Prepared for
Illinois Power Generating Company

Date
January 31, 2023

Project No.
1940102203-003

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

ASH POND NO. 1

COFFEEN POWER PLANT

COFFEEN, ILLINOIS

CCR UNIT 101

RAMBOLL Bright ideas. Sustainable change.

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT ASH POND NO. 1

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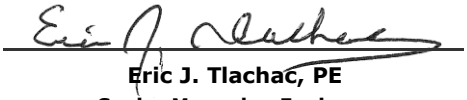

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ACRONYMS AND ABBREVIATIONS

§	Section
35 I.A.C.	Title 35 of the Illinois Administrative Code
40 C.F.R.	Title 40 of the Code of Federal Regulations
AP1	Ash Pond No. 1
ASD	Alternate Source Demonstration
CCR	coal combustion residuals
CMA	Corrective Measures Assessment
CPP	Coffeen Power Plant
GWPS	groundwater protection standard
IEPA	Illinois Environmental Protection Agency
NA	not applicable
NRT/OBG	Natural Resource Technology, an OBG Company
Ramboll	Ramboll Americas Engineering Solutions, Inc.
SAP	Sampling and Analysis Plan
SSI	statistically significant increase
SSL	statistically significant level
TBD	to be determined

EXECUTIVE SUMMARY

This report has been prepared to provide the information required by Title 40 of the Code of Federal Regulations (40 C.F.R.) Section (§) 257.90(e) for Ash Pond No. 1 (AP1) located at the Coffeen Power Plant (CPP) near Coffeen, Illinois.

Groundwater is being monitored at AP1 in accordance with the assessment monitoring program requirements specified in 40 C.F.R. § 257.95. Assessment monitoring was initiated at AP1 on April 9, 2018.

No changes were made to the monitoring system in 2022 (no wells were installed or decommissioned). As discussed in Section 5 of this annual report, the monitoring well network will be updated in 2023 to use the same monitoring well network developed for compliance with Title 35 of the Illinois Administrative Code (35 I.A.C.) § 845, which was submitted to the Illinois Environmental Protection Agency (IEPA) via an operating permit application.

No statistically significant levels (SSLs) of 40 C.F.R. § 257 Appendix IV parameters over groundwater protection standards (GWPSs) were determined in 2022, but statistically significant increases (SSIs) of Appendix III parameters greater than background values were determined. Consequently, a Corrective Measures Assessment (CMA) is not required and AP1 remains in the assessment monitoring program.

1. INTRODUCTION

This report has been prepared by Ramboll Americas Engineering Solutions, Inc. (Ramboll) on behalf of Illinois Power Generating Company, to provide the information required by 40 C.F.R. § 257.90(e) for AP1 located at the CPP near Coffeen, Illinois.

In accordance with 40 C.F.R. § 257.90(e), the owner or operator of a coal combustion residuals (CCR) unit must prepare an Annual Groundwater Monitoring and Corrective Action Report for the preceding calendar year that documents the status of the Groundwater Monitoring and Corrective Action Program for the CCR unit, summarizes key actions completed, describes any problems encountered, discusses actions to resolve the problems, and projects key activities for the upcoming year. At a minimum, the annual report must 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 relative to background levels).
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 of §257 pursuant to §257.94(e):
        A. Identify those constituents listed in Appendix III of §257 and the names of the monitoring wells associated with such an increase.
        B. Provide the date when the assessment monitoring program was initiated for the CCR unit.

iv. If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in Appendix IV of §257 pursuant to §257.95(g) include all of the following:

   A. Identify those constituents listed in Appendix IV of §257 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.

   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.

vi. Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.

This report provides the required information for AP1 for calendar year 2022.

2. MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

No changes have occurred to the Monitoring Program status in calendar year 2022 and AP1 remains in the assessment monitoring program in accordance with 40 C.F.R. § 257.95.

3. KEY ACTIONS COMPLETED IN 2022

The assessment monitoring program is summarized in **Table A** on the following page. The groundwater monitoring system, including the CCR unit and all background and compliance monitoring wells, is presented in **Figure 1**. No changes were made to the monitoring system in 2022 (no wells were installed or decommissioned). In general, one groundwater sample was collected from each background and compliance well during each monitoring event. All samples were collected and analyzed in accordance with the Sampling and Analysis Plan (SAP) (Natural Resource Technology, an OBG Company [NRT/OBG], 2017a. Potentiometric surface maps for both monitoring events in 2022 are included in **Figures 2 and 3**. All monitoring data and analytical results obtained under 40 C.F.R. § 257.90 through 257.98 (as applicable) for both monitoring events in 2022 are presented in **Tables 1 through 3**. Laboratory reports for both monitoring events in 2022 are included in **Appendix A**.

Analytical data were evaluated in accordance with the Statistical Analysis Plan (NRT/OBG, 2017b) to determine any SSLs of Appendix IV parameters over GWPSs and SSIs of Appendix III parameters greater than background values. SSL notifications were completed in accordance with 40 C.F.R. § 257.95(g). SSIs are highlighted in **Table 2**. Statistical background values are provided in **Table 4** and GWPSs are provided in **Table 5**. A flow chart showing the statistical methodology for determination of background values is included as **Appendix B**. A summary of the determination of SSLs in included in **Table 6**. A flow chart showing the statistical methodology for determination of SSLs is included as **Appendix C**.

Table A. 2022 Assessment Monitoring Program Summary

Sampling Dates	Analytical Data Receipt Date	Parameters Collected	SSL(s)	SSL(s) Determination Date	ASD Completion Date
February 8-11, 2022	March 31, 2022	Appendix III Appendix IV	None	June 30, 2022	NA
August 23-25, 2022	October 13, 2022	Appendix III Appendix IV Detected [1]	None	January 11, 2023	NA

Notes:

ASD: Alternate Source Demonstration

NA: not applicable

SSL: Statistically Significant Level

[1] Groundwater sample analysis was limited to Appendix IV parameters detected during previous events in accordance with 40 C.F.R. § 257.95(d)(1).

4. PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS

No problems were encountered with the Groundwater Monitoring Program during 2022. Groundwater samples were collected and analyzed in accordance with the SAP and all data were accepted.

5. KEY ACTIVITIES PLANNED FOR 2023

The following key activities are planned for 2023:

- Beginning in 2023, the current monitoring well system will be updated to use the same monitoring well network that was proposed for compliance with 35 I.A.C. § 845 which includes all of the monitoring wells used in the 2022 monitoring system. This is a logical step toward aligning the two regulatory programs. The following documents support the expanded monitoring system for 2023:
  - Hydrogeological Site Characterization Report (Ramboll, 2021), which expands upon the hydrogeologic information provided in the Hydrogeologic Monitoring Plan (NRT/OBG, 2017c)
  - Multi-Site SAP (Ramboll, 2022a)
  - Multi-Site Quality Assurance Project Plan (Ramboll, 2022b)
  - Multi-Site Data Management Plan (Ramboll, 2022c)
  - Multi-Site Statistical Analysis Plan and Certification (Ramboll, 2022d)
  - 40 C.F.R. § 257 Groundwater Monitoring Plan (Ramboll, 2022e), which replaces the monitoring plan provided in the Hydrogeologic Monitoring Plan
  - Monitoring Well Network Certification
- Continuation of the assessment monitoring program with semi-annual sampling scheduled for the first and third quarters of 2023.
- Complete evaluation of analytical data from the compliance wells using background data to determine whether an SSI of Appendix III parameters detected at concentrations greater than background concentrations has occurred.
- Complete evaluation of analytical data from the compliance wells to determine whether an SSL of Appendix IV parameters above GWPSs has occurred.
- If an SSL is identified, potential alternate sources (*i.e.,* a source other than the CCR unit caused the SSL or that the SSL resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality) will be evaluated.
  - If an alternate source is identified to be the cause of the SSL, a written demonstration will be completed within 90 days of SSL determination and included in the 2023 Annual Groundwater Monitoring and Corrective Action Report.
  - If an alternate source(s) is not identified to be the cause of the SSL, the applicable requirements of 40 C.F.R. §§ 257.94 through 257.98 (*e.g.,* assessment of corrective measures) as may apply in 2023 will be met, including associated recordkeeping/notifications required by 40 C.F.R. §§ 257.105 through 257.108.

6. REFERENCES

Natural Resource Technology, an OBG Company (NRT/OBG), 2017a. Sampling and Analysis Plan, Coffeen Ash Pond No. 1, Coffeen Power Station, Coffeen, Illinois, Project No. 2285, Revision 0. October 17, 2017.

Natural Resource Technology, an OBG Company (NRT/OBG), 2017b. Statistical Analysis Plan, Coffeen Power Station, Newton Power Station, Illinois Power Generating Company. October 17, 2017.

Natural Resource Technology, an OBG Company (NRT/OBG), 2017c. Hydrogeologic Monitoring Plan, Coffeen Power Station, Coffeen, Illinois. October 17, 2017.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2021. Hydrogeological Site Characterization Report, Ash Pond No. 1, Coffeen Power Plant, Coffeen, Illinois. October 21, 2021.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022a. Multi-Site Sampling and Analysis Plan. December 28, 2022.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022b. Multi-Site Quality Assurance Project Plan. December 28, 2022.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022c. Multi-Site Data Management Plan. December 28, 2022.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022d. Multi-Site Statistical Analysis Plan, 40 C.F.R. § 257. December 28, 2022.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022e. 40 C.F.R. § 257 Groundwater Monitoring Plan, Ash Pond No. 1, Coffeen Power Plant, Coffeen, Illinois. December 28, 2022.

TABLES

TABLE 1
GROUNDWATER ELEVATIONS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
101 - ASH POND NO. 1
COFFEEN, IL

Well ID	Monitored Unit	Well Screen Interval (feet BGS)	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G045D	LCU	31.88 - 41.52	Water Level Only	39.06435	-89.39628	02/07/2022	8.80	615.01
G045D	LCU	31.88 - 41.52	Water Level Only	39.06435	-89.39628	08/23/2022	9.23	614.58
G046D	LCU	41.61 - 51.26	Water Level Only	39.06030	-89.39852	02/07/2022	14.53	610.71
G046D	LCU	41.61 - 51.26	Water Level Only	39.06030	-89.39852	08/23/2022	10.11	615.13
G101	UA	15.68 - 20.32	Water Level Only	39.07139	-89.40011	02/07/2022	4.90	622.70
G101	UA	15.68 - 20.32	Water Level Only	39.07139	-89.40011	08/23/2022	7.65	619.95
G102	UA	12.02 - 16.78	Water Level Only	39.07139	-89.39899	02/07/2022	5.30	623.74
G102	UA	12.02 - 16.78	Water Level Only	39.07139	-89.39899	08/23/2022	6.79	622.25
G103	UA	15.88 - 20.67	Water Level Only	39.07041	-89.39911	02/07/2022	10.05	623.75
G103	UA	15.88 - 20.67	Water Level Only	39.07041	-89.39911	08/23/2022	10.00	623.80
G105	UA	16.11 - 20.90	Water Level Only	39.06849	-89.39910	02/07/2022	8.95	623.13
G105	UA	16.11 - 20.90	Water Level Only	39.06849	-89.39910	08/23/2022	8.60	623.48
G106	UA	14.37 - 18.96	Water Level Only	39.06753	-89.39910	02/07/2022	9.24	621.91
G106	UA	14.37 - 18.96	Water Level Only	39.06753	-89.39910	08/23/2022	9.65	621.50
G107	UA	13.87 - 18.50	Water Level Only	39.06711	-89.39965	02/07/2022	8.82	621.40
G107	UA	13.87 - 18.50	Water Level Only	39.06711	-89.39965	08/23/2022	10.53	619.69
G108	UA	16.82 - 21.50	Water Level Only	39.06698	-89.40003	02/07/2022	10.83	619.39
G108	UA	16.82 - 21.50	Water Level Only	39.06698	-89.40003	08/23/2022	11.39	618.83
G109	UA	15.39 - 19.93	Water Level Only	39.06705	-89.40042	02/07/2022	11.10	618.66
G109	UA	15.39 - 19.93	Water Level Only	39.06705	-89.40042	08/23/2022	11.50	618.26
G110	UA	15.05 - 19.59	Water Level Only	39.06717	-89.40070	02/07/2022	12.02	617.63
G110	UA	15.05 - 19.59	Water Level Only	39.06717	-89.40070	08/23/2022	12.18	617.47
G111	UA	14.61 - 19.15	Water Level Only	39.06729	-89.40097	02/07/2022	13.23	616.67
G111	UA	14.61 - 19.15	Water Level Only	39.06729	-89.40097	08/23/2022	13.40	616.50
G119	UA	17.29 - 21.83	Water Level Only	39.06899	-89.40121	02/07/2022	14.34	617.21
G119	UA	17.29 - 21.83	Water Level Only	39.06899	-89.40121	08/23/2022	15.00	616.55
G120	UA	15.10 - 19.62	Water Level Only	39.06948	-89.40121	02/07/2022	13.97	617.90
G120	UA	15.10 - 19.62	Water Level Only	39.06948	-89.40121	08/23/2022	15.07	616.80
G121	UA	16.79 - 21.47	Water Level Only	39.06978	-89.40122	02/07/2022	13.82	619.01
G121	UA	16.79 - 21.47	Water Level Only	39.06978	-89.40122	08/23/2022	16.15	616.68

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101 - ASH POND NO. 1
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Well ID	Monitored Unit	Well Screen Interval (feet BGS)	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G122	UA	16.51 - 21.05	Water Level Only	39.07010	-89.40122	02/07/2022	11.53	621.16
G122	UA	16.51 - 21.05	Water Level Only	39.07010	-89.40122	08/23/2022	15.66	617.03
G123	UA	20.94 - 25.46	Water Level Only	39.07040	-89.40122	02/07/2022	11.45	621.51
G123	UA	20.94 - 25.46	Water Level Only	39.07040	-89.40122	08/23/2022	13.46	619.50
G124	UA	15.98 - 20.51	Water Level Only	39.07072	-89.40122	02/07/2022	10.97	622.42
G124	UA	15.98 - 20.51	Water Level Only	39.07072	-89.40122	08/23/2022	14.22	619.17
G125	UA	17.03 - 21.56	Water Level Only	39.07100	-89.40122	02/07/2022	11.07	622.44
G125	UA	17.03 - 21.56	Water Level Only	39.07100	-89.40122	08/23/2022	14.37	619.14
G126	UA	12.89 - 17.43	Water Level Only	39.06730	-89.40127	02/07/2022	9.65	615.74
G126	UA	12.89 - 17.43	Water Level Only	39.06730	-89.40127	08/23/2022	9.69	615.70
G151	UA	15.34 - 19.84	Water Level Only	39.06720	-89.40159	02/07/2022	11.46	614.47
G151	UA	15.34 - 19.84	Water Level Only	39.06720	-89.40159	08/23/2022	11.31	614.62
G152	UA	13.59 - 18.09	Water Level Only	39.06628	-89.40129	02/07/2022	10.76	615.76
G152	UA	13.59 - 18.09	Water Level Only	39.06628	-89.40129	08/23/2022	11.45	615.07
G153	UA	15.90 - 20.34	Water Level Only	39.06586	-89.40257	02/07/2022	11.15	615.25
G153	UA	15.90 - 20.34	Water Level Only	39.06586	-89.40257	08/23/2022	11.77	614.63
G154	UA	14.26 - 18.76	Water Level Only	39.06709	-89.40357	02/07/2022	11.45	614.90
G154	UA	14.26 - 18.76	Water Level Only	39.06709	-89.40357	08/23/2022	13.00	613.35
G155	UA	15.09 - 19.58	Water Level Only	39.06749	-89.40266	02/07/2022	11.67	614.19
G155	UA	15.09 - 19.58	Water Level Only	39.06749	-89.40266	08/23/2022	12.56	613.30
G200	UA	12.19 - 16.98	Water Level Only	39.07514	-89.39501	02/07/2022	3.55	622.39
G200	UA	12.19 - 16.98	Water Level Only	39.07514	-89.39501	08/23/2022	6.21	619.73
G206	UA	17.51 - 21.92	Water Level Only	39.06740	-89.39855	02/07/2022	10.45	622.37
G206	UA	17.51 - 21.92	Water Level Only	39.06740	-89.39855	08/23/2022	11.21	621.61
G206D	DA	49.20 – 59.00	Water Level Only	39.06743	-89.39849	02/07/2022	35.92	598.22
G206D	DA	49.20 – 59.00	Water Level Only	39.06743	-89.39849	08/23/2022	31.28	602.86
G207	UA	18.24 - 22.77	Water Level Only	39.06757	-89.39795	02/07/2022	10.64	622.57
G207	UA	18.24 - 22.77	Water Level Only	39.06757	-89.39795	08/23/2022	11.33	621.88
G208	UA	17.53 - 22.06	Water Level Only	39.06774	-89.39740	02/07/2022	10.80	622.36
G208	UA	17.53 - 22.06	Water Level Only	39.06774	-89.39740	08/23/2022	11.04	622.12

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Well ID	Monitored Unit	Well Screen Interval (feet BGS)	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G209	UA	17.74 - 22.28	Water Level Only	39.06792	-89.39685	02/07/2022	10.56	622.35
G209	UA	17.74 - 22.28	Water Level Only	39.06792	-89.39685	08/23/2022	10.72	622.19
G210	UA	19.39 - 23.93	Water Level Only	39.06809	-89.39632	02/07/2022	11.05	621.94
G210	UA	19.39 - 23.93	Water Level Only	39.06809	-89.39632	08/23/2022	11.03	621.96
G211	UA	17.34 - 21.88	Water Level Only	39.06826	-89.39579	02/07/2022	10.76	621.88
G211	UA	17.34 - 21.88	Water Level Only	39.06826	-89.39579	08/23/2022	10.87	621.77
G212	UA	16.74 - 21.29	Water Level Only	39.06843	-89.39532	02/07/2022	11.10	621.79
G212	UA	16.74 - 21.29	Water Level Only	39.06843	-89.39532	08/23/2022	12.08	620.81
G213	UA	16.75 - 21.29	Water Level Only	39.06859	-89.39482	02/07/2022	11.23	621.58
G213	UA	16.75 - 21.29	Water Level Only	39.06859	-89.39482	08/23/2022	12.18	620.63
G214	UA	17.75 - 22.14	Water Level Only	39.06892	-89.39398	02/07/2022	14.52	618.33
G214	UA	17.75 - 22.14	Water Level Only	39.06892	-89.39398	08/23/2022	14.85	618.00
G215	UA	19.41 - 23.80	Water Level Only	39.06931	-89.39394	02/07/2022	14.45	618.61
G215	UA	19.41 - 23.80	Water Level Only	39.06931	-89.39394	08/23/2022	14.61	618.45
G216	UA	20.04 - 24.42	Water Level Only	39.06976	-89.39395	02/07/2022	13.68	619.08
G216	UA	20.04 - 24.42	Water Level Only	39.06976	-89.39395	08/23/2022	13.92	618.84
G217	UA	20.49 - 24.88	Water Level Only	39.07034	-89.39396	02/07/2022	14.76	618.34
G217	UA	20.49 - 24.88	Water Level Only	39.07034	-89.39396	08/23/2022	15.60	617.50
G218	UA	20.33 - 24.77	Water Level Only	39.07088	-89.39396	02/07/2022	13.78	619.33
G218	UA	20.33 - 24.77	Water Level Only	39.07088	-89.39396	08/23/2022	14.23	618.88
G270	UA	13.13 - 17.92	Water Level Only	39.06656	-89.39740	02/07/2022	2.59	623.27
G270	UA	13.13 - 17.92	Water Level Only	39.06656	-89.39740	08/23/2022	4.03	621.83
G271	UA	9.96 - 14.31	Water Level Only	39.06501	-89.39559	02/07/2022	9.06	616.51
G271	UA	9.96 - 14.31	Water Level Only	39.06501	-89.39559	08/23/2022	10.68	614.89
G272	UA	9.11 - 13.98	Water Level Only	39.06499	-89.39479	02/07/2022	8.92	614.89
G272	UA	9.11 - 13.98	Water Level Only	39.06499	-89.39479	08/23/2022	10.19	613.62
G273	UA	9.08 - 14.56	Water Level Only	39.06499	-89.39397	02/07/2022	10.32	612.70
G273	UA	9.08 - 14.56	Water Level Only	39.06499	-89.39397	08/23/2022	11.23	611.79
G274	UA	12.90 - 17.67	Water Level Only	39.06499	-89.39320	02/07/2022	13.90	610.14
G274	UA	12.90 - 17.67	Water Level Only	39.06499	-89.39320	08/23/2022	14.70	609.34

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G275	UA	8.22 - 12.62	Water Level Only	39.06515	-89.39256	02/07/2022	13.16	605.10
G275	UA	8.22 - 12.62	Water Level Only	39.06515	-89.39256	08/23/2022	Dry	
G275D	DA	49.76 - 59.55	Water Level Only	39.06512	-89.39260	02/07/2022	39.85	580.46
G275D	DA	49.76 - 59.55	Water Level Only	39.06512	-89.39260	08/23/2022	39.49	580.82
G276	UA	22.41 - 27.22	Water Level Only	39.06553	-89.39262	02/07/2022	27.54	604.46
G276	UA	22.41 - 27.22	Water Level Only	39.06553	-89.39262	08/23/2022	27.34	604.66
G277	UA	14.29 - 18.77	Water Level Only	39.06593	-89.39257	02/07/2022	19.37	603.71
G277	UA	14.29 - 18.77	Water Level Only	39.06593	-89.39257	08/23/2022	19.62	603.46
G278	UA	18.93 - 23.70	Water Level Only	39.06674	-89.39316	02/07/2022	24.23	606.94
G278	UA	18.93 - 23.70	Water Level Only	39.06674	-89.39316	08/23/2022	22.66	608.51
G279	UA	22.40 - 26.79	Water Level Only	39.06716	-89.39300	02/07/2022	22.93	609.11
G279	UA	22.40 - 26.79	Water Level Only	39.06716	-89.39300	08/23/2022	23.00	609.04
G280	UA	12.79 - 17.63	Water Level Only	39.06722	-89.39499	02/07/2022	4.90	620.45
G280	UA	12.79 - 17.63	Water Level Only	39.06722	-89.39499	08/23/2022	4.10	621.25
G281	UA	15.51 - 20.16	Background	39.06541	-89.39932	02/07/2022	6.25	620.11
G281	UA	15.51 - 20.16	Background	39.06541	-89.39932	08/23/2022	6.85	619.51
G283	LCU	8.39 - 18.17	Water Level Only	39.06464	-89.39212	02/07/2022	4.79	605.96
G283	LCU	8.39 - 18.17	Water Level Only	39.06464	-89.39212	08/23/2022	8.06	602.69
G284	UA	8.08 - 12.85	Water Level Only	39.06549	-89.39063	02/07/2022	10.96	607.46
G284	UA	8.08 - 12.85	Water Level Only	39.06549	-89.39063	08/23/2022	12.00	606.42
G285	LCU	13.68 - 23.45	Water Level Only	39.06651	-89.39147	02/07/2022	7.21	606.31
G285	LCU	13.68 - 23.45	Water Level Only	39.06651	-89.39147	08/23/2022	6.44	607.08
G286	UA	3.37 - 8.16	Water Level Only	39.06728	-89.39188	02/07/2022	7.03	606.10
G286	UA	3.37 - 8.16	Water Level Only	39.06728	-89.39188	08/23/2022	Dry	
G287	UA	5.43 - 10.25	Water Level Only	39.06830	-89.39239	02/07/2022	9.10	608.35
G287	UA	5.43 - 10.25	Water Level Only	39.06830	-89.39239	08/23/2022	Dry	
G288	UA	7.59 - 12.26	Water Level Only	39.06783	-89.39008	02/07/2022	6.14	613.93
G288	UA	7.59 - 12.26	Water Level Only	39.06783	-89.39008	08/23/2022	7.68	612.39
G301	UA	11.31 - 15.96	Compliance	39.05951	-89.39541	02/07/2022	6.14	616.51
G301	UA	11.31 - 15.96	Compliance	39.05951	-89.39541	08/23/2022	7.07	615.58
G302	UA	13.21 - 17.86	Compliance	39.05954	-89.39319	02/07/2022	8.04	612.00
G302	UA	13.21 - 17.86	Compliance	39.05954	-89.39319	08/23/2022	9.15	610.89

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COFFEEN, IL

Well ID	Monitored Unit	Well Screen Interval (feet BGS)	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G303	UA	10 - 20	Compliance	39.05714	-89.39172	02/07/2022	4.12	617.90
G303	UA	10 - 20	Compliance	39.05714	-89.39172	08/23/2022	6.06	615.96
G305	UA	13.44 - 18.27	Water Level Only	39.05656	-89.39680	02/07/2022	6.27	619.40
G305	UA	13.44 - 18.27	Water Level Only	39.05656	-89.39680	08/23/2022	7.61	618.06
G306	UA	13.07 - 17.68	Background	39.05649	-89.39356	02/07/2022	6.09	619.82
G306	UA	13.07 - 17.68	Background	39.05649	-89.39356	08/23/2022	8.12	617.79
G307	UA	12.96 - 17.80	Compliance	39.05721	-89.39554	02/07/2022	Above Top of Casing	
G307	UA	12.96 - 17.80	Compliance	39.05721	-89.39554	08/23/2022	Above Top of Casing	
G307D	LCU	48.98 - 58.75	Water Level Only	39.05721	-89.39552	02/07/2022	2.56	622.32
G307D	LCU	48.98 - 58.75	Water Level Only	39.05721	-89.39552	08/23/2022	9.79	615.09
G308	UA	10.10 - 14.89	Water Level Only	39.05738	-89.39713	02/07/2022	3.84	620.75
G308	UA	10.10 - 14.89	Water Level Only	39.05738	-89.39713	08/23/2022	7.24	617.35
G309	UA	12.97 - 17.75	Water Level Only	39.05851	-89.39724	02/07/2022	6.79	619.09
G309	UA	12.97 - 17.75	Water Level Only	39.05851	-89.39724	08/23/2022	7.24	618.64
G310	UA	10.24 - 15.03	Water Level Only	39.05953	-89.39691	02/07/2022	7.86	615.01
G310	UA	10.24 - 15.03	Water Level Only	39.05953	-89.39691	08/23/2022	8.89	613.98
G311	UA	9.27 - 14.04	Water Level Only	39.05951	-89.39436	02/07/2022	6.76	614.28
G311	UA	9.27 - 14.04	Water Level Only	39.05951	-89.39436	08/23/2022	7.85	613.19
G311D	LCU	50.16 - 60.10	Water Level Only	39.05951	-89.39431	02/07/2022	28.10	593.14
G311D	LCU	50.16 - 60.10	Water Level Only	39.05951	-89.39431	08/23/2022	23.78	597.46
G312	UA	9.79 - 14.58	Water Level Only	39.05956	-89.39198	02/07/2022	10.77	609.01
G312	UA	9.79 - 14.58	Water Level Only	39.05956	-89.39198	08/23/2022	11.28	608.50
G313	UA	6.30 - 11.11	Water Level Only	39.05877	-89.39112	02/07/2022	2.88	611.42
G313	UA	6.30 - 11.11	Water Level Only	39.05877	-89.39112	08/23/2022	2.38	611.92
G314	LCU	14.56 - 19.58	Water Level Only	39.05782	-89.39096	02/07/2022	6.03	607.85
G314	LCU	14.56 - 19.58	Water Level Only	39.05782	-89.39096	08/23/2022	3.30	610.58
G314D	DA	39.34 - 49.11	Water Level Only	39.05785	-89.39096	02/07/2022	23.24	590.46
G314D	DA	39.34 - 49.11	Water Level Only	39.05785	-89.39096	08/23/2022	18.00	595.70
G315	UA	9.69 - 14.48	Water Level Only	39.05716	-89.39367	02/07/2022	2.11	621.41
G315	UA	9.69 - 14.48	Water Level Only	39.05716	-89.39367	08/23/2022	3.31	620.21
G316	LCU	10.02 - 14.82	Water Level Only	39.05785	-89.38970	02/07/2022	11.48	591.11
G316	LCU	10.02 - 14.82	Water Level Only	39.05785	-89.38970	08/23/2022	12.18	590.41

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Well ID	Monitored Unit	Well Screen Interval (feet BGS)	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G317	UA	30.14 - 34.93	Water Level Only	39.05673	-89.39015	02/07/2022	32.04	609.89
G317	UA	30.14 - 34.93	Water Level Only	39.05673	-89.39015	08/23/2022	33.97	607.96
G401	UA	14.36 - 18.79	Water Level Only	39.06026	-89.39529	02/07/2022	21.14	604.43
G401	UA	14.36 - 18.79	Water Level Only	39.06026	-89.39529	08/23/2022	21.52	604.05
G402	UA	10 - 20	Water Level Only	39.06021	-89.39171	02/07/2022	9.24	604.13
G402	UA	10 - 20	Water Level Only	39.06021	-89.39171	08/23/2022	10.01	603.36
G403	UA	13.11 - 17.78	Water Level Only	39.06317	-89.39878	02/07/2022	6.39	620.08
G403	UA	13.11 - 17.78	Water Level Only	39.06317	-89.39878	08/23/2022	8.54	617.93
G404	UA	6.42 - 11.17	Water Level Only	39.06433	-89.39249	02/07/2022	3.58	612.09
G404	UA	6.42 - 11.17	Water Level Only	39.06433	-89.39249	08/23/2022	5.41	610.26
G405	UA	9.01 - 13.76	Water Level Only	39.06435	-89.39623	02/07/2022	6.35	617.28
G405	UA	9.01 - 13.76	Water Level Only	39.06435	-89.39623	08/23/2022	6.78	616.85
G406	UA	13.56 - 18.37	Water Level Only	39.06031	-89.39851	02/07/2022	11.81	613.55
G406	UA	13.56 - 18.37	Water Level Only	39.06031	-89.39851	08/23/2022	11.89	613.47
G407	UA	13.78 - 18.61	Water Level Only	39.06157	-89.40200	02/07/2022	5.93	615.39
G407	UA	13.78 - 18.61	Water Level Only	39.06157	-89.40200	08/23/2022	7.27	614.05
G410	UA	8.89 - 13.68	Water Level Only	39.06157	-89.40376	02/07/2022	8.12	611.67
G410	UA	8.89 - 13.68	Water Level Only	39.06157	-89.40376	08/23/2022	8.81	610.98
G411	UA	11.21 - 16.07	Water Level Only	39.06398	-89.40403	02/07/2022	6.48	616.77
G411	UA	11.21 - 16.07	Water Level Only	39.06398	-89.40403	08/23/2022	7.78	615.47
MW03D	DA	52.29 - 57.06	Water Level Only	39.07139	-89.39898	02/07/2022	30.55	598.46
MW03D	DA	52.29 - 57.06	Water Level Only	39.07139	-89.39898	08/23/2022	30.26	598.75
MW04S	UA	9.83 - 14.26	Water Level Only	39.07536	-89.39923	02/07/2022	6.33	619.56
MW04S	UA	9.83 - 14.26	Water Level Only	39.07536	-89.39923	08/23/2022	7.19	618.70
MW05S	UA	12.66 - 17.41	Water Level Only	39.07587	-89.40333	02/07/2022	7.29	618.66
MW05S	UA	12.66 - 17.41	Water Level Only	39.07587	-89.40333	08/23/2022	8.08	617.87
MW10S	UA	11.28 - 15.76	Water Level Only	39.07601	-89.39407	02/07/2022	5.54	618.91
MW10S	UA	11.28 - 15.76	Water Level Only	39.07601	-89.39407	08/23/2022	6.08	618.37
MW11S	UA	8.89 - 13.63	Water Level Only	39.07189	-89.39391	02/07/2022	3.28	621.99
MW11S	UA	8.89 - 13.63	Water Level Only	39.07189	-89.39391	08/23/2022	4.41	620.86

