
  - d) cleanup methods, and
  - e) if required for the project, tentatively identified compounds (TICs).
- R4 Surrogate recovery data including:
  - a) Calculated recovery (%R), and
  - b) The laboratory's surrogate QC limits.
- R5 Test reports/summary forms for blank samples;
- R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - a) LCS spiking amounts,
  - b) Calculated %R for each analyte, and
  - c) The laboratory's LCS QC limits.
- R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a) Samples associated with the MS/MSD clearly identified,
  - b) MS/MSD spiking amounts,
  - c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d) Calculated %Rs and relative percent differences (RPDs), and
  - e) The laboratory's MS/MSD QC limits
- R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - a) The amount of analyte measured in the duplicate,
  - b) The calculated RPD, and
  - c) The laboratory's QC limits for analytical duplicates.
- R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;
- R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in the Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory is not accredited under the Texas Laboratory Accreditation Program.

**Release Statement:** I am responsible for the release of this laboratory data package. This laboratory is accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge that all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information or data affecting the quality of the data has been knowingly withheld.

This laboratory was last inspected by TCEQ on February 23-26 2021. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Name: John DuPont  
Official Title: General Manager

  
Signature

11/19/21  
Date

Name: Dr. Derhsing Luu  
Official Title: Technical Director

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**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Lab Order:** 2110093

**CASE NARRATIVE**

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Samples were analyzed using the methods outlined in the following references:

Method SW6020B - Metals Analysis

Method SW7470A - Mercury Analysis

Method E300 - Anions Analysis

Method M2540C - TDS Analysis

Sub-contract - Radium-228 and Radium-226 analyses by methods E904/9320 and SM 7500 Ra B M. Analyzed at Pace Analytical.

Exception Report R1-01

The samples were received and log-in performed on 10/13/21. A total of 10 samples were received. The samples arrived in good condition and were properly packaged.

Exception Report R7-03

For Anions analysis performed on 10/14/21 (batch 102405) the matrix spikes and matrix spike duplicate recoveries (2110093-01 MS/MSD & 2110093-08 MS/MSD) were slightly below control limits for Chloride. These are flagged accordingly in the QC summary report. The samples selected for the matrix spikes and matrix spike duplicates (2110093-01 MS/MSD & 2110093-08 MS/MSD) were from this work order. The LCS was within control limits for this analyte. No further corrective actions were taken.

For Anions analysis performed on 10/15/21 (batch 102421) the matrix spikes and matrix spike duplicate recoveries (2110054-13 MS/MSD & 2110118-01 MS/MSD) were slightly below control limits for Chloride. These are flagged accordingly. The samples selected for the matrix spikes and matrix spike duplicates (2110054-13 MS/MSD & 2110118-01 MS/MSD) were not from this work order. The LCS was within control limits for this analyte. No further corrective actions were taken.



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**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Lab Order:** 2110093

**Work Order Sample Summary**

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<b>Lab Smp ID</b>	<b>Client Sample ID</b>	<b>Tag Number</b>	<b>Date Collected</b>	<b>Date Recved</b>
2110093-01	FGD-8		10/11/21 06:05 PM	10/13/2021
2110093-02	FGD-11		10/11/21 03:50 PM	10/13/2021
2110093-03	FGD-5		10/11/21 12:50 PM	10/13/2021
2110093-04	FGD-3		10/11/21 11:40 AM	10/13/2021
2110093-05	FGD-4		10/11/21 10:40 AM	10/13/2021
2110093-06	FGD-6		10/11/21 09:35 AM	10/13/2021
2110093-07	FGD-1		10/12/21 08:15 AM	10/13/2021
2110093-08	FGD-2		10/12/21 09:20 AM	10/13/2021
2110093-09	DUP-1		10/12/21 09:20 AM	10/13/2021
2110093-10	FGD-12		10/12/21 10:25 AM	10/13/2021

Lab Order: 2110093  
 Client: Golder  
 Project: Luminant-OGSES-CCR-FGD Pon

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
2110093-01A	FGD-8	10/11/21 06:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	FGD-8	10/11/21 06:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	FGD-8	10/11/21 06:05 PM	Aqueous	SW7470A	Mercury Aq Prep	10/15/21 09:30 AM	102418
2110093-01B	FGD-8	10/11/21 06:05 PM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-8	10/11/21 06:05 PM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-8	10/11/21 06:05 PM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-8	10/11/21 06:05 PM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408
	FGD-8	10/11/21 06:05 PM	Aqueous	M2540C	TDS Preparation	10/15/21 03:22 PM	102431
	FGD-8	10/11/21 06:05 PM	Aqueous	M2540C	TDS Preparation	10/15/21 03:22 PM	102431
2110093-02A	FGD-11	10/11/21 03:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	FGD-11	10/11/21 03:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	FGD-11	10/11/21 03:50 PM	Aqueous	SW7470A	Mercury Aq Prep	10/15/21 09:30 AM	102418
2110093-02B	FGD-11	10/11/21 03:50 PM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-11	10/11/21 03:50 PM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-11	10/11/21 03:50 PM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408
2110093-03A	FGD-5	10/11/21 12:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	FGD-5	10/11/21 12:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	FGD-5	10/11/21 12:50 PM	Aqueous	SW7470A	Mercury Aq Prep	10/15/21 09:30 AM	102418
2110093-03B	FGD-5	10/11/21 12:50 PM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-5	10/11/21 12:50 PM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-5	10/11/21 12:50 PM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408
2110093-04A	FGD-3	10/11/21 11:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	FGD-3	10/11/21 11:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	FGD-3	10/11/21 11:40 AM	Aqueous	SW7470A	Mercury Aq Prep	10/15/21 09:30 AM	102418
2110093-04B	FGD-3	10/11/21 11:40 AM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-3	10/11/21 11:40 AM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-3	10/11/21 11:40 AM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408
2110093-05A	FGD-4	10/11/21 10:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	FGD-4	10/11/21 10:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437

Lab Order: 2110093  
 Client: Golder  
 Project: Luminant-OGSES-CCR-FGD Pon

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
2110093-05A	FGD-4	10/11/21 10:40 AM	Aqueous	SW7470A	Mercury Aq Prep	10/15/21 09:30 AM	102418
2110093-05B	FGD-4	10/11/21 10:40 AM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-4	10/11/21 10:40 AM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-4	10/11/21 10:40 AM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408
2110093-06A	FGD-6	10/11/21 09:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	FGD-6	10/11/21 09:35 AM	Aqueous	SW7470A	Mercury Aq Prep	10/15/21 09:30 AM	102418
2110093-06B	FGD-6	10/11/21 09:35 AM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-6	10/11/21 09:35 AM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-6	10/11/21 09:35 AM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408
2110093-07A	FGD-1	10/12/21 08:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	FGD-1	10/12/21 08:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	FGD-1	10/12/21 08:15 AM	Aqueous	SW7470A	Mercury Aq Prep	10/15/21 09:30 AM	102418
2110093-07B	FGD-1	10/12/21 08:15 AM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-1	10/12/21 08:15 AM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-1	10/12/21 08:15 AM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408
2110093-08A	FGD-2	10/12/21 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	FGD-2	10/12/21 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	FGD-2	10/12/21 09:20 AM	Aqueous	SW7470A	Mercury Aq Prep	10/15/21 09:30 AM	102418
2110093-08B	FGD-2	10/12/21 09:20 AM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-2	10/12/21 09:20 AM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-2	10/12/21 09:20 AM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-2	10/12/21 09:20 AM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408
2110093-09A	DUP-1	10/12/21 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	DUP-1	10/12/21 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	DUP-1	10/12/21 09:20 AM	Aqueous	SW7470A	Mercury Aq Prep	10/15/21 09:30 AM	102418
2110093-09B	DUP-1	10/12/21 09:20 AM	Aqueous	E300	Anion Preparation	10/15/21 10:07 AM	102421
	DUP-1	10/12/21 09:20 AM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	DUP-1	10/12/21 09:20 AM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405

**Lab Order:** 2110093  
**Client:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Pon

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
2110093-09B	DUP-1	10/12/21 09:20 AM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408
2110093-10A	FGD-12	10/12/21 10:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:13 AM	102437
	FGD-12	10/12/21 10:25 AM	Aqueous	SW7470A	Mercury Aq Prep	10/15/21 09:30 AM	102418
2110093-10B	FGD-12	10/12/21 10:25 AM	Aqueous	E300	Anion Preparation	10/14/21 09:27 AM	102405
	FGD-12	10/12/21 10:25 AM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408

Lab Order: 2110093  
 Client: Golder  
 Project: Luminant-OGSES-CCR-FGD Pon

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2110093-01A	FGD-8	Aqueous	SW7470A	Mercury Total: Aqueous	102418	1	10/15/21 03:37 PM	CETAC2_HG_211015 C
	FGD-8	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	1	10/19/21 11:03 AM	ICP-MS4_211019A
	FGD-8	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	50	10/19/21 12:10 PM	ICP-MS4_211019A
2110093-01B	FGD-8	Aqueous	E300	Anions by IC method - Water	102405	100	10/14/21 05:07 PM	IC4_211014B
	FGD-8	Aqueous	E300	Anions by IC method - Water	102405	10	10/14/21 07:20 PM	IC4_211014B
	FGD-8	Aqueous	E300	Anions by IC method - Water	102405	1	10/14/21 11:46 PM	IC4_211014B
	FGD-8	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C
	FGD-8	Aqueous	M2540C	Total Dissolved Solids	102431	1	10/15/21 05:00 PM	WC_211015C
2110093-02A	FGD-11	Aqueous	SW7470A	Mercury Total: Aqueous	102418	1	10/15/21 03:40 PM	CETAC2_HG_211015 C
	FGD-11	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	1	10/19/21 11:05 AM	ICP-MS4_211019A
	FGD-11	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	10	10/19/21 12:12 PM	ICP-MS4_211019A
2110093-02B	FGD-11	Aqueous	E300	Anions by IC method - Water	102405	100	10/14/21 06:04 PM	IC4_211014B
	FGD-11	Aqueous	E300	Anions by IC method - Water	102405	1	10/15/21 12:05 AM	IC4_211014B
	FGD-11	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C
2110093-03A	FGD-5	Aqueous	SW7470A	Mercury Total: Aqueous	102418	1	10/15/21 03:42 PM	CETAC2_HG_211015 C
	FGD-5	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	1	10/19/21 11:07 AM	ICP-MS4_211019A
	FGD-5	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	10	10/19/21 12:14 PM	ICP-MS4_211019A
2110093-03B	FGD-5	Aqueous	E300	Anions by IC method - Water	102405	10	10/14/21 07:39 PM	IC4_211014B
	FGD-5	Aqueous	E300	Anions by IC method - Water	102405	1	10/15/21 12:24 AM	IC4_211014B
	FGD-5	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C
2110093-04A	FGD-3	Aqueous	SW7470A	Mercury Total: Aqueous	102418	1	10/15/21 03:49 PM	CETAC2_HG_211015 C
	FGD-3	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	1	10/19/21 11:09 AM	ICP-MS4_211019A
	FGD-3	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	10	10/19/21 12:16 PM	ICP-MS4_211019A
2110093-04B	FGD-3	Aqueous	E300	Anions by IC method - Water	102405	10	10/14/21 07:58 PM	IC4_211014B
	FGD-3	Aqueous	E300	Anions by IC method - Water	102405	1	10/15/21 12:43 AM	IC4_211014B
	FGD-3	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C

Lab Order: 2110093  
 Client: Golder  
 Project: Luminant-OGSES-CCR-FGD Pon

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2110093-05A	FGD-4	Aqueous	SW7470A	Mercury Total: Aqueous	102418	1	10/15/21 03:51 PM	CETAC2_HG_211015 C
	FGD-4	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	1	10/19/21 10:59 AM	ICP-MS4_211019A
	FGD-4	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	10	10/19/21 12:06 PM	ICP-MS4_211019A
2110093-05B	FGD-4	Aqueous	E300	Anions by IC method - Water	102405	1	10/15/21 01:02 AM	IC4_211014B
	FGD-4	Aqueous	E300	Anions by IC method - Water	102405	10	10/14/21 08:17 PM	IC4_211014B
	FGD-4	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C
2110093-06A	FGD-6	Aqueous	SW7470A	Mercury Total: Aqueous	102418	1	10/15/21 03:53 PM	CETAC2_HG_211015 C
	FGD-6	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	1	10/19/21 11:11 AM	ICP-MS4_211019A
2110093-06B	FGD-6	Aqueous	E300	Anions by IC method - Water	102405	10	10/14/21 08:36 PM	IC4_211014B
	FGD-6	Aqueous	E300	Anions by IC method - Water	102405	1	10/15/21 01:21 AM	IC4_211014B
	FGD-6	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C
2110093-07A	FGD-1	Aqueous	SW7470A	Mercury Total: Aqueous	102418	1	10/15/21 03:56 PM	CETAC2_HG_211015 C
	FGD-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	1	10/19/21 11:13 AM	ICP-MS4_211019A
	FGD-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	10	10/19/21 12:18 PM	ICP-MS4_211019A
2110093-07B	FGD-1	Aqueous	E300	Anions by IC method - Water	102405	10	10/14/21 08:55 PM	IC4_211014B
	FGD-1	Aqueous	E300	Anions by IC method - Water	102405	1	10/15/21 01:40 AM	IC4_211014B
	FGD-1	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C
2110093-08A	FGD-2	Aqueous	SW7470A	Mercury Total: Aqueous	102418	1	10/15/21 03:58 PM	CETAC2_HG_211015 C
	FGD-2	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	1	10/19/21 11:15 AM	ICP-MS4_211019A
	FGD-2	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	50	10/19/21 12:20 PM	ICP-MS4_211019A
2110093-08B	FGD-2	Aqueous	E300	Anions by IC method - Water	102405	10	10/14/21 09:14 PM	IC4_211014B
	FGD-2	Aqueous	E300	Anions by IC method - Water	102405	1	10/15/21 03:15 AM	IC4_211014B
	FGD-2	Aqueous	E300	Anions by IC method - Water	102405	100	10/14/21 06:23 PM	IC4_211014B
	FGD-2	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C
2110093-09A	DUP-1	Aqueous	SW7470A	Mercury Total: Aqueous	102418	1	10/15/21 04:00 PM	CETAC2_HG_211015 C
	DUP-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	50	10/19/21 12:22 PM	ICP-MS4_211019A

Lab Order: 2110093  
 Client: Golder  
 Project: Luminant-OGSES-CCR-FGD Pon

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2110093-09A	DUP-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	1	10/19/21 11:17 AM	ICP-MS4_211019A
2110093-09B	DUP-1	Aqueous	E300	Anions by IC method - Water	102421	100	10/15/21 06:02 PM	IC4_211015A
	DUP-1	Aqueous	E300	Anions by IC method - Water	102405	10	10/14/21 10:49 PM	IC4_211014B
	DUP-1	Aqueous	E300	Anions by IC method - Water	102405	1	10/15/21 03:34 AM	IC4_211014B
	DUP-1	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C
2110093-10A	FGD-12	Aqueous	SW7470A	Mercury Total: Aqueous	102418	1	10/15/21 04:02 PM	CETAC2_HG_211015 C
	FGD-12	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102437	1	10/19/21 11:19 AM	ICP-MS4_211019A
2110093-10B	FGD-12	Aqueous	E300	Anions by IC method - Water	102405	1	10/15/21 03:53 AM	IC4_211014B
	FGD-12	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C

**DHL Analytical, Inc.**

**Date:** 19-Nov-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2110093

**Client Sample ID:** FGD-8  
**Lab ID:** 2110093-01  
**Collection Date:** 10/11/21 06:05 PM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>			Analyst: <b>SP</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/19/21 11:03 AM
Arsenic	0.00786	0.00200	0.00500		mg/L	1	10/19/21 11:03 AM
Barium	0.994	0.00300	0.0100		mg/L	1	10/19/21 11:03 AM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:03 AM
Boron	0.0779	0.0100	0.0300		mg/L	1	10/19/21 11:03 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:03 AM
Calcium	362	5.00	15.0		mg/L	50	10/19/21 12:10 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:03 AM
Cobalt	0.00312	0.00300	0.00500	J	mg/L	1	10/19/21 11:03 AM
Lead	0.00119	0.000300	0.00100		mg/L	1	10/19/21 11:03 AM
Lithium	0.00851	0.00500	0.0100	J	mg/L	1	10/19/21 11:03 AM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:03 AM
Selenium	0.00265	0.00200	0.00500	J	mg/L	1	10/19/21 11:03 AM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/19/21 11:03 AM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>JVR</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/15/21 03:37 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>BM</b>		
Chloride	2040	30.0	100		mg/L	100	10/14/21 05:07 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	10/14/21 11:46 PM
Sulfate	63.9	1.00	3.00		mg/L	1	10/14/21 11:46 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>JS</b>		
Total Dissolved Solids (Residue, Filterable)	3790	50.0	50.0		mg/L	1	10/15/21 05:00 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern



**DHL Analytical, Inc.**

**Date:** 19-Nov-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2110093

**Client Sample ID:** FGD-11  
**Lab ID:** 2110093-02  
**Collection Date:** 10/11/21 03:50 PM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>			Analyst: <b>SP</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/19/21 11:05 AM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:05 AM
Barium	0.231	0.00300	0.0100		mg/L	1	10/19/21 11:05 AM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:05 AM
Boron	0.124	0.0100	0.0300		mg/L	1	10/19/21 11:05 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:05 AM
Calcium	81.8	1.00	3.00		mg/L	10	10/19/21 12:12 PM
Chromium	0.0158	0.00200	0.00500		mg/L	1	10/19/21 11:05 AM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	10/19/21 11:05 AM
Lead	0.000332	0.000300	0.00100	J	mg/L	1	10/19/21 11:05 AM
Lithium	0.0126	0.00500	0.0100		mg/L	1	10/19/21 11:05 AM
Molybdenum	0.00276	0.00200	0.00500	J	mg/L	1	10/19/21 11:05 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:05 AM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/19/21 11:05 AM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>JVR</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/15/21 03:40 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>BM</b>		
Chloride	376	30.0	100		mg/L	100	10/14/21 06:04 PM
Fluoride	0.453	0.100	0.400		mg/L	1	10/15/21 12:05 AM
Sulfate	35.2	1.00	3.00		mg/L	1	10/15/21 12:05 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>JS</b>		
Total Dissolved Solids (Residue, Filterable)	1040	50.0	50.0		mg/L	1	10/14/21 04:30 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**DHL Analytical, Inc.**

**Date:** 19-Nov-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2110093

**Client Sample ID:** FGD-5  
**Lab ID:** 2110093-03  
**Collection Date:** 10/11/21 12:50 PM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>			Analyst: <b>SP</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/19/21 11:07 AM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:07 AM
Barium	0.0995	0.00300	0.0100		mg/L	1	10/19/21 11:07 AM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:07 AM
Boron	0.0957	0.0100	0.0300		mg/L	1	10/19/21 11:07 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:07 AM
Calcium	114	1.00	3.00		mg/L	10	10/19/21 12:14 PM
Chromium	0.0549	0.00200	0.00500		mg/L	1	10/19/21 11:07 AM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	10/19/21 11:07 AM
Lead	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:07 AM
Lithium	0.139	0.00500	0.0100		mg/L	1	10/19/21 11:07 AM
Molybdenum	0.00669	0.00200	0.00500		mg/L	1	10/19/21 11:07 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:07 AM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/19/21 11:07 AM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>JVR</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/15/21 03:42 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>BM</b>		
Chloride	290	3.00	10.0		mg/L	10	10/14/21 07:39 PM
Fluoride	0.459	0.100	0.400		mg/L	1	10/15/21 12:24 AM
Sulfate	107	1.00	3.00		mg/L	1	10/15/21 12:24 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>JS</b>		
Total Dissolved Solids (Residue, Filterable)	898	10.0	10.0		mg/L	1	10/14/21 04:30 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**DHL Analytical, Inc.**

**Date:** 19-Nov-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2110093

**Client Sample ID:** FGD-3  
**Lab ID:** 2110093-04  
**Collection Date:** 10/11/21 11:40 AM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>			Analyst: <b>SP</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/19/21 11:09 AM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:09 AM
Barium	0.0322	0.00300	0.0100		mg/L	1	10/19/21 11:09 AM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:09 AM
Boron	0.0956	0.0100	0.0300		mg/L	1	10/19/21 11:09 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:09 AM
Calcium	35.3	1.00	3.00		mg/L	10	10/19/21 12:16 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:09 AM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	10/19/21 11:09 AM
Lead	0.000494	0.000300	0.00100	J	mg/L	1	10/19/21 11:09 AM
Lithium	0.0296	0.00500	0.0100		mg/L	1	10/19/21 11:09 AM
Molybdenum	0.00370	0.00200	0.00500	J	mg/L	1	10/19/21 11:09 AM
Selenium	0.00748	0.00200	0.00500		mg/L	1	10/19/21 11:09 AM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/19/21 11:09 AM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>JVR</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/15/21 03:49 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>BM</b>		
Chloride	42.5	0.300	1.00		mg/L	1	10/15/21 12:43 AM
Fluoride	1.08	0.100	0.400		mg/L	1	10/15/21 12:43 AM
Sulfate	105	1.00	3.00		mg/L	1	10/15/21 12:43 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>JS</b>		
Total Dissolved Solids (Residue, Filterable)	671	10.0	10.0		mg/L	1	10/14/21 04:30 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**DHL Analytical, Inc.**

**Date:** 19-Nov-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2110093

**Client Sample ID:** FGD-4  
**Lab ID:** 2110093-05  
**Collection Date:** 10/11/21 10:40 AM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>			Analyst: <b>SP</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/19/21 10:59 AM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 10:59 AM
Barium	0.0796	0.00300	0.0100		mg/L	1	10/19/21 10:59 AM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 10:59 AM
Boron	0.0801	0.0100	0.0300		mg/L	1	10/19/21 10:59 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 10:59 AM
Calcium	32.9	1.00	3.00		mg/L	10	10/19/21 12:06 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 10:59 AM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	10/19/21 10:59 AM
Lead	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 10:59 AM
Lithium	0.00984	0.00500	0.0100	J	mg/L	1	10/19/21 10:59 AM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 10:59 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 10:59 AM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/19/21 10:59 AM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>JVR</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/15/21 03:51 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>BM</b>		
Chloride	185	3.00	10.0		mg/L	10	10/14/21 08:17 PM
Fluoride	0.398	0.100	0.400	J	mg/L	1	10/15/21 01:02 AM
Sulfate	47.6	1.00	3.00		mg/L	1	10/15/21 01:02 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>JS</b>		
Total Dissolved Solids (Residue, Filterable)	670	10.0	10.0		mg/L	1	10/14/21 04:30 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**DHL Analytical, Inc.**

**Date:** 19-Nov-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2110093

**Client Sample ID:** FGD-6  
**Lab ID:** 2110093-06  
**Collection Date:** 10/11/21 09:35 AM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>			Analyst: <b>SP</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/19/21 11:11 AM
Arsenic	0.00696	0.00200	0.00500		mg/L	1	10/19/21 11:11 AM
Barium	0.0507	0.00300	0.0100		mg/L	1	10/19/21 11:11 AM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:11 AM
Boron	0.105	0.0100	0.0300		mg/L	1	10/19/21 11:11 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:11 AM
Calcium	19.1	0.100	0.300		mg/L	1	10/19/21 11:11 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:11 AM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	10/19/21 11:11 AM
Lead	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:11 AM
Lithium	0.00641	0.00500	0.0100	J	mg/L	1	10/19/21 11:11 AM
Molybdenum	0.00222	0.00200	0.00500	J	mg/L	1	10/19/21 11:11 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:11 AM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/19/21 11:11 AM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>JVR</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/15/21 03:53 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>BM</b>		
Chloride	130	3.00	10.0		mg/L	70	10/14/21 08:36 PM
Fluoride	0.616	0.100	0.400		mg/L	1	10/15/21 01:21 AM
Sulfate	73.2	1.00	3.00		mg/L	1	10/15/21 01:21 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>JS</b>		
Total Dissolved Solids (Residue, Filterable)	656	10.0	10.0		mg/L	1	10/14/21 04:30 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**DHL Analytical, Inc.**