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Well ID	Monitored Unit	Well Screen Interval (feet BGS)	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
MW11D	LCU	28.31 - 33.04	Water Level Only	39.07189	-89.39389	02/07/2022	4.17	621.35
MW11D	LCU	28.31 - 33.04	Water Level Only	39.07189	-89.39389	08/23/2022	5.12	620.40
MW12S	UA	10.61 - 15.18	Water Level Only	39.06851	-89.39420	02/07/2022	5.53	619.78
MW12D	DA	42.46 - 46.99	Water Level Only	39.06850	-89.39420	02/07/2022	12.52	612.69
MW12D	DA	42.46 - 46.99	Water Level Only	39.06850	-89.39420	08/23/2022	12.93	612.28
MW16S	UA	14.59 - 19.41	Water Level Only	39.07357	-89.39701	02/07/2022	5.73	623.74
MW16S	UA	14.59 - 19.41	Water Level Only	39.07357	-89.39701	08/23/2022	9.45	620.02
MW16D	DA	45.90 - 50.34	Water Level Only	39.07357	-89.39704	02/07/2022	12.46	616.92
MW16D	DA	45.90 - 50.34	Water Level Only	39.07357	-89.39704	08/23/2022	11.95	617.43
MW20S	UA	8.41 - 13.22	Water Level Only	39.06497	-89.39432	02/07/2022	8.86	614.04
MW20S	UA	8.41 - 13.22	Water Level Only	39.06497	-89.39432	08/23/2022	10.21	612.69
R104	UA	14.59 - 19.32	Water Level Only	39.06947	-89.39911	02/07/2022	8.06	624.78
R104	UA	14.59 - 19.32	Water Level Only	39.06947	-89.39911	08/23/2022	7.77	625.07
R201	UA	14.59 - 19.32	Water Level Only	39.07514	-89.39786	02/07/2022	3.49	622.85
R201	UA	14.59 - 19.32	Water Level Only	39.07514	-89.39786	08/23/2022	5.92	620.42
R205	UA	11.32 - 16.01	Water Level Only	39.06859	-89.39416	02/07/2022	4.10	620.42
R205	UA	11.32 - 16.01	Water Level Only	39.06859	-89.39416	08/23/2022	6.36	618.16
T127	UA	17.53 - 22.07	Water Level Only	39.06812	-89.40121	02/07/2022	14.00	616.96
T127	UA	17.53 - 22.07	Water Level Only	39.06812	-89.40121	08/23/2022	14.49	616.47
T128	UA	16.53 - 21.04	Water Level Only	39.06853	-89.40121	02/07/2022	13.70	617.23
T128	UA	16.53 - 21.04	Water Level Only	39.06853	-89.40121	08/23/2022	14.50	616.43
T202	UA	12.27 - 16.65	Water Level Only	39.07178	-89.39771	02/07/2022	5.68	622.95
T202	UA	12.27 - 16.65	Water Level Only	39.07178	-89.39771	08/23/2022	6.44	622.19
T408	LCU	20.66 - 25.49	Water Level Only	39.06435	-89.39631	02/07/2022	7.20	616.88
T408	LCU	20.66 - 25.49	Water Level Only	39.06435	-89.39631	08/23/2022	7.09	616.99
T409	LCU	21.79 - 26.59	Water Level Only	39.06030	-89.39854	02/07/2022	10.04	614.97
T409	LCU	21.79 - 26.59	Water Level Only	39.06030	-89.39854	08/23/2022	14.28	610.73
TA31	UA	15.09 - 19.57	Water Level Only	39.07137	-89.40137	02/07/2022	4.83	621.72
TA31	UA	15.09 - 19.57	Water Level Only	39.07137	-89.40137	08/23/2022	7.89	618.66
TA33	UA	12.23 - 16.89	Water Level Only	39.07156	-89.40351	02/07/2022	7.26	618.01

TABLE 1
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Well ID	Monitored Unit	Well Screen Interval (feet BGS)	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
TA33	UA	12.23 - 16.89	Water Level Only	39.07156	-89.40351	08/23/2022	9.35	615.92
TA34	UA	10.92 - 15.41	Water Level Only	39.06963	-89.40276	02/07/2022	7.76	618.76
TA34	UA	10.92 - 15.41	Water Level Only	39.06963	-89.40276	08/23/2022	9.51	617.01
TR32	UA	11.00 - 15.68	Water Level Only	39.07406	-89.40224	02/07/2022	6.47	615.21
TR32	UA	11.00 - 15.68	Water Level Only	39.07406	-89.40224	08/23/2022	5.91	615.77
XPW01	CCR	8.21 - 12.98	Water Level Only	39.05788	-89.39620	02/07/2022	4.32	630.25
XPW01	CCR	8.21 - 12.98	Water Level Only	39.05788	-89.39620	08/23/2022	7.90	626.67
XPW02	CCR	8.05 - 17.85	Water Level Only	39.05883	-89.39527	02/07/2022	9.31	630.38
XPW02	CCR	8.05 - 17.85	Water Level Only	39.05883	-89.39527	08/23/2022	8.88	630.81
XSG-01	CCR	NA	Water Level Only	39.05913	-89.39673	02/07/2022	5.25	630.27
XSG-01	CCR	NA	Water Level Only	39.05913	-89.39673	08/23/2022	3.07	632.45
SG-02	SW	NA	Water Level Only	39.05969	-89.39143	02/07/2022	7.35	598.52
SG-02	SW	NA	Water Level Only	39.05969	-89.39143	08/23/2022	7.45	598.42
SG-03	SW	NA	Water Level Only	39.05909	-89.39034	02/07/2022	5.01	589.93
SG-03	SW	NA	Water Level Only	39.05909	-89.39034	08/23/2022	9.81	585.13
SG-04	SW	NA	Water Level Only	39.06415	-89.39050	02/07/2022	6.52	593.00
SG-04	SW	NA	Water Level Only	39.06415	-89.39050	08/23/2022	6.16	593.36

Notes:
BGS = below ground surface
BMP = below measuring point
NAVD88 = North American Vertical Datum of 1988
NA = not available/not applicable
Monitored Unit Abbreviations:
CCR = coal combustion residuals
DA = deep aquifer
LCU = lower confining unit
SW = surface water
UA = uppermost aquifer

TABLE 2
ANALYTICAL RESULTS - APPENDIX III PARAMETERS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
101 - ASH POND NO. 1
COFFEEN, IL

Well ID	Well Type	Date	Event ID	Boron, total (mg/L)	Calcium, total (mg/L)	Chloride, total (mg/L)	Fluoride, total (mg/L)	pH (field) (SU)	Sulfate, total (mg/L)	Total Dissolved Solids (mg/L)
Background Value(s)	--	--	--	*2.90*	*153*	*75.0*	*0.470*	*6.5/7.1*	*700*	*893*
G281	Background	02/08/2022	A5	0.01 U	130	78.0	0.295	7.0	270	910
G281	Background	08/25/2022	A5D	0.0140	150	69.0	0.302	6.8	310	980
G306	Background	02/08/2022	A5	3.50	120	1.30 B	0.270	6.8	200	640
G306	Background	08/24/2022	A5D	3.00	100	0.96 U	0.04 U	6.6	210	610
G301	Compliance	02/08/2022	A5	2.20	140	15.0	0.347	6.5	620	1,100
G301	Compliance	08/23/2022	A5D	2.20	130	15.0	0.305	6.6	650	1,100
G302	Compliance	02/08/2022	A5	2.20	170	15.0	0.25 U	6.7	410	1,100
G302	Compliance	08/23/2022	A5D	1.70	140	9.6 U	0.164	6.9	290	860
G303	Compliance	02/08/2022	A5	2.50	170	29.0	0.25 U	6.8	650	1,500
G303	Compliance	08/24/2022	A5D	1.90	200	28.0	0.268	6.7	760	1,900
G307	Compliance	02/11/2022	A5	2.00	190	16.0	0.431	7.3	780	1,200
G307	Compliance	08/24/2022	A5D	2.00	210	14.0	0.264	7.0	730	1,400

Notes:
Exceedance of Background
mg/L = milligrams per liter
SU = Standard Units
U = The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate. Lab reports may or may not report both the limit of detection and the limit of quantitation. Limits are provided in the electronic data deliverable. As such, the U-flagged result value provided in this table may not match the result value provided in the lab report.
B = The analyte was found in sample and in associated method blank.

TABLE 3
ANALYTICAL RESULTS - APPENDIX IV PARAMETERS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
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COFFEEN, IL

Well ID	Well Type	Date	Antimony, total (mg/L)	Arsenic, total (mg/L)	Barium, total (mg/L)	Beryllium, total (mg/L)	Cadmium, total (mg/L)	Chromium, total (mg/L)	Cobalt, total (mg/L)	Fluoride, total (mg/L)	Lead, total (mg/L)	Lithium, total (mg/L)	Mercury, total (mg/L)	Molybdenum, total (mg/L)	Radium 226 + 228 (pCi/L)	Selenium, total (mg/L)	Thallium, total (mg/L)
G281	Background	02/08/2022	0.003 U	0.001 U	0.0650	0.001 U	0.001 U	0.004 U	0.002 U	0.295	0.001 U	0.02 U	0.0002 U	0.001 U	0.214	0.001 U	0.001 U
G281	Background	08/24/2022	--	--	--	--	--	--	--	--	--	--	--	--	1.23	--	--
G281	Background	08/25/2022	0.00043 U	0.00096	0.0680	0.00059 U	0.00074 U	0.0028 U	0.00074	0.302	0.00043	0.005 U	0.00014 U	0.00074 U	--	0.00074 U	0.00038 U
G306	Background	02/08/2022	0.003 U	0.001 U	0.0290	0.001 U	0.001 U	0.004 U	0.002 U	0.270	0.001 U	0.02 U	0.0002 U	0.001 U	--	0.001 U	0.001 U
G306	Background	03/21/2022	--	--	--	--	--	--	--	--	--	--	--	--	0.431 B	--	--
G306	Background	08/24/2022	--	0.00069 U	0.0290	0.00059 U	0.00074 U	0.0028 U	0.00048 U	0.04 U	0.00022 U	0.005 U	--	0.00074 U	0.701 B	0.00074 U	--
G301	Compliance	02/08/2022	0.003 U	0.001 U	0.0130	0.001 U	0.001 U	0.004 U	0.002 U	0.347	0.001 U	0.02 U	0.0002 U	0.001 U	--	0.001 U	0.001 U
G301	Compliance	03/21/2022	--	--	--	--	--	--	--	--	--	--	--	--	0	--	--
G301	Compliance	08/23/2022	--	0.00069 U	0.0250	0.00059 U	0.00074 U	0.0031	0.00260	0.305	0.00140	0.0064	--	0.00074 U	1.42 B	0.00074 U	--
G302	Compliance	02/08/2022	0.003 U	0.00120	0.0250	0.001 U	0.001 U	0.004 U	0.002 U	0.25 U	0.001 U	0.02 U	0.0002 U	0.001 U	--	0.001 U	0.001 U
G302	Compliance	03/21/2022	--	--	--	--	--	--	--	--	--	--	--	--	0.258	--	--
G302	Compliance	08/23/2022	--	0.00069 U	0.0240	0.00059 U	0.00074 U	0.0028 U	0.00310	0.164	0.00043	0.011	--	0.00074 U	0.258 B	0.00074 U	--
G303	Compliance	02/08/2022	0.003 U	0.00160	0.0130	0.001 U	0.001 U	0.004 U	0.002 U	0.25 U	0.001 U	0.0200	0.0002 U	0.00140	--	0.001 U	0.001 U
G303	Compliance	03/21/2022	--	--	--	--	--	--	--	--	--	--	--	--	0.29 B	--	--
G303	Compliance	08/24/2022	--	0.00190	0.0200	0.00059 U	0.00074 U	0.0028 U	0.00690	0.268	0.00092	0.0360	--	0.00130	0.915 B	0.00074 U	--
G307	Compliance	02/11/2022	0.003 U	0.001 U	0.0210	0.001 U	0.001 U	0.004 U	0.00250	0.431	0.001 U	0.02 U	0.0002 U	0.00120	--	0.001 U	0.001 U
G307	Compliance	03/21/2022	--	--	--	--	--	--	--	--	--	--	--	--	0.0336	--	--
G307	Compliance	08/24/2022	--	0.00310	0.0550	0.00059 U	0.00290	0.0140	0.00470	0.264	0.00760	0.011	--	0.00140	1.74 B	0.00074 U	--

Notes:
mg/L = milligrams per liter
pCi/L = picoCuries per liter
– = not analyzed
U = The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate. Lab reports may or may not report both the limit of detection and the limit of quantitation. Limits are provided in the electronic data deliverable. As such, the U-flagged result value provided in this table may not match the result value provided in the lab report.
B = The analyte was found in sample and in associated method blank.

TABLE 4
STATISTICAL BACKGROUND VALUES
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
101 - ASH POND NO. 1
COFFEEN, IL

Parameter	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Background Value (LPL/UPL)
Boron (mg/L)	11/20/2015 - 07/13/2017	16	31	Non-parametric UPL	2.90
Calcium (mg/L)	11/20/2015 - 07/13/2017	16	0	Parametric UPL	153
Chloride (mg/L)	11/20/2015 - 07/13/2017	16	0	Non-parametric UPL	75.0
Fluoride (mg/L)	11/20/2015 - 07/13/2017	16	6	Parametric UPL	0.470
pH (field) (SU)	11/20/2015 - 07/13/2017	16	0	Non-parametric LPL/UPL	6.5/7.1
Sulfate (mg/L)	11/20/2015 - 07/13/2017	16	0	Non-parametric UPL	700
Total Dissolved Solids (mg/L)	11/20/2015 - 07/13/2017	16	0	Parametric UPL	893

Notes:
LPL = lower prediction limit (applicable for pH only)
mg/L = milligrams per liter
SU = standard units
UPL = upper prediction limit

TABLE 5
GROUNDWATER PROTECTION STANDARDS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
101 - ASH POND NO. 1
COFFEEN, IL

Parameter	Background					MCL/HBL	Groundwater Protection Standard*	Groundwater Protection Standard Source
	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Value			
Antimony (mg/L)	11/20/2015 - 07/13/2017	16	100	All ND - Last Reporting Limit	0.003	0.006	0.006	MCL/HBL
Arsenic (mg/L)	11/20/2015 - 07/13/2017	16	75	Non-parametric UTL	0.00430	0.010	0.010	MCL/HBL
Barium (mg/L)	11/20/2015 - 07/13/2017	16	0	Parametric UTL (log-transformed)	0.130	2	2	MCL/HBL
Beryllium (mg/L)	11/20/2015 - 07/13/2017	16	100	All ND - Last Reporting Limit	0.001	0.004	0.004	MCL/HBL
Cadmium (mg/L)	11/20/2015 - 07/13/2017	16	100	All ND - Last Reporting Limit	0.001	0.005	0.005	MCL/HBL
Chromium (mg/L)	11/20/2015 - 07/13/2017	16	88	Non-parametric UTL	0.0120	0.1	0.1	MCL/HBL
Cobalt (mg/L)	11/20/2015 - 07/13/2017	16	69	Non-parametric UTL	0.00640	0.006	0.00640	Background
Fluoride (mg/L)	11/20/2015 - 07/13/2017	16	6	Parametric UTL	0.501	4.0	4.0	MCL/HBL
Lead (mg/L)	11/20/2015 - 07/13/2017	16	69	Non-parametric UTL	0.00630	0.015	0.015	MCL/HBL
Lithium (mg/L)	11/20/2015 - 07/13/2017	16	88	Non-parametric UTL	0.0130	0.04	0.04	MCL/HBL
Mercury (mg/L)	11/20/2015 - 07/13/2017	16	100	All ND - Last Reporting Limit	0.0002	0.002	0.002	MCL/HBL
Molybdenum (mg/L)	11/20/2015 - 07/13/2017	16	50	Non-parametric UTL	0.00190	0.1	0.1	MCL/HBL
Radium 226 + Radium 228 (pCi/L)	11/20/2015 - 07/13/2017	16	0	Parametric UTL	1.91	5	5	MCL/HBL
Selenium (mg/L)	11/20/2015 - 07/13/2017	16	94	Non-parametric UTL	0.00110	0.05	0.05	MCL/HBL
Thallium (mg/L)	11/20/2015 - 07/13/2017	16	100	All ND - Last Reporting Limit	0.001	0.002	0.002	MCL/HBL

Notes:
* Groundwater Protection Standard is the higher of the MCL/HBL or background.
MCL/HBL = maximum contaminant level/health-based level
mg/L = milligrams per liter
ND = non-detect
pCi/L = picoCuries per liter
UTL = upper tolerance limit

TABLE 6
DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
101 - ASH POND NO. 1
COFFEEN, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
G301	Antimony, total	mg/L	A5	11/20/2015 - 02/08/2022	13	100	All ND - Last	0.003	0.006	MCL/HBL
G301	Arsenic, total	mg/L	A5	11/20/2015 - 02/08/2022	17	59	CI around median	0.00100	0.010	MCL/HBL
G301	Arsenic, total	mg/L	A5D	11/20/2015 - 08/23/2022	18	61	CI around median	0.00100	0.010	MCL/HBL
G301	Barium, total	mg/L	A5	11/20/2015 - 02/08/2022	17	0	CI around mean	0.0259	2	MCL/HBL
G301	Barium, total	mg/L	A5D	11/20/2015 - 08/23/2022	18	0	CI around mean	0.0258	2	MCL/HBL
G301	Beryllium, total	mg/L	A5	11/20/2015 - 02/08/2022	16	100	All ND - Last	0.001	0.004	MCL/HBL
G301	Beryllium, total	mg/L	A5D	11/20/2015 - 08/23/2022	17	100	All ND - Last	0.00059	0.004	MCL/HBL
G301	Cadmium, total	mg/L	A5	11/20/2015 - 02/08/2022	17	94	CI around median	0.00100	0.005	MCL/HBL
G301	Cadmium, total	mg/L	A5D	11/20/2015 - 08/23/2022	18	94	CI around median	0.00100	0.005	MCL/HBL
G301	Chromium, total	mg/L	A5	11/20/2015 - 02/08/2022	17	53	CI around median	0.00400	0.1	MCL/HBL
G301	Chromium, total	mg/L	A5D	11/20/2015 - 08/23/2022	18	56	CI around median	0.00400	0.1	MCL/HBL
G301	Cobalt, total	mg/L	A5	11/20/2015 - 02/08/2022	17	29	Future median	0.00200	0.00640	Background
G301	Cobalt, total	mg/L	A5D	11/20/2015 - 08/23/2022	18	28	CI around geomean	0.00225	0.00640	Background
G301	Fluoride, total	mg/L	A5	11/20/2015 - 02/08/2022	18	33	CI around mean	0.267	4.0	MCL/HBL
G301	Fluoride, total	mg/L	A5D	11/20/2015 - 08/23/2022	19	32	CI around mean	0.267	4.0	MCL/HBL
G301	Lead, total	mg/L	A5	11/20/2015 - 02/08/2022	17	41	CI around median	0.00100	0.015	MCL/HBL
G301	Lead, total	mg/L	A5D	11/20/2015 - 08/23/2022	18	39	CI around median	0.00100	0.015	MCL/HBL
G301	Lithium, total	mg/L	A5	11/20/2015 - 02/08/2022	17	59	CB around linear reg	0.0163	0.04	MCL/HBL
G301	Lithium, total	mg/L	A5D	11/20/2015 - 08/23/2022	18	61	CB around T-S line	0.00816	0.04	MCL/HBL
G301	Mercury, total	mg/L	A5	11/20/2015 - 02/08/2022	13	92	CI around median	0.000200	0.002	MCL/HBL
G301	Molybdenum, total	mg/L	A5	11/20/2015 - 02/08/2022	17	100	All ND - Last	0.001	0.1	MCL/HBL
G301	Molybdenum, total	mg/L	A5D	11/20/2015 - 08/23/2022	18	100	All ND - Last	0.00074	0.1	MCL/HBL
G301	Radium 226 + Radium 228, total	pCi/L	A5	11/20/2015 - 03/21/2022	17	0	CI around mean	0.557	5	MCL/HBL
G301	Radium 226 + Radium 228, total	pCi/L	A5D	11/20/2015 - 08/23/2022	18	0	CI around mean	0.599	5	MCL/HBL
G301	Selenium, total	mg/L	A5	11/20/2015 - 02/08/2022	16	100	All ND - Last	0.001	0.05	MCL/HBL
G301	Selenium, total	mg/L	A5D	11/20/2015 - 08/23/2022	17	100	All ND - Last	0.00074	0.05	MCL/HBL
G301	Thallium, total	mg/L	A5	11/20/2015 - 02/08/2022	13	100	All ND - Last	0.001	0.002	MCL/HBL
G302	Antimony, total	mg/L	A5	11/20/2015 - 02/08/2022	13	100	All ND - Last	0.003	0.006	MCL/HBL
G302	Arsenic, total	mg/L	A5	11/20/2015 - 02/08/2022	17	24	CI around geomean	0.00143	0.010	MCL/HBL

TABLE 6
DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
101 - ASH POND NO. 1
COFFEEN, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
G302	Arsenic, total	mg/L	A5D	11/20/2015 - 08/23/2022	18	28	CI around geomean	0.00115	0.010	MCL/HBL
G302	Barium, total	mg/L	A5	11/20/2015 - 02/08/2022	17	0	CI around geomean	0.0268	2	MCL/HBL
G302	Barium, total	mg/L	A5D	11/20/2015 - 08/23/2022	18	0	CI around geomean	0.0265	2	MCL/HBL
G302	Beryllium, total	mg/L	A5	11/20/2015 - 02/08/2022	16	100	All ND - Last	0.001	0.004	MCL/HBL
G302	Beryllium, total	mg/L	A5D	11/20/2015 - 08/23/2022	17	100	All ND - Last	0.00059	0.004	MCL/HBL
G302	Cadmium, total	mg/L	A5	11/20/2015 - 02/08/2022	17	100	All ND - Last	0.001	0.005	MCL/HBL
G302	Cadmium, total	mg/L	A5D	11/20/2015 - 08/23/2022	18	100	All ND - Last	0.00074	0.005	MCL/HBL
G302	Chromium, total	mg/L	A5	11/20/2015 - 02/08/2022	17	71	CI around median	0.00400	0.1	MCL/HBL
G302	Chromium, total	mg/L	A5D	11/20/2015 - 08/23/2022	18	72	CI around median	0.00400	0.1	MCL/HBL
G302	Cobalt, total	mg/L	A5	11/20/2015 - 02/08/2022	17	35	Future median	0.00200	0.00640	Background
G302	Cobalt, total	mg/L	A5D	11/20/2015 - 08/23/2022	18	33	CI around median	0.00200	0.00640	Background
G302	Fluoride, total	mg/L	A5	11/20/2015 - 02/08/2022	18	28	CI around geomean	0.267	4.0	MCL/HBL
G302	Fluoride, total	mg/L	A5D	11/20/2015 - 08/23/2022	19	32	CI around median	0.250	4.0	MCL/HBL
G302	Lead, total	mg/L	A5	11/20/2015 - 02/08/2022	17	59	CI around median	0.00100	0.015	MCL/HBL
G302	Lead, total	mg/L	A5D	11/20/2015 - 08/23/2022	18	61	CI around median	0.00100	0.015	MCL/HBL
G302	Lithium, total	mg/L	A5	11/20/2015 - 02/08/2022	17	24	CI around mean	0.0186	0.04	MCL/HBL
G302	Lithium, total	mg/L	A5D	11/20/2015 - 08/23/2022	18	28	CI around mean	0.0143	0.04	MCL/HBL
G302	Mercury, total	mg/L	A5	11/20/2015 - 02/08/2022	13	92	CI around median	0.000200	0.002	MCL/HBL
G302	Molybdenum, total	mg/L	A5	11/20/2015 - 02/08/2022	17	41	CI around median	0.00100	0.1	MCL/HBL
G302	Molybdenum, total	mg/L	A5D	11/20/2015 - 08/23/2022	18	44	CI around median	0.00100	0.1	MCL/HBL
G302	Radium 226 + Radium 228, total	pCi/L	A5	11/20/2015 - 03/21/2022	17	0	CI around geomean	0.377	5	MCL/HBL
G302	Radium 226 + Radium 228, total	pCi/L	A5D	11/20/2015 - 08/23/2022	18	0	CI around geomean	0.364	5	MCL/HBL
G302	Selenium, total	mg/L	A5	11/20/2015 - 02/08/2022	16	94	CI around median	0.00100	0.05	MCL/HBL
G302	Selenium, total	mg/L	A5D	11/20/2015 - 08/23/2022	17	94	CI around median	0.00100	0.05	MCL/HBL
G302	Thallium, total	mg/L	A5	11/20/2015 - 02/08/2022	13	100	All ND - Last	0.001	0.002	MCL/HBL
G303	Antimony, total	mg/L	A5	11/20/2015 - 02/08/2022	13	100	All ND - Last	0.003	0.006	MCL/HBL
G303	Arsenic, total	mg/L	A5	11/20/2015 - 02/08/2022	17	6	CB around linear reg	-0.00469	0.010	MCL/HBL
G303	Arsenic, total	mg/L	A5D	11/20/2015 - 08/24/2022	18	6	CB around linear reg	-0.00465	0.010	MCL/HBL
G303	Barium, total	mg/L	A5	11/20/2015 - 02/08/2022	17	0	CI around median	0.0150	2	MCL/HBL

TABLE 6
DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
101 - ASH POND NO. 1
COFFEEN, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
G303	Barium, total	mg/L	A5D	11/20/2015 - 08/24/2022	18	0	CI around median	0.0150	2	MCL/HBL
G303	Beryllium, total	mg/L	A5	11/20/2015 - 02/08/2022	16	100	All ND - Last	0.001	0.004	MCL/HBL
G303	Beryllium, total	mg/L	A5D	11/20/2015 - 08/24/2022	17	100	All ND - Last	0.00059	0.004	MCL/HBL
G303	Cadmium, total	mg/L	A5	11/20/2015 - 02/08/2022	17	100	All ND - Last	0.001	0.005	MCL/HBL
G303	Cadmium, total	mg/L	A5D	11/20/2015 - 08/24/2022	18	100	All ND - Last	0.00074	0.005	MCL/HBL
G303	Chromium, total	mg/L	A5	11/20/2015 - 02/08/2022	17	88	CI around median	0.00400	0.1	MCL/HBL
G303	Chromium, total	mg/L	A5D	11/20/2015 - 08/24/2022	18	89	CI around median	0.00400	0.1	MCL/HBL
G303	Cobalt, total	mg/L	A5	11/20/2015 - 02/08/2022	17	29	Future median	0.00200	0.00640	Background
G303	Cobalt, total	mg/L	A5D	11/20/2015 - 08/24/2022	18	28	CI around mean	0.00253	0.00640	Background
G303	Fluoride, total	mg/L	A5	11/20/2015 - 02/08/2022	18	22	CI around mean	0.267	4.0	MCL/HBL
G303	Fluoride, total	mg/L	A5D	11/20/2015 - 08/24/2022	19	21	CI around mean	0.264	4.0	MCL/HBL
G303	Lead, total	mg/L	A5	11/20/2015 - 02/08/2022	17	88	CI around median	0.00100	0.015	MCL/HBL
G303	Lead, total	mg/L	A5D	11/20/2015 - 08/24/2022	18	89	CI around median	0.00100	0.015	MCL/HBL
G303	Lithium, total	mg/L	A5	11/20/2015 - 02/08/2022	17	0	CB around linear reg	0.00726	0.04	MCL/HBL
G303	Lithium, total	mg/L	A5D	11/20/2015 - 08/24/2022	18	0	CB around linear reg	0.00830	0.04	MCL/HBL
G303	Mercury, total	mg/L	A5	11/20/2015 - 02/08/2022	13	85	CI around median	0.000200	0.002	MCL/HBL
G303	Molybdenum, total	mg/L	A5	11/20/2015 - 02/08/2022	17	0	CI around mean	0.00179	0.1	MCL/HBL
G303	Molybdenum, total	mg/L	A5D	11/20/2015 - 08/24/2022	18	0	CI around mean	0.00175	0.1	MCL/HBL
G303	Radium 226 + Radium 228, total	pCi/L	A5	11/20/2015 - 03/21/2022	17	0	CI around mean	0.531	5	MCL/HBL
G303	Radium 226 + Radium 228, total	pCi/L	A5D	11/20/2015 - 08/24/2022	18	0	CI around mean	0.555	5	MCL/HBL
G303	Selenium, total	mg/L	A5	11/20/2015 - 02/08/2022	16	100	All ND - Last	0.001	0.05	MCL/HBL
G303	Selenium, total	mg/L	A5D	11/20/2015 - 08/24/2022	17	100	All ND - Last	0.00074	0.05	MCL/HBL
G303	Thallium, total	mg/L	A5	11/20/2015 - 02/08/2022	13	100	All ND - Last	0.001	0.002	MCL/HBL
G304/G307	Antimony, total	mg/L	A5	11/20/2015 - 02/11/2022	13	100	All ND - Last	0.003	0.006	MCL/HBL
G304/G307	Arsenic, total	mg/L	A5	11/20/2015 - 02/11/2022	17	53	CI around median	0.00100	0.010	MCL/HBL
G304/G307	Arsenic, total	mg/L	A5D	11/20/2015 - 08/24/2022	18	50	CI around median	0.00100	0.010	MCL/HBL
G304/G307	Barium, total	mg/L	A5	11/20/2015 - 02/11/2022	17	0	CI around median	0.0290	2	MCL/HBL
G304/G307	Barium, total	mg/L	A5D	11/20/2015 - 08/24/2022	18	0	CI around geomean	0.0290	2	MCL/HBL
G304/G307	Beryllium, total	mg/L	A5	11/20/2015 - 02/11/2022	16	94	CI around median	0.00100	0.004	MCL/HBL

TABLE 6
DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
101 - ASH POND NO. 1
COFFEEN, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
G304/G307	Beryllium, total	mg/L	A5D	11/20/2015 - 08/24/2022	17	94	CI around median	0.00100	0.004	MCL/HBL
G304/G307	Cadmium, total	mg/L	A5	11/20/2015 - 02/11/2022	17	59	CI around median	0.00100	0.005	MCL/HBL
G304/G307	Cadmium, total	mg/L	A5D	11/20/2015 - 08/24/2022	18	56	CI around median	0.00100	0.005	MCL/HBL
G304/G307	Chromium, total	mg/L	A5	11/20/2015 - 02/11/2022	17	53	CI around median	0.00400	0.1	MCL/HBL
G304/G307	Chromium, total	mg/L	A5D	11/20/2015 - 08/24/2022	18	50	CI around median	0.00400	0.1	MCL/HBL
G304/G307	Cobalt, total	mg/L	A5	11/20/2015 - 02/11/2022	18	0	Future median	0.00250	0.00640	Background
G304/G307	Cobalt, total	mg/L	A5D	11/20/2015 - 08/24/2022	19	0	CI around median	0.00290	0.00640	Background
G304/G307	Fluoride, total	mg/L	A5	11/20/2015 - 02/11/2022	18	6	CI around median	0.354	4.0	MCL/HBL
G304/G307	Fluoride, total	mg/L	A5D	11/20/2015 - 08/24/2022	19	5	CI around median	0.323	4.0	MCL/HBL
G304/G307	Lead, total	mg/L	A5	11/20/2015 - 02/11/2022	17	35	CI around median	0.00100	0.015	MCL/HBL
G304/G307	Lead, total	mg/L	A5D	11/20/2015 - 08/24/2022	18	33	CI around median	0.00100	0.015	MCL/HBL
G304/G307	Lithium, total	mg/L	A5	11/20/2015 - 02/11/2022	17	41	CI around median	0.0110	0.04	MCL/HBL
G304/G307	Lithium, total	mg/L	A5D	11/20/2015 - 08/24/2022	18	44	CI around median	0.0110	0.04	MCL/HBL
G304/G307	Mercury, total	mg/L	A5	11/20/2015 - 02/11/2022	13	85	CI around median	0.000200	0.002	MCL/HBL
G304/G307	Molybdenum, total	mg/L	A5	11/20/2015 - 02/11/2022	17	0	CI around median	0.00120	0.1	MCL/HBL
G304/G307	Molybdenum, total	mg/L	A5D	11/20/2015 - 08/24/2022	18	0	CI around median	0.00120	0.1	MCL/HBL
G304/G307	Radium 226 + Radium 228, total	pCi/L	A5	11/20/2015 - 03/21/2022	17	0	CI around mean	0.493	5	MCL/HBL
G304/G307	Radium 226 + Radium 228, total	pCi/L	A5D	11/20/2015 - 08/24/2022	18	0	CI around mean	0.540	5	MCL/HBL
G304/G307	Selenium, total	mg/L	A5	11/20/2015 - 02/11/2022	16	81	CI around median	0.00100	0.05	MCL/HBL
G304/G307	Selenium, total	mg/L	A5D	11/20/2015 - 08/24/2022	17	82	CI around median	0.00100	0.05	MCL/HBL
G304/G307	Thallium, total	mg/L	A5	11/20/2015 - 02/11/2022	13	100	All ND - Last	0.001	0.002	MCL/HBL

Notes:
mg/L = milligrams per liter
pCi/L = picocuries per liter
Sample Count = number of samples from Sampled Date Range used to calculate the Statistical Result
Statistical Calculation = method used to calculate the statistical result:

All ND - Last = All results were below the reporting limit, and the last determined reporting limit is shown

CB around linear reg = Confidence band around linear regression

CB around T-S line = Confidence band around Thiel-Sen line

CI around geomean = Confidence interval around the geometric mean

CI around mean = Confidence interval around the mean

CI around median = Confidence interval around the median

Future median = Median of the three most recent samples

Statistical Result = calculated in accordance with Statistical Analysis Plan using constituent concentrations observed at monitoring well during all sampling events within the specified date range
GWPS = Groundwater Protection Standard
GWPS Source:

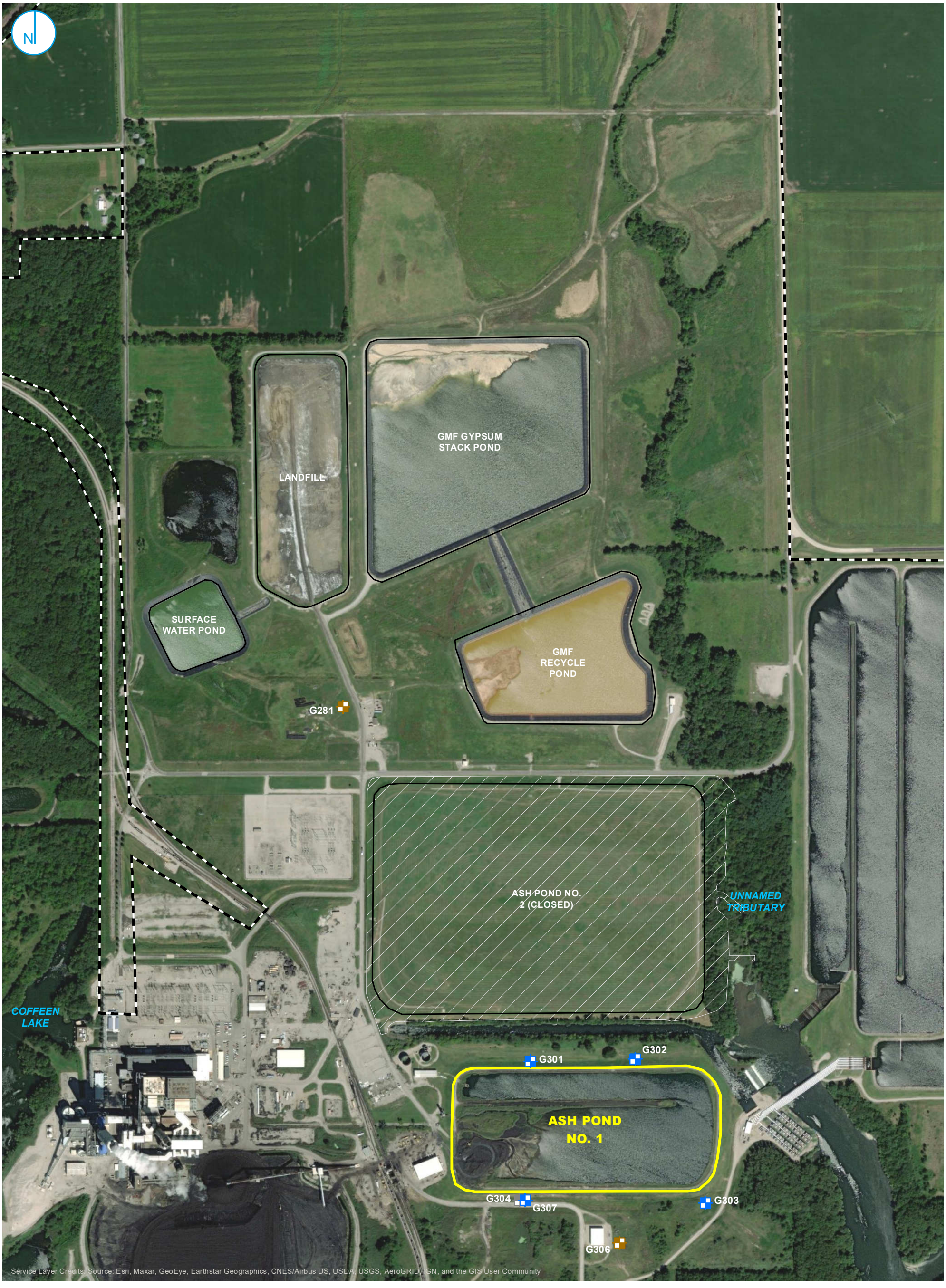
MCL/HBL = maximum contaminant level/health-based level

Background = background concentration

FIGURES

PROJECT: 169000XXXX | DATED: 1/6/2022 | DESIGNER: galarnmc

Y:\Mapping\Projects\22\2285\MXD\2021_AnnualGWM_CAR\Coffeen\AP1_101\Figure 1 COF AP1 MW Location Map.mxd



BACKGROUND WELL

COMPLIANCE WELL

CLOSED MONITORING WELL

40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)

SITE FEATURE

LIMITS OF FINAL COVER

PROPERTY BOUNDARY

0 275 550 Feet

MONITORING WELL LOCATION MAP

FIGURE 1

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
ASH POND NO. 1
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL

PROJECT: 169000XXXX | DATED: 5/23/2022 | DESIGNER: galarnmc

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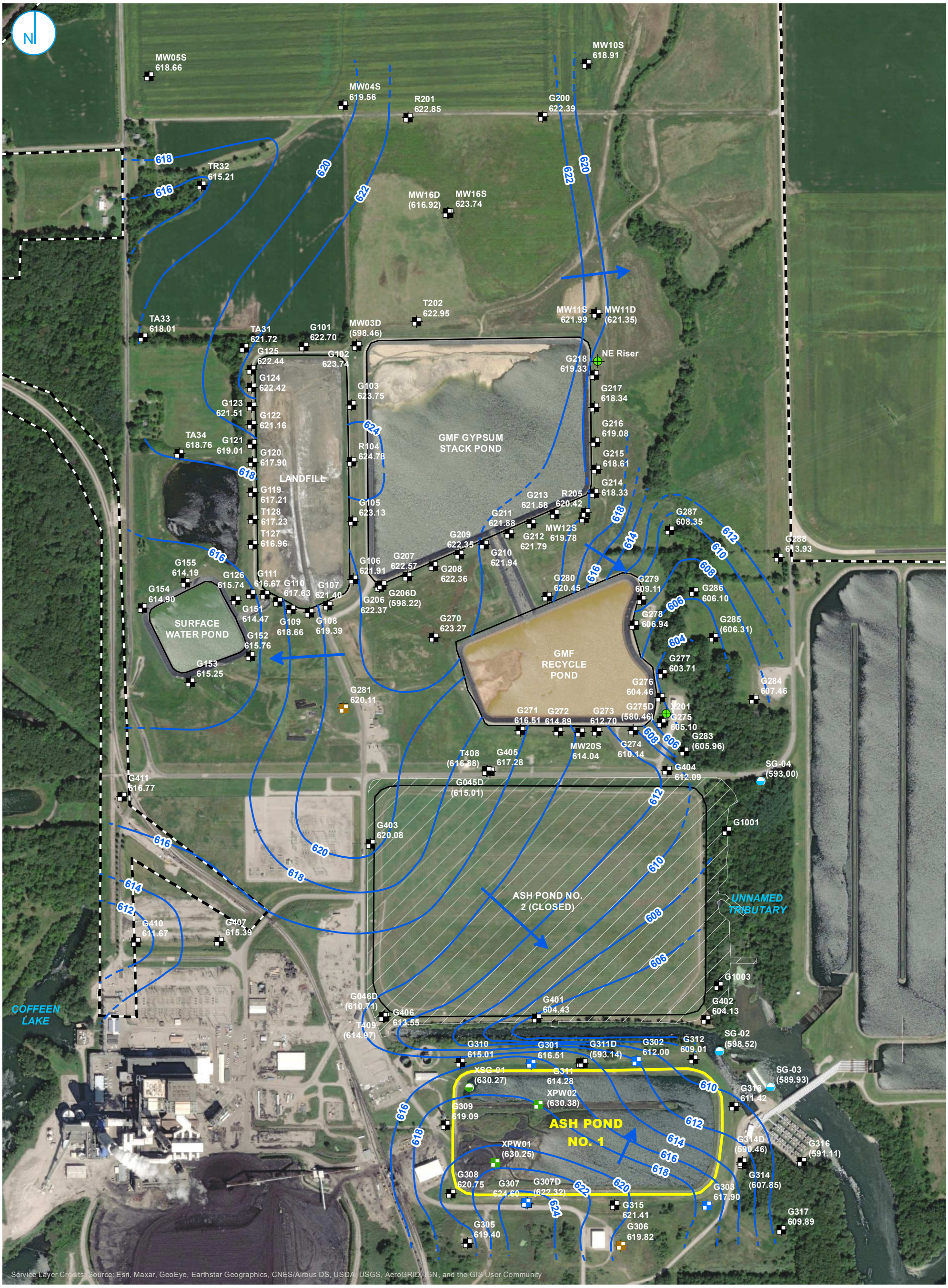


Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- BACKGROUND WELL
- COMPLIANCE WELL
- PORE WATER WELL
- LEACHATE WELL
- MONITORING WELL
- STAFF GAGE, CCR UNIT
- STAFF GAGE, RIVER

- GROUNDWATER ELEVATION CONTOUR (2-FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- 40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

0 275 550 Feet

NOTES:
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

POTENTIOMETRIC SURFACE MAP FEBRUARY 7, 2022

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ASH POND NO. 1

COFFEEN POWER PLANT
COFFEEN, ILLINOIS

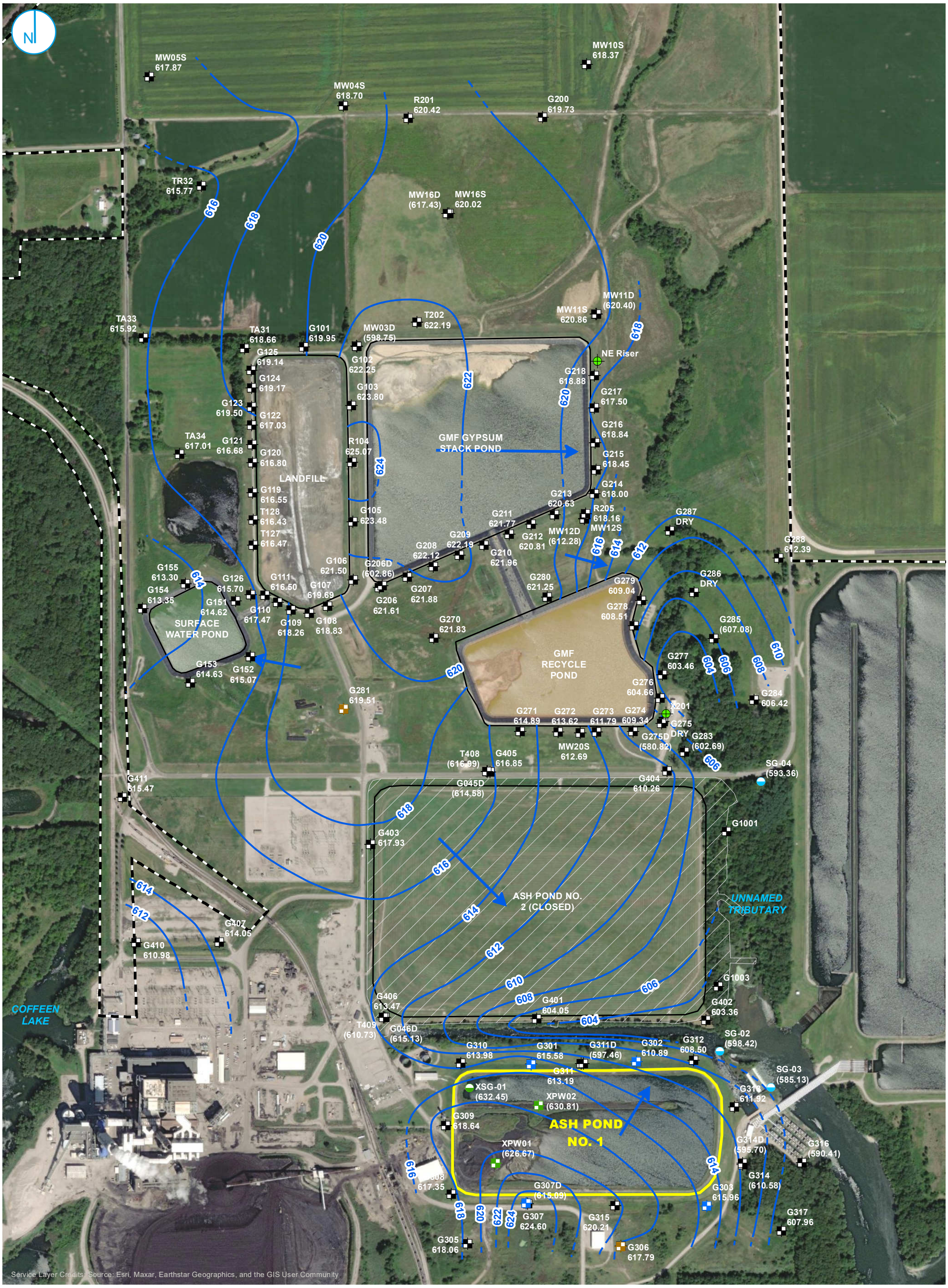
FIGURE 2

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL

PROJECT: 169000XXXX | DATED: 12/8/2022 | DESIGNER: galammc

Y:\Mapping\Projects\22\2285\MXD\GW_Contours\Round_2022\Coffeen\AP1_101\COF AP1 101 Pot Surface 20220823.mxd



- BACKGROUND WELL
- COMPLIANCE WELL
- PORE WATER WELL
- LEACHATE WELL
- MONITORING WELL
- STAFF GAGE, CCR UNIT
- STAFF GAGE, RIVER

- GROUNDWATER ELEVATION CONTOUR (2-FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- 40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

0 275 550 Feet

NOTES:

1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

POTENTIOMETRIC SURFACE MAP AUGUST 23, 2022

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ASH POND NO. 1

COFFEEN POWER PLANT
COFFEEN, ILLINOIS

FIGURE 3

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL

APPENDICES

APPENDIX A
LABORATORY REPORTS

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

March 31, 2022

Eric Bauer
Ramboll - Milwaukee
234 W Florida Street, 5th Floor
Milwaukee, WI 53204

Dear Eric Bauer:

Please find enclosed the **revised** analytical results for the sample(s) the laboratory received. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of Pace Analytical Services, LLC.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

Pace Analytical Services appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the Director of Client Services, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-683-1764 or lisa.grant@pacelabs.com.

Gail J Schindler

Gail Schindler
Project Manager
(309) 692-9688 x1716
gail.schindler@pacelabs.com

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SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as in compliance

Work Order FB01365

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
NO	Current PDC COC submitted
YES	Case narrative provided

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Work Order FB01775

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
NO	Current PDC COC submitted
NO	Case narrative provided

Pace Analytical Services, LLC
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Peoria, IL 61615
(800)752-6651

Work Order FB02282

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
NO	Current PDC COC submitted
NO	Case narrative provided

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

ANALYTICAL RESULTS

Sample: FB01365-01
Name: G301
Alias: COF_257_101

Sampled: 02/08/22 16:24
Received: 02/08/22 17:45
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	15	mg/L	Q4	02/21/22 11:14	10	10	02/21/22 11:14	CRD	EPA 300.0 REV 2.1
Fluoride	0.347	mg/L		02/21/22 10:13	1	0.250	02/21/22 10:13	CRD	EPA 300.0 REV 2.1
Sulfate	620	mg/L	Q4	02/21/22 11:34	100	100	02/21/22 11:34	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	6.12	Feet		02/08/22 16:24	1		02/08/22 16:24	FIELD	Field
Dissolved oxygen, Field	0.28	mg/L		02/08/22 16:24	1		02/08/22 16:24	FIELD	Field
Oxidation Reduction Potential	-23.3	mV		02/08/22 16:24	1	-500	02/08/22 16:24	FIELD	Field
pH, Field Measured	6.48	pH Units		02/08/22 16:24	1		02/08/22 16:24	FIELD	Field
Specific Conductance, Field Measured	1406	umhos/cm		02/08/22 16:24	1		02/08/22 16:24	FIELD	Field
Temperature, Field Measured	12.6	°C		02/08/22 16:24	1		02/08/22 16:24	FIELD	Field
Turbidity, Field Measured	2.88	NTU		02/08/22 16:24	1	0.00	02/08/22 16:24	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	150	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	1100	mg/L		02/10/22 12:10	1	26	02/10/22 14:17	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/14/22 12:51	5	3.0	02/15/22 15:54	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:54	JMW	EPA 6020A
Barium	13	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:54	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:54	JMW	EPA 6020A
Boron	2200	ug/L		02/14/22 12:51	5	10	02/16/22 10:46	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/16/22 10:46	JMW	EPA 6020A
Calcium	140	mg/L		02/14/22 12:51	5	0.20	02/16/22 10:46	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/14/22 12:51	5	4.0	02/16/22 10:46	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/14/22 12:51	5	2.0	02/16/22 10:46	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:54	JMW	EPA 6020A
Magnesium	49	mg/L		02/14/22 12:51	5	0.10	02/17/22 12:03	KMC	EPA 6020A
Mercury	< 0.20	ug/L		02/14/22 12:51	5	0.20	02/15/22 15:54	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:54	JMW	EPA 6020A
Potassium	1.4	mg/L		02/14/22 12:51	5	0.10	02/16/22 10:46	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:54	JMW	EPA 6020A
Sodium	140	mg/L		02/14/22 12:51	5	0.10	02/16/22 10:46	JMW	EPA 6020A

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

ANALYTICAL RESULTS

Sample: FB01365-01
Name: G301
Alias: COF_257_101

Sampled: 02/08/22 16:24
Received: 02/08/22 17:45
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:54	JMW	EPA 6020A
Lithium	< 20	ug/L		02/14/22 12:51	1	20	02/15/22 09:47	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FB01365-02
Name: G302
Alias: COF_257_101

Sampled: 02/08/22 16:41
Received: 02/08/22 17:45
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	15	mg/L		02/21/22 12:14	10	10	02/21/22 12:14	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/21/22 11:54	1	0.250	02/21/22 11:54	CRD	EPA 300.0 REV 2.1
Sulfate	410	mg/L		02/21/22 12:34	100	100	02/21/22 12:34	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	7.89	Feet		02/08/22 16:41	1		02/08/22 16:41	FIELD	Field
Dissolved oxygen, Field	2.9	mg/L		02/08/22 16:41	1		02/08/22 16:41	FIELD	Field
Oxidation Reduction Potential	-13.9	mV		02/08/22 16:41	1	-500	02/08/22 16:41	FIELD	Field
pH, Field Measured	6.73	pH Units		02/08/22 16:41	1		02/08/22 16:41	FIELD	Field
Specific Conductance, Field Measured	1517	umhos/cm		02/08/22 16:41	1		02/08/22 16:41	FIELD	Field
Temperature, Field Measured	11.8	°C		02/08/22 16:41	1		02/08/22 16:41	FIELD	Field
Turbidity, Field Measured	3.46	NTU		02/08/22 16:41	1	0.00	02/08/22 16:41	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	450	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	1100	mg/L		02/10/22 12:10	1	26	02/10/22 14:17	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/14/22 12:51	5	3.0	02/15/22 15:58	JMW	EPA 6020A
Arsenic	1.2	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:58	JMW	EPA 6020A
Barium	25	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:58	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:58	JMW	EPA 6020A
Boron	2200	ug/L		02/14/22 12:51	5	10	02/16/22 11:11	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/16/22 11:11	JMW	EPA 6020A
Calcium	170	mg/L		02/14/22 12:51	5	0.20	02/16/22 11:11	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/14/22 12:51	5	4.0	02/16/22 11:11	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/14/22 12:51	5	2.0	02/16/22 11:11	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:58	JMW	EPA 6020A
Magnesium	68	mg/L		02/14/22 12:51	5	0.10	02/17/22 12:07	KMC	EPA 6020A
Mercury	< 0.20	ug/L		02/14/22 12:51	5	0.20	02/15/22 15:58	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:58	JMW	EPA 6020A
Potassium	0.68	mg/L		02/14/22 12:51	5	0.10	02/16/22 11:11	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:58	JMW	EPA 6020A
Sodium	120	mg/L		02/14/22 12:51	5	0.10	02/15/22 15:58	JMW	EPA 6020A

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Peoria, IL 61615
(800)752-6651

ANALYTICAL RESULTS

Sample: FB01365-02
Name: G302
Alias: COF_257_101

Sampled: 02/08/22 16:41
Received: 02/08/22 17:45
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 15:58	JMW	EPA 6020A
Lithium	< 20	ug/L		02/14/22 12:51	1	20	02/15/22 09:50	TJJ	EPA 6010B

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Peoria, IL 61615
(800)752-6651

ANALYTICAL RESULTS

Sample: FB01365-03
Name: G303
Alias: COF_257_101

Sampled: 02/08/22 15:01
Received: 02/08/22 17:45
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	29	mg/L		02/21/22 13:55	10	10	02/21/22 13:55	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/21/22 13:35	1	0.250	02/21/22 13:35	CRD	EPA 300.0 REV 2.1
Sulfate	650	mg/L		02/21/22 14:15	100	100	02/21/22 14:15	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	3.99	Feet		02/08/22 15:01	1		02/08/22 15:01	FIELD	Field
Dissolved oxygen, Field	2.2	mg/L		02/08/22 15:01	1		02/08/22 15:01	FIELD	Field
Oxidation Reduction Potential	5.70	mV		02/08/22 15:01	1	-500	02/08/22 15:01	FIELD	Field
pH, Field Measured	6.79	pH Units		02/08/22 15:01	1		02/08/22 15:01	FIELD	Field
Specific Conductance, Field Measured	2069	umhos/cm		02/08/22 15:01	1		02/08/22 15:01	FIELD	Field
Temperature, Field Measured	11.7	°C		02/08/22 15:01	1		02/08/22 15:01	FIELD	Field
Turbidity, Field Measured	3.45	NTU		02/08/22 15:01	1	0.00	02/08/22 15:01	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	590	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	1500	mg/L		02/10/22 12:10	1	26	02/10/22 14:17	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/14/22 12:51	5	3.0	02/15/22 16:01	JMW	EPA 6020A
Arsenic	1.6	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:01	JMW	EPA 6020A
Barium	13	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:01	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:01	JMW	EPA 6020A
Boron	2500	ug/L		02/14/22 12:51	5	10	02/16/22 11:15	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/16/22 11:15	JMW	EPA 6020A
Calcium	170	mg/L		02/14/22 12:51	5	0.20	02/16/22 11:15	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/14/22 12:51	5	4.0	02/16/22 11:15	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/14/22 12:51	5	2.0	02/16/22 11:15	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:01	JMW	EPA 6020A
Magnesium	130	mg/L		02/14/22 12:51	5	0.10	02/17/22 12:10	KMC	EPA 6020A
Mercury	< 0.20	ug/L		02/14/22 12:51	5	0.20	02/15/22 16:01	JMW	EPA 6020A
Molybdenum	1.4	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:01	JMW	EPA 6020A
Potassium	1.1	mg/L		02/14/22 12:51	5	0.10	02/16/22 11:15	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:01	JMW	EPA 6020A
Sodium	180	mg/L		02/14/22 12:51	5	0.10	02/15/22 16:01	JMW	EPA 6020A

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ANALYTICAL RESULTS

Sample: FB01365-03
Name: G303
Alias: COF_257_101

Sampled: 02/08/22 15:01
Received: 02/08/22 17:45
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:01	JMW	EPA 6020A
Lithium	20	ug/L		02/14/22 12:51	1	20	02/15/22 09:53	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FB01365-04
Name: G306
Alias: COF_257_101

Sampled: 02/08/22 13:57
Received: 02/08/22 17:45
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	1.3	mg/L		02/18/22 22:59	1	1.0	02/18/22 22:59	CRD	EPA 300.0 REV 2.1
Fluoride	0.270	mg/L		02/18/22 22:59	1	0.250	02/18/22 22:59	CRD	EPA 300.0 REV 2.1
Sulfate	200	mg/L		02/18/22 23:36	100	100	02/18/22 23:36	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	6.06	Feet		02/08/22 13:57	1		02/08/22 13:57	FIELD	Field
Dissolved oxygen, Field	7.4	mg/L		02/08/22 13:57	1		02/08/22 13:57	FIELD	Field
Oxidation Reduction Potential	11.6	mV		02/08/22 13:57	1	-500	02/08/22 13:57	FIELD	Field
pH, Field Measured	6.77	pH Units		02/08/22 13:57	1		02/08/22 13:57	FIELD	Field
Specific Conductance, Field Measured	912.0	umhos/cm		02/08/22 13:57	1		02/08/22 13:57	FIELD	Field
Temperature, Field Measured	12.0	°C		02/08/22 13:57	1		02/08/22 13:57	FIELD	Field
Turbidity, Field Measured	1.29	NTU		02/08/22 13:57	1	0.00	02/08/22 13:57	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	310	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	640	mg/L		02/10/22 12:10	1	26	02/10/22 14:17	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/14/22 12:51	5	3.0	02/15/22 16:16	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:16	JMW	EPA 6020A
Barium	29	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:16	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:16	JMW	EPA 6020A
Boron	3500	ug/L		02/14/22 12:51	5	10	02/16/22 11:18	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/16/22 11:18	JMW	EPA 6020A
Calcium	120	mg/L		02/14/22 12:51	5	0.20	02/16/22 11:18	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/14/22 12:51	5	4.0	02/16/22 11:18	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/14/22 12:51	5	2.0	02/16/22 11:18	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:16	JMW	EPA 6020A
Magnesium	41	mg/L		02/14/22 12:51	5	0.10	02/17/22 12:14	KMC	EPA 6020A
Mercury	< 0.20	ug/L		02/14/22 12:51	5	0.20	02/15/22 16:16	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:16	JMW	EPA 6020A
Potassium	0.27	mg/L		02/14/22 12:51	5	0.10	02/16/22 11:18	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:16	JMW	EPA 6020A
Sodium	47	mg/L		02/14/22 12:51	5	0.10	02/16/22 11:18	JMW	EPA 6020A

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ANALYTICAL RESULTS

Sample: FB01365-04
Name: G306
Alias: COF_257_101

Sampled: 02/08/22 13:57
Received: 02/08/22 17:45
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/14/22 12:51	5	1.0	02/15/22 16:16	JMW	EPA 6020A
Lithium	< 20	ug/L		02/14/22 12:51	1	20	02/15/22 09:55	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FB01365-05
Name: G281
Alias: COF_257_101

Sampled: 02/08/22 12:12
Received: 02/08/22 17:45
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	78	mg/L		02/09/22 22:27	10	10	02/09/22 22:27	CRD	EPA 300.0 REV 2.1
Fluoride	0.295	mg/L		02/09/22 22:09	1	0.250	02/09/22 22:09	CRD	EPA 300.0 REV 2.1
Sulfate	270	mg/L		02/09/22 22:45	50	50	02/09/22 22:45	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	6.21	Feet		02/08/22 12:12	1		02/08/22 12:12	FIELD	Field
Dissolved oxygen, Field	2.5	mg/L		02/08/22 12:12	1		02/08/22 12:12	FIELD	Field
Oxidation Reduction Potential	102	mV		02/08/22 12:12	1	-500	02/08/22 12:12	FIELD	Field
pH, Field Measured	7.00	pH Units		02/08/22 12:12	1		02/08/22 12:12	FIELD	Field
Specific Conductance, Field Measured	1338	umhos/cm		02/08/22 12:12	1		02/08/22 12:12	FIELD	Field
Temperature, Field Measured	10.6	°C		02/08/22 12:12	1		02/08/22 12:12	FIELD	Field
Turbidity, Field Measured	6.69	NTU		02/08/22 12:12	1	0.00	02/08/22 12:12	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	340	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/15/22 07:51	1	10	02/15/22 07:51	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	910	mg/L		02/10/22 12:10	1	26	02/10/22 14:17	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/10/22 09:21	5	3.0	02/11/22 12:12	KMC	EPA 6020A
Arsenic	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:12	KMC	EPA 6020A
Barium	65	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:12	KMC	EPA 6020A
Beryllium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:12	KMC	EPA 6020A
Boron	< 10	ug/L		02/10/22 09:21	5	10	02/11/22 12:12	WJM	EPA 6020A
Cadmium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:12	KMC	EPA 6020A
Calcium	130	mg/L		02/10/22 09:21	5	0.20	02/11/22 12:12	KMC	EPA 6020A
Chromium	< 4.0	ug/L		02/10/22 09:21	5	4.0	02/11/22 12:12	KMC	EPA 6020A
Cobalt	< 2.0	ug/L		02/10/22 09:21	5	2.0	02/11/22 12:12	KMC	EPA 6020A
Lead	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:12	KMC	EPA 6020A
Magnesium	60	mg/L		02/10/22 09:21	5	0.10	02/11/22 12:12	KMC	EPA 6020A
Mercury	< 0.20	ug/L		02/10/22 09:21	5	0.20	02/11/22 12:12	KMC	EPA 6020A
Molybdenum	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:12	KMC	EPA 6020A
Potassium	0.51	mg/L		02/10/22 09:21	5	0.10	02/11/22 12:12	KMC	EPA 6020A
Selenium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:12	KMC	EPA 6020A
Sodium	89	mg/L		02/10/22 09:21	5	0.10	02/11/22 12:12	KMC	EPA 6020A

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ANALYTICAL RESULTS

Sample: FB01365-05
Name: G281
Alias: COF_257_101

Sampled: 02/08/22 12:12
Received: 02/08/22 17:45
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/10/22 09:21	5	1.0	02/11/22 12:12	KMC	EPA 6020A
Lithium	< 20	ug/L		02/10/22 09:21	1	20	02/15/22 10:06	TJJ	EPA 6010B

Sample: FB01775-01
Name: FIELD BLANK
Matrix: DI Water - Field Blank

Sampled: 02/09/22 16:25
Received: 02/09/22 16:30

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	< 1.0	mg/L		02/25/22 12:39	1	1.0	02/25/22 12:39	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/25/22 12:39	1	0.250	02/25/22 12:39	CRD	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		02/25/22 12:39	1	1.0	02/25/22 12:39	CRD	EPA 300.0 REV 2.1
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	< 2.0	mg/L		02/15/22 08:14	1	2.0	02/15/22 08:14	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 2.0	mg/L		02/15/22 08:14	1	2.0	02/15/22 08:14	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	< 17	mg/L		02/11/22 15:13	1	17	02/11/22 16:21	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/15/22 07:51	5	3.0	02/17/22 15:13	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:39	JMW	EPA 6020A
Barium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:39	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:39	JMW	EPA 6020A
Boron	76	ug/L		02/15/22 07:51	5	10	02/18/22 12:39	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:39	JMW	EPA 6020A
Calcium	< 0.20	mg/L		02/15/22 07:51	5	0.20	02/17/22 15:39	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/15/22 07:51	5	4.0	02/17/22 15:39	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/15/22 07:51	5	2.0	02/17/22 15:39	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:39	JMW	EPA 6020A
Magnesium	< 0.10	mg/L		02/15/22 07:51	5	0.10	02/18/22 12:39	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/15/22 07:51	5	0.20	02/17/22 15:39	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:39	JMW	EPA 6020A
Potassium	< 0.10	mg/L		02/15/22 07:51	5	0.10	02/17/22 15:39	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:39	JMW	EPA 6020A
Sodium	< 0.10	mg/L		02/15/22 07:51	5	0.10	02/18/22 12:39	JMW	EPA 6020A
Thallium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:13	JMW	EPA 6020A
Lithium	< 20	ug/L		02/15/22 07:51	1	20	02/15/22 11:41	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FB01775-02
Name: EQUIPMENT BLANK
Matrix: DI Water - Equipment Blank