**Date:** 19-Nov-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2110093

**Client Sample ID:** FGD-1  
**Lab ID:** 2110093-07  
**Collection Date:** 10/12/21 08:15 AM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>		Analyst: <b>SP</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/19/21 11:13 AM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:13 AM
Barium	0.132	0.00300	0.0100		mg/L	1	10/19/21 11:13 AM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:13 AM
Boron	0.103	0.0100	0.0300		mg/L	1	10/19/21 11:13 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:13 AM
Calcium	31.9	1.00	3.00		mg/L	10	10/19/21 12:18 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:13 AM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	10/19/21 11:13 AM
Lead	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:13 AM
Lithium	0.0182	0.00500	0.0100		mg/L	1	10/19/21 11:13 AM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:13 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:13 AM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/19/21 11:13 AM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>JVR</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/15/21 03:56 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>BM</b>			
Chloride	244	3.00	10.0		mg/L	10	10/14/21 08:55 PM
Fluoride	0.295	0.100	0.400	J	mg/L	1	10/15/21 01:40 AM
Sulfate	133	1.00	3.00		mg/L	1	10/15/21 01:40 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>JS</b>			
Total Dissolved Solids (Residue, Filterable)	897	10.0	10.0		mg/L	1	10/14/21 04:30 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**DHL Analytical, Inc.**

**Date:** 19-Nov-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2110093

**Client Sample ID:** FGD-2  
**Lab ID:** 2110093-08  
**Collection Date:** 10/12/21 09:20 AM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>			Analyst: <b>SP</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/19/21 11:15 AM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:15 AM
Barium	0.0823	0.00300	0.0100		mg/L	1	10/19/21 11:15 AM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:15 AM
Boron	0.473	0.0100	0.0300		mg/L	1	10/19/21 11:15 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:15 AM
Calcium	245	5.00	15.0		mg/L	50	10/19/21 12:20 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:15 AM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	10/19/21 11:15 AM
Lead	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:15 AM
Lithium	0.0259	0.00500	0.0100		mg/L	1	10/19/21 11:15 AM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:15 AM
Selenium	0.0185	0.00200	0.00500		mg/L	1	10/19/21 11:15 AM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/19/21 11:15 AM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>JVR</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/15/21 03:58 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>BM</b>		
Chloride	950	30.0	100		mg/L	100	10/14/21 06:23 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	10/15/21 03:15 AM
Sulfate	467	10.0	30.0		mg/L	10	10/14/21 09:14 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>JS</b>		
Total Dissolved Solids (Residue, Filterable)	2630	50.0	50.0		mg/L	1	10/14/21 04:30 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**DHL Analytical, Inc.**

**Date:** 19-Nov-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2110093

**Client Sample ID:** DUP-1  
**Lab ID:** 2110093-09  
**Collection Date:** 10/12/21 09:20 AM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>		Analyst: <b>SP</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/19/21 11:17 AM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:17 AM
Barium	0.0814	0.00300	0.0100		mg/L	1	10/19/21 11:17 AM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:17 AM
Boron	0.492	0.0100	0.0300		mg/L	1	10/19/21 11:17 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:17 AM
Calcium	249	5.00	15.0		mg/L	50	10/19/21 12:22 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:17 AM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	10/19/21 11:17 AM
Lead	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:17 AM
Lithium	0.0263	0.00500	0.0100		mg/L	1	10/19/21 11:17 AM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:17 AM
Selenium	0.0194	0.00200	0.00500		mg/L	1	10/19/21 11:17 AM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/19/21 11:17 AM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>JVR</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/15/21 04:00 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>BM</b>			
Chloride	921	30.0	100		mg/L	100	10/15/21 06:02 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	10/15/21 03:34 AM
Sulfate	477	10.0	30.0		mg/L	10	10/14/21 10:49 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>JS</b>			
Total Dissolved Solids (Residue, Filterable)	2460	50.0	50.0		mg/L	1	10/14/21 04:30 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern



**DHL Analytical, Inc.**

**Date:** 19-Nov-21

**CLIENT:** Golder  
**Project:** Luminant-OGSES-CCR-FGD Ponds  
**Project No:** 19122262  
**Lab Order:** 2110093

**Client Sample ID:** FGD-12  
**Lab ID:** 2110093-10  
**Collection Date:** 10/12/21 10:25 AM  
**Matrix:** AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020B</b>			Analyst: <b>SP</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/19/21 11:19 AM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:19 AM
Barium	0.0613	0.00300	0.0100		mg/L	1	10/19/21 11:19 AM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:19 AM
Boron	0.0759	0.0100	0.0300		mg/L	1	10/19/21 11:19 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/19/21 11:19 AM
Calcium	8.69	0.100	0.300		mg/L	1	10/19/21 11:19 AM
Chromium	0.00387	0.00200	0.00500	J	mg/L	1	10/19/21 11:19 AM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	10/19/21 11:19 AM
Lead	0.00255	0.000300	0.00100		mg/L	1	10/19/21 11:19 AM
Lithium	0.0222	0.00500	0.0100		mg/L	1	10/19/21 11:19 AM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	10/19/21 11:19 AM
Selenium	0.00255	0.00200	0.00500	J	mg/L	1	10/19/21 11:19 AM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/19/21 11:19 AM
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>JVR</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/15/21 04:02 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>BM</b>		
Chloride	12.5	0.300	1.00		mg/L	1	10/15/21 03:53 AM
Fluoride	0.101	0.100	0.400	J	mg/L	1	10/15/21 03:53 AM
Sulfate	18.1	1.00	3.00		mg/L	1	10/15/21 03:53 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>JS</b>		
Total Dissolved Solids (Residue, Filterable)	195	10.0	10.0		mg/L	1	10/14/21 04:30 PM

**Qualifiers:** ND - Not Detected at the SDL  
 J - Analyte detected between SDL and RL  
 B - Analyte detected in the associated Method Blank  
 DF- Dilution Factor  
 N - Parameter not NELAP certified  
 See Final Page of Report for MQLs and MDLs

S - Spike Recovery outside control limits  
 C - Sample Result or QC discussed in Case Narrative  
 RL - Reporting Limit (MQL adjusted for moisture and sample size)  
 SDL - Sample Detection Limit  
 E - TPH pattern not Gas or Diesel Range Pattern

**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

**ANALYTICAL QC SUMMARY REPORT**

**RunID: CETAC2\_HG\_210728C**

Sample ID: <b>DCS-101411</b>	Batch ID: <b>101411</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>DCS</b>	Run ID: <b>CETAC2_HG_210728C</b>	Analysis Date: <b>7/28/2021 1:24:11 PM</b>	Prep Date: <b>7/27/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.000189	0.000200	0.000200	0	94.5	82	119	0	0	

**Qualifiers:** B Analyte detected in the associated Method Blank  
 J Analyte detected between MDL and RL  
 ND Not Detected at the Method Detection Limit  
 RL Reporting Limit  
 J Analyte detected between SDL and RL

DF Dilution Factor  
 MDL Method Detection Limit  
 R RPD outside accepted control limits  
 S Spike Recovery outside control limits  
 N Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: CETAC2\_HG\_211015C**

The QC data in batch 102418 applies to the following samples: 2110093-01A, 2110093-02A, 2110093-03A, 2110093-04A, 2110093-05A, 2110093-06A, 2110093-07A, 2110093-08A, 2110093-09A, 2110093-10A

Sample ID: <b>MB-102418</b>	Batch ID: <b>102418</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>CETAC2_HG_211015C</b>	Analysis Date: <b>10/15/2021 3:02:20 PM</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	<0.0000800	0.000200								

Sample ID: <b>LCS-102418</b>	Batch ID: <b>102418</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>CETAC2_HG_211015C</b>	Analysis Date: <b>10/15/2021 3:06:52 PM</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00198	0.000200	0.00200	0	99.0	85	115			

Sample ID: <b>LCSD-102418</b>	Batch ID: <b>102418</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>CETAC2_HG_211015C</b>	Analysis Date: <b>10/15/2021 3:09:08 PM</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00197	0.000200	0.00200	0	98.5	85	115	0.506	15	

Sample ID: <b>2110085-01D MS</b>	Batch ID: <b>102418</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>CETAC2_HG_211015C</b>	Analysis Date: <b>10/15/2021 3:27:14 PM</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0101	0.00100	0.0100	0	101	80	120			

Sample ID: <b>2110085-01D MSD</b>	Batch ID: <b>102418</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>CETAC2_HG_211015C</b>	Analysis Date: <b>10/15/2021 3:29:30 PM</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0102	0.00100	0.0100	0	102	80	120	0.985	15	

Sample ID: <b>2110085-01D SD</b>	Batch ID: <b>102418</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>CETAC2_HG_211015C</b>	Analysis Date: <b>10/15/2021 3:31:46 PM</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	<0.00200	0.00500	0	0				0	10	

Sample ID: <b>2110085-01D PDS</b>	Batch ID: <b>102418</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>CETAC2_HG_211015C</b>	Analysis Date: <b>10/15/2021 3:34:02 PM</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0125	0.00100	0.0125	0	99.6	85	115			

**Qualifiers:** B Analyte detected in the associated Method Blank      DF Dilution Factor  
J Analyte detected between MDL and RL      MDL Method Detection Limit  
ND Not Detected at the Method Detection Limit      R RPD outside accepted control limits  
RL Reporting Limit      S Spike Recovery outside control limits  
J Analyte detected between SDL and RL      N Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID:** CETAC2\_HG\_211015C

Sample ID: <b>ICV-211015</b>	Batch ID: <b>R117542</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>CETAC2_HG_211015C</b>	Analysis Date: <b>10/15/2021 2:56:35 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00403	0.000200	0.00400	0	101	90	110			
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Sample ID: <b>CCV1-211015</b>	Batch ID: <b>R117542</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_211015C</b>	Analysis Date: <b>10/15/2021 3:44:40 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00198	0.000200	0.00200	0	99.0	90	110			
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Sample ID: <b>CCV2-211015</b>	Batch ID: <b>R117542</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_211015C</b>	Analysis Date: <b>10/15/2021 4:27:57 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00197	0.000200	0.00200	0	98.5	90	110			
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<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAP certified</p>
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**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_210803A**

Sample ID: <b>DCS1-101483</b>	Batch ID: <b>101483</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>DCS</b>	Run ID: <b>ICP-MS4_210803A</b>	Analysis Date: <b>8/3/2021 1:18:00 PM</b>	Prep Date: <b>8/2/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00114	0.00250	0.00100	0	114	70	130	0	0	
Beryllium	0.000608	0.00100	0.000500	0	122	70	130	0	0	
Cadmium	0.000587	0.00100	0.000500	0	117	70	130	0	0	
Lead	0.000537	0.00100	0.000500	0	107	70	130	0	0	
Thallium	0.000524	0.00150	0.000500	0	105	70	130	0	0	

Sample ID: <b>DCS2-101483</b>	Batch ID: <b>101483</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>DCS2</b>	Run ID: <b>ICP-MS4_210803A</b>	Analysis Date: <b>8/3/2021 1:21:00 PM</b>	Prep Date: <b>8/2/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.278	0.300	0.300	0	92.6	70	130	0	0	

Sample ID: <b>DCS3-101483</b>	Batch ID: <b>101483</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>DCS3</b>	Run ID: <b>ICP-MS4_210803A</b>	Analysis Date: <b>8/3/2021 1:24:00 PM</b>	Prep Date: <b>8/2/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00522	0.00500	0.00500	0	104	70	130	0	0	
Barium	0.00522	0.0100	0.00500	0	104	70	130	0	0	
Chromium	0.00527	0.00500	0.00500	0	105	70	130	0	0	
Cobalt	0.00534	0.00500	0.00500	0	107	70	130	0	0	
Lithium	0.00475	0.0100	0.00500	0	95.0	70	130	0	0	
Molybdenum	0.00509	0.00500	0.00500	0	102	70	130	0	0	
Selenium	0.00500	0.00500	0.00500	0	100	70	130	0	0	

Sample ID: <b>DCS4-101483</b>	Batch ID: <b>101483</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>DCS4</b>	Run ID: <b>ICP-MS4_210803A</b>	Analysis Date: <b>8/3/2021 1:27:00 PM</b>	Prep Date: <b>8/2/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0315	0.0300	0.0300	0	105	70	130	0	0	

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_211019A**

The QC data in batch 102437 applies to the following samples: 2110093-01A, 2110093-02A, 2110093-03A, 2110093-04A, 2110093-05A, 2110093-06A, 2110093-07A, 2110093-08A, 2110093-09A, 2110093-10A

Sample ID: <b>MB-102437</b>	Batch ID: <b>102437</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 10:51:00 A</b>	Prep Date: <b>10/18/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.000800	0.00250								
Arsenic	<0.00200	0.00500								
Barium	<0.00300	0.0100								
Beryllium	<0.000300	0.00100								
Boron	<0.0100	0.0300								
Cadmium	<0.000300	0.00100								
Calcium	<0.100	0.300								
Chromium	<0.00200	0.00500								
Cobalt	<0.00300	0.00500								
Lead	<0.000300	0.00100								
Lithium	<0.00500	0.0100								
Molybdenum	<0.00200	0.00500								
Selenium	<0.00200	0.00500								
Thallium	<0.000500	0.00150								

Sample ID: <b>LCS-102437</b>	Batch ID: <b>102437</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 10:53:00 A</b>	Prep Date: <b>10/18/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.195	0.00250	0.200	0	97.4	80	120			
Arsenic	0.203	0.00500	0.200	0	101	80	120			
Barium	0.201	0.0100	0.200	0	100	80	120			
Beryllium	0.200	0.00100	0.200	0	99.8	80	120			
Boron	0.200	0.0300	0.200	0	100	80	120			
Cadmium	0.202	0.00100	0.200	0	101	80	120			
Calcium	5.43	0.300	5.00	0	109	80	120			
Chromium	0.203	0.00500	0.200	0	102	80	120			
Cobalt	0.196	0.00500	0.200	0	98.1	80	120			
Lead	0.197	0.00100	0.200	0	98.7	80	120			
Lithium	0.205	0.0100	0.200	0	103	80	120			
Molybdenum	0.199	0.00500	0.200	0	99.7	80	120			
Selenium	0.200	0.00500	0.200	0	99.8	80	120			
Thallium	0.203	0.00150	0.200	0	102	80	120			

Sample ID: <b>LCSD-102437</b>	Batch ID: <b>102437</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 10:55:00 A</b>	Prep Date: <b>10/18/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.194	0.00250	0.200	0	97.1	80	120	0.391	15	

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAP certified</p>
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CLIENT: Golder  
 Work Order: 2110093  
 Project: Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4\_211019A

Sample ID: <b>LCSD-102437</b>	Batch ID: <b>102437</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 10:55:00 A</b>	Prep Date: <b>10/18/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.202	0.00500	0.200	0	101	80	120	0.143	15	
Barium	0.200	0.0100	0.200	0	99.8	80	120	0.544	15	
Beryllium	0.197	0.00100	0.200	0	98.6	80	120	1.14	15	
Boron	0.195	0.0300	0.200	0	97.3	80	120	2.74	15	
Cadmium	0.200	0.00100	0.200	0	100	80	120	0.815	15	
Calcium	5.37	0.300	5.00	0	107	80	120	1.16	15	
Chromium	0.203	0.00500	0.200	0	101	80	120	0.356	15	
Cobalt	0.196	0.00500	0.200	0	98.0	80	120	0.026	15	
Lead	0.199	0.00100	0.200	0	99.4	80	120	0.772	15	
Lithium	0.195	0.0100	0.200	0	97.7	80	120	4.99	15	
Molybdenum	0.197	0.00500	0.200	0	98.6	80	120	1.12	15	
Selenium	0.196	0.00500	0.200	0	98.2	80	120	1.68	15	
Thallium	0.204	0.00150	0.200	0	102	80	120	0.279	15	

Sample ID: <b>2110093-05A SD</b>	Batch ID: <b>102437</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 11:01:00 A</b>	Prep Date: <b>10/18/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.00400	0.0125	0	0				0	20	
Arsenic	<0.0100	0.0250	0	0				0	20	
Barium	0.0798	0.0500	0	0.0796				0.292	20	
Beryllium	<0.00150	0.00500	0	0				0	20	
Boron	0.0762	0.150	0	0.0801				4.93	20	
Cadmium	<0.00150	0.00500	0	0				0	20	
Chromium	<0.0100	0.0250	0	0				0	20	
Cobalt	<0.0150	0.0250	0	0				0	20	
Lead	<0.00150	0.00500	0	0				0	20	
Lithium	<0.0250	0.0500	0	0.00984				0	20	
Molybdenum	<0.0100	0.0250	0	0				0	20	
Selenium	<0.0100	0.0250	0	0				0	20	
Thallium	<0.00250	0.00750	0	0				0	20	

Sample ID: <b>2110093-05A PDS</b>	Batch ID: <b>102437</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 11:21:00 A</b>	Prep Date: <b>10/18/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.186	0.00250	0.200	0	92.8	75	125			
Arsenic	0.196	0.00500	0.200	0	98.0	75	125			
Barium	0.274	0.0100	0.200	0.0796	97.4	75	125			
Beryllium	0.192	0.00100	0.200	0	95.9	75	125			
Boron	0.266	0.0300	0.200	0.0801	92.9	75	125			

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_211019A**

Sample ID: <b>2110093-05A PDS</b>	Batch ID: <b>102437</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 11:21:00 A</b>	Prep Date: <b>10/18/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.199	0.00100	0.200	0	99.6	75	125			
Chromium	0.203	0.00500	0.200	0	102	75	125			
Cobalt	0.192	0.00500	0.200	0	96.0	75	125			
Lead	0.201	0.00100	0.200	0	101	75	125			
Lithium	0.198	0.0100	0.200	0.00984	94.2	75	125			
Molybdenum	0.198	0.00500	0.200	0	98.9	75	125			
Selenium	0.196	0.00500	0.200	0	97.8	75	125			
Thallium	0.205	0.00150	0.200	0	103	75	125			

Sample ID: <b>2110093-05A MS</b>	Batch ID: <b>102437</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 11:23:00 A</b>	Prep Date: <b>10/18/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.199	0.00250	0.200	0	99.5	75	125			
Arsenic	0.203	0.00500	0.200	0	101	75	125			
Barium	0.284	0.0100	0.200	0.0796	102	75	125			
Beryllium	0.196	0.00100	0.200	0	97.9	75	125			
Boron	0.268	0.0300	0.200	0.0801	94.2	75	125			
Cadmium	0.200	0.00100	0.200	0	99.8	75	125			
Calcium	37.5	0.300	5.00	32.6	97.6	75	125			
Chromium	0.203	0.00500	0.200	0	101	75	125			
Cobalt	0.194	0.00500	0.200	0	97.0	75	125			
Lead	0.203	0.00100	0.200	0	101	75	125			
Lithium	0.209	0.0100	0.200	0.00984	99.3	75	125			
Molybdenum	0.200	0.00500	0.200	0	100	75	125			
Selenium	0.197	0.00500	0.200	0	98.7	75	125			
Thallium	0.208	0.00150	0.200	0	104	75	125			

Sample ID: <b>2110093-05A MSD</b>	Batch ID: <b>102437</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 11:25:00 A</b>	Prep Date: <b>10/18/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.197	0.00250	0.200	0	98.5	75	125	1.07	15	
Arsenic	0.201	0.00500	0.200	0	100	75	125	1.18	15	
Barium	0.278	0.0100	0.200	0.0796	99.3	75	125	2.10	15	
Beryllium	0.195	0.00100	0.200	0	97.6	75	125	0.266	15	
Boron	0.285	0.0300	0.200	0.0801	103	75	125	6.04	15	
Cadmium	0.199	0.00100	0.200	0	99.5	75	125	0.267	15	
Calcium	36.7	0.300	5.00	32.6	81.0	75	125	2.23	15	
Chromium	0.200	0.00500	0.200	0	99.8	75	125	1.54	15	
Cobalt	0.191	0.00500	0.200	0	95.6	75	125	1.44	15	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified



**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_211019A**

Sample ID: <b>2110093-05A MSD</b>	Batch ID: <b>102437</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 11:25:00 A</b>	Prep Date: <b>10/18/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.202	0.00100	0.200	0	101	75	125	0.354	15	
Lithium	0.207	0.0100	0.200	0.00984	98.5	75	125	0.833	15	
Molybdenum	0.200	0.00500	0.200	0	100	75	125	0.055	15	
Selenium	0.197	0.00500	0.200	0	98.4	75	125	0.334	15	
Thallium	0.206	0.00150	0.200	0	103	75	125	0.569	15	

Sample ID: <b>2110093-05A SD</b>	Batch ID: <b>102437</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 12:08:00 P</b>	Prep Date: <b>10/18/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	33.9	15.0	0	32.9				2.85	20	

Sample ID: <b>2110093-05A PDS</b>	Batch ID: <b>102437</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 12:24:00 P</b>	Prep Date: <b>10/18/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	83.4	3.00	50.0	32.9	101	75	125			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_211019A**

Sample ID: <b>ICV-211019</b>	Batch ID: <b>R117572</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 10:36:00 A</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0961	0.00250	0.100	0	96.1	90	110			
Arsenic	0.0964	0.00500	0.100	0	96.4	90	110			
Barium	0.0979	0.0100	0.100	0	97.9	90	110			
Beryllium	0.0964	0.00100	0.100	0	96.4	90	110			
Boron	0.0970	0.0300	0.100	0	97.0	90	110			
Cadmium	0.0978	0.00100	0.100	0	97.8	90	110			
Calcium	2.59	0.300	2.50	0	104	90	110			
Chromium	0.102	0.00500	0.100	0	102	90	110			
Cobalt	0.0967	0.00500	0.100	0	96.7	90	110			
Lead	0.101	0.00100	0.100	0	101	90	110			
Lithium	0.0964	0.0100	0.100	0	96.4	90	110			
Molybdenum	0.0959	0.00500	0.100	0	95.9	90	110			
Selenium	0.0963	0.00500	0.100	0	96.3	90	110			
Thallium	0.102	0.00150	0.100	0	102	90	110			

Sample ID: <b>LCVL-211019</b>	Batch ID: <b>R117572</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 10:45:00 A</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00182	0.00250	0.00200	0	91.2	80	120			
Arsenic	0.00462	0.00500	0.00500	0	92.4	80	120			
Barium	0.00451	0.0100	0.00500	0	90.1	80	120			
Beryllium	0.000894	0.00100	0.00100	0	89.4	80	120			
Boron	0.0174	0.0300	0.0200	0	87.1	80	120			
Cadmium	0.000901	0.00100	0.00100	0	90.1	80	120			
Calcium	0.101	0.300	0.100	0	101	80	120			
Chromium	0.00469	0.00500	0.00500	0	93.7	80	120			
Cobalt	0.00441	0.00500	0.00500	0	88.1	80	120			
Lead	0.000958	0.00100	0.00100	0	95.8	80	120			
Lithium	0.00822	0.0100	0.0100	0	82.2	80	120			
Molybdenum	0.00463	0.00500	0.00500	0	92.6	80	120			
Selenium	0.00458	0.00500	0.00500	0	91.6	80	120			
Thallium	0.000952	0.00150	0.00100	0	95.2	80	120			

Sample ID: <b>CCV1-211019</b>	Batch ID: <b>R117572</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 11:36:00 A</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.196	0.00250	0.200	0	98.2	90	110			
Arsenic	0.203	0.00500	0.200	0	101	90	110			
Barium	0.199	0.0100	0.200	0	99.4	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS4\_211019A

Sample ID: <b>CCV1-211019</b>	Batch ID: <b>R117572</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 11:36:00 A</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.198	0.00100	0.200	0	99.0	90	110			
Boron	0.187	0.0300	0.200	0	93.5	90	110			
Cadmium	0.203	0.00100	0.200	0	102	90	110			
Calcium	5.36	0.300	5.00	0	107	90	110			
Chromium	0.203	0.00500	0.200	0	102	90	110			
Cobalt	0.199	0.00500	0.200	0	99.3	90	110			
Lead	0.199	0.00100	0.200	0	99.5	90	110			
Lithium	0.194	0.0100	0.200	0	97.1	90	110			
Molybdenum	0.199	0.00500	0.200	0	99.3	90	110			
Selenium	0.205	0.00500	0.200	0	102	90	110			
Thallium	0.203	0.00150	0.200	0	102	90	110			

Sample ID: <b>CCV2-211019</b>	Batch ID: <b>R117572</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 12:02:00 P</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.36	0.300	5.00	0	107	90	110			

Sample ID: <b>CCV3-211019</b>	Batch ID: <b>R117572</b>	TestNo: <b>SW6020B</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_211019A</b>	Analysis Date: <b>10/19/2021 12:26:00 P</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.28	0.300	5.00	0	106	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC4\_210930A**

Sample ID: <b>DCS2-102243</b>	Batch ID: <b>102243</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>DCS2</b>	Run ID: <b>IC4_210930A</b>	Analysis Date: <b>9/30/2021 4:11:30 PM</b>	Prep Date: <b>9/30/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	0.505	1.00	0.5000	0	101	70	130	0	0	
Fluoride	0.163	0.400	0.2000	0	81.3	70	130	0	0	

Sample ID: <b>DCS3-102243</b>	Batch ID: <b>102243</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>DCS3</b>	Run ID: <b>IC4_210930A</b>	Analysis Date: <b>9/30/2021 4:30:30 PM</b>	Prep Date: <b>9/30/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	3.08	3.00	3.000	0	103	70	130	0	0	

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAP certified</p>
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**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC4\_211014B**

The QC data in batch 102405 applies to the following samples: 2110093-01B, 2110093-02B, 2110093-03B, 2110093-04B, 2110093-05B, 2110093-06B, 2110093-07B, 2110093-08B, 2110093-09B, 2110093-10B

Sample ID: <b>MB-102405</b>	Batch ID: <b>102405</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>IC4_211014B</b>	Analysis Date: <b>10/14/2021 4:10:46 PM</b>	Prep Date: <b>10/14/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								
Fluoride	<0.100	0.400								
Sulfate	<1.00	3.00								

Sample ID: <b>LCS-102405</b>	Batch ID: <b>102405</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>IC4_211014B</b>	Analysis Date: <b>10/14/2021 4:29:46 PM</b>	Prep Date: <b>10/14/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.48	1.00	10.00	0	94.8	90	110			
Fluoride	3.86	0.400	4.000	0	96.5	90	110			
Sulfate	30.8	3.00	30.00	0	103	90	110			

Sample ID: <b>LCS-102405</b>	Batch ID: <b>102405</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>IC4_211014B</b>	Analysis Date: <b>10/14/2021 4:48:46 PM</b>	Prep Date: <b>10/14/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.50	1.00	10.00	0	95.0	90	110	0.288	20	
Fluoride	3.87	0.400	4.000	0	96.8	90	110	0.292	20	
Sulfate	30.9	3.00	30.00	0	103	90	110	0.348	20	

Sample ID: <b>2110093-01BMS</b>	Batch ID: <b>102405</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>IC4_211014B</b>	Analysis Date: <b>10/14/2021 5:26:46 PM</b>	Prep Date: <b>10/14/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	3670	100	2000	2035	81.8	90	110			S
Fluoride	2050	40.0	2000	0	102	90	110			
Sulfate	1990	300	2000	0	99.4	90	110			

Sample ID: <b>2110093-01BMSD</b>	Batch ID: <b>102405</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>IC4_211014B</b>	Analysis Date: <b>10/14/2021 5:45:46 PM</b>	Prep Date: <b>10/14/2021</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	3680	100	2000	2035	82.1	90	110	0.119	20	S
Fluoride	2050	40.0	2000	0	102	90	110	0.048	20	
Sulfate	1990	300	2000	0	99.6	90	110	0.158	20	

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC4\_211014B**

Sample ID: <b>2110093-08BMS</b>	Batch ID: <b>102405</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>IC4_211014B</b>	Analysis Date: <b>10/14/2021 6:42:45 PM</b>	Prep Date: <b>10/14/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2680	100	2000	950.3	86.3	90	110			S
Fluoride	1920	40.0	2000	0	95.8	90	110			
Sulfate	2370	300	2000	474.0	94.6	90	110			

Sample ID: <b>2110093-08BMSD</b>	Batch ID: <b>102405</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>IC4_211014B</b>	Analysis Date: <b>10/14/2021 7:01:45 PM</b>	Prep Date: <b>10/14/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2680	100	2000	950.3	86.4	90	110	0.060	20	S
Fluoride	1920	40.0	2000	0	96.0	90	110	0.197	20	
Sulfate	2370	300	2000	474.0	94.7	90	110	0.062	20	

**Qualifiers:** B Analyte detected in the associated Method Blank      DF Dilution Factor  
                   J Analyte detected between MDL and RL                    MDL Method Detection Limit  
                   ND Not Detected at the Method Detection Limit            R RPD outside accepted control limits  
                   RL Reporting Limit    S Spike Recovery outside control limits  
                   J Analyte detected between SDL and RL                        N Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC4\_211014B**

Sample ID: <b>ICV-211014</b>	Batch ID: <b>R117523</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>IC4_211014B</b>	Analysis Date: <b>10/14/2021 10:54:36 A</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.4	1.00	25.00	0	97.5	90	110			
Fluoride	9.78	0.400	10.00	0	97.8	90	110			
Sulfate	77.5	3.00	75.00	0	103	90	110			

Sample ID: <b>CCV1-211012</b>	Batch ID: <b>R117523</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC4_211014B</b>	Analysis Date: <b>10/14/2021 1:26:36 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.38	1.00	10.00	0	93.8	90	110			
Fluoride	3.83	0.400	4.000	0	95.9	90	110			
Sulfate	30.5	3.00	30.00	0	102	90	110			

Sample ID: <b>CCV2-211012</b>	Batch ID: <b>R117523</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC4_211014B</b>	Analysis Date: <b>10/14/2021 10:11:45 P</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.59	1.00	10.00	0	95.9	90	110			
Fluoride	3.90	0.400	4.000	0	97.5	90	110			
Sulfate	31.1	3.00	30.00	0	104	90	110			

Sample ID: <b>CCV3-211012</b>	Batch ID: <b>R117523</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC4_211014B</b>	Analysis Date: <b>10/15/2021 2:37:46 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.65	1.00	10.00	0	96.5	90	110			
Fluoride	3.91	0.400	4.000	0	97.8	90	110			
Sulfate	31.2	3.00	30.00	0	104	90	110			

Sample ID: <b>CCV4-211012</b>	Batch ID: <b>R117523</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC4_211014B</b>	Analysis Date: <b>10/15/2021 7:03:45 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.61	1.00	10.00	0	96.1	90	110			
Fluoride	3.92	0.400	4.000	0	98.0	90	110			
Sulfate	31.1	3.00	30.00	0	104	90	110			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAP certified

**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC4\_211015A**

The QC data in batch 102421 applies to the following samples: 2110093-09B

Sample ID: <b>MB-102421</b>	Batch ID: <b>102421</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>IC4_211015A</b>	Analysis Date: <b>10/15/2021 12:34:47 P</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	<0.300	1.00								
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Sample ID: <b>LCS-102421</b>	Batch ID: <b>102421</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>IC4_211015A</b>	Analysis Date: <b>10/15/2021 12:53:47 P</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.43	1.00	10.00	0	94.3	90	110			
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Sample ID: <b>LCSD-102421</b>	Batch ID: <b>102421</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>IC4_211015A</b>	Analysis Date: <b>10/15/2021 1:12:47 PM</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.41	1.00	10.00	0	94.1	90	110	0.263	20	
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Sample ID: <b>2110054-13BMS</b>	Batch ID: <b>102421</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>IC4_211015A</b>	Analysis Date: <b>10/15/2021 5:24:28 PM</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2200	100	2000	473.7	86.3	90	110			S
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Sample ID: <b>2110054-13BMSD</b>	Batch ID: <b>102421</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>IC4_211015A</b>	Analysis Date: <b>10/15/2021 5:43:28 PM</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2200	100	2000	473.7	86.5	90	110	0.126	20	S
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Sample ID: <b>2110118-01AMS</b>	Batch ID: <b>102421</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>IC4_211015A</b>	Analysis Date: <b>10/15/2021 10:28:27 P</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	196	10.0	200.0	25.21	85.3	90	110			S
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Sample ID: <b>2110118-01AMSD</b>	Batch ID: <b>102421</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>IC4_211015A</b>	Analysis Date: <b>10/15/2021 10:47:27 P</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	198	10.0	200.0	25.21	86.6	90	110	1.37	20	S
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- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAP certified



**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC4\_211015A**

Sample ID: <b>ICV-211015</b>	Batch ID: <b>R117538</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>IC4_211015A</b>	Analysis Date: <b>10/15/2021 11:56:47 A</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	24.2	1.00	25.00	0	96.6	90	110			
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Sample ID: <b>CCV1-211015</b>	Batch ID: <b>R117538</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>IC4_211015A</b>	Analysis Date: <b>10/15/2021 8:34:28 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.45	1.00	10.00	0	94.5	90	110			
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Sample ID: <b>CCV2-211015</b>	Batch ID: <b>R117538</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>IC4_211015A</b>	Analysis Date: <b>10/16/2021 1:38:27 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.50	1.00	10.00	0	95.0	90	110			
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<p><b>Qualifiers:</b></p> <ul style="list-style-type: none"> <li>B Analyte detected in the associated Method Blank</li> <li>J Analyte detected between MDL and RL</li> <li>ND Not Detected at the Method Detection Limit</li> <li>RL Reporting Limit</li> <li>J Analyte detected between SDL and RL</li> </ul>	<ul style="list-style-type: none"> <li>DF Dilution Factor</li> <li>MDL Method Detection Limit</li> <li>R RPD outside accepted control limits</li> <li>S Spike Recovery outside control limits</li> <li>N Parameter not NELAP certified</li> </ul>
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**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: WC\_211014C**

The QC data in batch 102408 applies to the following samples: 2110093-01B, 2110093-02B, 2110093-03B, 2110093-04B, 2110093-05B, 2110093-06B, 2110093-07B, 2110093-08B, 2110093-09B, 2110093-10B

Sample ID: <b>MB-102408</b>	Batch ID: <b>102408</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>WC_211014C</b>	Analysis Date: <b>10/14/2021 4:30:00 PM</b>	Prep Date: <b>10/14/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		<10.0	10.0							

Sample ID: <b>LCS-102408</b>	Batch ID: <b>102408</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>WC_211014C</b>	Analysis Date: <b>10/14/2021 4:30:00 PM</b>	Prep Date: <b>10/14/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		744	10.0	745.6	0	99.8	90	113		

Sample ID: <b>2110088-01A-DUP</b>	Batch ID: <b>102408</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_211014C</b>	Analysis Date: <b>10/14/2021 4:30:00 PM</b>	Prep Date: <b>10/14/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		962	10.0	0	972.0			1.03	5	

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAP certified</p>
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**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: WC\_211015C**

The QC data in batch 102431 applies to the following samples: 2110093-01B

Sample ID: <b>MB-102431</b>	Batch ID: <b>102431</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>WC_211015C</b>	Analysis Date: <b>10/15/2021 5:00:00 PM</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID: <b>LCS-102431</b>	Batch ID: <b>102431</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>WC_211015C</b>	Analysis Date: <b>10/15/2021 5:00:00 PM</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 755 10.0 745.6 0 101 90 113

Sample ID: <b>LCSD-102431</b>	Batch ID: <b>102431</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>WC_211015C</b>	Analysis Date: <b>10/15/2021 5:00:00 PM</b>	Prep Date: <b>10/15/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 756 10.0 745.6 0 101 90 113 0.132 5

Sample ID: <b>2110093-01B-DUP</b>	Batch ID: <b>102431</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_211015C</b>	Analysis Date: <b>10/15/2021 5:00:00 PM</b>	Prep Date: <b>10/14/2021</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 3730 50.0 0 3790 1.60 5

- |  |   |
|--|---|
| <p><b>Qualifiers:</b></p> <ul style="list-style-type: none"> <li>B Analyte detected in the associated Method Blank</li> <li>J Analyte detected between MDL and RL</li> <li>ND Not Detected at the Method Detection Limit</li> <li>RL Reporting Limit</li> <li>J Analyte detected between SDL and RL</li> </ul> | <ul style="list-style-type: none"> <li>DF Dilution Factor</li> <li>MDL Method Detection Limit</li> <li>R RPD outside accepted control limits</li> <li>S Spike Recovery outside control limits</li> <li>N Parameter not NELAP certified</li> </ul> |
|--|---|

**CLIENT:** Golder  
**Work Order:** 2110093  
**Project:** Luminant-OGSES-CCR-FGD Ponds

**MQL SUMMARY REPORT**

<b>TestNo: E300</b>	<b>MDL</b>	<b>MQL</b>
<b>Analyte</b>	<b>mg/L</b>	<b>mg/L</b>
Chloride	0.300	1.00
Fluoride	0.100	0.400
Sulfate	1.00	3.00

<b>TestNo: SW6020B</b>	<b>MDL</b>	<b>MQL</b>
<b>Analyte</b>	<b>mg/L</b>	<b>mg/L</b>
Antimony	0.000800	0.00250
Arsenic	0.00200	0.00500
Barium	0.00300	0.0100
Beryllium	0.000300	0.00100
Boron	0.0100	0.0300
Cadmium	0.000300	0.00100
Calcium	0.100	0.300
Chromium	0.00200	0.00500
Cobalt	0.00300	0.00500
Lead	0.000300	0.00100
Lithium	0.00500	0.0100
Molybdenum	0.00200	0.00500
Selenium	0.00200	0.00500
Thallium	0.000500	0.00150

<b>TestNo: SW7470A</b>	<b>MDL</b>	<b>MQL</b>
<b>Analyte</b>	<b>mg/L</b>	<b>mg/L</b>
Mercury	0.0000800	0.000200

<b>TestNo: M2540C</b>	<b>MDL</b>	<b>MQL</b>
<b>Analyte</b>	<b>mg/L</b>	<b>mg/L</b>
Total Dissolved Solids (Residue, Filt	10.0	10.0

**Qualifiers:** MQL -Method Quantitation Limit as defined by TRRP  
MDL -Method Detection Limit as defined by TRRP

## DHL Analytical, Inc.

Sample Delivery Group: L1419560  
Samples Received: 10/19/2021  
Project Number: 210093  
Description:

Report To: John DuPont  
2300 Double Creek Drive  
Round Rock, TX 78664

Entire Report Reviewed By:



Donna Eidson  
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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# SAMPLE SUMMARY

## FGD-8 L1419560-01 Non-Potable Water

Collected by  
Collected date/time  
Received date/time

10/11/21 18:05  
10/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

## FGD-11 L1419560-02 Non-Potable Water

Collected by  
Collected date/time  
Received date/time

10/11/21 15:50  
10/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN

4 Cn

5 Sr

6 Qc

## FGD-5 L1419560-03 Non-Potable Water

Collected by  
Collected date/time  
Received date/time

10/11/21 12:50  
10/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN

7 Gl

8 Al

9 Sc

## FGD-3 L1419560-04 Non-Potable Water

Collected by  
Collected date/time  
Received date/time

10/11/21 11:40  
10/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN

## FGD-4 L1419560-05 Non-Potable Water

Collected by  
Collected date/time  
Received date/time

10/11/21 10:40  
10/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN

## FGD-6 L1419560-06 Non-Potable Water

Collected by  
Collected date/time  
Received date/time

10/11/21 09:35  
10/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN

## FGD-1 L1419560-07 Non-Potable Water

Collected by  
Collected date/time  
Received date/time

10/11/21 08:15  
10/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN

# SAMPLE SUMMARY

## FGD-2 L1419560-08 Non-Potable Water

Collected by  
Collected date/time  
Received date/time

10/11/21 09:20  
10/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

## DUP-1 L1419560-09 Non-Potable Water

Collected by  
Collected date/time  
Received date/time

10/11/21 09:20  
10/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

## FGD-12 L1419560-10 Non-Potable Water

Collected by  
Collected date/time  
Received date/time

10/11/21 10:25  
10/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1767288	1	11/10/21 16:27	11/16/21 12:45	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1767288	1	11/10/21 16:27	11/12/21 14:47	RGT	Mt. Juliet, TN

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



# CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Donna Eidson  
Project Manager

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	6.78		0.721	1.16	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Barium	98.8			62.0-143	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Yttrium	109			79.0-136	11/10/2021 12:40	<a href="#">WG1768040</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	7.98		1.19	1.48	11/12/2021 14:47	<a href="#">WG1767288</a>

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.20		0.466	0.319	11/12/2021 14:47	<a href="#">WG1767288</a>
(T) Barium-133	121			30.0-143	11/12/2021 14:47	<a href="#">WG1767288</a>

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	3.33		0.385	0.638	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Barium	104			62.0-143	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Yttrium	104			79.0-136	11/10/2021 12:40	<a href="#">WG1768040</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	4.45		0.835	0.919	11/12/2021 14:47	<a href="#">WG1767288</a>

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.11		0.450	0.281	11/12/2021 14:47	<a href="#">WG1767288</a>
(T) Barium-133	124			30.0-143	11/12/2021 14:47	<a href="#">WG1767288</a>

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.203	<u>U</u>	0.337	0.646	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Barium	108			62.0-143	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Yttrium	97.5			79.0-136	11/10/2021 12:40	<a href="#">WG1768040</a>

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.293	<u>U</u>	0.489	0.889	11/12/2021 14:47	<a href="#">WG1767288</a>

<sup>4</sup>Cn

<sup>5</sup>Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0902	<u>U</u>	0.152	0.243	11/12/2021 14:47	<a href="#">WG1767288</a>
(T) Barium-133	116			30.0-143	11/12/2021 14:47	<a href="#">WG1767288</a>

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.02		0.291	0.527	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Barium	111			62.0-143	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Yttrium	96.6			79.0-136	11/10/2021 12:40	<a href="#">WG1768040</a>

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.25		0.517	0.796	11/12/2021 14:47	<a href="#">WG1767288</a>

<sup>4</sup>Cn

<sup>5</sup>Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.233	J	0.226	0.269	11/12/2021 14:47	<a href="#">WG1767288</a>
(T) Barium-133	112			30.0-143	11/12/2021 14:47	<a href="#">WG1767288</a>

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.27		0.301	0.54	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Barium	101			62.0-143	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Yttrium	103			79.0-136	11/10/2021 12:40	<a href="#">WG1768040</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.44		0.494	0.798	11/12/2021 14:47	<a href="#">WG1767288</a>

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.169	J	0.193	0.258	11/12/2021 14:47	<a href="#">WG1767288</a>
(T) Barium-133	102			30.0-143	11/12/2021 14:47	<a href="#">WG1767288</a>

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.39		0.308	0.548	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Barium	105			62.0-143	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Yttrium	93.9			79.0-136	11/10/2021 12:40	<a href="#">WG1768040</a>

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.44		0.525	0.904	11/12/2021 14:47	<a href="#">WG1767288</a>

<sup>4</sup>Cn

<sup>5</sup>Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0567	<u>U</u>	0.217	0.356	11/12/2021 14:47	<a href="#">WG1767288</a>
(T) Barium-133	102			30.0-143	11/12/2021 14:47	<a href="#">WG1767288</a>

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.85		0.328	0.572	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Barium	105			62.0-143	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Yttrium	91.8			79.0-136	11/10/2021 12:40	<a href="#">WG1768040</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.21		0.596	0.837	11/12/2021 14:47	<a href="#">WG1767288</a>

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.362		0.268	0.265	11/12/2021 14:47	<a href="#">WG1767288</a>
(T) Barium-133	104			30.0-143	11/12/2021 14:47	<a href="#">WG1767288</a>



Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.922		0.345	0.637	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Barium	94.5			62.0-143	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Yttrium	104			79.0-136	11/10/2021 12:40	<a href="#">WG1768040</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.52		0.688	0.99	11/12/2021 14:47	<a href="#">WG1767288</a>

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.593		0.343	0.353	11/12/2021 14:47	<a href="#">WG1767288</a>
(T) Barium-133	91.9			30.0-143	11/12/2021 14:47	<a href="#">WG1767288</a>

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.50		0.323	0.576	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Barium	96.5			62.0-143	11/10/2021 12:40	<a href="#">WG1768040</a>
(T) Yttrium	103			79.0-136	11/10/2021 12:40	<a href="#">WG1768040</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.82		0.554	0.756	11/12/2021 14:47	<a href="#">WG1767288</a>

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.324		0.231	0.18	11/12/2021 14:47	<a href="#">WG1767288</a>
(T) Barium-133	103			30.0-143	11/12/2021 14:47	<a href="#">WG1767288</a>

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.94		0.929	1.78	11/16/2021 12:45	<a href="#">WG1768041</a>
(T) Barium	105			62.0-143	11/16/2021 12:45	<a href="#">WG1768041</a>
(T) Yttrium	108			79.0-136	11/16/2021 12:45	<a href="#">WG1768041</a>

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	3.78		1.47	2.05	11/16/2021 12:45	<a href="#">WG1767288</a>

<sup>4</sup>Cn

<sup>5</sup>Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.84		0.545	0.265	11/12/2021 14:47	<a href="#">WG1767288</a>
(T) Barium-133	104			30.0-143	11/12/2021 14:47	<a href="#">WG1767288</a>

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

Method Blank (MB)

(MB) R3728770-1 11/10/21 12:40

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-228	0.219	<u>U</u>	0.241	0.462
(T) Barium	104		104	
(T) Yttrium	93.3		93.3	

L1426677-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1426677-01 11/10/21 12:40 • (DUP) R3728770-5 11/10/21 12:40

Analyte	Original Result	Original Uncertainty	Original MDA	DUP Result	DUP Uncertainty	DUP MDA	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	+ / -	pCi/l		%			%	
Radium-228	0.925	0.285	0.519	1.64	0.848	0.519	1	55.8	0.800		20	3
(T) Barium	94.6			96.7	96.7							
(T) Yttrium	104			99.0	99.0							

Laboratory Control Sample (LCS)

(LCS) R3728770-2 11/10/21 12:40

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	4.52	90.3	80.0-120	
(T) Barium			107		
(T) Yttrium			98.5		

L1419560-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1419560-02 11/10/21 12:40 • (MS) R3728770-3 11/10/21 12:40 • (MSD) R3728770-4 11/10/21 12:40