Sampled: 02/09/22 16:25
Received: 02/09/22 16:30

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	< 1.0	mg/L		02/25/22 12:57	1	1.0	02/25/22 12:57	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		02/25/22 12:57	1	0.250	02/25/22 12:57	CRD	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		02/25/22 12:57	1	1.0	02/25/22 12:57	CRD	EPA 300.0 REV 2.1
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	< 2.0	mg/L		02/15/22 08:14	1	2.0	02/15/22 08:14	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 2.0	mg/L		02/15/22 08:14	1	2.0	02/15/22 08:14	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	< 17	mg/L		02/14/22 14:37	1	17	02/14/22 15:44	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/15/22 07:51	5	3.0	02/17/22 15:17	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:42	JMW	EPA 6020A
Barium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:42	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:42	JMW	EPA 6020A
Boron	78	ug/L		02/15/22 07:51	5	10	02/18/22 12:43	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:42	JMW	EPA 6020A
Calcium	< 0.20	mg/L		02/15/22 07:51	5	0.20	02/17/22 15:42	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/15/22 07:51	5	4.0	02/17/22 15:42	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		02/15/22 07:51	5	2.0	02/17/22 15:42	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:42	JMW	EPA 6020A
Magnesium	< 0.10	mg/L		02/15/22 07:51	5	0.10	02/18/22 12:43	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/15/22 07:51	5	0.20	02/17/22 15:42	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:42	JMW	EPA 6020A
Potassium	< 0.10	mg/L		02/15/22 07:51	5	0.10	02/17/22 15:42	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:42	JMW	EPA 6020A
Sodium	< 0.10	mg/L		02/15/22 07:51	5	0.10	02/18/22 12:43	JMW	EPA 6020A
Thallium	< 1.0	ug/L		02/15/22 07:51	5	1.0	02/17/22 15:17	JMW	EPA 6020A
Lithium	< 20	ug/L		02/15/22 07:51	1	20	02/15/22 11:50	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FB02282-01
Name: G307
Alias: COF_257_101

Sampled: 02/11/22 11:48
Received: 02/11/22 13:18
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	16	mg/L		02/28/22 18:01	10	10	02/28/22 18:01	CRD	EPA 300.0 REV 2.1
Fluoride	0.431	mg/L		02/28/22 17:41	1	0.250	02/28/22 17:41	CRD	EPA 300.0 REV 2.1
Sulfate	780	mg/L		02/28/22 18:22	250	250	02/28/22 18:22	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	0	Feet		02/11/22 11:48	1		02/11/22 11:48	FIELD	Field
Dissolved oxygen, Field	5.3	mg/L		02/11/22 11:48	1		02/11/22 11:48	FIELD	Field
Oxidation Reduction Potential	144	mV		02/11/22 11:48	1	-500	02/11/22 11:48	FIELD	Field
pH, Field Measured	7.28	pH Units		02/11/22 11:48	1		02/11/22 11:48	FIELD	Field
Specific Conductance, Field Measured	1633	umhos/cm		02/11/22 11:48	1		02/11/22 11:48	FIELD	Field
Temperature, Field Measured	9.1	°C		02/11/22 11:48	1		02/11/22 11:48	FIELD	Field
Turbidity, Field Measured	12.2	NTU		02/11/22 11:48	1	0.00	02/11/22 11:48	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	120	mg/L		02/22/22 07:44	1	10	02/22/22 07:44	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		02/22/22 07:44	1	10	02/22/22 07:44	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	1200	mg/L		02/16/22 12:37	1	26	02/16/22 14:44	ADM	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		02/17/22 08:20	5	3.0	02/21/22 09:54	JMW	EPA 6020A
Arsenic	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 09:54	JMW	EPA 6020A
Barium	21	ug/L		02/17/22 08:20	5	1.0	02/21/22 09:54	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 09:54	JMW	EPA 6020A
Boron	2000	ug/L		02/17/22 08:20	5	10	02/21/22 09:54	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 09:54	JMW	EPA 6020A
Calcium	190	mg/L		02/17/22 08:20	5	0.20	02/21/22 09:54	JMW	EPA 6020A
Chromium	< 4.0	ug/L		02/17/22 08:20	5	4.0	02/21/22 09:54	JMW	EPA 6020A
Cobalt	2.5	ug/L		02/17/22 08:20	5	2.0	02/21/22 09:54	JMW	EPA 6020A
Lead	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 09:54	JMW	EPA 6020A
Magnesium	65	mg/L		02/17/22 08:20	5	0.10	02/21/22 09:54	JMW	EPA 6020A
Mercury	< 0.20	ug/L		02/17/22 08:20	5	0.20	02/21/22 09:54	JMW	EPA 6020A
Molybdenum	1.2	ug/L		02/17/22 08:20	5	1.0	02/21/22 09:54	JMW	EPA 6020A
Potassium	4.2	mg/L		02/17/22 08:20	5	0.10	02/21/22 09:54	JMW	EPA 6020A
Selenium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 09:54	JMW	EPA 6020A
Sodium	97	mg/L		02/17/22 08:20	5	0.22	02/21/22 09:54	JMW	EPA 6020A

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ANALYTICAL RESULTS

Sample: FB02282-01
Name: G307
Alias: COF_257_101

Sampled: 02/11/22 11:48
Received: 02/11/22 13:18
Matrix: Ground Water - Grab

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Thallium	< 1.0	ug/L		02/17/22 08:20	5	1.0	02/21/22 09:54	JMW	EPA 6020A
Lithium	< 20	ug/L		02/17/22 08:20	1	20	02/18/22 10:27	TJJ	EPA 6010B

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B224022 - SW 3015 - EPA 6020A									
Blank (B224022-BLK1)				Prepared: 02/10/22 Analyzed: 02/11/22					
Antimony	< 3.0	ug/L							
Arsenic	< 1.0	ug/L							
Barium	< 1.0	ug/L							
Beryllium	< 1.0	ug/L							
Boron	< 10	ug/L							
Cadmium	< 1.0	ug/L							
Calcium	< 0.20	mg/L							
Chromium	< 4.0	ug/L							
Cobalt	< 2.0	ug/L							
Lead	< 1.0	ug/L							
Magnesium	< 0.10	mg/L							
Mercury	< 0.20	ug/L							
Molybdenum	< 1.0	ug/L							
Potassium	< 0.10	mg/L							
Selenium	< 1.0	ug/L							
Sodium	< 0.10	mg/L							
Thallium	< 1.0	ug/L							
Lithium	< 20	ug/L							
LCS (B224022-BS1)				Prepared: 02/10/22 Analyzed: 02/11/22					
Antimony	547	ug/L		555.6		98	80-120		
Arsenic	523	ug/L		555.6		94	80-120		
Barium	542	ug/L		555.6		98	80-120		
Beryllium	535	ug/L		555.6		96	80-120		
Boron	517	ug/L		555.6		93	80-120		
Cadmium	528	ug/L		555.6		95	80-120		
Calcium	5.80	mg/L		5.556		104	80-120		
Chromium	545	ug/L		555.6		98	80-120		
Cobalt	545	ug/L		555.6		98	80-120		
Lead	540	ug/L		555.6		97	80-120		
Magnesium	6.07	mg/L		5.556		109	80-120		
Mercury	51.4	ug/L		55.56		93	80-120		
Molybdenum	504	ug/L		555.6		91	80-120		
Potassium	5.84	mg/L		5.556		105	80-120		
Selenium	535	ug/L		555.6		96	80-120		
Sodium	6.02	mg/L		5.556		108	80-120		
Thallium	539	ug/L		555.6		97	80-120		
Lithium	526	ug/L		555.6		95	80-120		
Batch B224043 - IC No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B224043-CCB1)				Prepared & Analyzed: 02/09/22					
Fluoride	0.00	mg/L							
Chloride	0.469	mg/L							

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B224043 - IC No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B224043-CCB1)				Prepared & Analyzed: 02/09/22					
Sulfate	0.0350	mg/L							
Calibration Check (B224043-CCV1)				Prepared & Analyzed: 02/09/22					
Fluoride	4.85	mg/L		5.000		97	90-110		
Sulfate	4.67	mg/L		5.000		93	90-110		
Chloride	4.58	mg/L		5.000		92	90-110		
Batch B224051 - No Prep - SM 2540C									
Blank (B224051-BLK1)				Prepared & Analyzed: 02/10/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B224051-BS1)				Prepared & Analyzed: 02/10/22					
Solids - total dissolved solids (TDS)	960	mg/L		1000		96	84.9-109		
Duplicate (B224051-DUP1)	**Sample: FB01365-02**			Prepared & Analyzed: 02/10/22					
Solids - total dissolved solids (TDS)	1110	mg/L			1070			4	5
Duplicate (B224051-DUP2)	**Sample: FB01365-03**			Prepared & Analyzed: 02/10/22					
Solids - total dissolved solids (TDS)	1560	mg/L			1520			3	5
Batch B224238 - No Prep - SM 2540C									
Blank (B224238-BLK1)				Prepared & Analyzed: 02/11/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B224238-BS1)				Prepared & Analyzed: 02/11/22					
Solids - total dissolved solids (TDS)	900	mg/L		1000		90	84.9-109		
Batch B224335 - SW 3015 - EPA 6020A									
Blank (B224335-BLK1)				Prepared: 02/14/22 Analyzed: 02/15/22					
Antimony	< 3.0	ug/L							
Arsenic	< 1.0	ug/L							
Barium	< 1.0	ug/L							
Beryllium	< 1.0	ug/L							
Boron	< 10	ug/L							
Cadmium	< 1.0	ug/L							
Calcium	< 0.20	mg/L							
Chromium	< 4.0	ug/L							
Cobalt	< 2.0	ug/L							
Lead	< 1.0	ug/L							
Magnesium	< 0.10	mg/L							
Mercury	< 0.20	ug/L							
Molybdenum	< 1.0	ug/L							
Potassium	< 0.10	mg/L							
Selenium	< 1.0	ug/L							
Sodium	< 0.10	mg/L							
Thallium	< 1.0	ug/L							
Lithium	< 20	ug/L							
LCS (B224335-BS1)				Prepared: 02/14/22 Analyzed: 02/15/22					
Antimony	552	ug/L		555.6		99	80-120		

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B224335 - SW 3015 - EPA 6020A									
LCS (B224335-BS1)				Prepared: 02/14/22 Analyzed: 02/15/22					
Arsenic	527	ug/L		555.6		95	80-120		
Barium	547	ug/L		555.6		98	80-120		
Beryllium	542	ug/L		555.6		98	80-120		
Boron	568	ug/L		555.6		102	80-120		
Cadmium	542	ug/L		555.6		98	80-120		
Calcium	6.56	mg/L		5.556		118	80-120		
Chromium	581	ug/L		555.6		105	80-120		
Cobalt	558	ug/L		555.6		100	80-120		
Lead	585	ug/L		555.6		105	80-120		
Magnesium	6.23	mg/L		5.556		112	80-120		
Mercury	56.0	ug/L		55.56		101	80-120		
Molybdenum	536	ug/L		555.6		97	80-120		
Potassium	6.22	mg/L		5.556		112	80-120		
Selenium	555	ug/L		555.6		100	80-120		
Sodium	6.53	mg/L		5.556		118	80-120		
Thallium	562	ug/L		555.6		101	80-120		
Lithium	511	ug/L		555.6		92	80-120		
Batch B224361 - No Prep - SM 2540C									
Blank (B224361-BLK1)				Prepared & Analyzed: 02/14/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B224361-BS1)				Prepared & Analyzed: 02/14/22					
Solids - total dissolved solids (TDS)	953	mg/L		1000		95	84.9-109		
Batch B224401 - SW 3015 - EPA 6020A									
Blank (B224401-BLK1)				Prepared: 02/15/22 Analyzed: 02/17/22					
Antimony	< 3.0	ug/L							
Arsenic	< 1.0	ug/L							
Barium	< 1.0	ug/L							
Beryllium	< 1.0	ug/L							
Boron	< 10	ug/L							
Cadmium	< 1.0	ug/L							
Calcium	< 0.20	mg/L							
Chromium	< 4.0	ug/L							
Cobalt	< 2.0	ug/L							
Lead	< 1.0	ug/L							
Magnesium	< 0.10	mg/L							
Mercury	< 0.20	ug/L							
Molybdenum	< 1.0	ug/L							
Potassium	< 0.10	mg/L							
Selenium	< 1.0	ug/L							
Sodium	0.101	mg/L	B						
Thallium	< 1.0	ug/L							
Lithium	< 20	ug/L							

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B224401 - SW 3015 - EPA 6020A									
LCS (B224401-BS1)				Prepared: 02/15/22 Analyzed: 02/17/22					
Antimony	542	ug/L		555.6		97	80-120		
Arsenic	520	ug/L		555.6		94	80-120		
Barium	572	ug/L		555.6		103	80-120		
Beryllium	528	ug/L		555.6		95	80-120		
Boron	504	ug/L		555.6		91	80-120		
Cadmium	534	ug/L		555.6		96	80-120		
Calcium	6.37	mg/L		5.556		115	80-120		
Chromium	564	ug/L		555.6		101	80-120		
Cobalt	550	ug/L		555.6		99	80-120		
Lead	565	ug/L		555.6		102	80-120		
Magnesium	6.25	mg/L		5.556		112	80-120		
Mercury	53.1	ug/L		55.56		96	80-120		
Molybdenum	513	ug/L		555.6		92	80-120		
Potassium	6.60	mg/L		5.556		119	80-120		
Selenium	537	ug/L		555.6		97	80-120		
Sodium	6.49	mg/L		5.556		117	80-120		
Thallium	557	ug/L		555.6		100	80-120		
Lithium	519	ug/L		555.6		93	80-120		
Batch B224603 - No Prep - SM 2540C									
Blank (B224603-BLK1)				Prepared & Analyzed: 02/16/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B224603-BS1)				Prepared & Analyzed: 02/16/22					
Solids - total dissolved solids (TDS)	907	mg/L		1000		91	84.9-109		
Batch B224606 - No Prep - SM 2320B 1997									
Blank (B224606-BLK1)				Prepared & Analyzed: 02/15/22					
Alkalinity - bicarbonate as CaCO3	2.50	mg/L							
Blank (B224606-BLK2)				Prepared & Analyzed: 02/15/22					
Alkalinity - bicarbonate as CaCO3	2.50	mg/L							
Blank (B224606-BLK3)				Prepared & Analyzed: 02/15/22					
Alkalinity - bicarbonate as CaCO3	2.50	mg/L							
Batch B224607 - No Prep - SM 2320B 1997									
Blank (B224607-BLK1)				Prepared & Analyzed: 02/15/22					
Alkalinity - carbonate as CaCO3	< 2.0	mg/L							
Blank (B224607-BLK2)				Prepared & Analyzed: 02/15/22					
Alkalinity - carbonate as CaCO3	< 2.0	mg/L							
Batch B224612 - No Prep - SM 2320B 1997									
Blank (B224612-BLK1)				Prepared: 02/16/22 Analyzed: 02/15/22					
Alkalinity - carbonate as CaCO3	< 2.0	mg/L							
Batch B224613 - No Prep - SM 2320B 1997									

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B224613 - No Prep - SM 2320B 1997									
Blank (B224613-BLK1)				Prepared & Analyzed: 02/15/22					
Alkalinity - bicarbonate as CaCO3	< 2.0	mg/L							
Batch B224681 - SW 3015 - EPA 6020A									
Blank (B224681-BLK1)				Prepared: 02/17/22 Analyzed: 02/21/22					
Antimony	< 3.0	ug/L							
Arsenic	< 1.0	ug/L							
Barium	< 1.0	ug/L							
Beryllium	< 1.0	ug/L							
Boron	< 10	ug/L							
Cadmium	< 1.0	ug/L							
Calcium	< 0.20	mg/L							
Chromium	< 4.0	ug/L							
Cobalt	< 2.0	ug/L							
Lead	< 1.0	ug/L							
Magnesium	< 0.10	mg/L							
Mercury	< 0.20	ug/L							
Molybdenum	< 1.0	ug/L							
Potassium	< 0.10	mg/L							
Selenium	< 1.0	ug/L							
Sodium	< 0.10	mg/L							
Thallium	< 1.0	ug/L							
Lithium	< 20	ug/L							
LCS (B224681-BS1)				Prepared: 02/17/22 Analyzed: 02/21/22					
Antimony	526	ug/L		555.6		95	80-120		
Arsenic	504	ug/L		555.6		91	80-120		
Barium	539	ug/L		555.6		97	80-120		
Beryllium	511	ug/L		555.6		92	80-120		
Boron	535	ug/L		555.6		96	80-120		
Cadmium	531	ug/L		555.6		96	80-120		
Calcium	6.10	mg/L		5.556		110	80-120		
Chromium	566	ug/L		555.6		102	80-120		
Cobalt	546	ug/L		555.6		98	80-120		
Lead	555	ug/L		555.6		100	80-120		
Magnesium	6.32	mg/L		5.556		114	80-120		
Mercury	50.8	ug/L		55.56		91	80-120		
Molybdenum	497	ug/L		555.6		90	80-120		
Potassium	6.40	mg/L		5.556		115	80-120		
Selenium	533	ug/L		555.6		96	80-120		
Sodium	6.49	mg/L		5.556		117	80-120		
Thallium	529	ug/L		555.6		95	80-120		
Lithium	549	ug/L		555.6		99	80-120		
Batch B224912 - IC No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B224912-CCB1)				Prepared & Analyzed: 02/18/22					

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B224912 - IC No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B224912-CCB1)				Prepared & Analyzed: 02/18/22					
Fluoride	0.00	mg/L							
Sulfate	0.00	mg/L							
Chloride	0.572	mg/L							
Calibration Check (B224912-CCV1)				Prepared & Analyzed: 02/18/22					
Chloride	4.84	mg/L		5.000		97	90-110		
Sulfate	4.85	mg/L		5.000		97	90-110		
Fluoride	5.18	mg/L		5.000		104	90-110		
Batch B225087 - IC No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B225087-CCB1)				Prepared & Analyzed: 02/21/22					
Chloride	0.514	mg/L							
Fluoride	0.00	mg/L							
Sulfate	0.0413	mg/L							
Calibration Check (B225087-CCV1)				Prepared & Analyzed: 02/21/22					
Fluoride	4.86	mg/L		5.000		97	90-110		
Sulfate	4.78	mg/L		5.000		96	90-110		
Chloride	4.67	mg/L		5.000		93	90-110		
Matrix Spike (B225087-MS1)	**Sample: FB01365-01**			Prepared & Analyzed: 02/21/22					
Fluoride	1.55	mg/L		1.500	0.347	80	80-120		
Chloride	1.0E9	mg/L	Q4	1.500	15	NR	80-120		
Sulfate	1.00E9	mg/L	Q4	1.500	620	NR	80-120		
Matrix Spike Dup (B225087-MSD1)	**Sample: FB01365-01**			Prepared & Analyzed: 02/21/22					
Chloride	1.0E9	mg/L	Q4	1.500	15	NR	80-120	0	20
Sulfate	1.00E9	mg/L	Q4	1.500	620	NR	80-120	0	20
Fluoride	1.49	mg/L		1.500	0.347	76	80-120	4	20
Batch B225239 - No Prep - SM 2320B 1997									
Blank (B225239-BLK1)				Prepared & Analyzed: 02/22/22					
Alkalinity - carbonate as CaCO3	< 2.0	mg/L							
Batch B225240 - No Prep - SM 2320B 1997									
Blank (B225240-BLK1)				Prepared & Analyzed: 02/22/22					
Alkalinity - bicarbonate as CaCO3	2.50	mg/L							
Blank (B225240-BLK2)				Prepared & Analyzed: 02/22/22					
Alkalinity - bicarbonate as CaCO3	5.00	mg/L							
Batch B225525 - IC No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B225525-CCB1)				Prepared & Analyzed: 02/25/22					
Sulfate	0.00	mg/L							
Fluoride	0.00	mg/L							
Chloride	0.00	mg/L							
Calibration Check (B225525-CCV1)				Prepared & Analyzed: 02/25/22					
Sulfate	5.02	mg/L		5.000		100	90-110		
Chloride	4.93	mg/L		5.000		99	90-110		

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B225525 - IC No Prep - EPA 300.0 REV 2.1									
Calibration Check (B225525-CCV1)				Prepared & Analyzed: 02/25/22					
Fluoride	4.81	mg/L		5.000		96	90-110		
Batch B225681 - IC No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B225681-CCB1)				Prepared & Analyzed: 02/28/22					
Sulfate	0.0666	mg/L							
Chloride	0.612	mg/L							
Fluoride	0.00	mg/L							
Calibration Check (B225681-CCV1)				Prepared & Analyzed: 02/28/22					
Fluoride	4.73	mg/L		5.000		95	90-110		
Sulfate	4.98	mg/L		5.000		100	90-110		
Chloride	4.91	mg/L		5.000		98	90-110		

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NOTES

Specifications regarding method revisions, method modifications, and calculations used for analysis are available upon request. Please contact your project manager.

* Not a TNI accredited analyte

Memos

Revised Report - edited calibration forms

Certifications

CHI - McHenry, IL - 4314-A W. Crystal Lake Road, McHenry, IL 60050
TNI Accreditation for Drinking Water and Wastewater Fields of Testing through IL EPA Accreditation No. 100279
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17556

PIA - Peoria, IL - 2231 W. Altorfer Drive, Peoria, IL 61615
TNI Accreditation for Drinking Water, Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. 100230
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17553
Drinking Water Certifications/Accreditations: Iowa (240); Kansas (E-10338); Missouri (870)
Wastewater Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)
Solid and Hazardous Material Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

SPMO - Springfield, MO - 1805 W Sunset Street, Springfield, MO 65807
USEPA DMR-QA Program

STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042
TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389
TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. - 200080
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory, Registry No. 171050
Missouri Department of Natural Resources - Certificate of Approval for Microbiological Laboratory Service - No. 1050

Qualifiers

B	Present in the method blank at 101 ug/L.
Q4	The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.

Gail J Schindler

Certified by: Gail Schindler, Project Manager

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 | Client: RAMBOLL

Project Number: 2285 | Task #: Unit 101 | Start Date: 2/8/22 | Time: 15 20

Field Personnel: Tracy Carrell, Jeremy Carrell | Finish Date: 2/8/2022 | Time: 16:24

WELL INFORMATION

Well ID: G301
Casing ID: 2 Inches
Screen Interval: 4.65'
Borehole Diameter: n/a Inches
Filter Pack Interval: n/a

EVENT TYPE

- ☐ Well Development
- ■ Low-Flow / Low-Stress Sampling
- ☐ Well Volume Approach Sampling
- ☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump
Bailer Type: n/a
Pump Type and Serial #: n/a
Tube/Pump Intake Depth: n/a
Stabilized Pumping Rate: 100 ml/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	6.12	2/8/22 1520	6.55	1624
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole
Volume Per Foot:
Standing Water Column: feet
1 Well Volume: n/a Gallons | 3 Well Volumes: n/a Gallons
5 Well Volumes: n/a Gallons | 10 Well Volumes: n/a Gallons
Total Volumes Produced: n/a Gallons
Well Purged Dry? ☐ Yes ■ No

Water Level Serial #: 19FF 2111015+13 Heron | Water Quality Probe Type and Serial #: AT600 732u570

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	15:26	0	6.12								
purge	15:38	1000	6.55	0.43	13.06	6.51	1411.5	0.26	2.31	-29.9	Clear
	15:40	1200	6.55	0.43	12.66	6.49	1412.3	0.27	2.79	-28.3	Clear
	15:42	1400	6.55	0.43	12.56	6.49	1411.3	0.28	2.72	-25.5	Clear
	15:44	1600	6.55	0.43	12.57	6.48	1405.7	0.28	2.88	-23.3	Clear

NOTES

MS/MSD / DUP

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
na - Not Applicable
nm - Not Measured
ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
°C - Degrees Celcius

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 — Client: RAMBOLL

Project Number: 2285 — Task #: Unit 101 — Start Date: 2/8/22 — Time: ~~7.89~~ 15:54

Field Personnel: Luke Giovanini [signature] — Finish Date: 2/8/22 — Time: 16:41

WELL INFORMATION

Well ID: G302

Casing ID: 2 Inches

Screen Interval: 4.65'

Borehole Diameter: n/a Inches

Filter Pack Interval: n/a

EVENT TYPE

- ☐ Well Development
- ■ Low-Flow / Low-Stress Sampling
- ☐ Well Volume Approach Sampling
- ☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump

Bailer Type: n/a

Pump Type and Serial #: n/a

Tube/Pump Intake Depth: n/a

Stabilized Pumping Rate: 100 ml/min

DEPTH MEASUREMENTS

	INITIAL Depth FT BTOC	INITIAL Date/Time (24-Hour)	FINAL Depth FT BTOC	FINAL Date/Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	7.89	2/8/22 15:54	8.18	16:41
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole

Volume Per Foot:

Standing Water Column: feet

1 Well Volume: n/a Gallons — 3 Well Volumes: n/a Gallons

5 Well Volumes: n/a Gallons — 10 Well Volumes: n/a Gallons

Total Volumes Produced: n/a Gallons

Well Purged Dry? ☐ Yes ■ No

Water Level Serial #: 19FF211192HB HERON — Water Quality Probe Type and Serial # AT400 739450

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	15:54	0	7.89								
purge	16:06	800	8.15	0.26	11.79	6.73	1560.4	2.87	2.86	-18.0	Clear
	16:08	1000	8.14	0.25	11.80	6.77	1527.6	2.85	3.50	-15.9	Clear
	16:10	1200	8.15	0.26	11.77	6.73	1517.2	2.90	3.46	-13.9	Clear

NOTES

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
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ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
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WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 | Client: RAMBOLL

Project Number: 2285 | Task #: Unit 101 | Start Date: 2/8/22 | Time: 14:12

Field Personnel: [illegible] | Finish Date: 2/8/22 | Time: 15:01

WELL INFORMATION

Well ID: G303

Casing ID: 2 Inches

Screen Interval: 10'

Borehole Diameter: n/a Inches

Filter Pack Interval: n/a

EVENT TYPE

☐ Well Development

■ Low-Flow / Low-Stress Sampling

☐ Well Volume Approach Sampling

☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump

Bailer Type: n/a

Pump Type and Serial #: n/a

Tube/Pump Intake Depth: n/a

Stabilized Pumping Rate: 100 ml/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	3.99	14:12	4.73	15:01
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole

Volume Per Foot:

Standing Water Column: feet

1 Well Volume: n/a Gallons | 3 Well Volumes: n/a Gallons

5 Well Volumes: n/a Gallons | 10 Well Volumes: n/a Gallons

Total Volumes Produced: n/a Gallons

Well Purged Dry? ☐ Yes ■ No

Water Level Serial #: 19EF211192HB Heron

Water Quality Probe Type and Serial # AT600 739480

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	14:12	0	3.99								
purge	14:25	700	4.39	0.40	~~6.76~~ 11.94	6.76	2103.5	2.07	3.77	8.6	clear
	14:27	900	4.45	0.46	11.82	6.78	2075.1	2.11	2.61	6.6	Clear
	14:29	1100	4.53	0.54	11.70	6.79	2068.9	2.18	3.45	5.7	Clear

NOTES

ABBREVIATIONS

Cond. - Actual Conductivity
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SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
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WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 | Client: RAMBOLL

Project Number: 2285 | Task #: Unit 101 | Start Date: 2-8-22 | Time: 1302

Field Personnel: Tracy Carroll, Tracy Carroll | Finish Date: 2/8/22 | Time: 1357

WELL INFORMATION

Well ID: G306

Casing ID: 2 Inches

Screen Interval:

Borehole Diameter: n/a Inches

Filter Pack Interval: n/a

EVENT TYPE

- ☐ Well Development
- ■ Low-Flow / Low-Stress Sampling
- ☐ Well Volume Approach Sampling
- ☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump

Bailer Type: n/a

Pump Type and Serial #: n/a

Tube/Pump Intake Depth: n/a

Stabilized Pumping Rate: 100 ml/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	6.06	2/8/22 1352	6.88	2/9/22 13:57
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

Water Level Serial #: 19FF211192HB HERON

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole

Volume Per Foot:

Standing Water Column: feet

1 Well Volume: n/a Gallons | 3 Well Volumes: n/a Gallons

5 Well Volumes: n/a Gallons | 10 Well Volumes: n/a Gallons

Total Volumes Produced: n/a Gallons

Well Purged Dry? ☐ Yes ■ No

Water Quality Probe Type and Serial # Aqua Troll 400 739450

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	1302	0	6.06								
purge	1317	1500	6.82	0.76	12.14	6.78	903.78	7.38	1.84	9.3	Clear
	1319	1700	6.82	0.76	12.06	6.78	907.52	7.35	1.46	10.2	Clear
	1321	1900	6.81	0.75	11.98	6.78	910.29	7.34	1.38	11.1	Clear
	1322	2000	6.81	0.75	11.95	6.77	912.01	7.35	1.29	11.6	Clear

NOTES

ABBREVIATIONS

Cond. - Actual Conductivity
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ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
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Temp - Temperature
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WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 | Client: RAMBOLL

Project Number: 2285 | Task #: Unit 101 | Start Date: 2/11/2022 Time: 1057

Field Personnel: Aaron Pemberton | Finish Date: 2/11/2022 Time: 1148

WELL INFORMATION

Well ID: G307

Casing ID: 2 Inches

Screen Interval: 10'

Borehole Diameter: n/a Inches

Filter Pack Interval: n/a

EVENT TYPE

- ☐ Well Development
- ■ Low-Flow / Low-Stress Sampling
- ☐ Well Volume Approach Sampling
- ☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump

Bailer Type: n/a

Pump Type and Serial #: n/a

Tube/Pump Intake Depth: n/a

Stabilized Pumping Rate: 100 ml/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	0.00	1059	0.00	1148
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole

Volume Per Foot:

Standing Water Column: feet

1 Well Volume: n/a Gallons | 3 Well Volumes: n/a Gallons

5 Well Volumes: n/a Gallons | 10 Well Volumes: n/a Gallons

Total Volumes Produced: n/a Gallons

Well Purged Dry? ☐ Yes ■ No

Water Level Serial #: Heron Dipper-T # 47757-T

Water Quality Probe Type and Serial # AT660 #762098

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU) App 2/14/22	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	1059	0	0.00	0.00	—	~~7.28~~	—	—	—	—	—
purge	1109	1000	0.00	0.00	9.14	7.29	1635.8	5.31	8.33	145.2	clear
	1111	1200	0.00	0.00	9.11	7.28	1634.3	5.33	8.35	144.1	clear
	1113	1400	0.00	0.00	9.12	7.28	1633.2	5.30	12.24	144.0	clear

NOTES

Artesian well

ABBREVIATIONS

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SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
°C - Degrees Celcius

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 | Client: RAMBOLL

Project Number: 2285 | Task #: Unit 101, 102 | Start Date: 2/8/22 | Time: 1109

Field Personnel: Mark Julian | Finish Date: 2/8/22 | Time: 1212

WELL INFORMATION

Well ID: G281

Casing ID: 2 Inches

Screen Interval: 4.65'

Borehole Diameter: n/a Inches

Filter Pack Interval: n/a

EVENT TYPE

☐ Well Development

■ Low-Flow / Low-Stress Sampling

☐ Well Volume Approach Sampling

☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump

Bailer Type: n/a

Pump Type and Serial #: n/a

Tube/Pump Intake Depth: n/a

Stabilized Pumping Rate: 100 ml/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	6.21	2/8/22 1109	6.24	2/8/22 1212
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole

Volume Per Foot:

Standing Water Column: feet

1 Well Volume: n/a Gallons | 3 Well Volumes: n/a Gallons

5 Well Volumes: n/a Gallons | 10 Well Volumes: n/a Gallons

Total Volumes Produced: n/a Gallons

Well Purged Dry? ☐ Yes ■ No

Water Level Serial #: Solinst # 269022

Water Quality Probe Type and Serial # Aquatroll 600 # 702215

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	1109	0	6.21	0.00							
purge	1121	1200	6.24	0.03	10.53	7.01	1327.7	2.92	9.95	94.7	clear
	1123	1400	6.24	0.03	10.55	7.00	1337.6	2.72	9.55	96.1	clear
MW-2022	~~1124~~ 1125	1600	6.24	0.03	10.53	7.00	1337.4	2.56	8.54	97.6	clear
	1127	1800	6.24	0.03	10.55	6.99	1337.9	2.42	7.50	98.9	clear
	1129	2000	6.24	0.03	10.58	6.99	1337.7	2.45	6.30	100.3	clear
	1131	2200	6.24	0.03	10.61	7.00	1337.8	2.52	6.69	101.5	clear

MW-2022 3/8/22

MW-2022 3/8/22

NOTES

5 GW2 3 CCR

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
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Temp - Temperature
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Multiparameter Meter Field Calibration Checklist

Field Personnel	MJN	Date:	3/8/22
Weather conditions:	21-46°, sunny, NE 6mph wind	Signature:	
Make/Model	AquaTroll 600	S/N	846000

Instrument unpacked/RDO sensor installed from storage solution and rinsed with pH 4 buffer then triple rinsed with DI water prior. Instrument then subjected to calibration check/calibration regiment (pH 4, then pH 7, then pH 10, followed by Spec Con., ORP, and RDO) instrument and calibration cup rinsed between each buffer.

Sources

	pH Buffers				
Primary Source:					
pH: 4a	4.00	pH: 7a	7.00	pH: 10a	10.00
Range:	+/- 0.02	Range:	+/- 0.02	Range:	+/- 0.02
Manufacturer:	MSI	Manufacturer:	MSI	Manufacturer:	MSI
Lot #:	L159-11	Lot #:	L146-06	Lot #:	K344-09
exp:	10-Jun-23	exp:	1-Jun-23	exp:	17-Dec-22
Secondary Source:					
pH: 4b	4.00	pH: 7b	7.00	pH: 10b	10.00
Range:	+/- 0.01	Range:	+/- 0.01	Range:	+/- 0.01
Manufacturer:	Geotech	Manufacturer:	Geotech	Manufacturer:	Geotech
Lot #:	1GD680	Lot #:	0GJ268	Lot #:	0GJ170
exp:	Apr-23	exp:	Oct-22	exp:	Oct-22
Spec Con.					
µS/cm: DI water	0	µS/cm: SC1000	1000	µS/cm: SC2000	2000
Range:	Not Measured	Range:	+/- 1	Range:	+/- 1 %
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	RICCA Chemical	Manufacturer:	Geotech
Received:		Lot #:	4101A25	Lot #:	1GF629
		exp:	Dec-22	exp:	Jun-22

RDO	Sodium Sulfite in DI Water	ORP	Zobell's Standard
Value:	0	Value*:	
Range:	+/- 0.01	Range:	+/- 10 mV
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ
Lot #:	168261	Lot #:	1GF668
Prepared by:	PDC Tech Services, Inc:	exp:	Mar-22

Turbidity (if required)					
0 NTU	0 (DI Water)	1 NTU	1	10 NTU	10
Range:	Not Measured	Range:		Range:	
Manufacturer:	PDC Laboratories, Inc	Manufacturer:		Manufacturer:	
Lot #:	NA	Lot #:		Lot #:	
exp:	NA	exp:		exp:	

Notes:	*See bottle for chart of values based on Temperature

Multiparameter Meter Calibration Checklist (continued)

Values are tested at the beginning of the day, at mid-day, and at the end of the day to document potential drift.
CCV checks are conducted ~ every 4 hours, unless only one well is read then is not required.

Initial Calibration Check/Calibration: 0820

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.04	s.u.	±0.1 s.u.			
7a	7.05	s.u.	±0.1 s.u.			
10a	10.03	s.u.	±0.1 s.u.			
SC Zero (DI)	13.07	µS/cm	0<25 µS/cm			
SC 2000	2015	µS/cm	±5%			
ORP	242	mV	±15 mV			
DO (Zero pt)	0.03	mg/L	±0.1			
DO (Saturated)	98.47	%	97-100%			
Turbidity (DI)	0.00	NTU	<2 NTU			

ICV (Initial Calibration Verification)

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.04	s.u.	±0.15 s.u.		
7b	6.91	s.u.	±0.15 s.u.		
10b	10.05	s.u.	±0.15 s.u.		
SC1000	1007	µS/cm	±5%		

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4		s.u.	±0.1 s.u.			
7		s.u.	±0.1 s.u.			
10		s.u.	±0.1 s.u.			
SC 1000		µS/cm	±5%			
DO (Zero pt)		mg/L	±0.1 mg/L			
Turbidity (DI)		NTU	<2 NTU			

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4		s.u.	±0.1 s.u.			
7*		s.u.	±0.1 s.u.			
10		s.u.	±0.1 s.u.			
SC 1000		µS/cm	±5%			
DO (Zero pt)		mg/L	±0.1 mg/L			
Turbidity (DI)		NTU	<2 NTU			
Comments:						

Signature: [signature]

Date: 2/8/22

Multiparameter Meter Field Calibration Checklist

Field Personnel	Tracy Carroll	Date:	3/8/23
Weather conditions:	25-43 Partly Cloudy 0-10 Mph	Signature:	Tracy Carroll
Make/Model	AquaTroll 600	S/N	739250

Instrument unpacked/RDO sensor installed from storage solution and rinsed with pH 4 buffer then triple rinsed with DI water prior. Instrument then subjected to calibration check/calibration regiment (pH 4, then pH 7, then pH 10, followed by Spec Con., ORP, and RDO) instrument and calibration cup rinsed between each buffer.

Sources

	pH Buffers				
Primary Source:					
pH: 4a	4.00	pH: 7a	7.00	pH: 10a	10.00
Range:	+/- 0.02	Range:	+/- 0.02	Range:	+/- 0.02
Manufacturer:	MSI	Manufacturer:	MSI	Manufacturer:	MSI
Lot #:	K063-05	Lot #:	K134-08	Lot #:	J235-04
exp:	6/8/23	exp:	6/23/23	exp:	12/17/22
Secondary Source:					
pH: 4b	4.00	pH: 7b	7.00	pH: 10b	10.00
Range:	+/- 0.01	Range:	+/- 0.01	Range:	+/- 0.01
Manufacturer:	Geotech	Manufacturer:	LabChem	Manufacturer:	Geotech
Lot #:	0GD046	Lot #:	J214-24	Lot #:	0GC851
exp:	AUG/23	exp:	APR/23	exp:	MAY/23

3/21/22 TC

Spec Con.					
µS/cm: DI water	0	µS/cm: SC1000	1000	µS/cm: SC2000	2000
Range:	Not Measured	Range:	+/- 1	Range:	+/- 1 %
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	RICCA Chemical	Manufacturer:	Geotech
Received:		Lot #:	4002A08	Lot #:	0GA078
		exp:	DEC/22	exp:	APR/22

RDO	Sodium Sulfite in DI Water	ORP	Zobell's Standard
Value:	0	Value*: 245.9	@ 10°C
Range:	+/- 0.01	Range:	+/- 10 mV
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ
Lot #:	168261	Lot #:	0GC1145
Prepared by:	PDC Tech Services, Inc:	exp:	AUG/22

Turbidity (if required)					
0 NTU	0 (DI Water)	1 NTU	1	10 NTU	10
Range:	Not Measured	Range:		Range:	
Manufacturer:	PDC Laboratories, Inc	Manufacturer:		Manufacturer:	
Lot #:	NA	Lot #:		Lot #:	
exp:	NA	exp:		exp:	

Notes: *See bottle for chart of values based on Temperature

Multiparameter Meter Calibration Checklist (continued)

Values are tested at the beginning of the day, at mid-day, and at the end of the day to document potential drift.
CCV checks are conducted ~ every 4 hours, unless only one well is read then is not required.

Initial Calibration Check/Calibration: 8:42

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	3.93	s.u.	±0.1 s.u.	P	No	
7a	6.96	s.u.	±0.1 s.u.			
10a	10.03	s.u.	±0.1 s.u.			
SC Zero (DI)	23.85	µS/cm	0<25 µS/cm			
SC 2000	2148.0	µS/cm	±5%			
ORP @ 18	249.9	mV	±15 mV			
DO (Zero pt)	0.05	mg/L	±0.1			
DO (Saturated)	142.20	%	97-100%	P	Y	100
Turbidity (DI)	0.17	NTU	<2 NTU	P	No	/

ICV (Initial Calibration Verification) 9:08

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	3.93	s.u.	±0.15 s.u.	P	
7b	6.87	s.u.	±0.15 s.u.		/
10b	9.94	s.u.	±0.15 s.u.		
SC1000	1033.0	µS/cm	±5%	P	

CCV (Continued Calibration Verification): 1456

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.03	s.u.	±0.1 s.u.	P	N	NA
7	6.99	s.u.	±0.1 s.u.			
10	9.99	s.u.	±0.1 s.u.			
SC 1000	995.77	µS/cm	±5%			
DO (Zero pt)	0.09	mg/L	±0.1 mg/L			
Turbidity (DI)	0.83	NTU	<2 NTU	P	N	NA

CCV (Continued Calibration Verification): 16:48

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.02	s.u.	±0.1 s.u.	P	N	NA
7*	7.02	s.u.	±0.1 s.u.			
10	10.04	s.u.	±0.1 s.u.			
SC 1000	1009.0	µS/cm	±5%			
DO (Zero pt)	0.10	mg/L	±0.1 mg/L			
Turbidity (DI)	0.18	NTU	<2 NTU	P	N	NA
Comments:						

Signature: Jenny Cisneros

Date: 2/8/22

Multiparameter Meter Field Calibration Checklist

Field Personnel	Aaron Ambler	Date:	2/18/2022
Weather conditions:	30-45°F sunny wind shift [illegible]	Signature:	[signature]
Make/Model	AquaTroll 600	S/N	762098

Instrument unpacked/RDO sensor installed from storage solution and rinsed with pH 4 buffer then triple rinsed with DI water prior. Instrument then subjected to calibration check/calibration regiment (pH 4, then pH 7, then pH 10, followed by Spec Con., ORP, and RDO) instrument and calibration cup rinsed between each buffer.

Sources

	pH Buffers				
Primary Source:					
pH: 4a	4.00	pH: 7a	7.00	pH: 10a	10.00
Range:	+/- 0.02	Range:	+/- 0.02	Range:	+/- 0.02
Manufacturer:	MSI	Manufacturer:	MSI	Manufacturer:	MSI
Lot #:	L159-11	Lot #:	L146-06	Lot #:	K344-09
exp:	10-Jun-23	exp:	1-Jun-23	exp:	17-Dec-22
Secondary Source:					
pH: 4b	4.00	pH: 7b	7.00	pH: 10b	10.00
Range:	+/- 0.01	Range:	+/- 0.01	Range:	+/- 0.01
Manufacturer:	Geotech	Manufacturer:	Geotech	Manufacturer:	Geotech
Lot #:	1GD680	Lot #:	0GJ268	Lot #:	0GJ170
exp:	Apr-23	exp:	Oct-22	exp:	Oct-22

Spec Con					
µS/cm: DI water	0	µS/cm: SC1000	1000	µS/cm: SC2000	2000
Range:	Not Measured	Range:	+/- 1	Range:	+/- 1 %
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	RICCA Chemical	Manufacturer:	Geotech
Received:		Lot #:	4101A25	Lot #:	1GF629
		exp:	Dec-22	exp:	Jun-22

RDO	Sodium Sulfite in DI Water	ORP	Zobell's Standard
Value:	0	Value*:	242 @ 15°C
Range:	+/- 0.01	Range:	+/- 10 mV
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ
Lot #:	168261	Lot #:	1GF668
Prepared by:	PDC Tech Services, Inc:	exp:	Mar-22

Turbidity (if required)					
0 NTU	0 (DI Water)	1 NTU	1	10 NTU	10
Range:	Not Measured	Range:		Range:	
Manufacturer:	PDC Laboratories, Inc	Manufacturer:		Manufacturer:	
Lot #:	NA	Lot #:		Lot #:	
exp:	NA	exp:		exp:	

Notes:	*See bottle for chart of values based on Temperature

Multiparameter Meter Calibration Checklist (continued)

Values are tested at the beginning of the day, at mid-day, and at the end of the day to document potential drift.
CCV checks are conducted ~ every 4 hours, unless only one well is read then is not required.

Initial Calibration Check/Calibration: 0848

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.03	s.u.	±0.1 s.u.	pass	NO	N/A
7a	7.06	s.u.	±0.1 s.u.			
10a	10.05	s.u.	±0.1 s.u.			
SC Zero (DI)	6.27	µS/cm	0<25 µS/cm			
SC 2000	1992.7	µS/cm	±5%			
ORP	235.6	mV	±15 mV			
DO (Zero pt)	0.06	mg/L	±0.1			
DO (Saturated)	97.23	%	97-100%			
Turbidity (DI)	0.00	NTU	<2 NTU	↓	↓	↓

ICV (Initial Calibration Verification)

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.02	s.u.	±0.15 s.u.	Pass	N/A
7b	6.96	s.u.	±0.15 s.u.		
10b	10.00	s.u.	±0.15 s.u.		
SC1000	991.00	µS/cm	±5%	↓	↓

CCV (Continued Calibration Verification): 1520

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.05	s.u.	±0.1 s.u.	pass	NO	NA
7	7.00	s.u.	±0.1 s.u.			
10	10.06	s.u.	±0.1 s.u.			
SC 1000	1013.1	µS/cm	±5%			
DO (Zero pt)	0.05	mg/L	±0.1 mg/L			
Turbidity (DI)	0.00	NTU	<2 NTU	↓	↓	↓

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4		s.u.	±0.1 s.u.			
7*		s.u.	±0.1 s.u.			
10		s.u.	±0.1 s.u.			
SC 1000		µS/cm	±5%			
DO (Zero pt)		mg/L	±0.1 mg/L			
Turbidity (DI)		NTU	<2 NTU			
Comments:						

Signature: [signature]

Date: 2/8/2022

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Multiparameter Meter Field Calibration Checklist

Field Personnel	Sam Grant	Date:	2/11/22
Weather conditions:	32-38°F, showers, wind SW 0-10 mph	Signature:	
Make/Model	AquaTroll 600	S/N	739449

Instrument unpacked/RDO sensor installed from storage solution and rinsed with pH 4 buffer then triple rinsed with DI water prior. Instrument then subjected to calibration check/calibration regiment (pH 4, then pH 7, then pH 10, followed by Spec Con., ORP, and RDO) instrument and calibration cup rinsed between each buffer.

Sources

	pH Buffers				
Primary Source:					
pH: 4a	4.00	pH: 7a	7.00	pH: 10a	10.00
Range:	+/- 0.02	Range:	+/- 0.02	Range:	+/- 0.02
Manufacturer:	MSI	Manufacturer:	MSI	Manufacturer:	MSI
Lot #:	K063-05	Lot #:	K134-08	Lot #:	J235-04
exp:	6/8/23	exp:	6/23/23	exp:	12/17/22
Secondary Source:					
pH: 4b	4.00	pH: 7b	7.00	pH: 10b	10.00
Range:	+/- 0.01	Range:	+/- 0.01	Range:	+/- 0.01
Manufacturer:	Geotech	Manufacturer:	LabChem	Manufacturer:	Geotech
Lot #:	0GD046	Lot #:	J214-24	Lot #:	0GC851
exp:	Aug/23	exp:	Apr/23	exp:	May/23

3/21/22 TC

Spec Con.					
µS/cm: DI water	0	µS/cm: SC1000	1000	µS/cm: SC2000	2000
Range:	Not Measured	Range:	+/- 1	Range:	+/- 1 %
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	RICCA Chemical	Manufacturer:	Geotech
Received:		Lot #:	4002A08	Lot #:	0GA078
		exp:	Dec/22	exp:	Apr/22

RDO	Sodium Sulfite In DI Water	ORP	Zobell's Standard
Value:	0	Value*:	242 mV @ 18°C
Range:	+/- 0.01	Range:	+/- 10 mV
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ
Lot #:	168261	Lot #:	0GC1145
Prepared by:	PDC Tech Services, Inc:	exp:	Aug/22

Turbidity (If required)					
0 NTU	0 (DI Water)	1 NTU	1	10 NTU	10
Range:	Not Measured	Range:		Range:	
Manufacturer:	PDC Laboratories, Inc	Manufacturer:		Manufacturer:	
Lot #:	NA	Lot #:		Lot #:	
exp:	NA	exp:		exp:	

Notes: *See bottle for chart of values based on Temperature

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Multiparameter Meter Calibration Checklist (continued)

Values are tested at the beginning of the day, at mid-day, and at the end of the day to document potential drift.
CCV checks are conducted ~ every 4 hours, unless only one well is read then is not required.

Initial Calibration Check/Calibration:

08:46

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.00	s.u.	±0.1 s.u.	Pass	No	NA
7a	7.04	s.u.	±0.1 s.u.			
10a	10.03	s.u.	±0.1 s.u.			
SC Zero (DI)	12.58	µS/cm	0<25 µS/cm			
SC 2000	1998.4	µS/cm	±5%			
ORP	240.7 @ 13.6°C	mV	±15 mV			
DO (Zero pt)	0.06	mg/L	±0.1			
DO (Saturated)	97.1%	%	97-100%			
Turbidity (DI)	0.00	NTU	<2 NTU			

ICV (Initial Calibration Verification)

08:50

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	3.99	s.u.	±0.15 s.u.	Pass	None
7b	6.97	s.u.	±0.15 s.u.		
10b	9.93	s.u.	±0.15 s.u.		
SC1000	1012.8	µS/cm	±5%		

CCV (Continued Calibration Verification):

12:00

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.09	s.u.	±0.1 s.u.	Pass	No	NA
7	7.10	s.u.	±0.1 s.u.			
10	10.07	s.u.	±0.1 s.u.			
SC 1000	971.43	µS/cm	±5%			
DO (Zero pt)	0.09	mg/L	±0.1 mg/L			
Turbidity (DI)	0.00	NTU	<2 NTU			

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4		s.u.	±0.1 s.u.			
7*		s.u.	±0.1 s.u.			
10		s.u.	±0.1 s.u.			
SC 1000		µS/cm	±5%			
DO (Zero pt)		mg/L	±0.1 mg/L			
Turbidity (DI)		NTU	<2 NTU			
Comments:						

Signature: [signature]

Date: 2/11/22

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Multiparameter Meter Field Calibration Checklist

Field Personnel	Tracy Carroll	Date:	2/11/22
Weather conditions:	32-38 Showers 0-10 mph SW	Signature:	Tracy Carroll
Make/Model	AquaTroll 600	S/N	739450

Instrument unpacked/RDO sensor installed from storage solution and rinsed with pH 4 buffer then triple rinsed with DI water prior. Instrument then subjected to calibration check/calibration regiment (pH 4, then pH 7, then pH 10, followed by Spec Con., ORP, and RDO) instrument and calibration cup rinsed between each buffer.

Sources

	pH Buffers				
Primary Source:					
pH: 4a	4.00	pH: 7a	7.00	pH: 10a	10.00
Range:	+/- 0.02	Range:	+/- 0.02	Range:	+/- 0.02
Manufacturer:	MSI	Manufacturer:	MSI	Manufacturer:	MSI
Lot #:	K063-05	Lot #:	K134-08	Lot #:	J235-04
exp:	6/8/23	exp:	6/25/23	exp:	12/17/22
Secondary Source:					
pH: 4b	4.00	pH: 7b	7.00	pH: 10b	10.00
Range:	+/- 0.01	Range:	+/- 0.01	Range:	+/- 0.01
Manufacturer:	Geotech	Manufacturer:	LabChem	Manufacturer:	Geotech
Lot #:	0GD046	Lot #:	J214-24	Lot #:	0GC851
exp:	AUG/23	exp:	APR/23	exp:	MAY/23

3/21/22 TC

Spec Con.					
µS/cm: DI water	0	µS/cm: SC1000	1000	µS/cm: SC2000	2000
Range:	Not Measured	Range:	+/- 1	Range:	+/- 1 %
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	RICCA Chemical	Manufacturer:	Geotech
Received:		Lot #:	4002A08	Lot #:	0GA078
		exp:	Dec/22	exp:	APR/22

RDO	Sodium Sulfite in DI Water	ORP	Zobell's Standard
Value:	0	Value*: 236.8	@ 14°c
Range:	+/- 0.01	Range:	+/- 10 mV
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ
Lot #:	168261	Lot #:	0GC1145
Prepared by:	PDC Tech Services, Inc:	exp:	AUG/22

Turbidity (if required)					
0 NTU	0 (DI Water)	1 NTU	1	10 NTU	10
Range:	Not Measured	Range:		Range:	
Manufacturer:	PDC Laboratories, Inc	Manufacturer:		Manufacturer:	
Lot #:	NA	Lot #:		Lot #:	
exp:	NA	exp:		exp:	

Notes: *See bottle for chart of values based on Temperature

Multiparameter Meter Calibration Checklist (continued)

Values are tested at the beginning of the day, at mid-day, and at the end of the day to document potential drift.
CCV checks are conducted ~ every 4 hours, unless only one well is read then is not required.

Initial Calibration Check/Calibration: 8:26

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	3.91	s.u.	±0.1 s.u.	P	N	NA
7a	6.92	s.u.	±0.1 s.u.			
10a	10.00	s.u.	±0.1 s.u.			
SC Zero (DI)	13.16	µS/cm	0<25 µS/cm			
SC 2000	2064.7	µS/cm	±5%			
ORP 14°C	236.3	mV	±15 mV			
DO (Zero pt)	0.18	mg/L	±0.1			
DO (Saturated)	113.1	%	97-100%	F	Y	100.00
Turbidity (DI)	0.20	NTU	<2 NTU	P	N	NA

ICV (Initial Calibration Verification)

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.11	s.u.	±0.15 s.u.	P	NA
7b	6.95	s.u.	±0.15 s.u.		
10b	9.89	s.u.	±0.15 s.u.		
SC1000	1034.4	µS/cm	±5%		

CCV (Continued Calibration Verification): 12:12

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.06	s.u.	±0.1 s.u.	P	N	NA
7	7.04	s.u.	±0.1 s.u.			
10	10.10	s.u.	±0.1 s.u.			
SC 1000	1015.5	µS/cm	±5%			
DO (Zero pt)	0.03	mg/L	±0.1 mg/L			
Turbidity (DI)	0.20	NTU	<2 NTU	P	A	

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4		s.u.	±0.1 s.u.			
7*		s.u.	±0.1 s.u.			
10		s.u.	±0.1 s.u.			
SC 1000		µS/cm	±5%			
DO (Zero pt)		mg/L	±0.1 mg/L			
Turbidity (DI)		NTU	<2 NTU			
Comments:						

Signature: Tracy Carroll

Date: 2/1/22

Multiparameter Meter Field Calibration Checklist

Field Personnel	Aaron Pemberton	Date:	2/11/2022
Weather conditions:	39-45°F cloudy rain wind sweatsmp	Signature:	[signature]
Make/Model	AquaTroll 600	S/N	762098

Instrument unpacked/RDO sensor installed from storage solution and rinsed with pH 4 buffer then triple rinsed with DI water prior. Instrument then subjected to calibration check/calibration regiment (pH 4, then pH 7, then pH 10, followed by Spec Con., ORP, and RDO) instrument and calibration cup rinsed between each buffer.

Sources

pH Buffers					
Primary Source:					
pH: 4a	4.00	pH: 7a	7.00	pH: 10a	10.00
Range:	+/- 0.02	Range:	+/- 0.02	Range:	+/- 0.02
Manufacturer:	MSI	Manufacturer:	MSI	Manufacturer:	MSI
Lot #:	L159-11	Lot #:	L146-06	Lot #:	K344-09
exp:	10-Jun-23	exp:	1-Jun-23	exp:	17-Dec-22
Secondary Source:					
pH: 4b	4.00	pH: 7b	7.00	pH: 10b	10.00
Range:	+/- 0.01	Range:	+/- 0.01	Range:	+/- 0.01
Manufacturer:	Geotech	Manufacturer:	Geotech	Manufacturer:	Geotech
Lot #:	1GD680	Lot #:	0GJ268	Lot #:	0GJ170
exp:	Apr-23	exp:	Oct-22	exp:	Oct-22

Spec Con					
µS/cm: DI water	0	µS/cm: SC1000	1000	µS/cm: SC2000	2000
Range:	Not Measured	Range:	+/- 1	Range:	+/- 1 %
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	RICCA Chemical	Manufacturer:	Geotech
Received:		Lot #:	4101A25	Lot #:	1GF629
		exp:	Dec-22	exp:	Jun-22

RDO	Sodium Sulfite in DI Water	ORP	Zobell's Standard
Value:	0	Value*:	242 @ 15°C
Range:	+/- 0.01	Range:	+/- 10 mV
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ
Lot #:	168261	Lot #:	1GF668
Prepared by:	PDC Tech Services, Inc:	exp:	Mar-22

Turbidity (if required)					
0 NTU	0 (DI Water)	1 NTU	1	10 NTU	10
Range:	Not Measured	Range:		Range:	
Manufacturer:	PDC Laboratories, Inc	Manufacturer:		Manufacturer:	
Lot #:	NA	Lot #:		Lot #:	
exp:	NA	exp:		exp:	

Notes:	*See bottle for chart of values based on Temperature

C:\Users\lgeml\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\ZWXAP4OU\Field Calibration form (filled in) with Turbidity

Revised November 2015

Multiparameter Meter Calibration Checklist (continued)

Values are tested at the beginning of the day, at mid-day, and at the end of the day to document potential drift.
CCV checks are conducted ~ every 4 hours, unless only one well is read then is not required.

Initial Calibration Check/Calibration: 0840

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.05	s.u.	±0.1 s.u.	pass	NO	N/A
7a	7.06	s.u.	±0.1 s.u.	↓	↓	↓
10a	10.03	s.u.	±0.1 s.u.	↓	↓	↓
SC Zero (DI)	0.57	µS/cm	0<25 µS/cm	↓	↓	↓
SC 2000	2007.8	µS/cm	±5%	↓	↓	↓
ORP	235.8	mV	±15 mV	↓	↓	↓
DO (Zero pt)	0.07	mg/L	±0.1	↓	↓	↓
DO (Saturated)	99.2%	%	97-100%	↓	↓	↓
Turbidity (DI)	0.00	NTU	<2 NTU	↓	↓	↓

ICV (Initial Calibration Verification)

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.05	s.u.	±0.15 s.u.	pass	N/A
7b	6.97	s.u.	±0.15 s.u.	↓	↓
10b	10.04	s.u.	±0.15 s.u.	↓	↓
SC1000	977.6	µS/cm	±5%	↓	↓

CCV (Continued Calibration Verification): 1153

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.04	s.u.	±0.1 s.u.	pass	NO	N/A
7	7.05	s.u.	±0.1 s.u.	↓	↓	↓
10	10.06	s.u.	±0.1 s.u.	↓	↓	↓
SC 1000	986.3	µS/cm	±5%	↓	↓	↓
DO (Zero pt)	0.08	mg/L	±0.1 mg/L	↓	↓	↓
Turbidity (DI)	0.00	NTU	<2 NTU	↓	↓	↓

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4		s.u.	±0.1 s.u.			
7*		s.u.	±0.1 s.u.			
10		s.u.	±0.1 s.u.			
SC 1000		µS/cm	±5%			
DO (Zero pt)		mg/L	±0.1 mg/L			
Turbidity (DI)		NTU	<2 NTU			
Comments:						

Signature: [signature]

Date: 2/11/2022

Multiparameter Meter Field Calibration Checklist

Field Personnel	Matt Julian	Date:	2/8/22
Weather conditions:	54°-57°F P. Cloudy wind 10-20mph SW	Signature:	
Make/Model	AquaTroll 600	S/N	762215

Instrument unpacked/RDO sensor installed from storage solution and rinsed with pH 4 buffer then triple rinsed with DI water prior. Instrument then subjected to calibration check/calibration regiment (pH 4, then pH 7, then pH 10, followed by Spec Con., ORP, and RDO) instrument and calibration cup rinsed between each buffer.

Sources

	pH Buffers				
Primary Source:					
pH: 4a	4.00	pH: 7a	7.00	pH: 10a	10.00
Range:	+/- 0.02	Range:	+/- 0.02	Range:	+/- 0.02
Manufacturer:	MSI	Manufacturer:	MSI	Manufacturer:	MSI
Lot #:	L159-11	Lot #:	L146-06	Lot #:	K344-09
exp:	10-Jun-23	exp:	1-Jun-23	exp:	17-Dec-22
Secondary Source:					
pH: 4b	4.00	pH: 7b	7.00	pH: 10b	10.00
Range:	+/- 0.01	Range:	+/- 0.01	Range:	+/- 0.01
Manufacturer:	Geotech	Manufacturer:	Geotech	Manufacturer:	Geotech
Lot #:	1GD680	Lot #:	0GJ268	Lot #:	0GJ170
exp:	Apr-23	exp:	Oct-22	exp:	Oct-22

Spec Con.					
µS/cm: DI water	0	µS/cm: SC1000	1000	µS/cm: SC2000	2000
Range:	Not Measured	Range:	+/- 1	Range:	+/- 1 %
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	RICCA Chemical	Manufacturer:	Geotech
Received:		Lot #:	4101A25	Lot #:	1GF629
		exp:	Dec-22	exp:	Jun-22

RDO	Sodium Sulfite in DI Water	ORP	Zobell's Standard
Value:	0	Value*:	
Range:	+/- 0.01	Range:	+/- 10 mV
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ
Lot #:	168261	Lot #:	1GF668
Prepared by:	PDC Tech Services, Inc:	exp:	Mar-22

Turbidity (if required)					
0 NTU	0 (DI Water)	1 NTU	1	10 NTU	10
Range:	Not Measured	Range:		Range:	
Manufacturer:	PDC Laboratories, Inc	Manufacturer:		Manufacturer:	
Lot #:	NA	Lot #:		Lot #:	
exp:	NA	exp:		exp:	

Notes:	*See bottle for chart of values based on Temperature

Multiparameter Meter Calibration Checklist (continued)

Values are tested at the beginning of the day, at mid-day, and at the end of the day to document potential drift.
CCV checks are conducted ~ every 4 hours, unless only one well is read then is not required.