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-228	16.7	3.33	23.6	20.9	121	105	1	70.0-130			12.4		20
(T) Barium		104			99.6	97.0							
(T) Yttrium		104			93.2	91.4							

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

Method Blank (MB)

(MB) R3731226-1 11/16/21 12:45

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-228	0.136	<u>U</u>	0.229	0.448
(T) Barium	99.0		99.0	
(T) Yttrium	98.7		98.7	

L1420159-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1420159-01 11/16/21 12:45 • (DUP) R3731226-5 11/16/21 12:45

Analyte	Original Result pCi/l	Original Uncertainty + / -	Original MDA pCi/l	DUP Result pCi/l	DUP Uncertainty + / -	DUP MDA pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	0.870	0.508	0.978	0.830	0.953	0.978	1	4.69	0.0369	<u>U</u>	20	3
(T) Barium	109			94.7	94.7							
(T) Yttrium	92.6			86.4	86.4							

Laboratory Control Sample (LCS)

(LCS) R3731226-2 11/16/21 12:45

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.20	84.1	80.0-120	
(T) Barium			102		
(T) Yttrium			109		

Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) • (MS) R3731226-3 11/16/21 12:45 • (MSD) R3731226-4 11/16/21 12:45

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	16.7	17.0	20.0	100	118	118	1	70.0-130			16.5		20
(T) Barium				98.9	111	111							
(T) Yttrium				100	103	103							

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

Method Blank (MB)

(MB) R3730011-1 11/12/21 14:47

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-226	0.00833	<u>U</u>	0.0206	0.0428
(T) Barium-133	101		101	

L1428427-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1428427-01 11/12/21 14:47 • (DUP) R3730011-5 11/12/21 14:47

Analyte	Original Result	Original Uncertainty	Original MDA	DUP Result	DUP Uncertainty	DUP MDA	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	+ / -	pCi/l		%			%	
Radium-226	0.574	0.323	0.223	0.390	0.277	0.223	1	38.2	0.433		20	3
(T) Barium-133	88.8			110	110							

Laboratory Control Sample (LCS)

(LCS) R3730011-2 11/12/21 14:47

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-226	5.02	5.01	99.8	80.0-120	
(T) Barium-133			101		

L1419560-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1419560-03 11/12/21 14:47 • (MS) R3730011-3 11/12/21 14:47 • (MSD) R3730011-4 11/12/21 14:47

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-226	20.1	0.0902	16.9	20.4	83.6	101	1	75.0-125			18.9		20
(T) Barium-133		116			96.9	101							

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

# GLOSSARY OF TERMS

## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

### Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

### Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

# ACCREDITATIONS & LOCATIONS

## Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1,6</sup>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1,4</sup>	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



DHL Analytical, Inc.  
2300 Double Creek Drive  
Round Rock, TX 78664

TEL: (512) 388-8222  
Work Order: 2110093

FAX:

B087

# CHAIN-OF-CUSTODY RECORD

**Subcontractor:**

Pace Analytical  
12065 Lebanon Rd  
Mt. Juliet, TN 37122

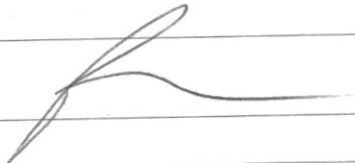
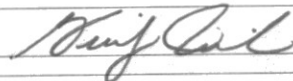
TEL: (615) 773-5923  
FAX:  
Acct #: DHLRRTX

U419660  
13-Oct-21

Sample ID	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests							
					Ra-228	Ra-226						
					E904.0	M7500 Ra B M						
FGD-8	Aqueous	01C	10/11/21 06:05 PM	1LHDPEHNO3		1						-01
FGD-8	Aqueous	01D	10/11/21 06:05 PM	1LHDPEHNO3	1							-01
FGD-11	Aqueous	02C	10/11/21 03:50 PM	1LHDPEHNO3		1						-02
FGD-11	Aqueous	02D	10/11/21 03:50 PM	1LHDPEHNO3	1							-02
FGD-5	Aqueous	03C	10/11/21 12:50 PM	1LHDPEHNO3		1						-03
FGD-5	Aqueous	03D	10/11/21 12:50 PM	1LHDPEHNO3	1							-03
FGD-3	Aqueous	04C	10/11/21 11:40 AM	1LHDPEHNO3		1						-04
FGD-3	Aqueous	04D	10/11/21 11:40 AM	1LHDPEHNO3	1							-04
FGD-4	Aqueous	05C	10/11/21 10:40 AM	1LHDPEHNO3		1						-05
FGD-4	Aqueous	05D	10/11/21 10:40 AM	1LHDPEHNO3	1							-05
FGD-6	Aqueous	06C	10/11/21 09:35 AM	1LHDPEHNO3		1						-06
FGD-6	Aqueous	06D	10/11/21 09:35 AM	1LHDPEHNO3	1							-06
FGD-1	Aqueous	07C	10/12/21 08:15 AM	1LHDPEHNO3		1						-07
FGD-1	Aqueous	07D	10/12/21 08:15 AM	1LHDPEHNO3	1							-07
FGD-2	Aqueous	08C	10/12/21 09:20 AM	1LHDPEHNO3		1						-08
FGD-2	Aqueous	08D	10/12/21 09:20 AM	1LHDPEHNO3	1							-08
DUP-1	Aqueous	09C	10/12/21 09:20 AM	1LHDPEHNO3		1						-09

**General Comments:**

Please analyze these samples with Normal Turnaround Time.  
Report Ra-226, Ra-228 & Combined per Specs  
Quality Control Package Needed: ~~Standard~~ <sup>Top</sup> NELAC Rad Test compliant  
Email to cac@dhlanalytical.com & dupont@dhlanalytical.com

Relinquished by: 	Date/Time: 10/14/21 1800	Received by: 	Date/Time: 10/19/21 9:45
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____

DHL Analytical, Inc.  
 2300 Double Creek Drive  
 Round Rock, TX 78664

# CHAIN-OF-CUSTODY RECORD

TEL: (512) 388-8222 FAX:  
 Work Order: 2110093

**Subcontractor:**

Pace Analytical  
 12065 Lebanon Rd  
 Mt. Juliet, TN 37122


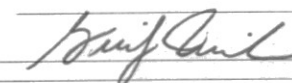
TEL: (615) 773-5923  
 FAX:  
 Acct #: DHLRRTX

4419560  
 13-Oct-21

Sample ID	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests						
					Ra-228	Ra-226					
					E904.0	M7500 Ra B M					
DUP-1	Aqueous	09D	10/12/21 09:20 AM	1LHDPEHNO3	1						-09
FGD-12	Aqueous	10C	10/12/21 10:25 AM	1LHDPEHNO3		1					-10
FGD-12	Aqueous	10D	10/12/21 10:25 AM	1LHDPEHNO3	1						-10

Sample Receipt Checklist  
 COC Seal Present/Intact:  Y  N If Applicable  
 COC Signed/Accurate:  Y  N VOA Zero Headspace:  Y  N  
 Bottles arrive intact:  Y  N Pres. Correct/Check:  Y  N  
 Correct bottles used:  Y  N  
 Sufficient volume sent:  Y  N  
 RAD Screen <0.5 mR/hr:  Y  N

General Comments: Please analyze these samples with Normal Turnaround Time.  
 Report Ra-226, Ra-228 & Combined per Specs.  
 Quality Control Package Needed: ~~Standard~~ <sup>TRIP</sup> NELAC Rad Test compliant  
 Email to cac@dhlanalytical.com & dupont@dhlanalytical.com

Relinquished by: 	Date/Time: 10/14/21 1800	Received by: 	Date/Time: 10/19/21 9:45
Relinquished by: _____	_____	Received by: _____	_____

**ATTACHMENT 2**  
**ALTERNATE SOURCE DEMONSTRATION REPORT**



## Alternate Source Demonstration

*Oak Grove Steam Electric Station*

*FGD Ponds - Robertson County, Texas*

Submitted to:

**Oak Grove Management Company LLC**

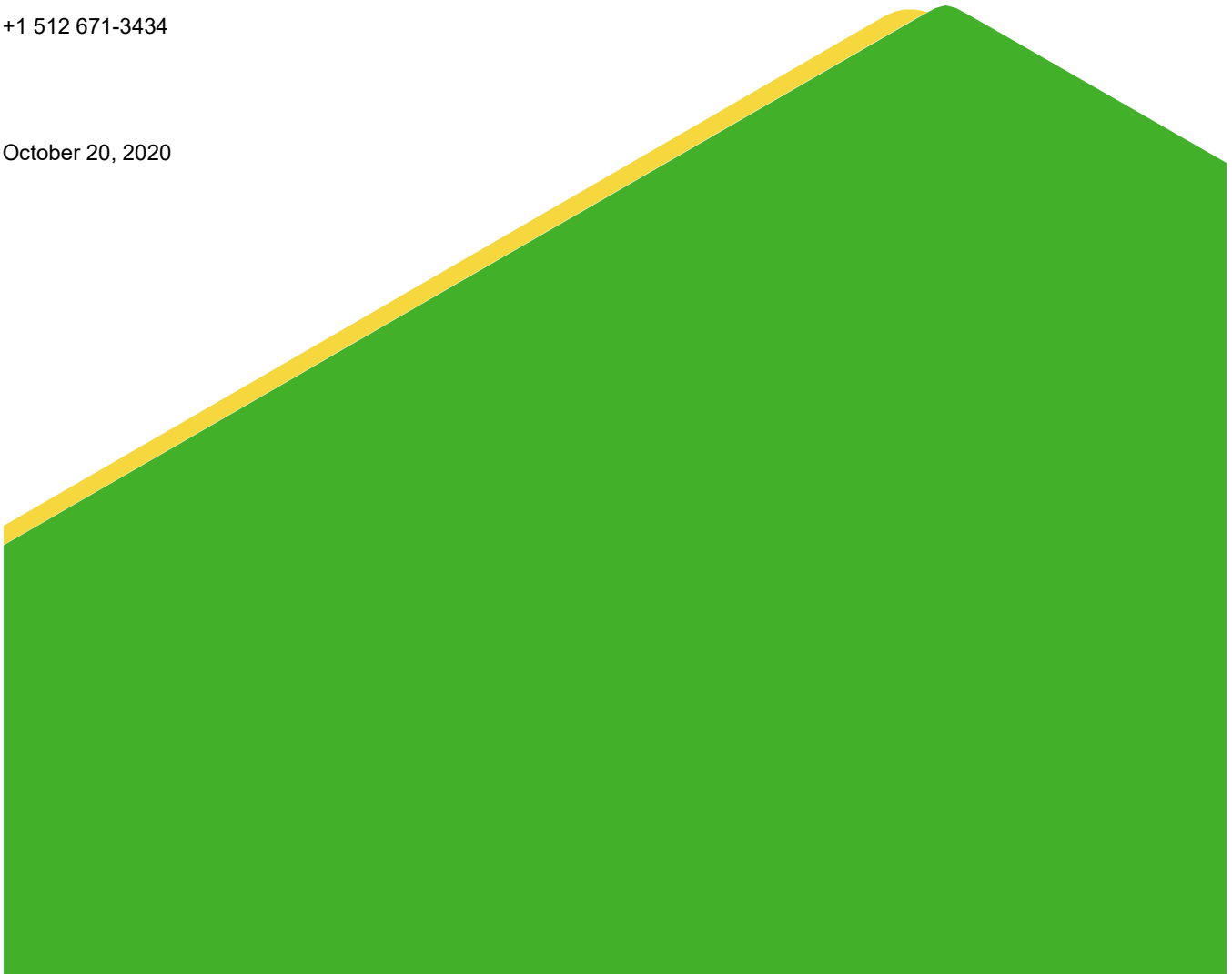
Submitted by:

**Golder Associates Inc.**

2201 Double Creek Dr, Suite 4004, Round Rock, Texas, USA 78664

+1 512 671-3434

October 20, 2020



## Executive Summary

In accordance with the United States Environmental Protection Agency (US EPA) Coal Combustion Residual (CCR) Rule (40 C.F.R. Part 257 Subpart D; 80 Fed. Reg. 21302 (April 17, 2015) (CCR Rule or The Rule), this Alternate Source Demonstration (ASD) was prepared to document that a source other than the FGD Ponds at the Oak Grove Steam Electric Station (the Site) caused a Statistically Significant Level (SSL) of lithium identified in monitoring well FGD-5 during the first semi-annual assessment monitoring event in 2020.

The following lines of evidence support the conclusion that the SSL of lithium in groundwater samples collected from FGD-5 of the FGD Ponds (FDG Pond A, FDG Pond B and FDG Pond C) monitoring well network is not caused by a release of CCR porewater/leachate, but instead results from an alternate source:

- The range of lithium concentrations in samples collected from FGD-5 (0.145 to 0.170 mg/L) is similar to that of samples in upgradient wells FGD-8 and FGD-11 (max 0.149 mg/L since 2015). The groundwater at FGD-5 is of the sodium-chloride type, which is the same type as the upgradient wells (FGD-8 and FGD-11), whereas samples from the FGD ponds indicate water of a magnesium-chloride dominant water type, indicating different water types for the groundwater system and FGD ponds.
- Concentrations of CCR tracers boron, chloride and sulfate, and ratios of boron to lithium differ significantly between FGD pond water and groundwater in the vicinity of FGD-5. Therefore, lithium in groundwater at FGD-5 cannot have originated from CCR porewater as selective dilution of lithium cannot occur.
- FGD-5 is downgradient from FGD Pond C and cross-gradient (and at times upgradient) from FGD Pond A and B. FGD Pond C has only been in operation since 2016. However, lithium concentrations in groundwater at FGD-5 have remained consistent since 2015 (0.145 to 0.170 mg/L). Therefore, lithium concentrations were already elevated in groundwater at FGD-5 prior to ash additions to FGD Pond C, which is the only FGD pond upgradient of FGD-5. Since FGD-5 is not directly downgradient from FGD Ponds A or B, it would not receive porewater from these ponds unless diluted with natural groundwater flowing to FGD-5 from upgradient areas. In groundwater samples collected from FGD-5, concentrations of CCR tracers (boron, sulfate and chloride) that are elevated in FGD Pond A and B water are similar to concentrations in background wells FGD-8 and FGD-11. Furthermore, lithium SSLs have not been observed in CCR monitoring wells directly downgradient of FGD Pond A or B (e.g., FGD-2, FGD-3, FGD-4 and FGD-6), or CCR monitoring wells FGD-1 and FGD-12, which are downgradient and more proximal to FGD Pond C than FGD-5. Thus, it is highly unlikely that lithium measured in FGD-5 groundwater originates from a release from any of the FGD ponds.
- Lithium is naturally occurring in soils at the Site. Sequential extraction of lithium from soil samples indicate total lithium concentrations ranging from 9 to 20 mg/kg, with the majority (76 to 97%) of lithium present in the non-environmentally available acid/sulfide and residual/refractory fractions.

In accordance with §257.95(g)(3), this ASD demonstrates that a source other than the FGD Ponds caused the SSL of lithium identified at monitoring well FGD-5.

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- Exhibit 1: Site Location Map
- Exhibit 2: Potentiometric Surface Map, May 2020

## APPENDICES

Appendix A: Sequential Extraction Results

## Certification

This document and all attachments were prepared by Golder Associates Inc. under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I hereby certify that the alternative source demonstration at the referenced facility meets the requirements of 40 C.F.R. § 257.94(e)(2) of the CCR Rule.

### Golder Associates Inc.



Patrick J. Behling, P.E.  
Principal Engineer



Roberta Russell, P.G.  
Senior Geologist



## 1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (US EPA) Coal Combustion Residual (CCR) Rule (40 C.F.R. Part 257 Subpart D; 80 Fed. Reg. 21302 (April 17, 2015) (CCR Rule or The Rule), this Alternate Source Demonstration (ASD) was prepared to document that a source other than the FGD Ponds at the Oak Grove Steam Electric Station (the Site) caused a Statistically Significant Level (SSL) of lithium identified in monitoring well FGD-5 during the first semi-annual assessment monitoring event in 2020. This document satisfies the requirements of § 257.95(g)(3)(ii) which allows the owner or operator to demonstrate that a source other than the CCR Unit has caused an SSL and that the SSL was the result of an alternate source or resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

As documented by this report, the SSL for lithium at the FGD Pond monitoring well FGD-5 is attributed to naturally occurring sources in subsurface aquifer materials and is not caused by the CCR unit.

## 2.0 SITE DESCRIPTION AND BACKGROUND

Oak Grove Management Company LLC owns OGSES located approximately 10 miles north of Franklin, Robertson County, Texas (Exhibit 1). The OGSES consists of two 800-megawatt power generation units which burn lignite and coal. CCR, including fly ash, bottom ash, and gypsum are generated as part of OGSES unit operations. Currently, CCRs generated at the OGSES are managed by Luminant in part within the FGD Pond Area (PBW, 2017a).

The FGD-A Pond, FGD-B Pond, and FGD-C Pond (collectively referred to as the “FGD Ponds”) are located approximately 2,500 feet northwest of the power generation units at the Site (Exhibit 1). FGD-A Pond and FGD-B Pond were placed in service during approximately 2007. Use of FGD-C Pond began in 2016 (PBW, 2017a).

### 2.1 FGD Pond Area Monitoring Network

The monitoring well network for the FGD Pond Area consists of 9 monitoring wells (FGD-1, FGD-2, FGD-3, FGD-4, FGD-5, FGD-6, FGD-8, FGD-11 and FGD-12) screened within the uppermost groundwater-bearing unit. Two wells, FGD-8 and FGD-11, are considered background monitoring wells. Monitoring well locations are shown on Exhibit 1.

### 2.2 Geologic and Hydrogeologic Setting

The FGD Ponds are located in the outcrop area of the Eocene-aged Wilcox Group (Barnes, 1970). Previous boring investigations indicate the geology in the FGD Pond Area primarily consists of an upper zone of relatively thick, interbedded sand and clay strata and a lower zone of interbedded silty to clayey sand and well sorted sand. The uppermost groundwater-bearing unit at the Site occurs in the lower zone of interbedded silty to clayey sand (PBW, 2017a).

## 3.0 STATISTICAL ANALYSIS METHODS

The following sections summarize the assessment monitoring at the FGD Pond Area, present the statistical analysis method for evaluation of assessment monitoring constituents (i.e., Appendix IV parameters) as they pertain to this ASD, discuss the test methods used for soil samples, and describe the geochemical evaluation.

During assessment monitoring, concentrations of Appendix IV constituents are compared to an applicable Groundwater Protection Standard (GWPS). As specified in 40 C.F.R. § 257.95(h), the GWPS is the higher of the



Maximum Contaminant Level (MCL) or the background concentration. For lithium, the GWPS is the background concentration of 0.15 mg/L, which is calculated as the upper prediction limit (UPL) of data collected from upgradient wells during the background period, prior to the start of the detection and assessment monitoring period.

Statistical analysis of the data was performed in accordance with the Statistical Analysis Plan for CCR Groundwater Monitoring (PBW, 2017b) and the USEPA Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities-Unified Guidance (USEPA, 2009). The statistical analysis included an evaluation of confidence intervals for each of the Appendix IV parameter data sets for each well to evaluate whether constituent concentrations were present at concentrations above GWPSs.

Figure 1 shows the lithium concentrations in FGD-5 since 2015 compared to the GWPS. The calculated lower and upper confidence limits for lithium based on sample data collected from FGD-5 are 0.152 mg/L and 0.156 mg/L, respectively. An SSL was indicated at FGD-5 because the lower confidence limit based on the lithium data set from FGD-5 exceeded the GWPS of 0.152 mg/L. As indicated on Figure 1, lithium concentrations exceeded the GWPS in FGD-5 during two sampling events conducted in 2015, prior to the completion of FGD Pond C (in 2016), which is the only FGD pond that is directly upgradient of FGD-5. Furthermore, the highest sample concentration (0.170 mg/L) in FGD-5 occurred in November 2015, prior to the completion of FGD-C.

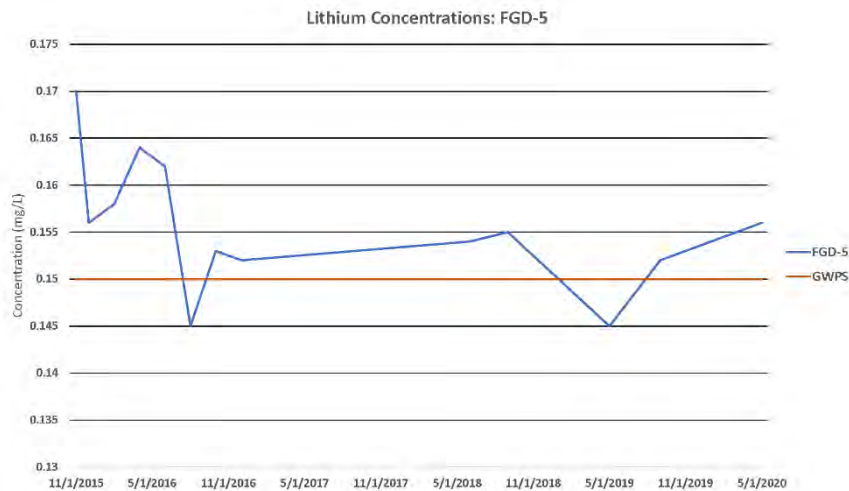


Figure 1: Lithium concentrations in groundwater samples collected from FGD-5.

### 3.1 Assessment Monitoring

Pursuant to 40 C.F.R. § 257.95(a), FGD Pond Area monitoring wells are sampled for all Appendix IV parameters. The 2015 through 2020 Appendix IV groundwater sample data were compared to the GWPS using confidence intervals.

### 3.2 Statistically Significant Levels

As stated in the Appendix IV SSL notification dated February 6, 2019, SSLs for cobalt and lithium were identified at the FGD Ponds during 2018 assessment monitoring completed in accordance with 40 C.F.R. § 257.95. No SSLs were identified for cobalt in subsequent semi-annual assessment monitoring completed during 2019 and 2020. No SSLs were identified for lithium in subsequent semi-annual assessment monitoring events in 2019;

however, an SSL notification for lithium was posted on August 21, 2020 based on the first 2020 semi-annual assessment monitoring event results.

### 3.3 Test Methods for Soil

#### 3.3.1 Sequential Extraction

Chemical analysis of soils for total metals and sequential extraction analysis was conducted on three soil samples collected from FGD Pond Area within the groundwater-bearing unit (Appendix A). The sequential extraction procedure (SEP) consists of a seven-step metals extraction from solids to determine their potential environmental stability. The seven-step SEP is defined by specific extraction steps as illustrated and described (based on a modified Tessier et al. 1979 method) in Figure 2.

SEQUENTIAL EXTRACTION PROCEDURE			
ENVIRONMENTALLY AVAILABLE ↑ Increasing Availability	Step 1	Exchangeable Fraction:	This extraction includes trace elements that are electrostatically adsorbed to overburden minerals
	Step 2	Carbonate Fraction:	This extraction targets trace elements that are adsorbed or otherwise bound to carbonate minerals
	Step 3	Non-Crystalline Materials Fraction:	This extraction targets trace elements that are complexed by amorphous minerals
	Step 4	Metal Hydroxide Fraction:	This extraction targets trace elements bound to hydroxides of iron, manganese, and/or aluminum
	Step 5	Organic Fraction:	This extraction targets trace elements strongly bound via chemisorption to organic material
NON-ENVIRONMENTALLY AVAILABLE ↓ Increasing Extraction Strength	Step 6	Acid/Sulfide Fraction:	The extraction is used to identify trace elements precipitated as sulfide minerals
	Step 7	Residual Fraction:	Trace elements remaining in the overburden after the previous extractions will be distributed between silicates, phosphates, and refractory oxide

Figure 2: Overview of sequential extraction procedure.