Initial Calibration Check/Calibration:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.00	s.u.	±0.1 s.u.	Pass	No	N/A
7a	7.04	s.u.	±0.1 s.u.	↓	↓	↓
10a	10.06	s.u.	±0.1 s.u.			
SC Zero (DI)	23.51	µS/cm	0<25 µS/cm			
SC 2000	2004.7	µS/cm	±5%			
ORP	243.2@ is	mV	±15 mV			
DO (Zero pt)	0.03	mg/L	±0.1			
DO (Saturated)	99.72	%	97-100%			
Turbidity (DI)	0.92	NTU	<2 NTU	↓		

ICV (Initial Calibration Verification) 1054

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.09	s.u.	±0.15 s.u.	Pass	None
7b	6.91	s.u.	±0.15 s.u.	↓	↓
10b	9.98	s.u.	±0.15 s.u.		
SC1000	986.10	µS/cm	±5%	↓	

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.05	s.u.	±0.1 s.u.	Pass	No	N/A
7	7.07	s.u.	±0.1 s.u.	↓	↓	↓
10	10.09	s.u.	±0.1 s.u.			
SC 1000	991.32	µS/cm	±5%			
DO (Zero pt)	0.08	mg/L	±0.1 mg/L			
Turbidity (DI)	1.02	NTU	<2 NTU	↓	↓	↓

~~CCV (Continued Calibration Verification):~~

~~Approx. every 4 hrs, unless only one well~~

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4		s.u.	±0.1 s.u.			
7*		s.u.	±0.1 s.u.			
10		s.u.	±0.1 s.u.			
SC 1000		µS/cm	±5%			
DO (Zero pt)		mg/L	±0.1 mg/L			
~~Turbidity (DI)~~		~~NTU~~	~~<2 NTU~~			
Comments:						

Signature: [signature]

Date: 2/18/22

Multiparameter Meter Field Calibration Checklist

Field Personnel	Matt Julien	Date:	2/11/22
Weather conditions:	32°-38°F showers wind 0-10mph SW	Signature:	
Make/Model	AquaTroll 600	S/N	762215

Instrument unpacked/RDO sensor installed from storage solution and rinsed with pH 4 buffer then triple rinsed with DI water prior. Instrument then subjected to calibration check/calibration regiment (pH 4, then pH 7, then pH 10, followed by Spec Con., ORP, and RDO) instrument and calibration cup rinsed between each buffer.

Sources

	pH Buffers				
Primary Source:					
pH: 4a	4.00	pH: 7a	7.00	pH: 10a	10.00
Range:	+/- 0.02	Range:	+/- 0.02	Range:	+/- 0.02
Manufacturer:	MSI	Manufacturer:	MSI	Manufacturer:	MSI
Lot #:	L159-11	Lot #:	L146-06	Lot #:	K344-09
exp:	10-Jun-23	exp:	1-Jun-23	exp:	17-Dec-22
Secondary Source:					
pH: 4b	4.00	pH: 7b	7.00	pH: 10b	10.00
Range:	+/- 0.01	Range:	+/- 0.01	Range:	+/- 0.01
Manufacturer:	Geotech	Manufacturer:	Geotech	Manufacturer:	Geotech
Lot #:	1GD680	Lot #:	0GJ268	Lot #:	0GJ170
exp:	Apr-23	exp:	Oct-22	exp:	Oct-22
Spec Con.					
µS/cm: DI water	0	µS/cm: SC1000	1000	µS/cm: SC2000	2000
Range:	Not Measured	Range:	+/- 1	Range:	+/- 1 %
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	RICCA Chemical	Manufacturer:	Geotech
Received:		Lot #:	4101A25	Lot #:	1GF629
		exp:	Dec-22	exp:	Jun-22

RDO	Sodium Sulfite in DI Water	ORP	Zobell's Standard
Value:	0	Value*:	
Range:	+/- 0.01	Range:	+/- 10 mV
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ
Lot #:	168261	Lot #:	1GF668
Prepared by:	PDC Tech Services, Inc:	exp:	Mar-22

Turbidity (if required)					
0 NTU	0 (DI Water)	1 NTU	1	10 NTU	10
Range:	Not Measured	Range:		Range:	
Manufacturer:	PDC Laboratories, Inc	Manufacturer:		Manufacturer:	
Lot #:	NA	Lot #:		Lot #:	
exp:	NA	exp:		exp:	

Notes:	*See bottle for chart of values based on Temperature

Multiparameter Meter Calibration Checklist (continued)

Values are tested at the beginning of the day, at mid-day, and at the end of the day to document potential drift.
CCV checks are conducted ~ every 4 hours, unless only one well is read then is not required.

Initial Calibration Check/Calibration: 0853

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.02	s.u.	±0.1 s.u.	Pass	No	N/A
7a	7.06	s.u.	±0.1 s.u.			
10a	10.08	s.u.	±0.1 s.u.			
SC Zero (DI)	10.81	µS/cm	0<25 µS/cm			
SC 2000	2015.1	µS/cm	±5%			
ORP	235.9 @ 15°C	mV	±15 mV			
DO (Zero pt)	0.04	mg/L	±0.1			
DO (Saturated)	98.74	%	97-100%			
Turbidity (DI)	0.99	NTU	<2 NTU			

ICV (Initial Calibration Verification) 0858

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.13	s.u.	±0.15 s.u.	Pass	None
7b	6.88	s.u.	±0.15 s.u.		
10b	9.93	s.u.	±0.15 s.u.		
SC1000	974.31	µS/cm	±5%		

CCV (Continued Calibration Verification): 1215

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.07	s.u.	±0.1 s.u.	Pass	No	N/A
7	7.09	s.u.	±0.1 s.u.			
10	10.03	s.u.	±0.1 s.u.			
SC 1000	998.31	µS/cm	±5%			
DO (Zero pt)	0.03	mg/L	±0.1 mg/L			
Turbidity (DI)	0.87	NTU	<2 NTU			

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	~~Pass/Fail~~	~~Calibrate?~~	Adjusted Reading
4		s.u.	±0.1 s.u.			
7*		s.u.	~~±0.1 s.u.~~			
10		s.u.	±0.1 s.u.			
SC 1000		µS/cm	±5%			
DO (Zero pt)		mg/L	±0.1 mg/L			
Turbidity (DI)		NTU	~~<2 NTU~~			
Comments:						

MC 2/11/22

Signature: [signature]

Date: 2/11/22

FB01365-05 KEG

RAMBOLL
234 W. FLORIDA STREET, 5th FLOOR
MILWAUKEE, WI 53204
TEL: 414.837.3607

RAMBOLL - MILWAUKEE
NRT COFFEEN CCR ASH 1

CHAIN OF CUSTODY # 1
DATE: 2/8/22
PAGE: 1 OF 1

LABORATORY SAMPLES SUBMITTED TO:
Pace Analytical Services
ADDRESS:
2231 W Altorfer Drive
CITY:
Peoria, IL 61615
TEL: **309-683-1716** FAX: **309-692-9689** E-MAIL: gschindler@pdclab.com

CLIENT PROJECT NAME: **Coffeen Ash Pond 1**
PROJECT NUMBER / TASK NUMBER: **2285 / Unit 101**
PROJECT CONTACT: **Gail Schindler**
QUOTE NO.:
SAMPLER(S): (SIGNATURE)

TURNAROUND TIME
☐ STANDARD ☐ 24 HR ☐ 48 HR ☐ 2 HR ☒ 5 DAYS

Data Package: **Level 2** Level 4

Preservatives: A = none, B= HCL, C = H_2SO_4, D = HNO_3, E = methanol, F = Sodium Bisulfate, G = zinc acetate, H = other

Preservation Code (pick letter)
Filtered (Yor N)

REQUESTED ANALYSIS

SPECIAL REQUIREMENTS

LAB USE ONLY	SAMPLE ID	QC SAMPLE	FIELD COMMENTS	SAMPLE DATE	SAMPLE TIME	MATRIX	SAMPLE TYPE	SAMPLE INTERVAL (ft) TOP	SAMPLE INTERVAL (ft) BOTTOM	#Cont	A N: Cl F SO_4 TDS	A N: alk HCO_3 CO_3	D N: As B Ba Be	D N: Ca Cd Cr Co Hg	D N: K Li Mg Mo	D N: Na Pb Sb Se Tl	A N: GFS 2-28-22	D N
	G301		MS/MSD/Dup	2/8/22	1624	GW	Grab			4								
	G302			2/8/22	1641	GW	Grab			3								
	G303			2/8/22	1501	GW	Grab			3								
	G306			2/8/22	1357	GW	Grab			3								
	G281			2/8/22	1212	GW	Grab			3								

Relinquished by: (Signature)	Received by: (Signature)	Date: 2/8/22	Time: 17:45
Relinquished by: (Signature)	Received by: (Signature)	Date: 2/8/22	Time: 19:30
Relinquished by: (Signature) 2/9/22 14:45	Received by: (Signature) Kathryn Gray	Date: 02/09/22	Time: 1445

6.2°C

FB01775-02 KEG

RAMBOLL
234 W. FLORIDA STREET, 5th FLOOR
MILWAUKEE, WI 53204
TEL: 414.837.3607

RAMBOLL - MILWAUKEE
NRT COFFEEN CCR ASH 1

CHAIN OF CUSTODY # 1
DATE: 2/9/22
PAGE: 1 OF 1

LABORATORY SAMPLES SUBMITTED TO: Pace Analytical Services		CLIENT PROJECT NAME: Coffeen Ash Pond 1	PROJECT NUMBER / TASK NUMBER: 2285 / Unit 101
ADDRESS: 2231 W Altorfer Drive		PROJECT CONTACT: Gail Schindler	QUOTE NO.:
CITY: Peoria, IL 61615		SAMPLER(S): (SIGNATURE) Tracy Carroll	
TEL: 309-683-1716	FAX: 309-692-9689	E-MAIL: gschindler@pdclab.com	

TURNAROUND TIME: ☐ STANDARD ☐ 24 HR ☐ 48 HR ☐ 2 HR ☒ 5 DAYS

Data Package: **Level 2** Level 4

Preservatives: A = none, B= HCL, C = H_2SO_4, D = HNO_3, E = methanol, F = Sodium Bisulfate, G = zinc acetate, H = other

REQUESTED ANALYSIS

Preservation Code (pick letter)	A	A	D	D	D	D	A	D
Filtered (Y or N)	N	N	N	N	N	N	N	N
Analysis	Cl F SO4 TDS	alk HCO3 CO3	As, B, Ba, Be	Ca Cd Co Cr Hg	K Li Mg Mo Na	Pb Sb Se Tl		

SPECIAL REQUIREMENTS

LAB USE ONLY	SAMPLE ID	QC SAMPLE	FIELD COMMENTS	SAMPLE DATE	SAMPLE TIME	MATRIX	SAMPLE TYPE	SAMPLE INTERVAL (ft) TOP	SAMPLE INTERVAL (ft) BOTTOM	#Cont	Cl F SO4 TDS	alk HCO3 CO3	As, B, Ba, Be	Ca Cd Co Cr Hg	K Li Mg Mo Na	Pb Sb Se Tl
	Field Blank			2/9/22	1625	DI	G			3	X	X	X	X	X	X
	Equip Blank			↓	1625	↓	↓			3	X	X	X	X	X	X

2-28-22 BS

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Tracy Carroll	Luke Drummond	2/9/22	1630
Luke Drummond	[signature]	2/9/22	18:45
[signature]	[signature]	2/10/22	1130

[signature] 2/10/22 1430 Kathy Gray 14:30 02/10/22 2.6°C

FB02282-01 KEG

RAMBOLL
234 W. FLORIDA STREET, 5th FLOOR
MILWAUKEE, WI 53204
TEL: 414.837.3607

RAMBOLL - MILWAUKEE
NRT COFFEEN CCR ASH 1

CHAIN OF CUSTODY #: 1
DATE: 2/11/22
PAGE: 1 OF 1

LABORATORY SAMPLES SUBMITTED TO: Pace Analytical Services		CLIENT PROJECT NAME: Coffeen Ash Pond 1	PROJECT NUMBER / TASK NUMBER: 2285 / Unit 101
ADDRESS: 2231 W Altorfer Drive		PROJECT CONTACT: Gail Schindler	QUOTE NO.:
CITY: Peoria, IL 61615		SAMPLER(S): (SIGNATURE) [signature]	
TEL: 309-683-1716	FAX: 309-692-9689	E-MAIL: gschindler@pdclab.com	

TURNAROUND TIME: ☐ STANDARD ☐ 24 HR ☐ 48 HR ☐ 2 HR ☒ 5 DAYS

Data Package: **Level 2** Level 4

Preservatives: A = none, B= HCL, C = H_2SO_4, D = HNO_3, E = methanol, F = Sodium Bisulfate, G = zinc acetate, H = other

SPECIAL REQUIREMENTS

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	QC SAMPLE	FIELD COMMENTS	SAMPLE DATE	SAMPLE TIME	MATRIX	SAMPLE TYPE	SAMPLE INTERVAL (ft) TOP	BOTTOM	#Cont	Cl F SO4 TDS	alk HCO3 CO3	As B Ba Be	Ca Cd Co Cr Hg	K Li Mg Mo Na	Pb Sb Se Tl		
Preservation Code (pick letter)											A	A	D	D	D	D	A	D
Filtered (Y or N)											N	N	N	N	N	N	N	N
	G307			2/11/22	1148	GW	Grab			3	X	X	X	X	X	X		

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
[signature]		2/11/22	1526
	Kathy Gray	2/11/22	1526

2.1°C

ANALYTICAL REPORT

March 03, 2022

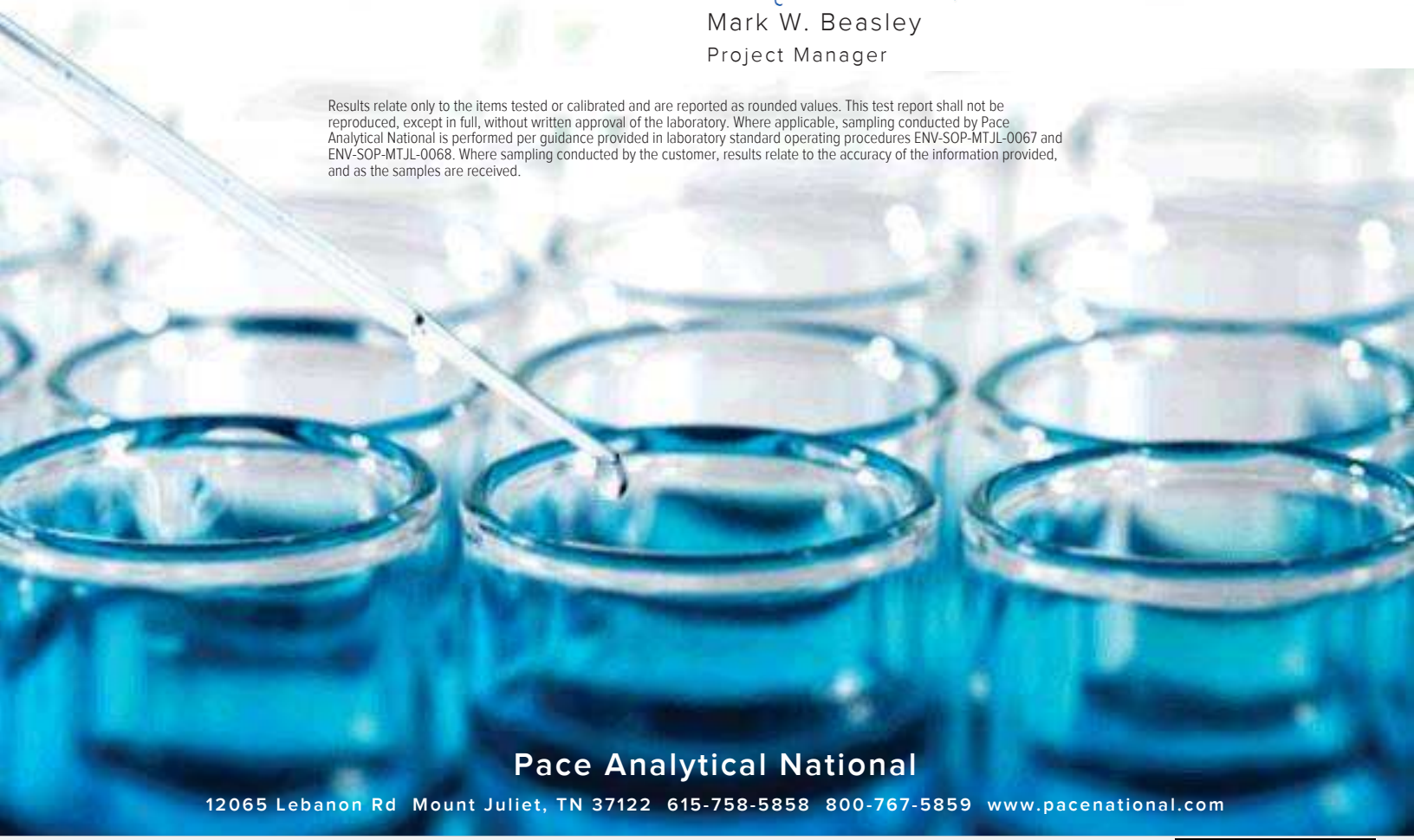
PDC Laboratory, Inc.

Sample Delivery Group:	L1461490
Samples Received:	02/14/2022
Project Number:	FB01360
Description:	

Report To: Gail Schindler
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:

Mark W. Beasley
Project Manager



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

TABLE OF CONTENTS

FB01360-01 L1461490-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/08/22 13:50	02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-02 L1461490-02 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/08/22 12:22	02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-03 L1461490-03 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/08/22 11:05	02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-04 L1461490-04 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/08/22 12:12	02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-05 L1461490-05 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/08/22 09:46	02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 15:05	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-06 L1461490-06 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/08/22 10:43	02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-07 L1461490-07 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/08/22 12:02	02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-08 L1461490-08 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/08/22 15:56	02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-09 L1461490-09 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/08/22 14:30	02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-10 L1461490-10 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/08/22 13:21	02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01360-11 L1461490-11 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/08/22 15:38	02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	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.

Mark W. Beasley
Project Manager

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.203	U	0.331	0.632	02/22/2022 14:50	WG1817742
(T) Barium	*103*			*62.0-143*	*02/22/2022 14:50*	WG1817742
(T) Yttrium	*104*			*79.0-136*	*02/22/2022 14:50*	WG1817742

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.000	U	0.365	0.709	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	-0.0399	U	0.154	0.321	02/23/2022 22:28	WG1819523
(T) Barium-133	*92.5*			*30.0-143*	*02/23/2022 22:28*	WG1819523

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.715		0.309	0.555	02/22/2022 14:50	WG1817742
(T) Barium	*95.7*			*62.0-143*	*02/22/2022 14:50*	WG1817742
(T) Yttrium	*94.7*			*79.0-136*	*02/22/2022 14:50*	WG1817742

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.913		0.358	0.583	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.198		0.181	0.178	02/23/2022 22:28	WG1819523
(T) Barium-133	*93.1*			*30.0-143*	*02/23/2022 22:28*	WG1819523

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	-0.0952	U	0.297	0.563	02/22/2022 14:50	WG1817742
(T) Barium	*95.6*			*62.0-143*	*02/22/2022 14:50*	WG1817742
(T) Yttrium	*94.1*			*79.0-136*	*02/22/2022 14:50*	WG1817742

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.111	U	0.343	0.622	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.111	J	0.172	0.265	02/23/2022 22:28	WG1819523
(T) Barium-133	*88.6*			*30.0-143*	*02/23/2022 22:28*	WG1819523

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.149	U	0.389	0.728	02/22/2022 14:50	WG1817742
(T) Barium	*111*			*62.0-143*	*02/22/2022 14:50*	WG1817742
(T) Yttrium	*95.8*			*79.0-136*	*02/22/2022 14:50*	WG1817742

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.214	U	0.415	0.775	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0649	U	0.146	0.266	02/23/2022 22:28	WG1819523
(T) Barium-133	*90.8*			*30.0-143*	*02/23/2022 22:28*	WG1819523

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.15		0.362	0.636	02/22/2022 14:50	WG1817742
(T) Barium	*103*			*62.0-143*	*02/22/2022 14:50*	WG1817742
(T) Yttrium	*102*			*79.0-136*	*02/22/2022 14:50*	WG1817742

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.25		0.435	0.751	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.104	U	0.241	0.400	02/23/2022 22:28	WG1819523
(T) Barium-133	*94.2*			*30.0-143*	*02/23/2022 22:28*	WG1819523

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.300	J	0.296	0.546	02/22/2022 14:50	WG1817742
(T) Barium	*86.4*			*62.0-143*	*02/22/2022 14:50*	WG1817742
(T) Yttrium	*103*			*79.0-136*	*02/22/2022 14:50*	WG1817742

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.353	J	0.336	0.624	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0525	U	0.159	0.303	02/23/2022 22:28	WG1819523
(T) Barium-133	*99.7*			*30.0-143*	*02/23/2022 22:28*	WG1819523

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.968	U	0.303	0.609	02/22/2022 14:50	WG1817742
(T) Barium	*89.7*			*62.0-143*	*02/22/2022 14:50*	WG1817742
(T) Yttrium	*105*			*79.0-136*	*02/22/2022 14:50*	WG1817742

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.000	U	0.333	0.691	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	-0.00247	U	0.138	0.326	02/23/2022 22:28	WG1819523
(T) Barium-133	*95.4*			*30.0-143*	*02/23/2022 22:28*	WG1819523

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.844		0.279	0.493	02/22/2022 14:50	WG1817742
(T) Barium	*98.1*			*62.0-143*	*02/22/2022 14:50*	WG1817742
(T) Yttrium	*105*			*79.0-136*	*02/22/2022 14:50*	WG1817742

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.949		0.330	0.568	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.105	U	0.177	0.283	02/23/2022 22:28	WG1819523
(T) Barium-133	*92.0*			*30.0-143*	*02/23/2022 22:28*	WG1819523

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	2.28		0.294	0.467	02/22/2022 14:50	WG1817742
(T) Barium	*106*			*62.0-143*	*02/22/2022 14:50*	WG1817742
(T) Yttrium	*98.8*			*79.0-136*	*02/22/2022 14:50*	WG1817742

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	2.28		0.299	0.516	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	-0.0184	U	0.0538	0.219	02/23/2022 22:28	WG1819523
(T) Barium-133	*97.3*			*30.0-143*	*02/23/2022 22:28*	WG1819523

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.0154	U	0.260	0.492	02/22/2022 14:50	WG1817742
(T) Barium	*102*			*62.0-143*	*02/22/2022 14:50*	WG1817742
(T) Yttrium	*93.8*			*79.0-136*	*02/22/2022 14:50*	WG1817742

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.173	U	0.308	0.524	02/23/2022 22:28	WG1819523

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	0.166	0.181	02/23/2022 22:28	WG1819523
(T) Barium-133	*99.7*			*30.0-143*	*02/23/2022 22:28*	WG1819523

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.55		0.304	0.511	02/22/2022 14:50	WG1817742
(T) Barium	*92.6*			*62.0-143*	*02/22/2022 14:50*	WG1817742
(T) Yttrium	*103*			*79.0-136*	*02/22/2022 14:50*	WG1817742

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.71		0.350	0.553	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.158	J	0.174	0.211	02/23/2022 22:28	WG1819523
(T) Barium-133	*95.0*			*30.0-143*	*02/23/2022 22:28*	WG1819523

Method Blank (MB)

(MB) R3764674-1 02/22/22 14:50

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-228	-0.170	U	0.223	0.420
(T) Barium	*98.2*		*98.2*	
(T) Yttrium	*105*		*105*	

L1461488-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1461488-01 02/22/22 14:50 • (DUP) R3764674-5 02/22/22 14:50

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	0.172	0.341	0.636	-0.0749	0.894	0.636	1	200	0.258	U	20	3
(T) Barium	*93.8*			*97.9*	*97.9*							
(T) Yttrium	*108*			*93.3*	*93.3*							

Laboratory Control Sample (LCS)

(LCS) R3764674-2 02/22/22 14:50

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.92	118	80.0-120	
(T) Barium			*99.1*		
(T) Yttrium			*96.5*		

L1461484-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1461484-01 02/22/22 14:50 • (MS) R3764674-3 02/22/22 14:50 • (MSD) R3764674-4 02/22/22 14:50

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	1.15	16.3	15.9	90.7	88.6	1	70.0-130			2.17		20
(T) Barium		*91.0*			*101*	*89.5*							
(T) Yttrium		*103*			*99.2*	*109*							

Method Blank (MB)

(MB) R3765862-1 02/23/22 22:28

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-226	0.0249	U	0.0535	0.0876
(T) Barium-133	*95.8*		*95.8*	

L1461490-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1461490-11 02/23/22 22:28 • (DUP) R3765862-5 02/23/22 22:28

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-226	0.158	0.174	0.211	0.0677	0.134	0.211	1	80.0	0.411	U	20	3
(T) Barium-133	*95.0*			*91.0*	*91.0*							

Laboratory Control Sample (LCS)

(LCS) R3765862-2 02/23/22 22:28

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	5.45	109	80.0-120	
(T) Barium-133			*95.9*		

L1461484-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1461484-03 02/23/22 22:28 • (MS) R3765862-3 02/23/22 22:28 • (MSD) R3765862-4 02/23/22 22:28

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	-0.00238	20.0	19.0	99.5	94.4	1	75.0-125			5.18		20
(T) Barium-133		*92.6*			*91.1*	*96.3*							

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.

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 [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	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 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] 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.

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC
FB01360

K009

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

L1461490

Sample: FB01360-01
Name: G270

Sampled: 02/08/22 13:50
Matrix: Ground Water
Preservative: HNO3, pH <2

-01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	03/10/22 16:00	08/07/22 13:50	

-01 lwl 2/15

Sample: FB01360-02
Name: G279

Sampled: 02/08/22 12:22
Matrix: Ground Water
Preservative: HNO3, pH <2

-02

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	03/10/22 16:00	08/07/22 12:22	

Sample: FB01360-03
Name: G280

Sampled: 02/08/22 11:05
Matrix: Ground Water
Preservative: HNO3, pH <2

-03

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	03/10/22 16:00	08/07/22 11:05	

Sample: FB01360-04
Name: G281

Sampled: 02/08/22 12:12
Matrix: Ground Water
Preservative: HNO3, pH <2

-04

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	03/10/22 16:00	08/07/22 12:12	

Sample: FB01360-05
Name: G403

Sampled: 02/08/22 09:46
Matrix: Ground Water
Preservative: HNO3, pH <2

-05

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	03/10/22 16:00	08/07/22 09:46	

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

FB01360

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

L1461490

Sample: FB01360-06
Name: G404

Sampled: 02/08/22 10:43
Matrix: Ground Water
Preservative: HNO3, pH <2

-06

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	03/10/22 16:00	08/07/22 10:43	

Sample: FB01360-07
Name: G405

Sampled: 02/08/22 12:02
Matrix: Ground Water
Preservative: HNO3, pH <2

-07

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	03/10/22 16:00	08/07/22 12:02	

Sample: FB01360-08
Name: G406

Sampled: 02/08/22 15:56
Matrix: Ground Water
Preservative: HNO3, pH <2

-08

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	03/10/22 16:00	08/07/22 15:56	

Sample: FB01360-09
Name: G407

Sampled: 02/08/22 14:30
Matrix: Ground Water
Preservative: HNO3, pH <2

-09

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	03/10/22 16:00	08/07/22 14:30	

Sample: FB01360-10
Name: G410

Sampled: 02/08/22 13:21
Matrix: Ground Water
Preservative: HNO3, pH <2

-10

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	03/10/22 16:00	08/07/22 13:21	

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

FB01360

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

L1461490

Sample: FB01360-11
Name: G154

Sampled: 02/08/22 15:38
Matrix: Ground Water
Preservative: HNO3, pH <2

-11

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	03/10/22 16:00	08/07/22 15:38	

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		

Please email results to Gail Schindler at gschindler@pdclab.com

Date Shipped: 2-10-22 Total # of Containers: 11 Sample Origin (State): IL PO #: 42

Turn-Around Time Requested ☑ NORMAL ☐ RUSH Date Results Needed: _____

Relinquished By	Date/Time	Received By	Date/Time
[signature]	2-10-22 11:15		
		[signature]	2/11/22 0930

Sample Temperature Upon Receipt	____ °C
Sample(s) Received on Ice	Y or N
Proper Bottles Received in Good Condition	Y or N
Bottles Filled with Adequate Volume	Y or N
Samples Received Within Hold Time	Y or N
Date/Time Taken From Sample Bottle	Y or N

ANALYTICAL REPORT

April 05, 2022

Revised Report

Pace IR - Peoria, IL

Sample Delivery Group:	L1461484
Samples Received:	02/14/2022
Project Number:	FB01773
Description:	

Report To: Gail Schindler
2231 W. Altorfer Drive
Peoria, IL 61615

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.

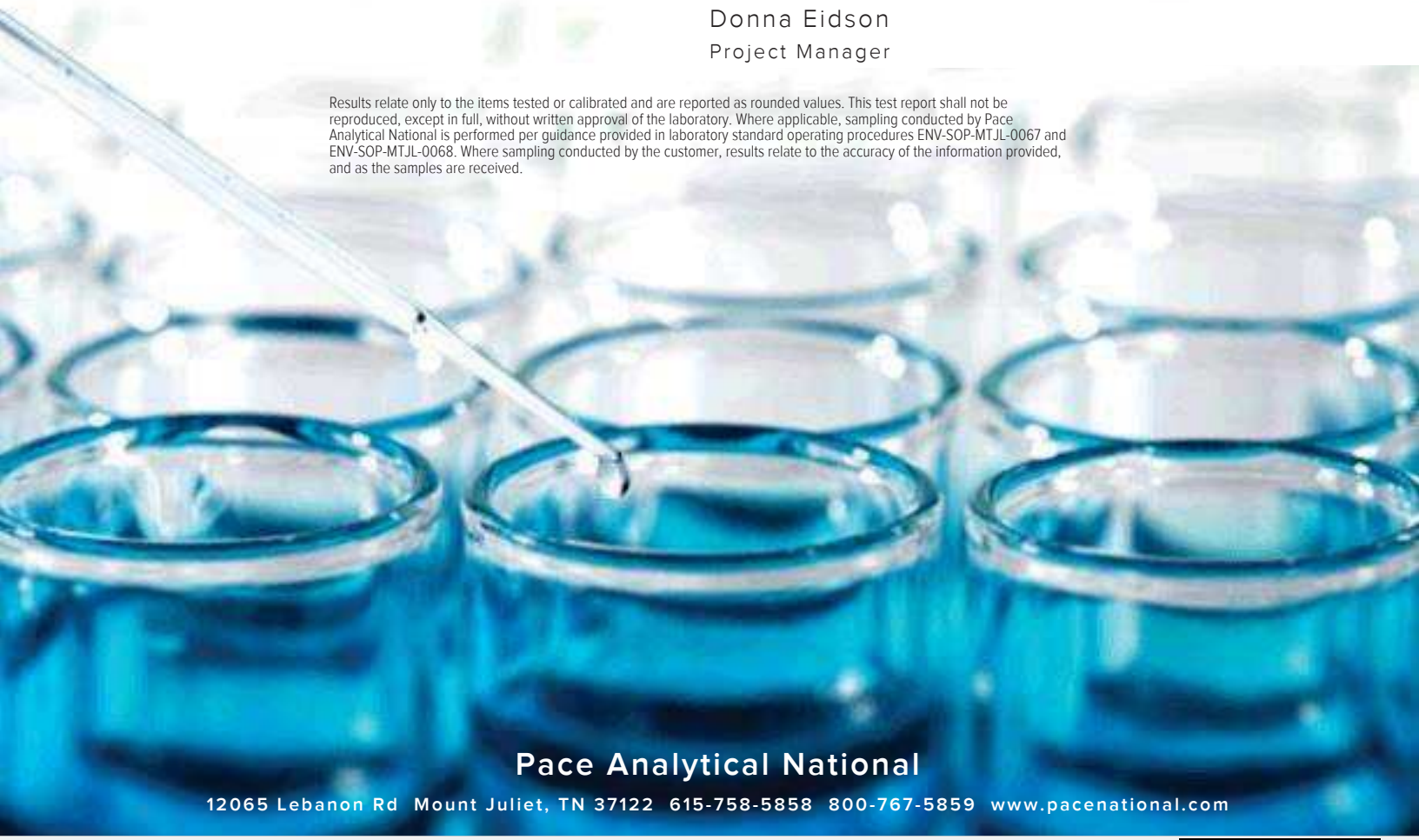


TABLE OF CONTENTS

FB01773-01 L1461484-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/09/22 11:52	02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01773-02 L1461484-02 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/09/22 13:20	02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

FB01773-03 L1461484-03 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/09/22 09:58	02/14/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1817742	1	02/16/22 10:00	02/22/22 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1819523	1	02/21/22 12:58	02/23/22 22:28	RGT	Mt. Juliet, TN

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

Report Revision History

Level II Report - Version 1: 03/03/22 10:54

Project Narrative

Revised collection times

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.15		0.407	0.723	02/22/2022 14:50	WG1817742
(T) Barium	*91.0*			*62.0-143*	*02/22/2022 14:50*	WG1817742
(T) Yttrium	*103*			*79.0-136*	*02/22/2022 14:50*	WG1817742

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.21		0.435	0.778	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0591	U	0.154	0.286	02/23/2022 22:28	WG1819523
(T) Barium-133	*93.5*			*30.0-143*	*02/23/2022 22:28*	WG1819523

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.628		0.315	0.568	02/22/2022 14:50	WG1817742
(T) Barium	*91.4*			*62.0-143*	*02/22/2022 14:50*	WG1817742
(T) Yttrium	*103*			*79.0-136*	*02/22/2022 14:50*	WG1817742

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.873		0.381	0.616	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.246		0.214	0.238	02/23/2022 22:28	WG1819523
(T) Barium-133	*92.2*			*30.0-143*	*02/23/2022 22:28*	WG1819523

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.351	J	0.349	0.642	02/22/2022 14:50	WG1817742
(T) Barium	*86.6*			*62.0-143*	*02/22/2022 14:50*	WG1817742
(T) Yttrium	*98.0*			*79.0-136*	*02/22/2022 14:50*	WG1817742

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.351	J	0.374	0.715	02/23/2022 22:28	WG1819523

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	-0.00238	U	0.134	0.315	02/23/2022 22:28	WG1819523
(T) Barium-133	*92.6*			*30.0-143*	*02/23/2022 22:28*	WG1819523

Method Blank (MB)

(MB) R3764674-1 02/22/22 14:50

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-228	-0.170	U	0.223	0.420
(T) Barium	*98.2*		*98.2*	
(T) Yttrium	*105*		*105*	

L1461488-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1461488-01 02/22/22 14:50 • (DUP) R3764674-5 02/22/22 14:50

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	0.172	0.341	0.636	-0.0749	0.894	0.636	1	200	0.258	U	20	3
(T) Barium	*93.8*			*97.9*	*97.9*							
(T) Yttrium	*108*			*93.3*	*93.3*							

Laboratory Control Sample (LCS)

(LCS) R3764674-2 02/22/22 14:50

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.92	118	80.0-120	
(T) Barium			*99.1*		
(T) Yttrium			*96.5*		

L1461484-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1461484-01 02/22/22 14:50 • (MS) R3764674-3 02/22/22 14:50 • (MSD) R3764674-4 02/22/22 14:50

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	1.15	16.3	15.9	90.7	88.6	1	70.0-130			2.17		20
(T) Barium		*91.0*			*101*	*89.5*							
(T) Yttrium		*103*			*99.2*	*109*							

Method Blank (MB)

(MB) R3765862-1 02/23/22 22:28

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-226	0.0249	U	0.0535	0.0876
(T) Barium-133	*95.8*		*95.8*	

L1461490-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1461490-11 02/23/22 22:28 • (DUP) R3765862-5 02/23/22 22:28

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-226	0.158	0.174	0.211	0.0677	0.134	0.211	1	80.0	0.411	U	20	3
(T) Barium-133	*95.0*			*91.0*	*91.0*							

Laboratory Control Sample (LCS)

(LCS) R3765862-2 02/23/22 22:28

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	5.45	109	80.0-120	
(T) Barium-133			*95.9*		

L1461484-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1461484-03 02/23/22 22:28 • (MS) R3765862-3 02/23/22 22:28 • (MSD) R3765862-4 02/23/22 22:28

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	-0.00238	20.0	19.0	99.5	94.4	1	75.0-125			5.18		20
(T) Barium-133		*92.6*			*91.1*	*96.3*							

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.