Steps 1 through 7 represent an increasing amount of target metals that can be removed into solution from the solid phase. For instance, metals bound in the carbonate fraction are much more likely to become mobile due to changes in groundwater chemistry than metals bound in a sulfide or residual fraction. The total concentration of a metal measured from all seven steps can be compared to the concentration determined from the total metal analysis for compositional accountability. Metals extracted in Steps 1 through 5 are considered environmentally available, whereas metals extracted in Steps 6 and 7 are present in non-environmentally available fractions and are not expected to be released under conditions typically encountered in aquifers, except in the case of acidification or other excursions from typical groundwater conditions (Tessier et al., 1979).

## 4.0 ALTERNATE SOURCE DEMONSTRATION

The May 2020 SSL of lithium in groundwater at the monitoring well FGD-5 is not caused by a release of CCR porewater/leachate but instead results from an alternate source. The following lines of evidence support this conclusion:

- **The range of lithium concentrations in samples collected from FGD-5 is similar to that of samples in background wells. Additionally, the FGD pond water is a magnesium-chloride type water whereas water at FGD-5 is of the sodium-chloride type, which is the same type as background wells.**

Lithium concentrations in groundwater samples from FGD-5 range from 0.145 to 0.170 mg/L, which is similar to the upper range of concentrations in background well FGD-8 (max of 0.149 mg/L). In addition, as shown on the Piper diagram presented on Figure 3, the groundwater at FGD-5 is a sodium-chloride type, which is the same water type of the groundwater encountered within the background wells FGD-8 and FGD-11. The FGD pond water samples from FGD Pond A and FGD Pond B are the magnesium-chloride type. Because the lithium concentrations and water chemistry in groundwater samples collected from FGD-5 are similar to those encountered in background wells, it is more likely that groundwater at FGD-5 is representative of background conditions, including the presence of naturally-occurring lithium in groundwater. Groundwater and pond water ASD data are summarized in Table 1.

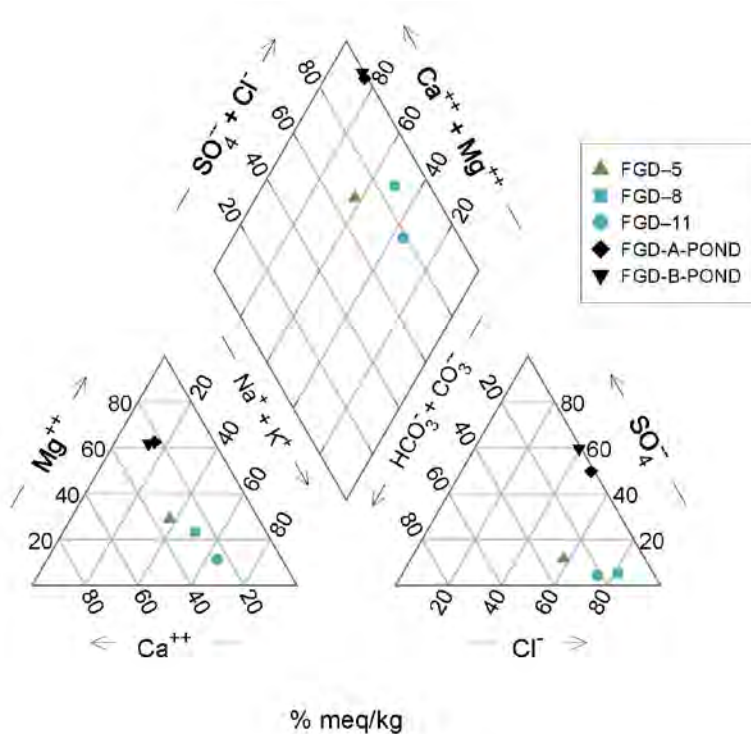
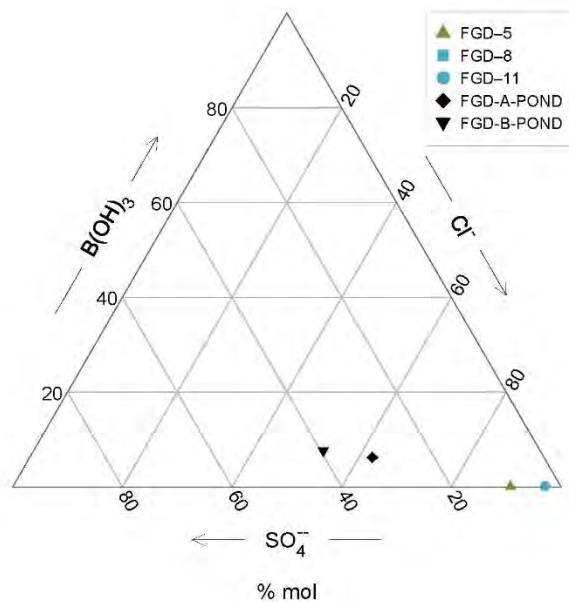


Figure 3: Piper diagram showing water chemistry of FGD-5, FGD-8, FGD-11 and FGD-A Pond and FGD-B Pond samples.

- **Concentrations of CCR tracers boron, chloride and sulfate, and ratios of boron to lithium differ significantly between FGD pond water and groundwater in the vicinity of FGD-5.**

Boron has been historically elevated in FGD pond samples (>72 mg/L). However, boron in groundwater samples collected from FGD-5 has never exceeded 0.2 mg/L since 2015 (when sampling started). Boron at well FGD-5 has also remained well below the maximum measured in background wells FGD-8 and FGD-11 (0.635 mg/L). Similarly, sulfate (max 83.8 mg/L) and chloride (max 307 mg/L) concentrations in FGD-5 are low compared to FGD pond samples (max of 4,680 mg/L and 3,440 mg/L, respectively). These differences are shown graphically in the ternary diagram presented in Figure 3. It should be noted that lithium concentrations in FGD pond water samples are generally similar to FGD-5. However, if lithium in groundwater at FGD-5 originated from the FGD ponds, sulfate, chloride and boron would also be expected to be comparatively higher. Additionally, the ratio of lithium to boron in FGD pond samples was approximately 1:500, while the ratio in groundwater from FGD-5 was approximately 1:1. Therefore, lithium at FGD-5 did not originate from CCR porewater as selective dilution of lithium cannot occur, assuming conservative transport.



**Figure 4: Ternary diagram showing relative molar concentrations of boron, chloride and sulfate for FGD ponds, FGD-5, and background wells FGD-8 and FGD-11.**

- **FGD-5 is down-gradient from FGD Pond C, which has only been in operation since 2016. However, lithium in groundwater at FGD-5 has remained consistent since sampling began in 2015.**

Monitoring well FGD-5 is cross-gradient (and at times upgradient) to FGD Ponds A and B and directly down-gradient from FGD Pond C (Exhibit 2). FGD-5 has been sampled since 2015 and, as shown on Figure 1, lithium concentrations have remained consistently between 0.145 and 0.170 mg/L. If the lithium occurrence were due to a plume originating from FGD Pond C, its concentrations would be expected to increase. FGD Pond C was not in operation until 2016; thus, lithium concentrations were already within ranges normal for FGD-5 before CCR was placed in FGD Pond C. Since FGD-5 is cross-gradient to FGD Ponds A and B, any porewater reaching FGD-5 from FGD Ponds A or B would be significantly diluted with natural groundwater flowing to FGD-5 from upgradient areas. Furthermore, lithium SSLs have not been observed in CCR monitoring wells directly downgradient of FGD Pond A or B (e.g., FGD-2, FGD-3, FGD-4 and FGD-6), or CCR monitoring wells FGD-1 and FGD-12, which are downgradient and more proximal to FGD Pond C than FGD-5. As discussed previously, concentrations of boron,

chloride and sulfate, which are mobile constituents and elevated in FGD Pond water, are similar to concentrations in background wells FGD-8 and FGD-11. Thus, it is very unlikely that lithium measured in FGD-5 groundwater originates from FGD Ponds A or B.

■ **Lithium is naturally occurring at the Site based on sequential extraction of lithium from soil.**

Total lithium concentrations in the three soil samples range from 9 to 20 mg/kg, which is within the range of naturally-occurring lithium in the Earth's crust and soils (18 to 65 mg/kg and 5 to 130 mg/kg, respectively; Smith and Huyck (1999)). Most of the lithium (between 76 and 97% of the total) is sequestered in the acid sulfide and refractory component of the soil material (SEP Steps 6 and 7). The environmentally-available fraction of lithium (which could contribute to concentrations observed at FGD-5) is less than 24% of the total, the largest of which is represented by the metal hydroxide phase.

## 5.0 ALTERNATE SOURCE DEMONSTRATION SUMMARY

The evaluation presented in this document demonstrates the statistically significant level of lithium identified in groundwater is due to the presence of naturally-occurring lithium and not caused by releases from the CCR unit. The following lines of evidence demonstrate the natural occurrence of lithium in groundwater at FGD-5:

- FGD-5 lithium concentrations are similar in range to concentrations in background wells. Additionally, the water type at FGD-5 is the same as background wells and different from FGD pond water.
- Concentrations of near-conservative CCR tracers boron, chloride and sulfate, and ratios of boron to lithium differ significantly between FGD pond water and groundwater in the vicinity of FGD-5.
- FGD-5 is located downgradient from FGD Pond C. However, lithium concentrations in FGD-5 have remained consistent since before FGD Pond C was put in operation.
- Lithium is naturally occurring at the Site based on sequential extraction of lithium from soil samples collected in the uppermost groundwater-bearing unit.

Based on these findings, the FGD Ponds are not the source for the SSL of lithium in FGD-5 samples. Instead, the SSL can be attributed to the presence of naturally-occurring lithium in subsurface aquifer materials

## 6.0 CONCLUSION

In accordance with 40 C.F.R. § 257.95(g)(3), this ASD addresses the SSL of lithium at FGD-5. Review of geochemical data indicates that the exceedance of lithium identified at FGD-5 is not the result of a release from the associated ash ponds at OGSES FGD Pond Area but can be attributed to the presence of naturally-occurring lithium in subsurface aquifer materials

## 7.0 REFERENCES

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- Smith, K. and Huyck, H., 1999. An overview of the abundance, relative mobility, bioavailability, and human toxicity of metals. In: Plumlee and Logsdon (eds.): The Environmental Geochemistry of Mineral Deposits, Reviews in Economic Geology Vol. 6A, pp.29-70.
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## Table

**Table 1**  
**Analytical Results**  
**Groundwater and Pond Samples**  
**Oak Grove Steam Electric Station FGD Pond Area**

Sample Location	Sample Date	Calcium mg/L	Magnesium mg/L	Potassium mg/L	Sodium mg/L	Alkalinity mg/L	Chloride mg/L	Sulfate mg/L	Fluoride mg/L	Boron mg/L	Lithium mg/L	Cobalt mg/L	Iron mg/L
FGD-1	5/16/2019	19.5	11.2	2.11	49.4	52.8	62.4	78.7	0.362 J	0.0803	0.0442	0.003	0.186
FGD-2	5/16/2019	38.9	16.7	2.57	198	157	260	70.7	0.383 J	0.105	0.0228	0.003	0.0799
FGD-3	5/16/2019	60.1	33.6	2.5	277	533	117	182	0.776	0.117	0.057	0.0052	0.126
FGD-4	5/16/2019	41.7	18.6	1.62	160	201	205	41.7	0.327 J	0.0733	0.0325	0.003	0.103
FGD-5	5/16/2019	77.7	50	3.46	123	237	287	67.2	0.579	0.108	0.145	0.003	0.03
FGD-6	5/16/2019	20.3	6.61	0.706	225	262	170	51.3	0.669	0.116	0.0068 J	0.0132	4.86
FGD-8	5/16/2019	314	204	19.2	792	516	2040	173	0.1	0.0687	0.0086 J	0.0146	263
FGD-11	5/16/2019	85	30.6	4.13	328	256	566	50.9	0.38 J	0.108	0.0145	0.003	1.28
FGD-12	5/16/2019	6.79	2.97	1.55	20.1	36.6	15.6	15	<0.100	0.0723	0.0221	0.003	0.425
FGD-A-POND	6/6/2019	487	809	82.1	270	58.6	1510	3260	17.2	72.1	0.167	0.003	0.03
FGD-B-POND	6/6/2019	458	796	86.9	287	68	1470	3040	17.5	73.3	0.172	0.003	0.03
FGD-1	5/11/2020	37.8	17.1	2.56	82	67.6	146	79.5	0.231 J	0.121	0.0548	0.0495	1.09
FGD-2	5/11/2020	217	74.2	5.73	507	114	1150	286	<0.100	0.605	0.028	0.003	0.0636
FGD-3	5/11/2020	42.3	23.5	2.14	230	434	70.2	129	0.8	0.152	0.0498	0.00332	0.0395
FGD-4	5/11/2020	40.6	14.7	1.53	204	247	198	52.9	0.3 J	0.145	0.0166	0.003	0.12
FGD-5	5/11/2020	100	52	3.64	125	232	307	83.8	0.413	0.165	0.156	0.003	0.0483
FGD-6	5/11/2020	27.4	7.17	0.743	235	275	189	70.7	0.292 J	0.109	0.0088 J	0.003	0.582
FGD-8	5/11/2020	381	198	19.9	801	518	2240	188	0.1	0.129	0.0152	0.0084	220
FGD-11	5/11/2020	103	28.5	4.42	306	230	560	43.3	0.365 J	0.166	0.0132	0.003	0.225
FGD-12	5/11/2020	15.6	8.03	5.31	22.1	34.6	19.3	19.9	<0.100	0.149	0.0371	0.00883	32.5
FGD-A-POND	5/11/2020	895	1490	195	563	134	3440	4680	20.6	104	0.422	0.00625	0.15
FGD-B-POND	5/11/2020	696	1020	106	351	68.8	1940	3930	15.6	84.4	0.182	0.003	0.17

Notes:

mg/L - milligrams per liter

SU - standard units

J - estimated value



**Table 1**  
**Analytical Results**  
**Groundwater and Pond Samples**  
**Oak Grove Steam Electric Station FGD Pond Area**

Sample Location	Sample Date	Iron (Fe3+) mg/L	Iron (Fe2+) mg/L	Selenium mg/L	Nitrate-N mg/L	Phosphorus mg/L	pH SU	Eh mV	TDS mg/L
FGD-1	5/16/2019	0.186	0.05	0.002	0.1	0.473	6.63	-32	320
FGD-2	5/16/2019	0.0799	0.05	0.0214	1.54	0.237	6.86	-91	729
FGD-3	5/16/2019	0.126	0.05	0.0423	1.41	0.096	6.73	-56	1100
FGD-4	5/16/2019	0.103	0.05	0.002	0.1	0.251	6.57	-41	651
FGD-5	5/16/2019	0.05	0.05	0.002	0.859	0.176	6.46	-31	801
FGD-6	5/16/2019	4.86	0.05	0.002	0.1	0.714	6.85	-28	710
FGD-8	5/16/2019	61	202	0.00274	0.107	0.219	6.67	-42	3970
FGD-11	5/16/2019	1.28	0.05	0.002	0.1	0.2	6.83	-48	1350
FGD-12	5/16/2019	0.425	0.05	0.002	1.42	0.168	6.52	-19	140
FGD-A-POND	6/6/2019	0.05	0.05	1.3	1.87	0.03	6.52	--	7410
FGD-B-POND	6/6/2019	0.00427	0.05	1.2	3.24	0.03	6.57	--	7240
FGD-1	5/11/2020	0.732	0.358	0.002	0.1	0.37	6.95	-55	448
FGD-2	5/11/2020	0.0636	0.05	0.0208	2.52	0.052	6.61	-27	2300
FGD-3	5/11/2020	0.05	0.05	0.00993	0.535	0.053	6.62	16	777
FGD-4	5/11/2020	0.12	0.05	0.002	0.1	0.139	6.62	-46	702
FGD-5	5/11/2020	0.05	0.05	0.002	0.563	0.03	6.82	-15	836
FGD-6	5/11/2020	0.582	0.05	0.002	0.129	0.076	6.75	-17	746
FGD-8	5/11/2020	68	152	0.0021	1.64	0.03	6.69	-14	4090
FGD-11	5/11/2020	0.225	0.05	0.002	0.1	0.064	6.74	-45	1300
FGD-12	5/11/2020	32.5	0.05	0.00678	1.22	0.056	6.59	-33	198
FGD-A-POND	5/11/2020	0.15	0.05	4.71	6.27	0.03	6.59	--	13200
FGD-B-POND	5/11/2020	0.17	0.05	0.681	2.23	0.03	6.64	--	8890

Notes:

mg/L - milligrams per liter



SU - standard units

J -estimated value

## Exhibits



**LEGEND**

-  DOWNGRADIENT CCR MONITORING WELL
-  BACKGROUND CCR MONITORING WELL

CLIENT  
**LUMINANT**

PROJECT  
**OAK GROVE STEAM ELECTRIC STATION  
ROBERTSON COUNTY, TEXAS**

TITLE  
**SITE LOCATION MAP**

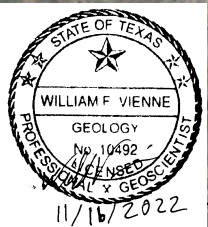
CONSULTANT	YYYY-MM-DD	2020-01-23
	DESIGNED	AJD
	PREPARED	AJD
	REVIEWED	WVW
	APPROVED	WVW

**REFERENCE(S)**  
BASE MAP TAKEN FROM GOOGLE EARTH, IMAGERY DATED 12/9/18.

PROJECT NO.  
**19122262**

REV.  
**0**

EXHIBIT  
**1**



**LEGEND**

- CCR MONITORING WELL
- BACKGROUND CCR MONITORING WELL
- CCR DELINEATION WELL
- (410.06)** GROUNDWATER POTENTIOMETRIC SURFACE (FT MSL)
- 400** GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR (C.I. = 1 FT)
- INFERRED GROUNDWATER FLOW DIRECTION

**NOTE(S)**

1. NATURE AND EXTENT DELINEATION IS NOT NECESSARY BASED ON THE UPDATED STATISTICAL EVALUATION.

**REFERENCE(S)**

BASE MAP TAKEN FROM GOOGLE EARTH, IMAGERY DATED 12/9/18.

**CLIENT**

LUMINANT

**PROJECT**

OAK GROVE STEAM ELECTRIC STATION  
ROBERTSON COUNTY, TEXAS

**TITLE**

**FGD PONDS  
POTENTIOMETRIC SURFACE MAP  
MAY 2020**

**CONSULTANT**



YYYY-MM-DD 2020-09-30

DESIGNED AJD

PREPARED AJD

REVIEWED WFV

APPROVED WFV

PROJECT NO.  
19134019

REV.  
0

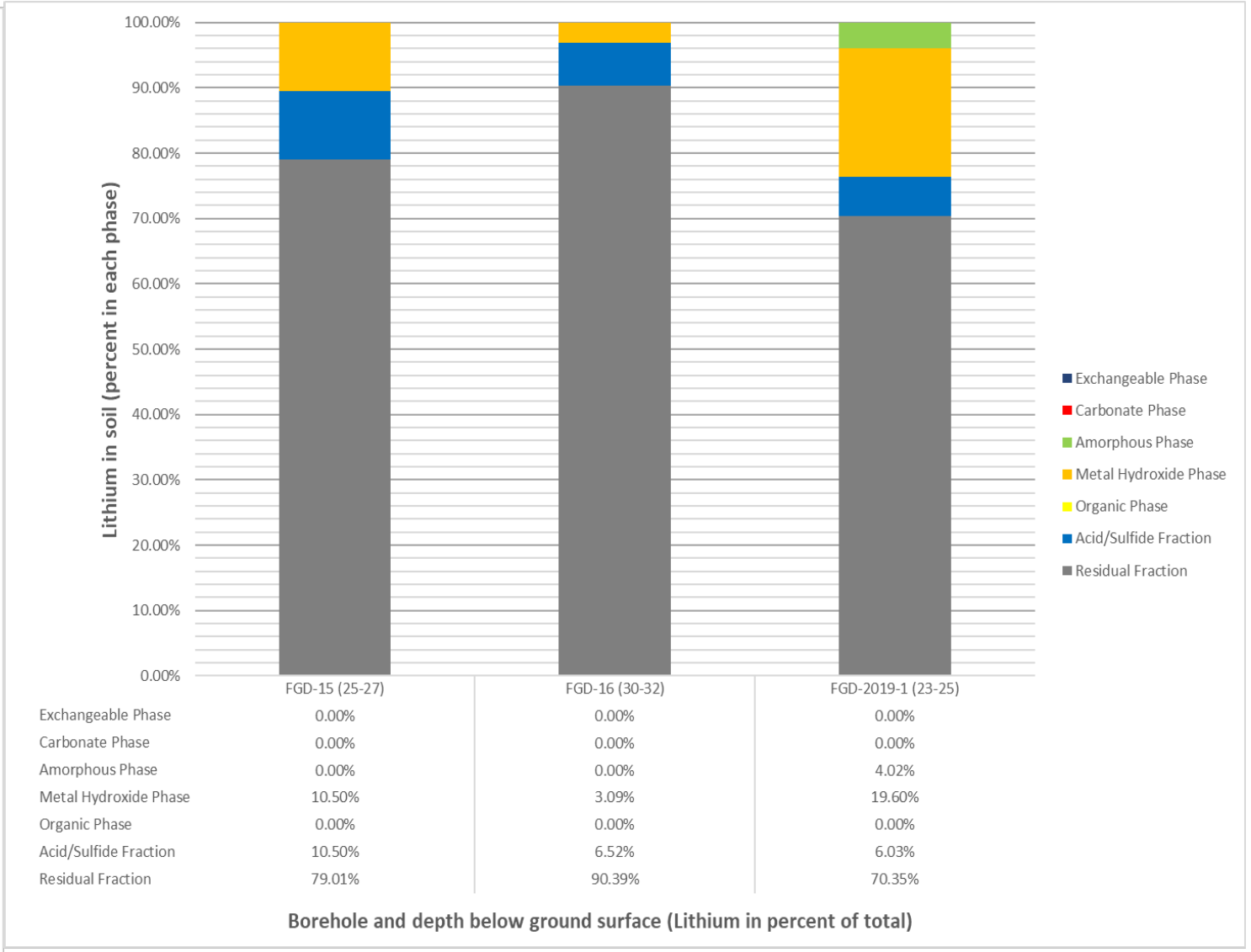
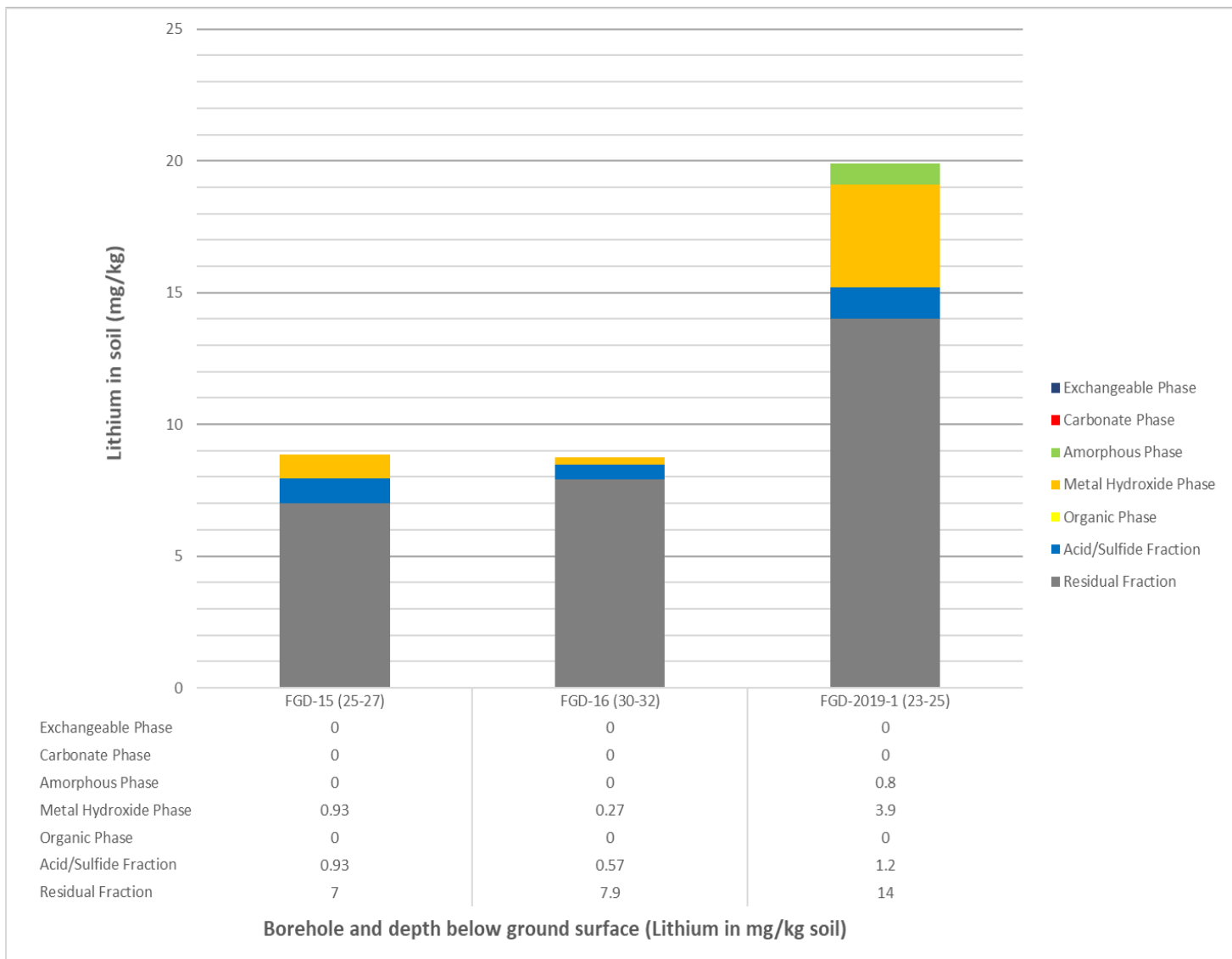
EXHIBIT  
2

Last Edited By: adiamond Date: 2020-09-30 Time: 1:50:53 PM | Printed By: adiamond Date: 2020-09-30 Time: 1:51:28 PM Path: \\luminant\data\Projects - Round Rock\_201919134019 - Luminant\PRODUCTION1 - Oak Grove\ | File Name: FIG X - FGD Ponds POT Surface Map (May 2020).dwg

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSIA 11in

**APPENDIX A**

# Sequential Extraction Results



CLIENT  
LUMINANT OAK GROVE SES  
FGD POND AREA

CONSULTANT



PROJECT  
ASSESSMENT OF CORRECTIVE MEASURES  
GEOCHEMICAL ASSESSMENT

TITLE  
SEQUENTIAL EXTRACTION

PROJECT NO.  
19134019

PHASE  
1000

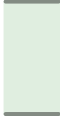



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FIGURE

### ATTACHMENT 3

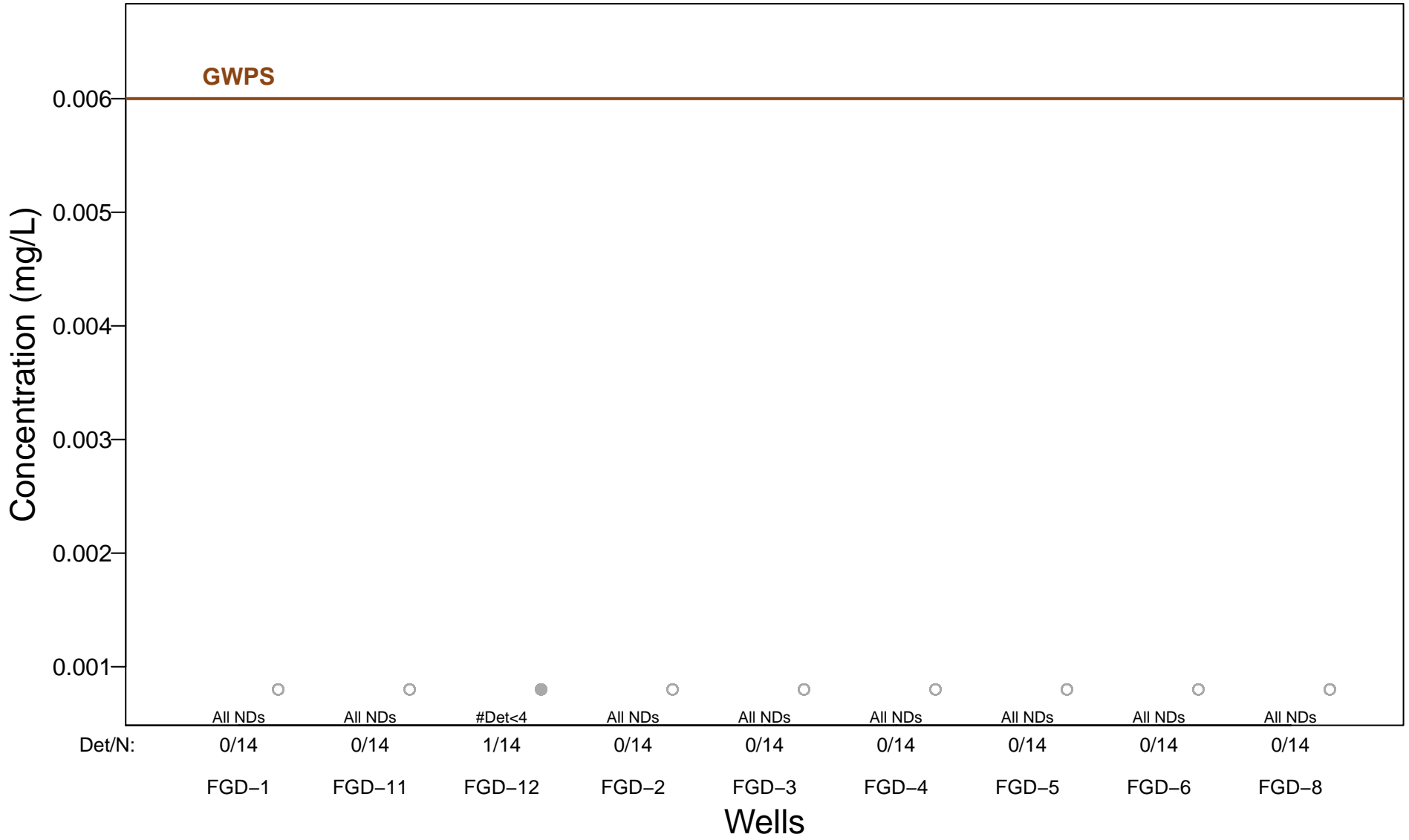
#### 2021 APPENDIX IV CONFIDENCE INTERVAL GRAPHS

##### EXPLANATION

-  95% Upper confidence limit
-  95% Lower confidence limit
-  Detected sample concentration
-  Non-detect sample result (concentration set to laboratory reporting limit)

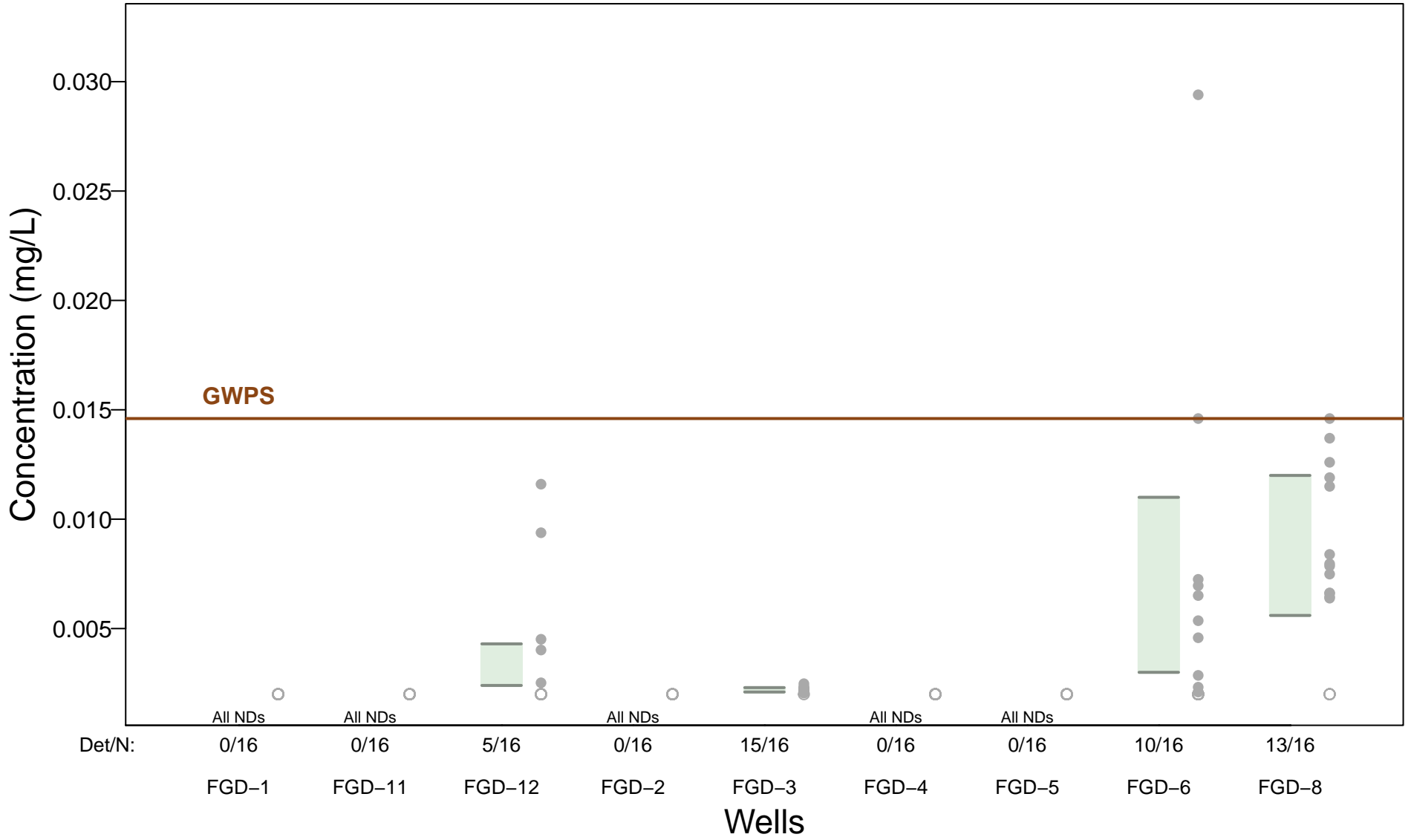
Note: An SSL is indicated if the lower confidence interval exceeds the GWPS.