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 [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	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 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] 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.

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

FB01773

K012

L1461484

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

Sample: FB01773-01 -01
Name: G401

Sampled: 02/09/22 11:52
Matrix: Ground Water
Preservative: HNO3, pH <2

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	03/03/22 16:00	08/08/22 11:52	

Sample: FB01773-02 -02
Name: G402

Sampled: 02/09/22 13:20
Matrix: Ground Water
Preservative: HNO3, pH <2

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	03/03/22 16:00	08/08/22 13:20	

Sample: FB01773-03 -03
Name: G411

Sampled: 02/09/22 09:58
Matrix: Ground Water
Preservative: HNO3, pH <2

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	03/03/22 16:00	08/08/22 09:58	

Sample Receipt Checklist

			If Applicable	
COC Seal Present/Intact:	Y	N		
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		

Please email results to Gail Schindler at gschindler@paclab.com

Date Shipped: 2-1-22 Total # of Containers: 3 Sample Origin (State): IL PO #: 42

Turn-Around Time Requested ☑ NORMAL ☐ RUSH Date Results Needed: _____

Relinquished By	Date/Time	Received By	Date/Time	Sample Temperature Upon Receipt	____ °C
	2-1-22 1:40			Sample(s) Received on Ice	Y or N
				Proper Bottles Received in Good Condition	Y or N
				Bottles Filled with Adequate Volume	Y or N
				Samples Received Within Hold Time	Y or N
Relinquished By	Date/Time	Received By	Date/Time	Date/Time Taken From Sample Bottle	Y or N
			2/4/22 0935		

ANALYTICAL REPORT

April 21, 2022

Revised Report

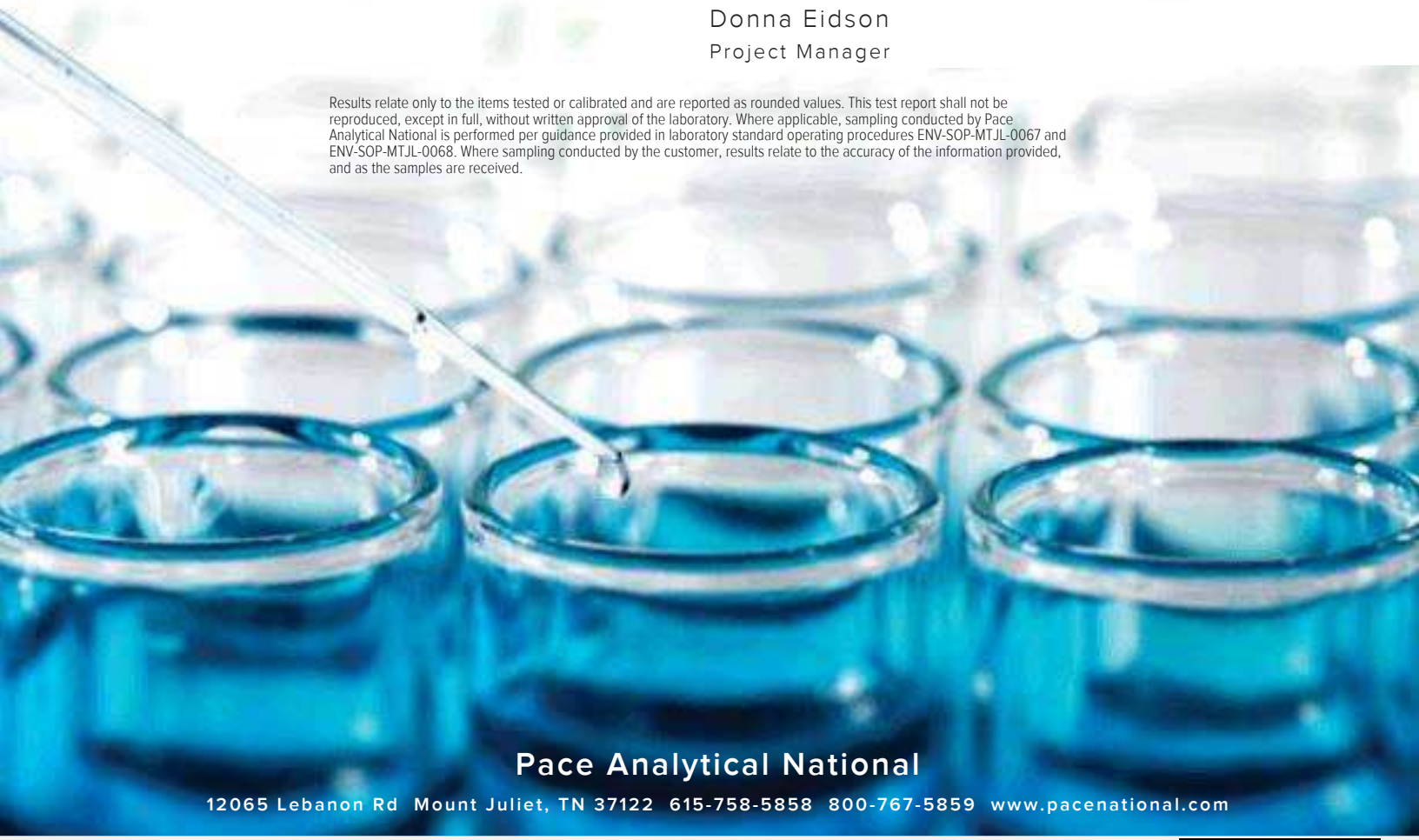
Pace IR - Peoria, IL

Sample Delivery Group:	L1475988
Samples Received:	03/29/2022
Project Number:	FC03756
Description:	Coffeen SW Pond
Site:	001
Report To:	Gail Schindler

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

TABLE OF CONTENTS

G151 L1475988-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	03/21/22 13:26	03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1846703	1	04/13/22 09:59	04/18/22 12:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1846344	1	04/13/22 13:54	04/18/22 12:20	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1846344	1	04/13/22 13:54	04/15/22 20:39	RGT	Mt. Juliet, TN

G152 L1475988-02 Non-Potable Water

Collected by	Collected date/time	Received date/time
	03/21/22 15:20	03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1846703	1	04/13/22 09:59	04/18/22 12:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1846344	1	04/13/22 13:54	04/18/22 12:20	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1846344	1	04/13/22 13:54	04/15/22 20:39	RGT	Mt. Juliet, TN

G153 L1475988-03 Non-Potable Water

Collected by	Collected date/time	Received date/time
	03/21/22 14:52	03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1846703	1	04/13/22 09:59	04/18/22 12:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1846344	1	04/13/22 13:54	04/18/22 12:20	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1846344	1	04/13/22 13:54	04/15/22 20:39	RGT	Mt. Juliet, TN

G155 L1475988-04 Non-Potable Water

Collected by	Collected date/time	Received date/time
	03/21/22 14:20	03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1846703	1	04/13/22 09:59	04/18/22 12:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1846344	1	04/13/22 13:54	04/18/22 12:20	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1846344	1	04/13/22 13:54	04/15/22 20:39	RGT	Mt. Juliet, TN

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

Report Revision History

Level II Report - Version 1: 04/20/22 17:53

Project Narrative

Added COMB RA per customer request.

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	-0.363	U	0.330	0.626	04/18/2022 12:20	WG1846703
(T) Barium	*93.0*			*62.0-143*	*04/18/2022 12:20*	WG1846703
(T) Yttrium	*101*			*79.0-136*	*04/18/2022 12:20*	WG1846703

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.0758	U	0.371	0.689	04/18/2022 12:20	WG1846344

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0758	U	0.169	0.289	04/15/2022 20:39	WG1846344
(T) Barium-133	*95.7*			*30.0-143*	*04/15/2022 20:39*	WG1846344

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.294	J	0.336	0.616	04/18/2022 12:20	WG1846703
(T) Barium	*84.4*			*62.0-143*	*04/18/2022 12:20*	WG1846703
(T) Yttrium	*107*			*79.0-136*	*04/18/2022 12:20*	WG1846703

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.621	J	0.453	0.707	04/18/2022 12:20	WG1846344

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.326	J	0.304	0.346	04/15/2022 20:39	WG1846344
(T) Barium-133	*80.2*			*30.0-143*	*04/15/2022 20:39*	WG1846344

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.340	J	0.321	0.587	04/18/2022 12:20	WG1846703
(T) Barium	*86.0*			*62.0-143*	*04/18/2022 12:20*	WG1846703
(T) Yttrium	*96.3*			*79.0-136*	*04/18/2022 12:20*	WG1846703

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.614	J	0.415	0.654	04/18/2022 12:20	WG1846344

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.274	J	0.263	0.288	04/15/2022 20:39	WG1846344
(T) Barium-133	*82.2*			*30.0-143*	*04/15/2022 20:39*	WG1846344

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.0803	U	0.310	0.575	04/18/2022 12:20	WG1846703
(T) Barium	*92.5*			*62.0-143*	*04/18/2022 12:20*	WG1846703
(T) Yttrium	*96.8*			*79.0-136*	*04/18/2022 12:20*	WG1846703

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.237	U	0.372	0.644	04/18/2022 12:20	WG1846344

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.156	J	0.205	0.291	04/15/2022 20:39	WG1846344
(T) Barium-133	*99.0*			*30.0-143*	*04/15/2022 20:39*	WG1846344

Method Blank (MB)

(MB) R3783293-1 04/15/22 12:10

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-228	-0.0673	U	0.212	0.427
(T) Barium	*95.4*		*95.4*	
(T) Yttrium	*98.3*		*98.3*	

L1475371-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1475371-01 04/18/22 12:20 • (DUP) R3783293-5 04/15/22 12:10

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	-0.0465	0.290	0.531	0.504	0.498	0.531	1	200	0.956	J	20	3
(T) Barium	*91.1*			*93.3*	*93.3*							
(T) Yttrium	*104*			*97.4*	*97.4*							

Laboratory Control Sample (LCS)

(LCS) R3783293-2 04/15/22 12:10

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.71	94.2	80.0-120	
(T) Barium			*105*		
(T) Yttrium			*99.4*		

L1475323-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1475323-01 04/15/22 12:10 • (MS) R3783293-3 04/15/22 12:10 • (MSD) R3783293-4 04/15/22 12:10

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	0.443	19.4	21.5	113	126	1	70.0-130			10.4		20
(T) Barium		*89.3*			*98.8*	*104*							
(T) Yttrium		*101*			*96.8*	*94.6*							

Method Blank (MB)

(MB) R3782355-5 04/16/22 15:33

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-226	-0.0121	U	0.0112	0.0292
(T) Barium-133	*94.6*		*94.6*	

L1480367-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1480367-01 04/15/22 20:39 • (DUP) R3782355-4 04/15/22 20:39

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-226	0.851	0.432	0.317	0.438	0.270	0.317	1	64.0	0.810		20	3
(T) Barium-133	*70.3*			*96.8*	*96.8*							

Laboratory Control Sample (LCS)

(LCS) R3782355-1 04/15/22 20:39

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	5.09	101	80.0-120	
(T) Barium-133			*93.4*		

L1479436-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1479436-01 04/15/22 20:39 • (MS) R3782355-2 04/15/22 20:39 • (MSD) R3782355-3 04/15/22 20:39

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	20.0	1.70	21.4	22.9	98.6	106	1	75.0-125			6.81		20
(T) Barium-133		*83.7*			*90.6*	*90.7*							

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.

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 [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	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 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] 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.

A150

Internal Transfer Chain of Custody

Pace Analytical®

State of Origin: IL
Cert. Needed: [X] YES [ ] NO

Workorder: FC03756 **Workorder Name:** Coffeen SW Pond **Owner Received Date:** 3/21/2022 **Results Requested By:** 4/13/2022

Report To:	Subcontract To:
Gail Schindler Pace Analytical - IL/MO 2231 W. Altorfer Drive Peoria, IL 61615 800-752-6651	Pace Analytical Services, LLC 12065 Lebanon Mt. Juliet, TN 37122 (615)758-5858

L1475988

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	Radium 226/228	LAB USE ONLY
1	G151	Grab	3/21/2022 13:26	FC03756-01	GW		X	-01
2	G152	Grab	3/21/2022 15:20	FC03756-02	GW		X	-02
3	G153	Grab	3/21/2022 14:52	FC03756-03	GW		X	-03
4	G155	Grab	3/21/2022 14:20	FC03756-04	GW		X	-04
5								
6								
7								
8								
9								
10								

Transfers	Released By	Date/Time	Reveived By	Date/Time	Comments
1	[signature]	3-23-22 12:55	[signature]	3/26/22 0900	
2					
3					

Cooler Temperature on Receipt ________ °C **Custody Seal** (Y) or N **Received on Ice** (Y) or N **Sample Intact** (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

FMT-ALL-C-002rev.00 24March2009 Page 1 of 1

14.1tnsl4l A2BA

Sample Receipt Checklist

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

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REGULATORY PROGRAM (CIRCLE):	NPDES
MORBCA	RCRA
CCDD	TACO: RES OR IND/COMM

CHAIN OF CUSTODY RECORD

STATE WHERE SAMPLE COLLECTED IL

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

(1) CLIENT: VISTRA - COFFEEN
PROJECT NUMBER: GMZ
PROJECT LOCATION:
PURCHASE ORDER #:
ADDRESS: 134 CIPS LANE
PHONE NUMBER:
E-MAIL:
DATE SHIPPED:
CITY / STATE / ZIP: COFFEEN, IL 62017
SAMPLER (PLEASE PRINT): Tracy Carroll
CONTACT PERSON: JOHN ROMANG
SAMPLER'S SIGNATURE: Tracy Carroll

MATRIX TYPES:
WW- WASTEWATER
DW- DRINKING WATER
GW- GROUND WATER
WWSL- SLUDGE
NAS- NON AQUEOUS SOLID
LCHT-LEACHATE
OIL-OIL
SO-SOIL
SOL-SOLID

(3) ANALYSIS REQUESTED

(4) (FOR LAB USE ONLY)
LOGIN # FBOB160-11
LOGGED BY: KEG
CLIENT: VISTRA-COFFEEN
PROJECT: COFFEEN GMZ
PROJ. MGR.: GJ SCHINDLER

(2) SAMPLE DESCRIPTION (UNIQUE DESCRIPTION AS IT WILL APPEAR ON THE ANALYTICAL REPORT)	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE GRAB	SAMPLE TYPE COMP	MATRIX TYPE	BOTTLE COUNT	PRES CODE CLIENT PROVIDED	AL*, SB, AS, AS*, BA, BE	B, B*, CD, CA, CR, CO, CU*	CN,FE*, PB, LI, MN*, HG,	MO, NI*, NO3, PB*, SE, AG*	TL, V*,ZN*, F, CL, SO4, TDS,	RADIUM 226/228		REMARKS
G270	2/8/22	1350	X		GW	5									*DISSOLVED
G279	"	12:22	"		"	"									
G280	"	11:05	"		"	"									
G281	"	1212	"		"	"									
G403	"	946	"		"	"									
G404	"	1043	"		"	"									
G405	"	1202	"		"	"									
G 406	"	1556	"		"	"									
G 407	"	1430	"		"	"									

CHEMICAL PRESERVATION CODES: 1 – HCL | 2 – H2SO4 | 3 – HNO3 | 4 – NAOH | 5 – NA2S2O3 | 6 – UNPRESERVED | 7 – OTHER

(5) TURNAROUND TIME REQUESTED (PLEASE CIRCLE) NORMAL RUSH
(RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)
DATE RESULTS NEEDED:
RUSH RESULTS VIA (PLEASE CIRCLE) EMAIL PHONE
EMAIL IF DIFFERENT FROM ABOVE:
PHONE # IF DIFFERENT FROM ABOVE:

(6) *I understand that by initialing this box I give the lab permission to proceed with analysis, even though it may not meet all sample conformance requirements as defined in the receiving facility's Sample Acceptance Policy and the data will be qualified. Qualified data may NOT be acceptable to report to all regulatory authorities.*
PROCEED WITH ANALYSIS AND QUALIFY RESULTS: (INITIALS) _____

(7)		DATE	TIME		DATE	TIME
RELINQUISHED BY: (SIGNATURE)	Tracy Carroll	2/8/22	1745	RECEIVED BY: (SIGNATURE)		2/8/22 17:45
RELINQUISHED BY: (SIGNATURE)		2/8/22	1430	RECEIVED BY: (SIGNATURE)		2/9/22 10:30
RELINQUISHED BY: (SIGNATURE)		2/9/22	1445	RECEIVED BY: (SIGNATURE)	Kathy Gray	02/09/22 1445

(8) COMMENTS: (FOR LAB USE ONLY)
6.2 KEG
SAMPLE TEMPERATURE UPON RECEIPT 6.5 °C
CHILL PROCESS STARTED PRIOR TO RECEIPT (Y) OR N
SAMPLE(S) RECEIVED ON ICE (Y) OR N
SAMPLE ACCEPTANCE NONCONFORMANT REPORT IS NEEDED Y OR (N)
DATE AND TIME TAKEN FROM SAMPLE BOTTLE _____

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REGULATORY PROGRAM (CIRCLE):	NPDES
MORBCA	RCRA
CCDD	TACO: RES OR IND/COMM

CHAIN OF CUSTODY RECORD

STATE WHERE SAMPLE COLLECTED IL

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

(1) CLIENT: **VISTRA - COFFEEN**
ADDRESS: **134 CIPS LANE**
CITY / STATE / ZIP: **COFFEEN, IL 62017**
CONTACT PERSON: **JOHN ROMANG**

PROJECT NUMBER: **GMZ**
PROJECT LOCATION:
PURCHASE ORDER #:
PHONE NUMBER:
E-MAIL:
DATE SHIPPED:
SAMPLER (PLEASE PRINT): MdH Tracy Carroll
SAMPLER'S SIGNATURE:

MATRIX TYPES:
WW- WASTEWATER
DW- DRINKING WATER
GW- GROUND WATER
WWSL- SLUDGE
NAS- NON AQUEOUS SOLID
LCHT-LEACHATE
OIL-OIL
SO-SOIL
SOL-SOLID

(3) ANALYSIS REQUESTED

(4) (FOR LAB USE ONLY)
LOGIN # FB0136(00-11
LOGGED BY: KEG
CLIENT: VISTRA-COFFEEN
PROJECT: COFFEEN GMZ
PROJ. MGR.: GJ SCHINDLER

(2) SAMPLE DESCRIPTION (UNIQUE DESCRIPTION AS IT WILL APPEAR ON THE ANALYTICAL REPORT)	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE GRAB	SAMPLE TYPE COMP	MATRIX TYPE	BOTTLE COUNT	PRES CODE CLIENT PROVIDED	AL*, SB, AS, AS*, BA, BE	B, B*, CD, CA, CR, CO, CU*	CN,FE*, PB, LI, MN*, HG,	MO, NI*, NO3, PB*, SE, AG*	TL, V*,ZN*, F, CL, SO4, TDS,	RADIUM 226/228		REMARKS
G410	2/8/22	1321	X		GW	5									*DISSOLVED
G154	2/8/22	1538	X		GW	5									

CHEMICAL PRESERVATION CODES: 1 – HCL | 2 – H2SO4 | 3 – HNO3 | 4 – NAOH | 5 – NA2S2O3 | 6 – UNPRESERVED | 7 – OTHER

(5) TURNAROUND TIME REQUESTED (PLEASE CIRCLE) NORMAL RUSH
(RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)
DATE RESULTS NEEDED:
RUSH RESULTS VIA (PLEASE CIRCLE) EMAIL PHONE
EMAIL IF DIFFERENT FROM ABOVE:
PHONE # IF DIFFERENT FROM ABOVE:

(6) *I understand that by initialing this box I give the lab permission to proceed with analysis, even though it may not meet all sample conformance requirements as defined in the receiving facility's Sample Acceptance Policy and the data will be qualified. Qualified data may NOT be acceptable to report to all regulatory authorities.*
PROCEED WITH ANALYSIS AND QUALIFY RESULTS: (INITIALS) _____

(7) RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Tracy Carroll	2/8/22	1745	[illegible]	2/8/22	17:45
RELINQUISHED BY: (SIGNATURE) [illegible]	2/8/22	19:30	RECEIVED BY: (SIGNATURE) [illegible]	2/9/22	10:38
RELINQUISHED BY: (SIGNATURE) [illegible]	2/9/22	14:45	RECEIVED BY: (SIGNATURE) Kathryn Gray	02/09/22	1445

(8) COMMENTS: (FOR LAB USE ONLY)
6.2 KEG
6.5
SAMPLE TEMPERATURE UPON RECEIPT _____ °C
CHILL PROCESS STARTED PRIOR TO RECEIPT Y OR N
SAMPLE(S) RECEIVED ON ICE Y OR N
SAMPLE ACCEPTANCE NONCONFORMANT REPORT IS NEEDED Y OR N
DATE AND TIME TAKEN FROM SAMPLE BOTTLE _____

2 of 2

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REGULATORY PROGRAM (CIRCLE):	NPDES
MORBCA	RCRA
CCDD	TACO: RES OR IND/COMM

CHAIN OF CUSTODY RECORD

STATE WHERE SAMPLE COLLECTED IL

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

(1) CLIENT: VISTRA - COFFEEN
ADDRESS: 134 CIPS LANE
CITY / STATE / ZIP: COFFEEN, IL 62017
CONTACT PERSON: JOHN ROMANG

PROJECT NUMBER: GMZ
PROJECT LOCATION:
PURCHASE ORDER #:
PHONE NUMBER:
E-MAIL:
DATE SHIPPED:
SAMPLER (PLEASE PRINT): MHJ
SAMPLER'S SIGNATURE:

MATRIX TYPES:
WW- WASTEWATER
DW- DRINKING WATER
GW- GROUND WATER
WWSL- SLUDGE
NAS- NON AQUEOUS SOLID
LCHT-LEACHATE
OIL-OIL
SO-SOIL
SOL-SOLID

(3) ANALYSIS REQUESTED

(4) (FOR LAB USE ONLY)
LOGIN # FB01773-03
LOGGED BY: KEG
CLIENT: VISTRA-COFFEEN
PROJECT: COFFEEN GMZ
PROJ. MGR.: GJ SCHINDLER

(2) SAMPLE DESCRIPTION (UNIQUE DESCRIPTION AS IT WILL APPEAR ON THE ANALYTICAL REPORT)	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE GRAB	SAMPLE TYPE COMP	MATRIX TYPE	BOTTLE COUNT	PRES CODE CLIENT PROVIDED	AL*, SB, AS, AS*, BA, BE	B, B*, CD, CA, CR, CO, CU*	CN,FE*, PB, LI, MN*, HG,	MO, NI*, NO3, PB*, SE, AG*	TL, V*,ZN*, F, CL, SO4, TDS,	RADIUM 226/228		REMARKS
G401	2/9/22	1152	X		GW	5									*DISSOLVED
G402	↓	1320	↓		↓	↓									
G411	↓	0958	↓		↓	↓									

CHEMICAL PRESERVATION CODES: 1 – HCL | 2 – H2SO4 | 3 – HNO3 | 4 – NAOH | 5 – NA2S2O3 | 6 – UNPRESERVED | 7 – OTHER

(5) TURNAROUND TIME REQUESTED (PLEASE CIRCLE) NORMAL RUSH
(RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)
DATE RESULTS NEEDED:
RUSH RESULTS VIA (PLEASE CIRCLE) EMAIL PHONE
EMAIL IF DIFFERENT FROM ABOVE:
PHONE # IF DIFFERENT FROM ABOVE:

(6) *I understand that by initialing this box I give the lab permission to proceed with analysis, even though it may not meet all sample conformance requirements as defined in the receiving facility's Sample Acceptance Policy and the data will be qualified. Qualified data may NOT be acceptable to report to all regulatory authorities.*
PROCEED WITH ANALYSIS AND QUALIFY RESULTS: (INITIALS) _____

(7)		DATE	TIME
RELINQUISHED BY: (SIGNATURE)		2/9/22	1630
RECEIVED BY: (SIGNATURE)		2/9/22	16:30
RELINQUISHED BY: (SIGNATURE)		2/9/22	18:45
RECEIVED BY: (SIGNATURE)		2/10/22	1130
RELINQUISHED BY: (SIGNATURE)		2/10/22	1430
RECEIVED BY: (SIGNATURE)	Kathy Gray	02/10/22	1430

(8) COMMENTS: (FOR LAB USE ONLY)
2.6
SAMPLE TEMPERATURE UPON RECEIPT KEG 2.9 °C
CHILL PROCESS STARTED PRIOR TO RECEIPT (Y) OR N
SAMPLE(S) RECEIVED ON ICE (Y) OR N
SAMPLE ACCEPTANCE NONCONFORMANT REPORT IS NEEDED Y OR (N)
DATE AND TIME TAKEN FROM SAMPLE BOTTLE _____

PACE ANALYTICAL SERVICES
WWW.PACELABS.COM

REGULATORY PROGRAM (CIRCLE):	NPDES
MORBCA	RCRA
CCDD	TACO: RES OR IND/COMM

CHAIN OF CUSTODY RECORD

STATE WHERE SAMPLE COLLECTED IL

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1 **CLIENT:** VISTRA - COFFEEN
PROJECT NUMBER: SW POND
PROJECT LOCATION:
PURCHASE ORDER #:
ADDRESS: 134 CIPS LANE
PHONE NUMBER:
E-MAIL:
DATE SHIPPED:
CITY / STATE / ZIP: COFFEEN, IL 62017
SAMPLER (PLEASE PRINT): MHS
CONTACT PERSON: JOHN ROMANG
SAMPLER'S SIGNATURE:

MATRIX TYPES:
WW- WASTEWATER
DW- DRINKING WATER
GW- GROUND WATER
WWSL- SLUDGE
NAS- NON AQUEOUS SOLID
LCHT-LEACHATE
OIL-OIL
SO-SOIL
SOL-SOLID

3 **ANALYSIS REQUESTED**

4 **(FOR LAB USE ONLY)**
LOGIN # FC03756-04
LOGGED BY: DCW
CLIENT: VISTRA-COFFEEN
PROJECT: COFFEEN SW POND
PROJ. MGR.: GJ SCHINDLER

2 SAMPLE DESCRIPTION (UNIQUE DESCRIPTION AS IT WILL APPEAR ON THE ANALYTICAL REPORT)	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE GRAB	SAMPLE TYPE COMP	MATRIX TYPE	BOTTLE COUNT	PRES CODE (CLIENT PROVIDED)	RADIUM 226/228	REMARKS
G151	3/21/22	1326	X		GW	1	3	X	
G152		1520	X		GW	1	3	X	
G153		1452	X		GW	1	3	X	
G155		1420	X		GW	1	3	X	

CHEMICAL PRESERVATION CODES: 1 – HCL | 2 – H2SO4 | 3 – HNO3 | 4 – NAOH | 5 – NA2S2O3 | 6 – UNPRESERVED | 7 – OTHER

5 **TURNAROUND TIME REQUESTED** (PLEASE CIRCLE) NORMAL RUSH
(RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)
DATE RESULTS NEEDED:
RUSH RESULTS VIA (PLEASE CIRCLE) EMAIL PHONE
EMAIL IF DIFFERENT FROM ABOVE:
PHONE # IF DIFFERENT FROM ABOVE:

6 *I understand that by initialing this box I give the lab permission to proceed with analysis, even though it may not meet all sample conformance requirements as defined in the receiving facility's Sample Acceptance Policy and the data will be qualified. Qualified data may NOT be acceptable to report to all regulatory authorities.*
PROCEED WITH ANALYSIS AND QUALIFY RESULTS: (INITIALS) _____

7 RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
	3/21/22	1923			
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
				3/21/22	1923

8 **COMMENTS: (FOR LAB USE ONLY)**
SAMPLE TEMPERATURE UPON RECEIPT 1.2 °C
CHILL PROCESS STARTED PRIOR TO RECEIPT (Y OR N)
SAMPLE(S) RECEIVED ON ICE (Y OR N)
SAMPLE ACCEPTANCE NONCONFORMANT REPORT IS NEEDED (Y OR N)
DATE AND TIME TAKEN FROM SAMPLE BOTTLE _____

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

April 27, 2022

Eric Bauer
Ramboll - Milwaukee
234 W Florida Street, 5th Floor
Milwaukee, WI 53204

Dear Eric Bauer:

Please find enclosed the analytical results for the sample(s) the laboratory received. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of Pace Analytical Services, LLC.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

Pace Analytical Services appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the Director of Client Services, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-683-1764 or lisa.grant@pacelabs.com.