# Antimony – 95% Confidence Intervals

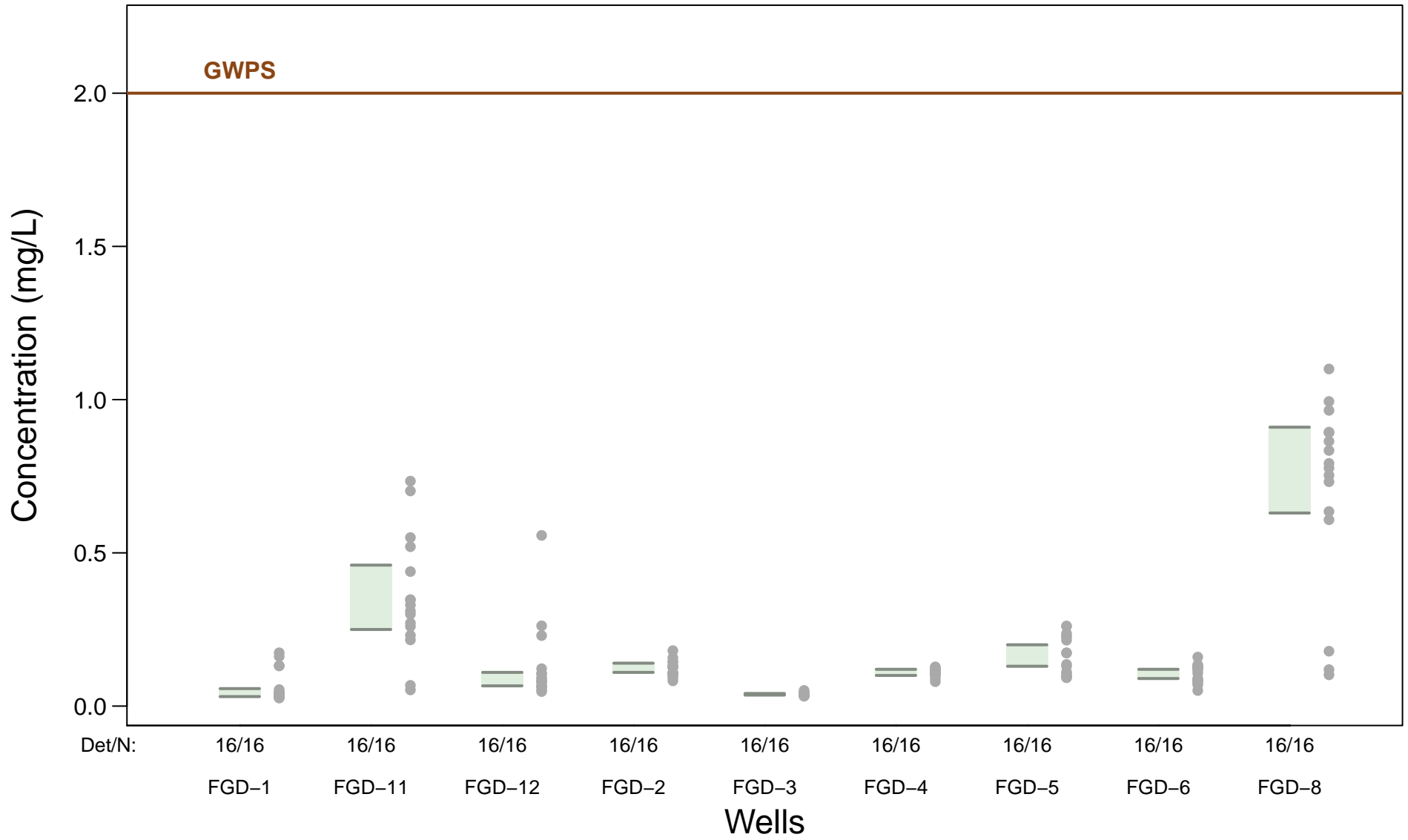




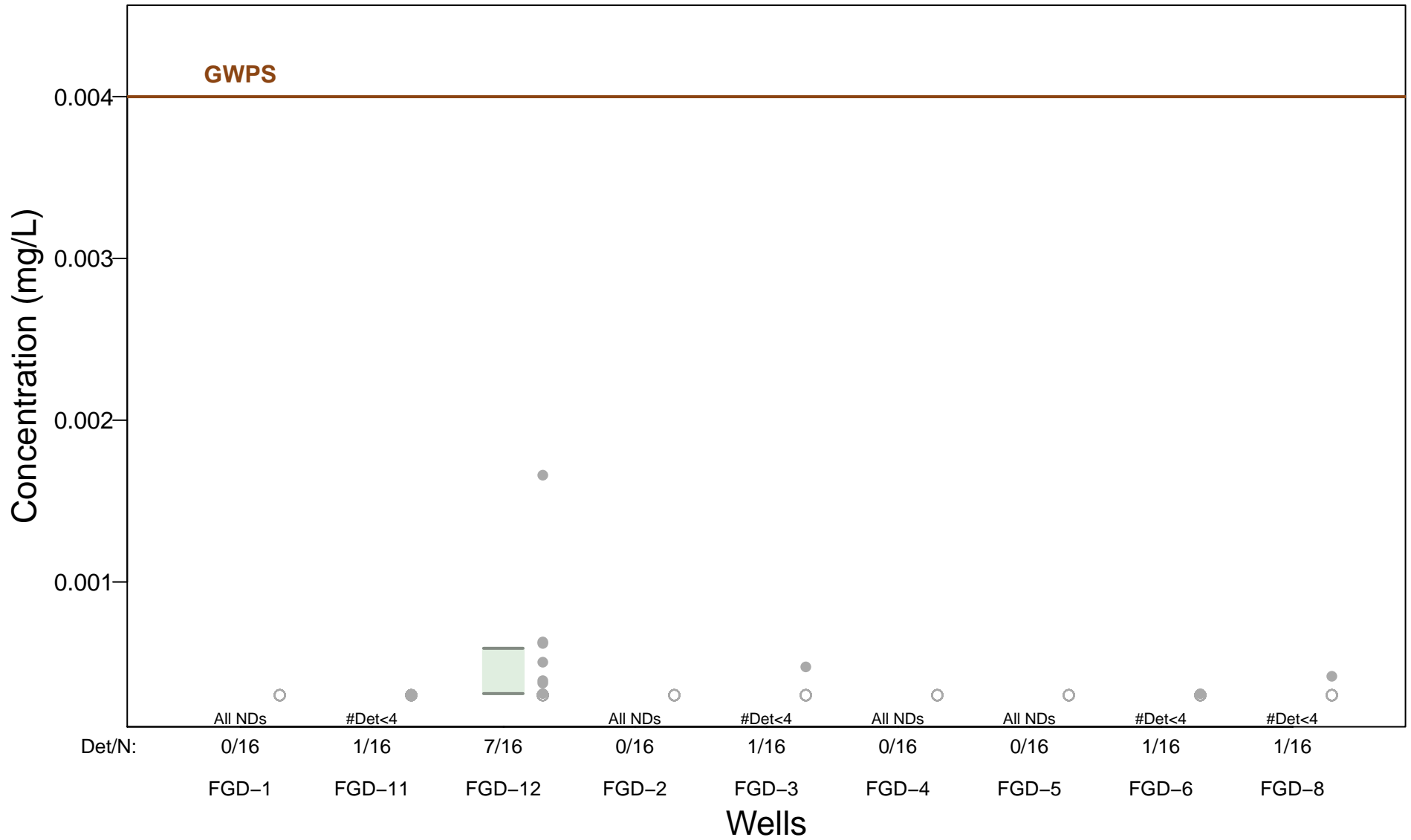
# Arsenic – 95% Confidence Intervals



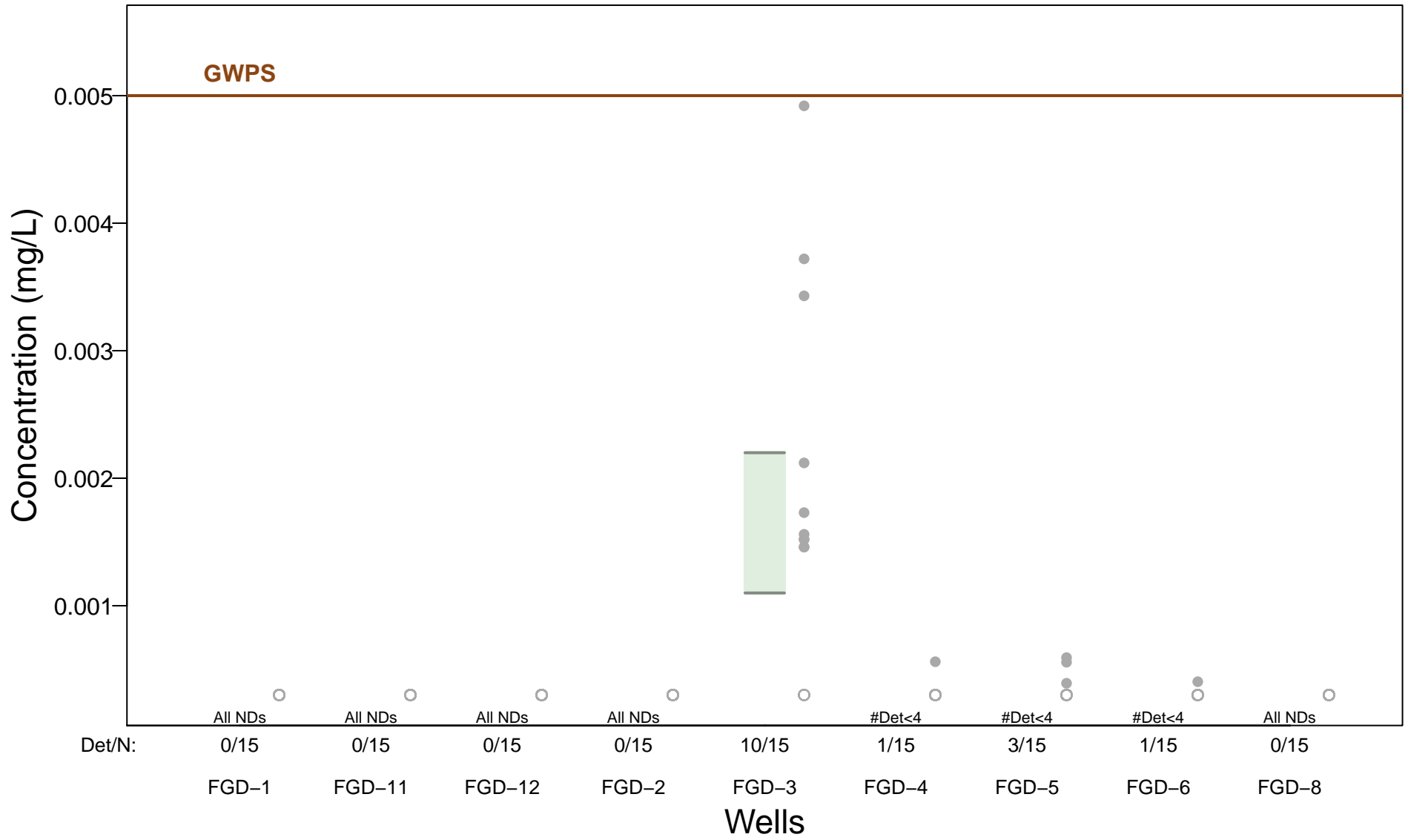
# Barium – 95% Confidence Intervals



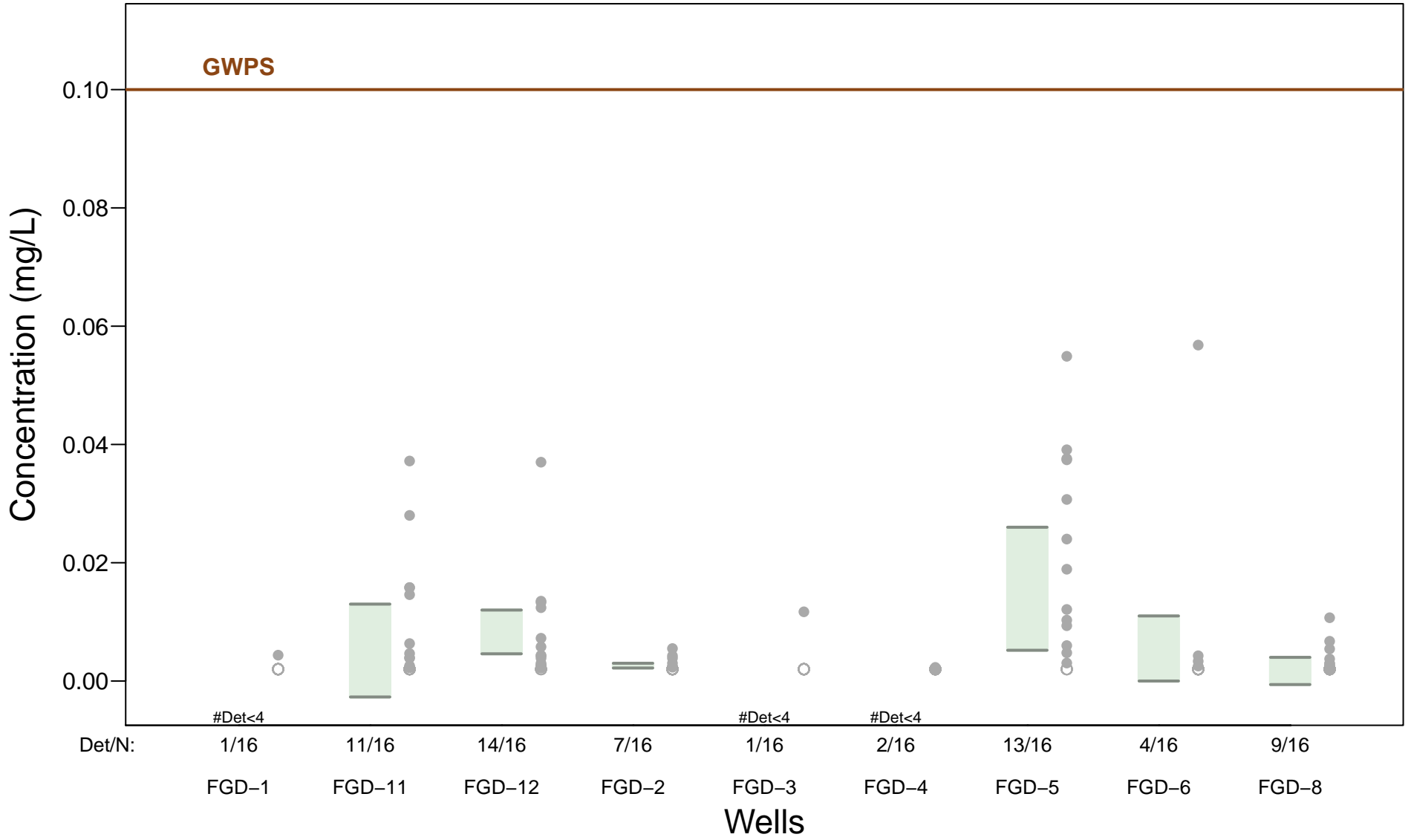
# Beryllium – 95% Confidence Intervals



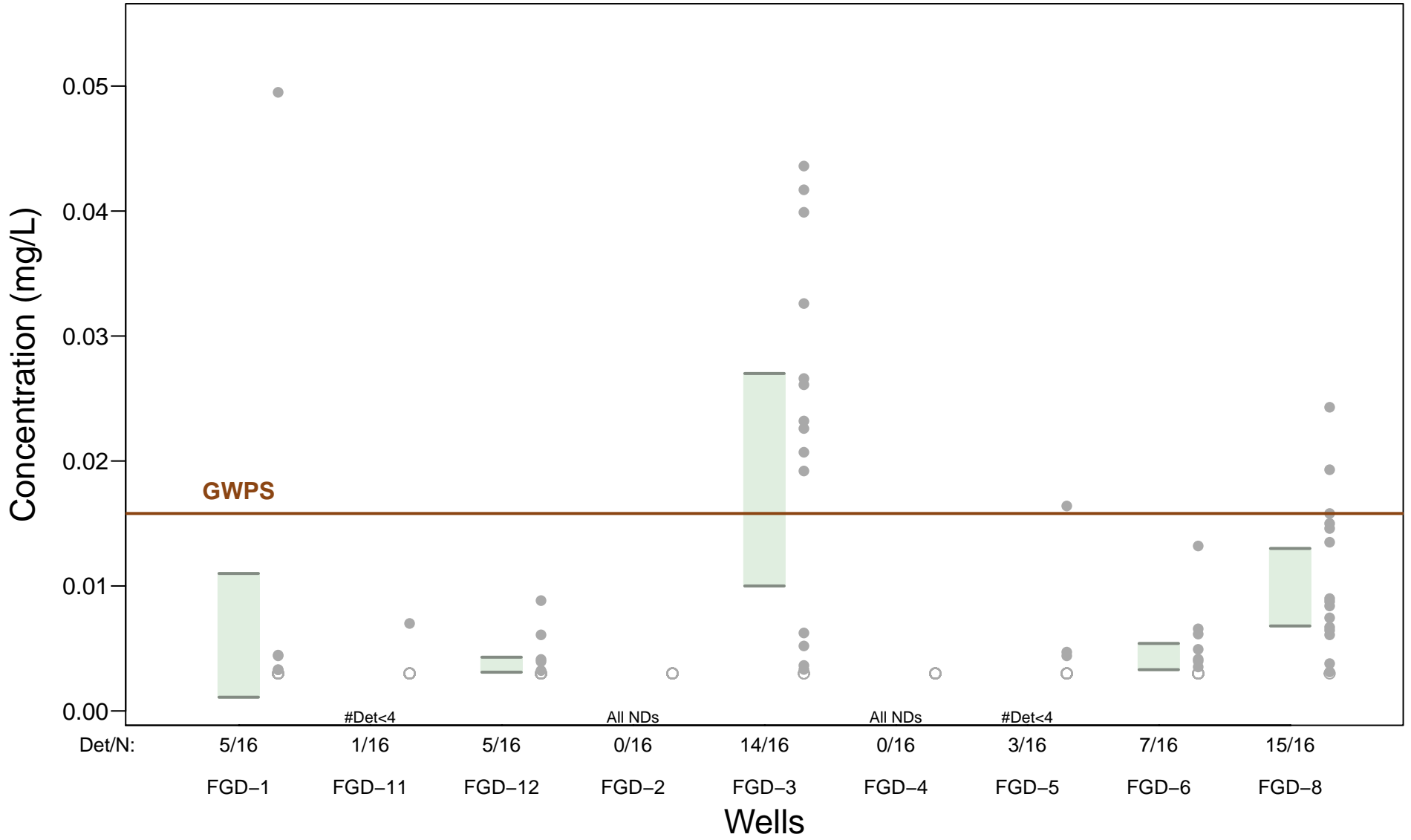
# Cadmium – 95% Confidence Intervals



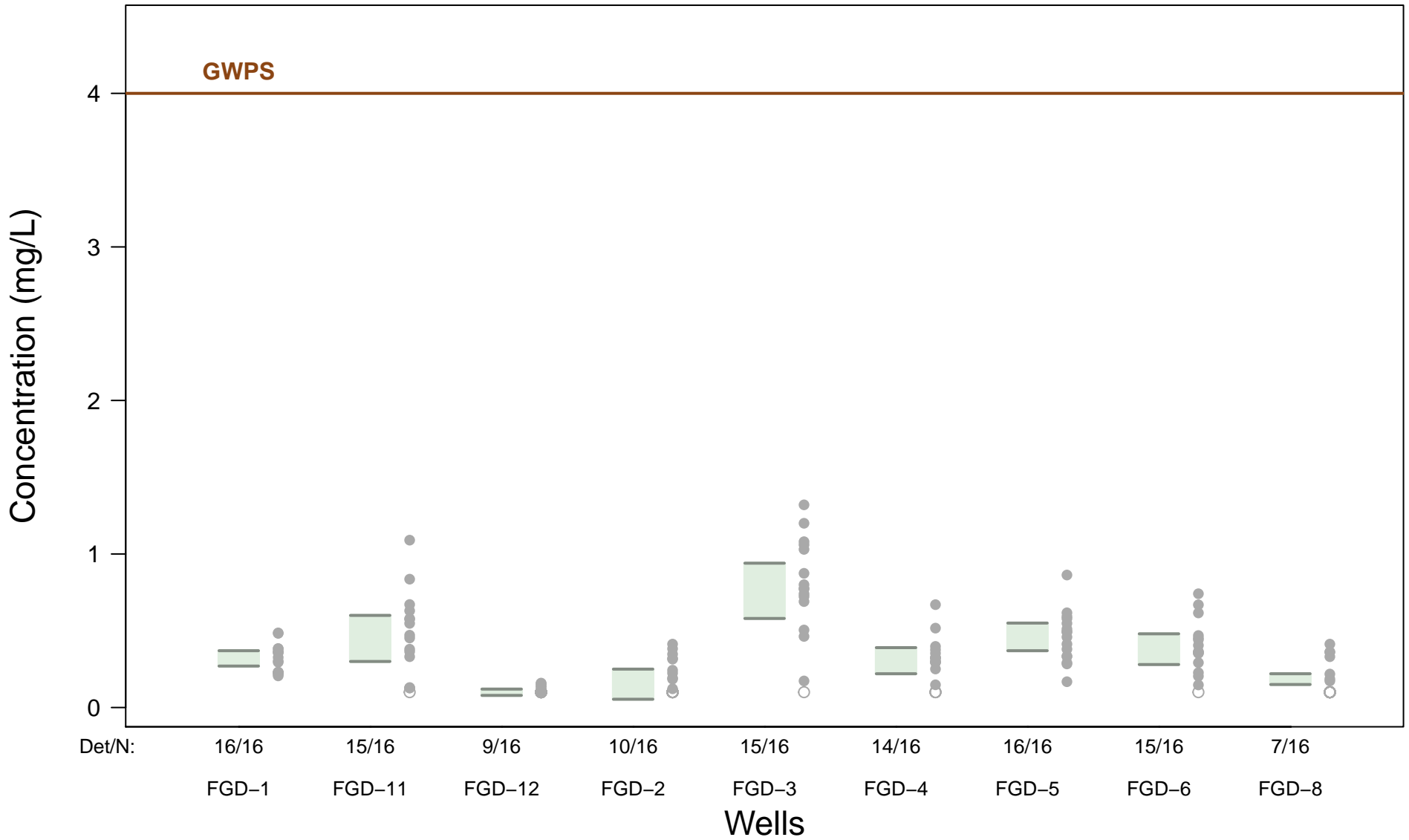
# Chromium – 95% Confidence Intervals



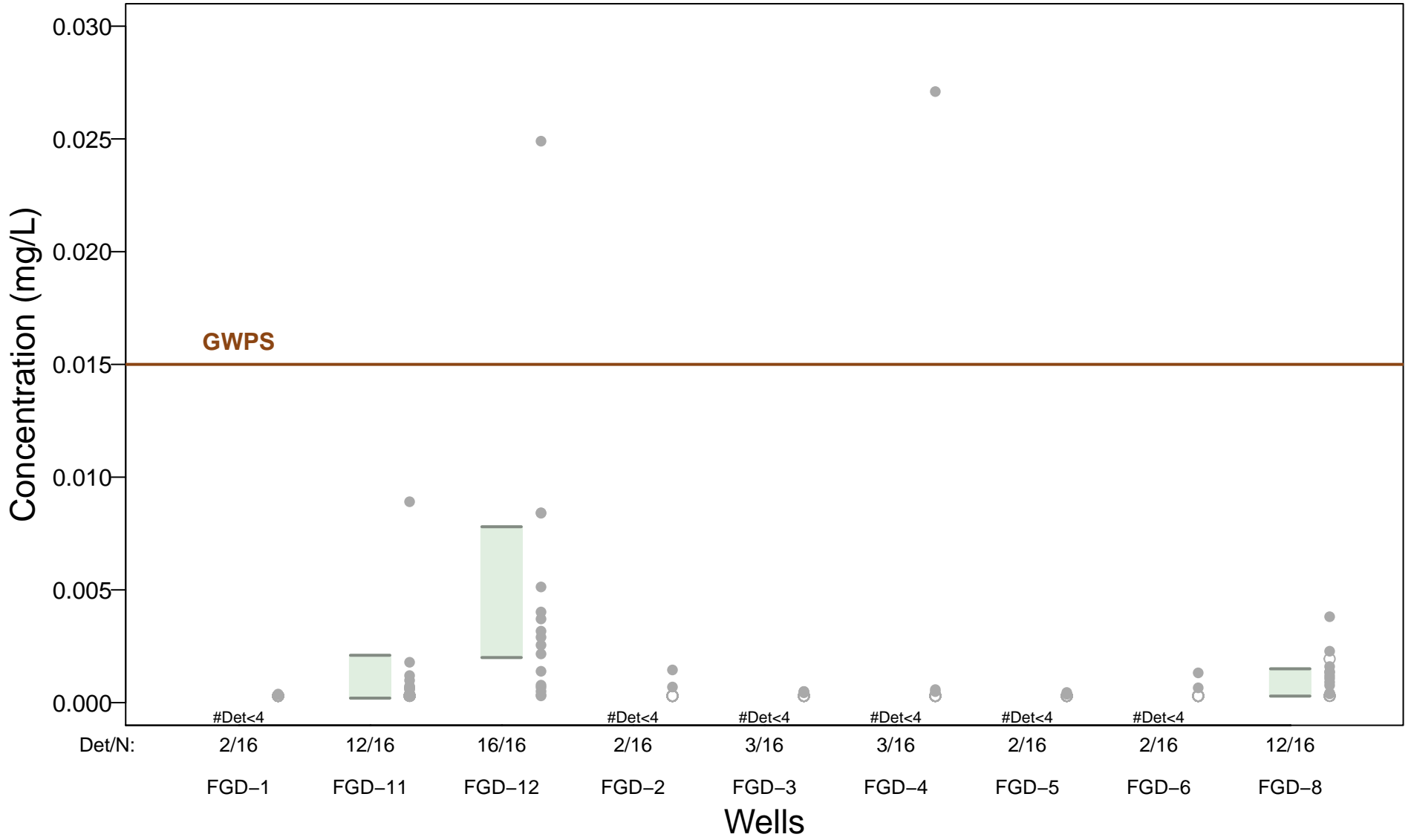
# Cobalt – 95% Confidence Intervals



# Fluoride (Appendix IV) – 95% Confidence Intervals

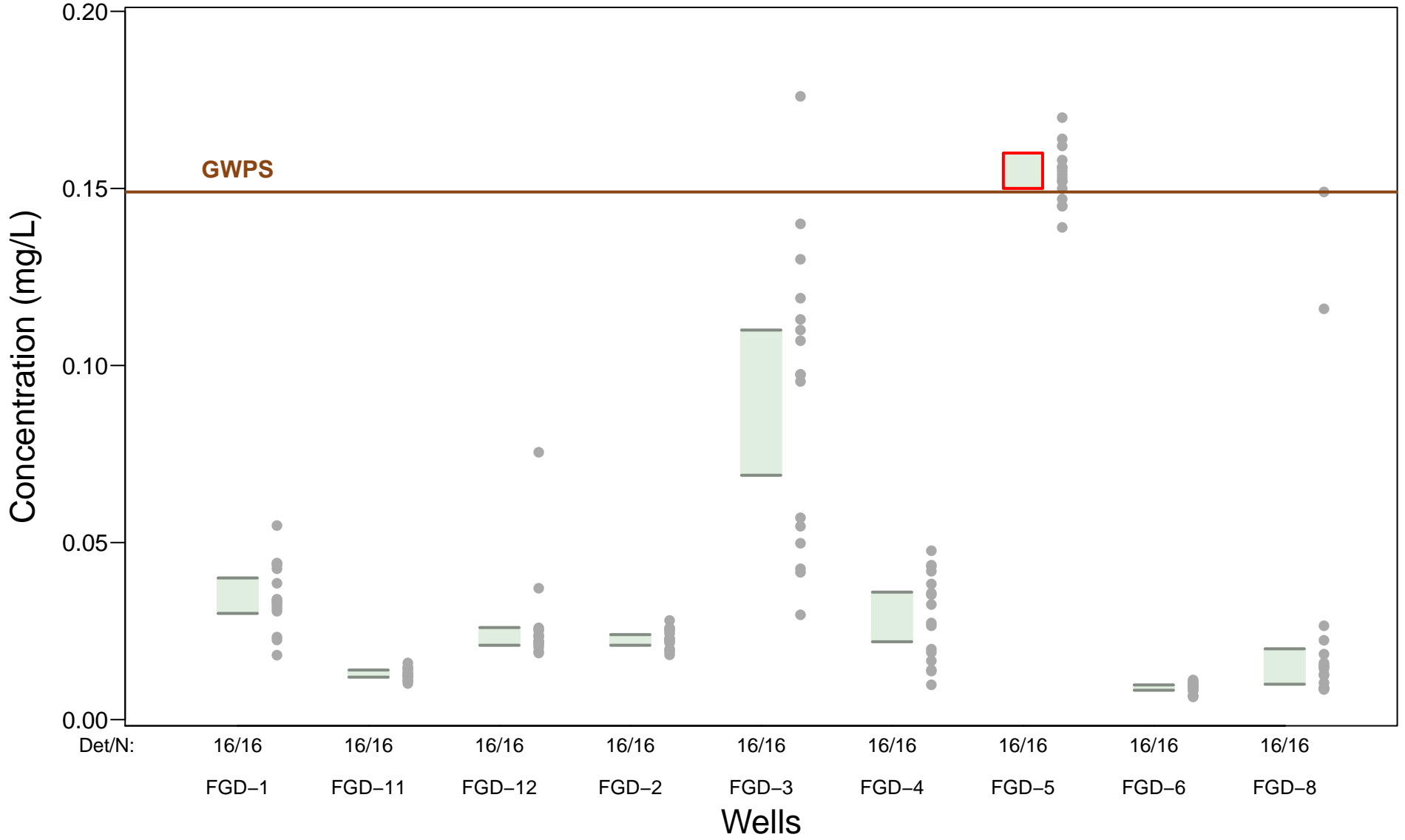


# Lead – 95% Confidence Intervals

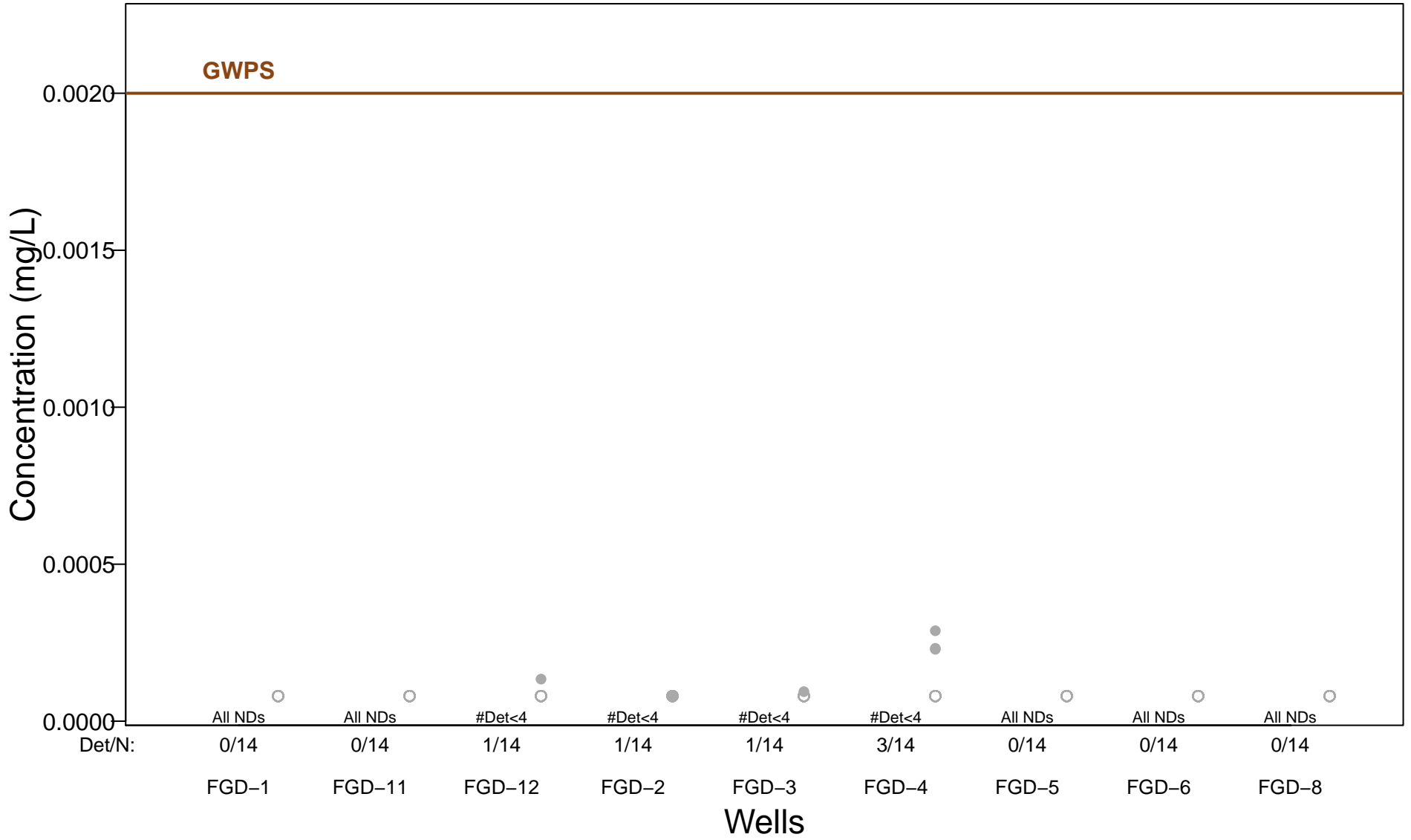




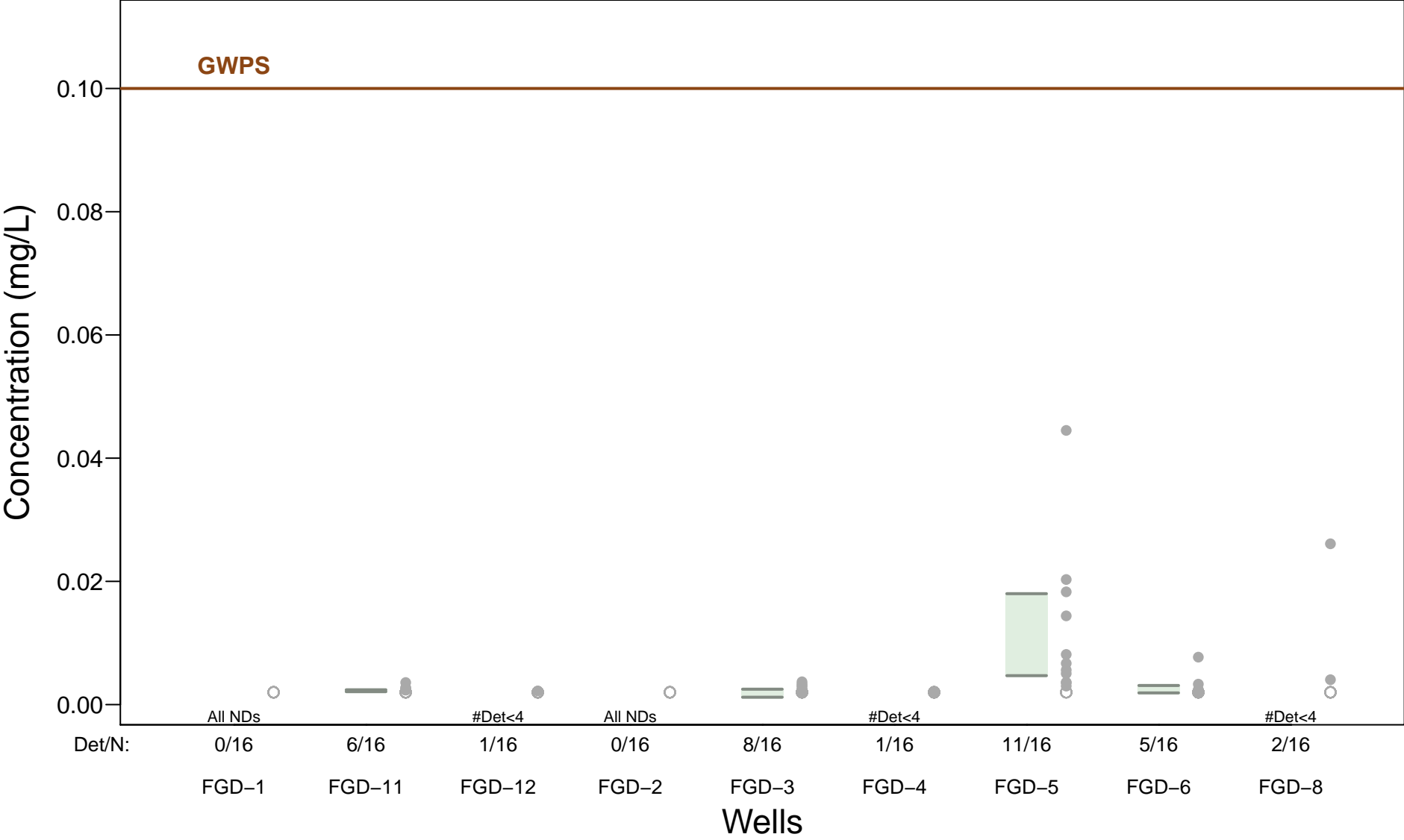
# Lithium – 95% Confidence Intervals



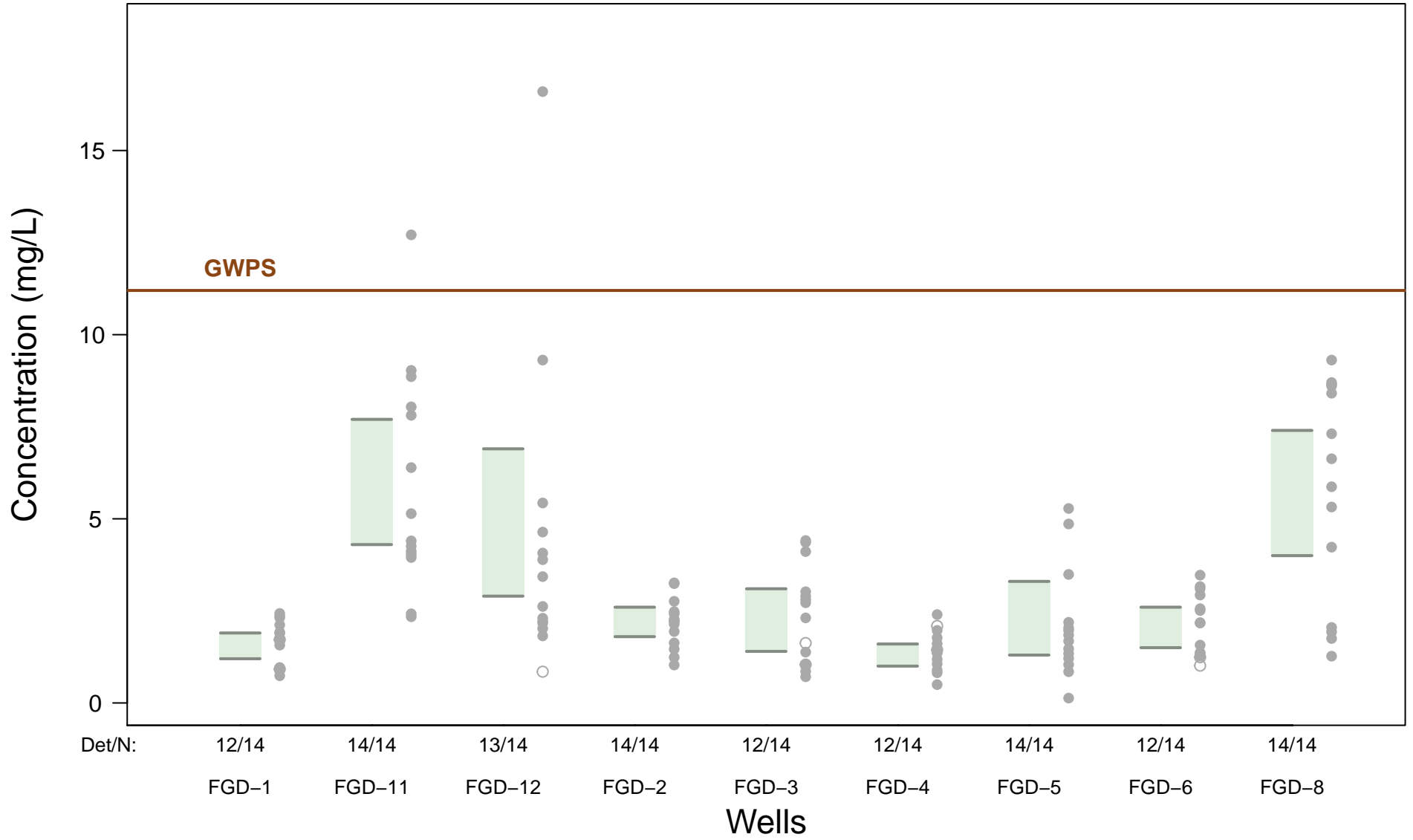
# Mercury – 95% Confidence Intervals



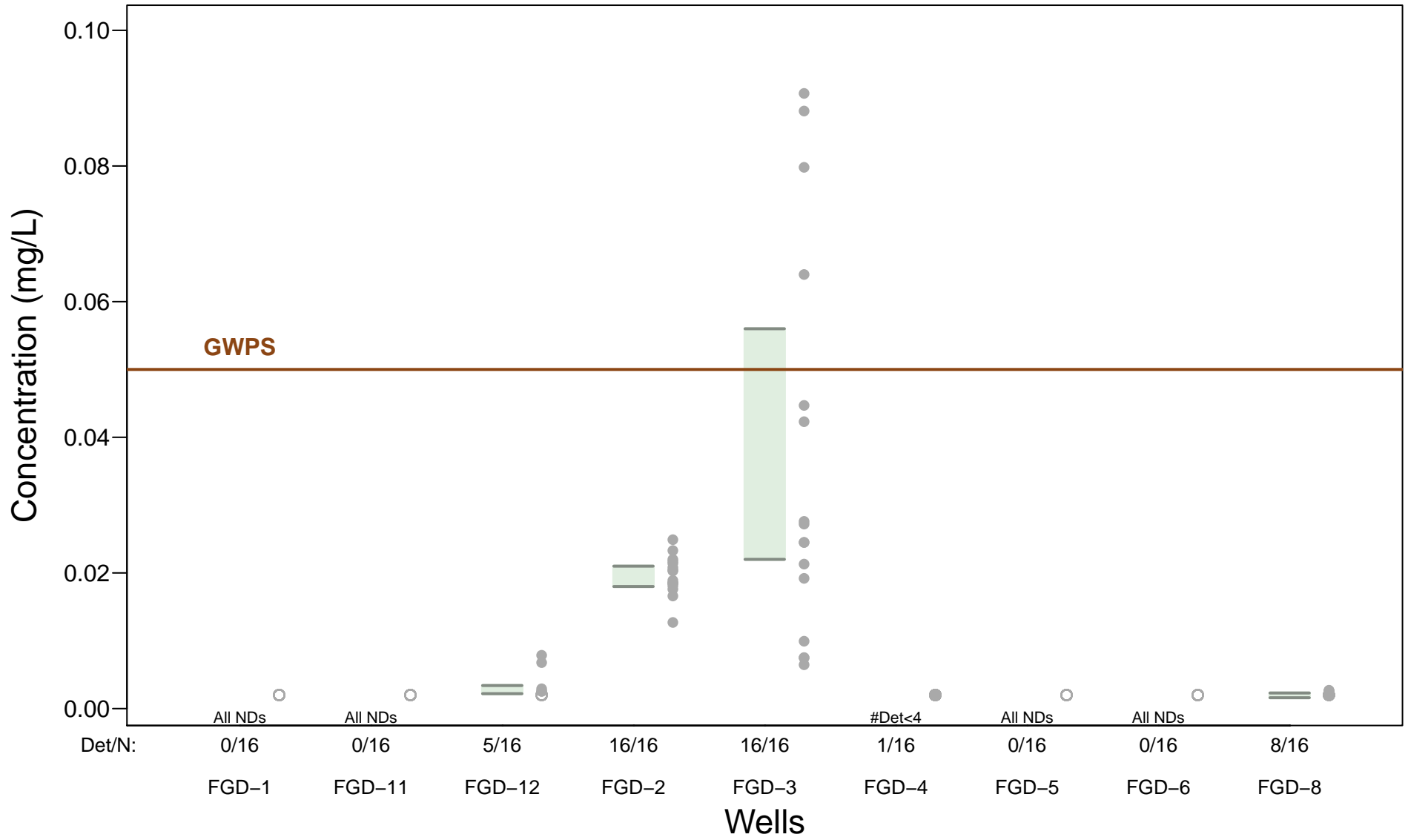
# Molybdenum – 95% Confidence Intervals



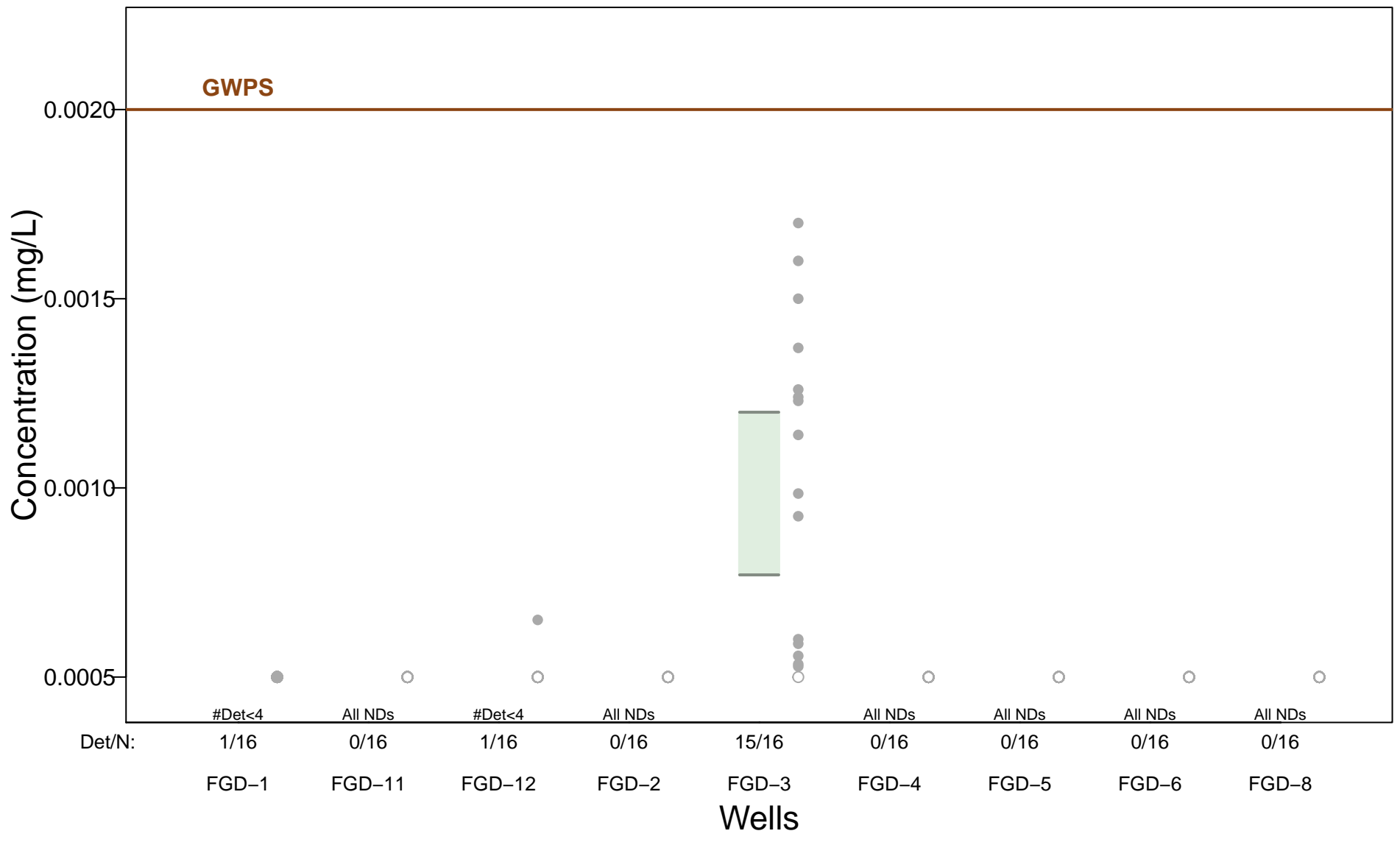
# Radium-226/228 combined – 95% Confidence Intervals



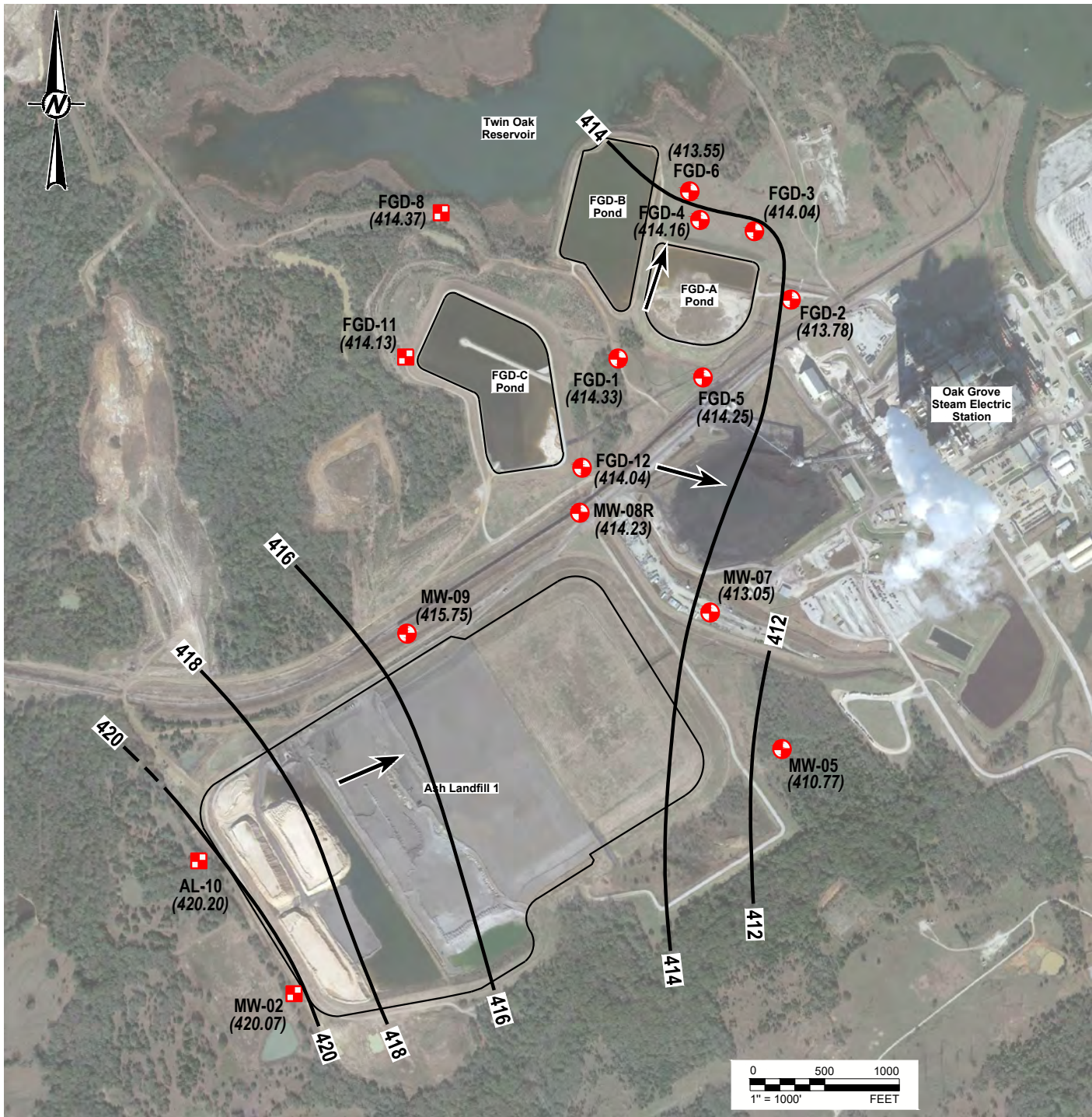
# Selenium – 95% Confidence Intervals






# Thallium – 95% Confidence Intervals

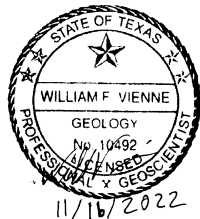


**ATTACHMENT 4**  
**GROUNDWATER POTENTIOMETRIC SURFACE MAPS**



**LEGEND**

-  CCR MONITORING WELL
-  BACKGROUND CCR MONITORING WELL
- (410.06)** GROUNDWATER POTENTIOMETRIC SURFACE (FT MSL)
- 400** GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR (C.I. = 2 FT)
-  INFERRED GROUNDWATER FLOW DIRECTION



**REFERENCE(S)**

BASE MAP TAKEN FROM GOOGLE EARTH, IMAGERY DATED 12/9/18.

CLIENT  
**LUMINANT**

PROJECT  
**OAK GROVE STEAM ELECTRIC STATION  
ROBERTSON COUNTY, TEXAS**

TITLE  
**ASH LANDFILL AND FGD PONDS  
POTENTIOMETRIC SURFACE MAP  
JUNE 16, 2021**

CONSULTANT



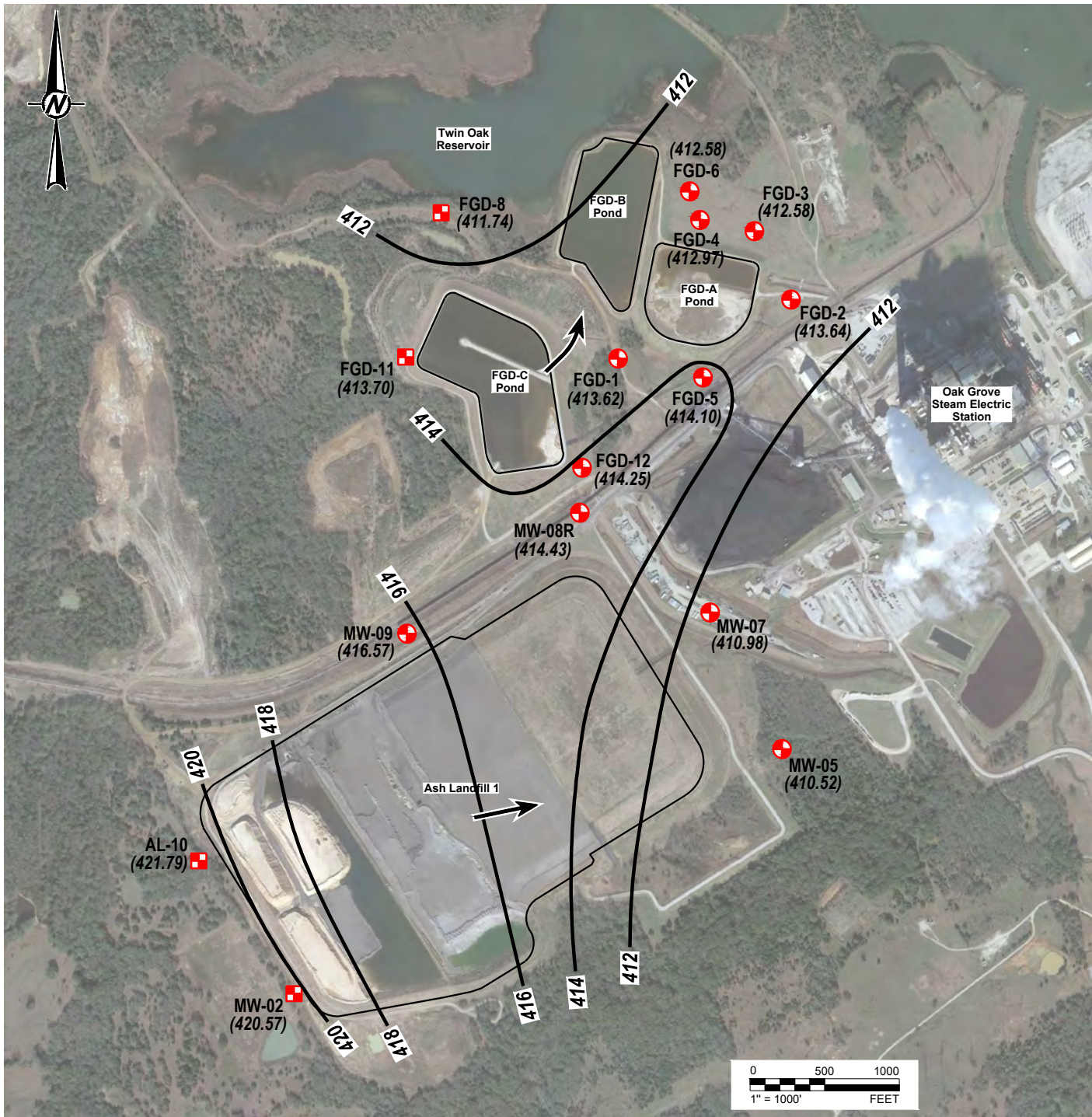
YYYY-MM-DD	2022-11-11
DESIGNED	AJD
PREPARED	AJD
REVIEWED	WVW
APPROVED	WVW

PROJECT NO.  
**31404097.007**




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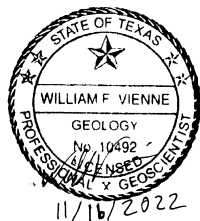
FIGURE  
**1**





**LEGEND**

-  CCR MONITORING WELL
-  BACKGROUND CCR MONITORING WELL
- (410.06)** GROUNDWATER POTENTIOMETRIC SURFACE (FT MSL)
- 400 —** GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR (C.I. = 2 FT)
-  INFERRED GROUNDWATER FLOW DIRECTION



**REFERENCE(S)**

BASE MAP TAKEN FROM GOOGLE EARTH, IMAGERY DATED 12/9/18.

CLIENT  
**LUMINANT**

PROJECT  
**OAK GROVE STEAM ELECTRIC STATION  
ROBERTSON COUNTY, TEXAS**

TITLE  
**ASH LANDFILL AND FGD PONDS  
POTENTIOMETRIC SURFACE MAP  
OCTOBER 11, 2021**

CONSULTANT



YYYY-MM-DD	2022-11-11
DESIGNED	AJD
PREPARED	AJD
REVIEWED	WVW
APPROVED	WVW

PROJECT NO.  
**31404097.007**

REV.  
**0**

FIGURE  
**2**