Sincerely,

Gail J Schindler

Gail Schindler
Project Manager
(309) 692-9688 x1716
gail.schindler@pacelabs.com

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as in compliance

Work Order FC03755

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

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ANALYTICAL RESULTS

Sample: FC03755-01
Name: G301
Alias: COF_257_101

Sampled: 03/21/22 14:20
Received: 03/21/22 19:23
Matrix: Ground Water - Grab
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.000 U	pCi/L			1	0.703	04/22/22 21:49		904.0 903.0

Sample: FC03755-02
Name: G302
Alias: COF_257_101

Sampled: 03/21/22 13:29
Received: 03/21/22 19:23
Matrix: Ground Water - Grab
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.258 U	pCi/L			1	0.691	04/22/22 21:49		904.0 903.0

Sample: FC03755-03
Name: G303
Alias: COF_257_101

Sampled: 03/21/22 16:17
Received: 03/21/22 19:23
Matrix: Ground Water - Grab
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.290 J	pCi/L			1	0.649	04/22/22 21:49		904.0 903.0

Sample: FC03755-04
Name: G306
Alias: COF_257_101

Sampled: 03/21/22 16:04
Received: 03/21/22 19:23
Matrix: Ground Water - Grab
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.431 J	pCi/L			1	0.596	04/22/22 21:49		904.0 903.0

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ANALYTICAL RESULTS

Sample: FC03755-05
Name: G307
Alias: COF_257_101

Sampled: 03/21/22 15:23
Received: 03/21/22 19:23
Matrix: Ground Water - Grab
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Rad 226 and 228-Subcontract	0.0336 U	pCi/L			1	0.605	04/22/22 21:49		904.0 903.0

ANALYTICAL RESULTS

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ANALYTICAL RESULTS

Sample: FC03755-06
Name: XPW-01
Alias: COF_257_101

Sampled: 03/21/22 15:27
Received: 03/21/22 19:23
Matrix: Ground Water - Grab
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	12	mg/L		03/23/22 14:53	10	10	03/23/22 14:53	CRD	EPA 300.0 REV 2.1
Fluoride	0.850	mg/L		03/23/22 14:35	1	0.250	03/23/22 14:35	CRD	EPA 300.0 REV 2.1
Sulfate	820	mg/L		03/23/22 15:11	100	100	03/23/22 15:11	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	3.96	Feet		03/21/22 15:27	1		03/21/22 15:27	FIELD	Field
Dissolved oxygen, Field	8.9	mg/L		03/21/22 15:27	1		03/21/22 15:27	FIELD	Field
Oxidation Reduction Potential	76.2	mV		03/21/22 15:27	1	-500	03/21/22 15:27	FIELD	Field
pH, Field Measured	6.69	pH Units		03/21/22 15:27	1		03/21/22 15:27	FIELD	Field
Specific Conductance, Field Measured	620.0	umhos/cm		03/21/22 15:27	1		03/21/22 15:27	FIELD	Field
Temperature, Field Measured	20.0	°C		03/21/22 15:27	1		03/21/22 15:27	FIELD	Field
Turbidity, Field Measured	1.09	NTU		03/21/22 15:27	1	0.00	03/21/22 15:27	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	80	mg/L		04/04/22 08:58	1	10	04/04/22 08:58	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		04/04/22 08:58	1	10	04/04/22 08:58	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	1200	mg/L		03/25/22 12:26	1	26	03/25/22 14:15	JLC1	SM 2540C
Total Metals - PIA									
Calcium	260	mg/L		03/23/22 12:31	5	0.20	03/29/22 09:42	JMW	EPA 6020A
Magnesium	26	mg/L		03/23/22 12:31	5	0.10	03/29/22 09:42	JMW	EPA 6020A
Potassium	21	mg/L		03/23/22 12:31	5	0.10	03/29/22 09:42	JMW	EPA 6020A
Sodium	90	mg/L		03/23/22 12:31	5	0.10	03/29/22 09:42	JMW	EPA 6020A

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ANALYTICAL RESULTS

Sample: FC03755-07
Name: XPW-02
Alias: COF_257_101

Sampled: 03/21/22 16:08
Received: 03/21/22 19:23
Matrix: Ground Water - Grab
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	12	mg/L		03/23/22 16:41	10	10	03/23/22 16:41	CRD	EPA 300.0 REV 2.1
Fluoride	0.450	mg/L		03/23/22 15:29	1	0.250	03/23/22 15:29	CRD	EPA 300.0 REV 2.1
Sulfate	540	mg/L		03/23/22 16:59	100	100	03/23/22 16:59	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	8.92	Feet		03/21/22 16:08	1		03/21/22 16:08	FIELD	Field
Dissolved oxygen, Field	8.9	mg/L		03/21/22 16:08	1		03/21/22 16:08	FIELD	Field
Oxidation Reduction Potential	68.4	mV		03/21/22 16:08	1	-500	03/21/22 16:08	FIELD	Field
pH, Field Measured	6.99	pH Units		03/21/22 16:08	1		03/21/22 16:08	FIELD	Field
Specific Conductance, Field Measured	1140	umhos/cm		03/21/22 16:08	1		03/21/22 16:08	FIELD	Field
Temperature, Field Measured	19.4	°C		03/21/22 16:08	1		03/21/22 16:08	FIELD	Field
Turbidity, Field Measured	1.11	NTU		03/21/22 16:08	1	0.00	03/21/22 16:08	FIELD	Field
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	120	mg/L		04/04/22 08:58	1	10	04/04/22 08:58	ADM/JAA	SM 2320B 1997
Alkalinity - carbonate as CaCO3	< 10	mg/L		04/04/22 08:58	1	10	04/04/22 08:58	ADM/JAA	SM 2320B 1997
Solids - total dissolved solids (TDS)	890	mg/L		03/25/22 12:26	1	26	03/25/22 14:15	JLC1	SM 2540C
Total Metals - PIA									
Calcium	190	mg/L		03/23/22 12:31	5	0.20	03/29/22 09:46	JMW	EPA 6020A
Magnesium	28	mg/L		03/23/22 12:31	5	0.10	03/29/22 09:46	JMW	EPA 6020A
Potassium	19	mg/L		03/23/22 12:31	5	0.10	03/29/22 09:46	JMW	EPA 6020A
Sodium	78	mg/L		03/23/22 12:31	5	0.10	03/29/22 09:46	JMW	EPA 6020A

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B227820 - SW 3015 - EPA 6020A									
Blank (B227820-BLK1)				Prepared: 03/23/22 Analyzed: 03/28/22					
Calcium	< 0.20	mg/L							
Magnesium	< 0.10	mg/L							
Potassium	< 0.10	mg/L							
Sodium	< 0.10	mg/L							
LCS (B227820-BS1)				Prepared: 03/23/22 Analyzed: 03/28/22					
Calcium	5.67	mg/L		5.556		102	80-120		
Magnesium	5.58	mg/L		5.556		100	80-120		
Potassium	5.78	mg/L		5.556		104	80-120		
Sodium	5.70	mg/L		5.556		103	80-120		
Batch B227905 - IC No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B227905-CCB1)				Prepared & Analyzed: 03/23/22					
Chloride	0.153	mg/L							
Fluoride	0.00	mg/L							
Sulfate	0.00	mg/L							
Calibration Check (B227905-CCV1)				Prepared & Analyzed: 03/23/22					
Fluoride	4.77	mg/L		5.000		95	90-110		
Sulfate	4.86	mg/L		5.000		97	90-110		
Chloride	4.55	mg/L		5.000		91	90-110		
Batch B228070 - No Prep - SM 2540C									
Blank (B228070-BLK1)				Prepared & Analyzed: 03/25/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B228070-BS1)				Prepared & Analyzed: 03/25/22					
Solids - total dissolved solids (TDS)	933	mg/L		1000		93	84.9-109		
Duplicate (B228070-DUP1)	**Sample: FC03755-06**			Prepared & Analyzed: 03/25/22					
Solids - total dissolved solids (TDS)	1120	mg/L			1150			3	5
Batch B228750 - No Prep - SM 2320B 1997									
Blank (B228750-BLK1)				Prepared & Analyzed: 04/04/22					
Alkalinity - carbonate as CaCO3	< 2.0	mg/L							
Batch B228751 - No Prep - SM 2320B 1997									
Blank (B228751-BLK1)				Prepared & Analyzed: 04/04/22					
Alkalinity - bicarbonate as CaCO3	2.50	mg/L							
LCS (B228751-BS1)				Prepared & Analyzed: 04/04/22					
Alkalinity - bicarbonate as CaCO3	75.0	mg/L					90-110		

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Peoria, IL 61615
(800)752-6651

NOTES

Specifications regarding method revisions, method modifications, and calculations used for analysis are available upon request. Please contact your project manager.

* Not a TNI accredited analyte

Certifications

CHI - McHenry, IL - 4314-A W. Crystal Lake Road, McHenry, IL 60050
TNI Accreditation for Drinking Water and Wastewater Fields of Testing through IL EPA Accreditation No. 100279
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17556

PIA - Peoria, IL - 2231 W. Altorfer Drive, Peoria, IL 61615
TNI Accreditation for Drinking Water, Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. 100230
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17553
Drinking Water Certifications/Accreditations: Iowa (240); Kansas (E-10338); Missouri (870)
Wastewater Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)
Solid and Hazardous Material Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

SPMO - Springfield, MO - 1805 W Sunset Street, Springfield, MO 65807
USEPA DMR-QA Program

STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042
TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389
TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. - 200080
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory, Registry No. 171050
Missouri Department of Natural Resources - Certificate of Approval for Microbiological Laboratory Service - No. 1050

Gail J Schindler

Certified by: Gail Schindler, Project Manager

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 | Client: RAMBOLL

Project Number: 2285 | Task #: Unit 101 | Start Date: 3/21/22 | Time: 1341

Field Personnel: JR KL | Finish Date: 3/21/22 | Time: 1420

WELL INFORMATION

Well ID: G301

Casing ID: 2 Inches

Screen Interval: 4.65'

Borehole Diameter: n/a Inches

Filter Pack Interval: n/a

EVENT TYPE

☐ Well Development

■ Low-Flow / Low-Stress Sampling

☐ Well Volume Approach Sampling

☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump

Bailer Type: n/a

Pump Type and Serial #: n/a

Tube/Pump Intake Depth: n/a

Stabilized Pumping Rate: 100 ml/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	4.79	1341	5.55	3/21/22 1420
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole

Volume Per Foot:

Standing Water Column: feet

1 Well Volume: n/a Gallons | 3 Well Volumes: n/a Gallons

5 Well Volumes: n/a Gallons | 10 Well Volumes: n/a Gallons

Total Volumes Produced: n/a Gallons

Well Purged Dry? ☐ Yes ■ No

Water Level Serial #: 336216

Water Quality Probe Type and Serial # 762215

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	1341	—	4.79	—							
purge	1359	1500	5.47	0.68	12.71	6.46	1431.4	0.76	13.85	68.7	clear
End	1420	—	5.55	0.76							

NOTES

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
na - Not Applicable
nm - Not Measured
ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
°C - Degrees Celcius

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1
Client: RAMBOLL
Project Number: 2285
Task #: Unit 101
Start Date: 3/21/22 Time: 1239
Field Personnel:
Finish Date: 3/21/22 Time: 1329

WELL INFORMATION

Well ID: G302
Casing ID: 2 Inches
Screen Interval: 4.65'
Borehole Diameter: n/a Inches
Filter Pack Interval: n/a

EVENT TYPE

- ☐ Well Development
- ■ Low-Flow / Low-Stress Sampling
- ☐ Well Volume Approach Sampling
- ☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump
Bailer Type: n/a
Pump Type and Serial #: n/a
Tube/Pump Intake Depth: n/a
Stabilized Pumping Rate: 100 ml/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	5.13	1239	5.48	1329
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole
Volume Per Foot:
Standing Water Column: feet
1 Well Volume: n/a Gallons 3 Well Volumes: n/a Gallons
5 Well Volumes: n/a Gallons 10 Well Volumes: n/a Gallons
Total Volumes Produced: n/a Gallons
Well Purged Dry? ☐ Yes ■ No

Water Level Serial #: 336216
Water Quality Probe Type and Serial # 762217

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	1239	—	5.13	—	—	—	—	—	—	—	—
purge	1303	1500	5.45	0.32	13.68	6.69	1609.3	2.46	71.48	27.3	clear
Final	1329		5.48	0.35							

NOTES

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
na - Not Applicable
nm - Not Measured
ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
°C - Degrees Celcius

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 | Client: RAMBOLL

Project Number: 2285 | Task #: Unit 101 | Start Date: 3/21/22 | Time: 1545

Field Personnel: Matt Talsma | Finish Date: 3/21/22 | Time: 1617

WELL INFORMATION

Well ID: G303

Casing ID: 2 Inches

Screen Interval: 10'

Borehole Diameter: n/a Inches

Filter Pack Interval: n/a

EVENT TYPE

- ☐ Well Development
- ■ Low-Flow / Low-Stress Sampling
- ☐ Well Volume Approach Sampling
- ☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump

Bailer Type: n/a

Pump Type and Serial #: n/a

Tube/Pump Intake Depth: n/a

Stabilized Pumping Rate: 100 ml/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	3.59	3/21/22 1545	4.60	3/21/22 1617
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

Water Level Serial #: Heron dipper-T #4778-T

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole

Volume Per Foot:

Standing Water Column: feet

1 Well Volume: n/a Gallons | 3 Well Volumes: n/a Gallons

5 Well Volumes: n/a Gallons | 10 Well Volumes: n/a Gallons

Total Volumes Produced: n/a Gallons

Well Purged Dry? ☐ Yes ■ No

Water Quality Probe Type and Serial # Aquatroll 600 # 762098

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	1545	0	3.59	0.00							
purge	1600	1500	4.54	0.95	12.73	6.86	2078.6	1.34	0.46	50.9	clear
	1602										
	1604										

MATT 3/21/22

MATT 3/21/22

NOTES

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
na - Not Applicable
nm - Not Measured
ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
°C - Degrees Celcius

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1
Client: RAMBOLL
Project Number: 2285
Task #: Unit 101
Start Date: ~~1534~~ 3/21/22 Time: 1534
Field Personnel:
Finish Date: Time: 1604

WELL INFORMATION

Well ID: G306
Casing ID: 2 Inches
Screen Interval:
Borehole Diameter: n/a Inches
Filter Pack Interval: n/a

EVENT TYPE

- ☐ Well Development
- ■ Low-Flow / Low-Stress Sampling
- ☐ Well Volume Approach Sampling
- ☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump
Bailer Type: n/a
Pump Type and Serial #: n/a
Tube/Pump Intake Depth: n/a
Stabilized Pumping Rate: 100 ml/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	5.30	1534	6.39	1605
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

Water Level Serial #: 336216

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole
Volume Per Foot:
Standing Water Column: feet
1 Well Volume: n/a Gallons 3 Well Volumes: n/a Gallons
5 Well Volumes: n/a Gallons 10 Well Volumes: n/a Gallons
Total Volumes Produced: n/a Gallons
Well Purged Dry? ☐ Yes ■ No

Water Quality Probe Type and Serial # 762215

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	1534	—	5.30								
purge	1553	1500	6.39	1.09	12.71	6.53	941.15	4.99	2.941	139.4	clear
	1604		6.39								

NOTES

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
na - Not Applicable
nm - Not Measured
ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
°C - Degrees Celcius

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 | Client: RAMBOLL

Project Number: 2285 | Task #: Unit 101 | Start Date: 3/21/22 | Time: 1450

Field Personnel: | Finish Date: 3/21 | Time: 1523

WELL INFORMATION

Well ID: G307

Casing ID: 2 Inches

Screen Interval: 10'

Borehole Diameter: n/a Inches

Filter Pack Interval: n/a

EVENT TYPE

- ☐ Well Development
- ■ Low-Flow / Low-Stress Sampling
- ☐ Well Volume Approach Sampling
- ☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump

Bailer Type: n/a

Pump Type and Serial #: n/a

Tube/Pump Intake Depth: n/a

Stabilized Pumping Rate: 100 ml/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	NA	3/21/22	NA	3/21/22
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

Water Level Serial #: 336216

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole

Volume Per Foot:

Standing Water Column: feet

1 Well Volume: n/a Gallons | 3 Well Volumes: n/a Gallons

5 Well Volumes: n/a Gallons | 10 Well Volumes: n/a Gallons

Total Volumes Produced: n/a Gallons

Well Purged Dry? ☐ Yes ■ No

Water Quality Probe Type and Serial # 762215

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial											
purge	1509	1500	NA	NA	13.59	7.17	1479.8	4.42	87.71	32.2	clear

NOTES

Well is artesian

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
na - Not Applicable
nm - Not Measured
ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
°C - Degrees Celcius

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 | Client: RAMBOLL

Project Number: 2285 | Task #: Unit 101 | Start Date: 3/21/22 | Time: 1500

Field Personnel: MJN | Finish Date: 3/21/22 | Time: 1527

WELL INFORMATION

Well ID: XPW-01

Casing ID: 2 Inches

Screen Interval: 10'

Borehole Diameter: n/a Inches

Filter Pack Interval: n/a

EVENT TYPE

- ☐ Well Development
- ■ Low-Flow / Low-Stress Sampling
- ☐ Well Volume Approach Sampling
- ☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump

Bailer Type: n/a

Pump Type and Serial #: n/a

Tube/Pump Intake Depth: n/a

Stabilized Pumping Rate: 100 ml/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	3.96	1501	3.96	1527
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole

Volume Per Foot:

Standing Water Column: feet

1 Well Volume: n/a Gallons | 3 Well Volumes: n/a Gallons

5 Well Volumes: n/a Gallons | 10 Well Volumes: n/a Gallons

Total Volumes Produced: n/a Gallons

Well Purged Dry? ☐ Yes ■ No

Water Level Serial #: 269860

Water Quality Probe Type and Serial # AT-600, 442986

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	1501	—	3.96	—	—	—	—	—	—	—	—
purge	1513	1500	3.96	—	19.95	6.68	0.540	8.86	1.05	75.5	cloudy/~~tan~~ tan
	1514	1625	3.96	—	19.96	6.69	0.580	8.88	1.06	73.7	tan/clear/murky
	1515	1750	3.96	—	19.96	6.69	0.620	8.89	1.09	76.2	tan/clear/murky

NOTES

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
na - Not Applicable
nm - Not Measured
ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
°C - Degrees Celcius

WELL DEVELOPMENT AND GROUNDWATER SAMPLING FIELD FORM

PROJECT INFORMATION

Site: Coffeen Ash Pond 1 | Client: RAMBOLL

Project Number: 2285 | Task #: Unit 101 | Start Date: 3/21/22 | Time: 1535

Field Personnel: MJN | Finish Date: 3/21/22 | Time: 1608

WELL INFORMATION

Well ID: XPW-02

Casing ID: 2 Inches

Screen Interval: 10'

Borehole Diameter: n/a Inches

Filter Pack Interval: n/a

EVENT TYPE

☐ Well Development

■ Low-Flow / Low-Stress Sampling

☐ Well Volume Approach Sampling

☐ Other (Specify below)

PURGE INFORMATION

Purge Method: ☐ Bailer ■ Pump

Bailer Type: n/a

Pump Type and Serial #: n/a

Tube/Pump Intake Depth: n/a

Stabilized Pumping Rate: 100 ml/min

DEPTH MEASUREMENTS

	INITIAL		FINAL	
	Depth FT BTOC	Date/Time (24-Hour)	Depth FT BTOC	Date/Time (24-Hour)
LNAPL	n/a	n/a	n/a	n/a
Groundwater	8.92	1536	8.92	1608
DNAPL	n/a	n/a	n/a	n/a
Casing Base	n/a	n/a	n/a	n/a

VOLUME CALCULATION AND PRODUCTION INFORMATION

Volume Calculation Type: ■ Well Casing ☐ Borehole

Volume Per Foot:

Standing Water Column: feet

1 Well Volume: n/a Gallons | 3 Well Volumes: n/a Gallons

5 Well Volumes: n/a Gallons | 10 Well Volumes: n/a Gallons

Total Volumes Produced: n/a Gallons

Well Purged Dry? ☐ Yes ■ No

Water Level Serial #: 2698600

Water Quality Probe Type and Serial # AT-600, 449186

WATER QUALITY INDICATOR PARAMETERS

Sampling Stage	Time (military)	Volume Removed (mls)	Depth to Water (Feet)	Drawdown (Feet)	Temp (°C)	pH (SU)	SEC or Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Visual Clarity
initial	1536	—	8.92	—	—	—	—	—	—	—	—
purge	1551	1500	8.92	—	19.45	6.97	0.960	8.92	1.10	67.7	clear
	1552	1600	8.92	—	19.41	7.01	0.890	8.96	0.99	66.3	clear
	1553	1700	8.92	—	19.43	6.99	1,140	8.92	1.11	68.4	clear

NOTES

ABBREVIATIONS

Cond. - Actual Conductivity
FT BTOC - Feet Below Top of Casing
na - Not Applicable
nm - Not Measured
ORP - Oxidation-Reduction Potential
SEC - Specific Electrical Conductance
SU - Standard Units
Temp - Temperature
°C - Degrees Celcius

Multiparameter Meter Field Calibration Checklist

Field Personnel	MJN	Date:	3/7/22
Weather conditions:	47-73°, sunny, Moderate wind	Signature:	
Make/Model	AquaTroll 600	S/N	449186

Instrument unpacked/RDO sensor installed from storage solution and rinsed with pH 4 buffer then triple rinsed with DI water prior. Instrument then subjected to calibration check/calibration regiment (pH 4, then pH 7, then pH 10, followed by Spec Con., ORP, and RDO) instrument and calibration cup rinsed between each buffer.

Sources

	pH Buffers				
Primary Source:					
pH: 4a	4.00	pH: 7a	7.00	pH: 10a	10.00
Range:	+/- 0.02	Range:	+/- 0.02	Range:	+/- 0.02
Manufacturer:	MSI	Manufacturer:	MSI	Manufacturer:	MSI
Lot #:	L159-11	Lot #:	L146-06	Lot #:	K344-09
exp:	10-Jun-23	exp:	1-Jun-23	exp:	17-Dec-22
Secondary Source:					
pH: 4b	4.00	pH: 7b	7.00	pH: 10b	10.00
Range:	+/- 0.01	Range:	+/- 0.01	Range:	+/- 0.01
Manufacturer:	Geotech	Manufacturer:	Geotech	Manufacturer:	Geotech
Lot #:	1GD680	Lot #:	0GJ268	Lot #:	0GJ170
exp:	Apr-23	exp:	Oct-22	exp:	Oct-22

Spec Con.					
µS/cm: DI water	0	µS/cm: SC1000	1000	µS/cm: SC2000	2000
Range:	Not Measured	Range:	+/- 1	Range:	+/- 1 %
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	RICCA Chemical	Manufacturer:	Geotech
Received:		Lot #:	4101A25	Lot #:	1GF629
		exp:	Dec-22	exp:	Jun-22

RDO	Sodium Sulfite in DI Water	ORP	Zobell's Standard
Value:	0	Value*:	
Range:	+/- 0.01	Range:	+/- 10 mV
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ
Lot #:	168261	Lot #:	1GF668
Prepared by:	PDC Tech Services, Inc:	exp:	Mar-22

Turbidity (if required)					
0 NTU	0 (DI Water)	1 NTU	1	10 NTU	10
Range:	Not Measured	Range:		Range:	
Manufacturer:	PDC Laboratories, Inc	Manufacturer:		Manufacturer:	
Lot #:	NA	Lot #:		Lot #:	
exp:	NA	exp:		exp:	

Notes:	*See bottle for chart of values based on Temperature

Multiparameter Meter Calibration Checklist (continued)

Values are tested at the beginning of the day, at mid-day, and at the end of the day to document potential drift.
CCV checks are conducted ~ every 4 hours, unless only one well is read then is not required.

Initial Calibration Check/Calibration: 1134 MSL

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.03	s.u.	±0.1 s.u.	P	N	N/A
7a	7.03	s.u.	±0.1 s.u.			
10a	10.05	s.u.	±0.1 s.u.			
SC Zero (DI)	5.78	µS/cm	0<25 µS/cm			
SC 2000	1988	µS/cm	±5%			
ORP	240	mV	±15 mV			
DO (Zero pt)	0.07	mg/L	±0.1			
DO (Saturated)	100	%	97-100%			
Turbidity (DI)	0.00	NTU	<2 NTU			

ICV (Initial Calibration Verification) Geotech

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.05	s.u.	±0.15 s.u.	P	N/A
7b	6.91	s.u.	±0.15 s.u.		
10b	9.98	s.u.	±0.15 s.u.		
SC1000	1014	µS/cm	±5%		

CCV (Continued Calibration Verification): 1609

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.04	s.u.	±0.1 s.u.	P	N	N/A
7	7.04	s.u.	±0.1 s.u.			
10	10.06	s.u.	±0.1 s.u.			
SC 1000	992	µS/cm	±5%			
DO (Zero pt)	0.04	mg/L	±0.1 mg/L			
Turbidity (DI)	0.00	NTU	<2 NTU			

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4		s.u.	±0.1 s.u.			
7*		s.u.	±0.1 s.u.			
10		s.u.	±0.1 s.u.			
SC 1000		µS/cm	±5%			
DO (Zero pt)		mg/L	±0.1 mg/L			
Turbidity (DI)		NTU	<2 NTU			
Comments:						

Signature: [signature]

Date: 3/21/22

Multiparameter Meter Field Calibration Checklist

Field Personnel	Matt Jn/Jon	Date:	3/21/22
Weather conditions:	65°-71°F Sunny - P. cloudy wind 5-10-15 mph	Signature:	
Make/Model	AquaTroll 600	S/N	762098

Instrument unpacked/RDO sensor installed from storage solution and rinsed with pH 4 buffer then triple rinsed with DI water prior. Instrument then subjected to calibration check/calibration regiment (pH 4, then pH 7, then pH 10, followed by Spec Con., ORP, and RDO) instrument and calibration cup rinsed between each buffer.

Sources

	pH Buffers				
Primary Source:					
pH: 4a	4.00	pH: 7a	7.00	pH: 10a	10.00
Range:	+/- 0.02	Range:	+/- 0.02	Range:	+/- 0.02
Manufacturer:	MSI	Manufacturer:	MSI	Manufacturer:	MSI
Lot #:	L159-11	Lot #:	L146-06	Lot #:	K344-09
exp:	10-Jun-23	exp:	1-Jun-23	exp:	17-Dec-22
Secondary Source:					
pH: 4b	4.00	pH: 7b	7.00	pH: 10b	10.00
Range:	+/- 0.01	Range:	+/- 0.01	Range:	+/- 0.01
Manufacturer:	Geotech	Manufacturer:	Geotech	Manufacturer:	Geotech
Lot #:	1GD680	Lot #:	0GJ268	Lot #:	0GJ170
exp:	Apr-23	exp:	Oct-22	exp:	Oct-22

Spec Con.					
µS/cm: DI water	0	µS/cm: SC1000	1000	µS/cm: SC2000	2000
Range:	Not Measured	Range:	+/- 1	Range:	+/- 1 %
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	RICCA Chemical	Manufacturer:	Geotech
Received:		Lot #:	4101A25	Lot #:	1GF629
		exp:	Dec-22	exp:	Jun-22

RDO	Sodium Sulfite in DI Water	ORP	Zobell's Standard
Value:	0	Value*:	
Range:	+/- 0.01	Range:	+/- 10 mV
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ
Lot #:	168261	Lot #:	1GF668
Prepared by:	PDC Tech Services, Inc:	exp:	Mar-22

Turbidity (if required)					
0 NTU	0 (DI Water)	1 NTU	1	10 NTU	10
Range:	Not Measured	Range:		Range:	
Manufacturer:	PDC Laboratories, Inc	Manufacturer:		Manufacturer:	
Lot #:	NA	Lot #:		Lot #:	
exp:	NA	exp:		exp:	

Notes:	*See bottle for chart of values based on Temperature

Multiparameter Meter Calibration Checklist (continued)

Values are tested at the beginning of the day, at mid-day, and at the end of the day to document potential drift.
CCV checks are conducted ~ every 4 hours, unless only one well is read then is not required.

Initial Calibration Check/Calibration:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.06	s.u.	±0.1 s.u.	Pass	NO	N/A
7a	7.07	s.u.	±0.1 s.u.			
10a	10.03	s.u.	±0.1 s.u.			
SC Zero (DI)	18.45	µS/cm	0<25 µS/cm			
SC 2000	1953.7	µS/cm	±5%			
ORP	218.1 @ 22°C	mV	±15 mV			
DO (Zero pt)	0.05	mg/L	±0.1			
DO (Saturated)	110.06	%	97-100%	Fail	Yes	99.82%
Turbidity (DI)	0.00	NTU	<2 NTU	Pass	No	N/A

ICV (Initial Calibration Verification) 1248

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.09	s.u.	±0.15 s.u.	Pass	None
7b	6.92	s.u.	±0.15 s.u.		
10b	10.04	s.u.	±0.15 s.u.		
SC1000	981.10	µS/cm	±5%		

CCV (Continued Calibration Verification): 1637

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.09	s.u.	±0.1 s.u.	Pass	No	N/A
7	7.08	s.u.	±0.1 s.u.			
10	10.06	s.u.	±0.1 s.u.			
SC 1000	996.15	µS/cm	±5%			
DO (Zero pt)	0.01	mg/L	±0.1 mg/L			
Turbidity (DI)	0.33	NTU	<2 NTU			

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4		s.u.	±0.1 s.u.			
7*		s.u.	±0.1 s.u.			
10		s.u.	±0.1 s.u.			
SC 1000		µS/cm	±5%			
DO (Zero pt)		mg/L	±0.1 mg/L			
Turbidity (DI)		NTU	<2 NTU			
Comments:						

MC 3/21/22

Signature: [signature]

Date: 3/21/22

Multiparameter Meter Field Calibration Checklist

Field Personnel	JR KL	Date:	3/21/22
Weather conditions:	66-71° sunny wind SSE 15mph	Signature:	Joseph R Reed
Make/Model	AquaTroll 600	S/N	762215

Instrument unpacked/RDO sensor installed from storage solution and rinsed with pH 4 buffer then triple rinsed with DI water prior. Instrument then subjected to calibration check/calibration regiment (pH 4, then pH 7, then pH 10, followed by Spec Con., ORP, and RDO) instrument and calibration cup rinsed between each buffer.

Sources

	pH Buffers				
Primary Source:					
pH: 4a	4.00	pH: 7a	7.00	pH: 10a	10.00
Range:	+/- 0.02	Range:	+/- 0.02	Range:	+/- 0.02
Manufacturer:	MSI	Manufacturer:	MSI	Manufacturer:	MSI
Lot #:	L159-11	Lot #:	L146-06	Lot #:	K344-09
exp:	10-Jun-23	exp:	1-Jun-23	exp:	17-Dec-22
Secondary Source:					
pH: 4b	4.00	pH: 7b	7.00	pH: 10b	10.00
Range:	+/- 0.01	Range:	+/- 0.01	Range:	+/- 0.01
Manufacturer:	Geotech	Manufacturer:	Geotech	Manufacturer:	Geotech
Lot #:	1GD680	Lot #:	0GJ268	Lot #:	0GJ170
exp:	Apr-23	exp:	Oct-22	exp:	Oct-22

Spec Con.					
µS/cm: DI water	0	µS/cm: SC1000	1000	µS/cm: SC2000	2000
Range:	Not Measured	Range:	+/- 1	Range:	+/- 1 %
Manufacturer:	PDC Laboratories, Inc	Manufacturer:	RICCA Chemical	Manufacturer:	Geotech
Received:		Lot #:	4101A25	Lot #:	1GF629
		exp:	Dec-22	exp:	Jun-22

RDO	Sodium Sulfite in DI Water	ORP	Zobell's Standard
Value:	0	Value*:	18.6°C
Range:	+/- 0.01	Range:	+/- 10 mV
Manufacturer:	Fisher Chemical	Manufacturer:	In-Situ
Lot #:	168261	Lot #:	1GF668
Prepared by:	PDC Tech Services, Inc:	exp:	Mar-22

Turbidity (if required)					
0 NTU	0 (DI Water)	1 NTU	1	10 NTU	10
Range:	Not Measured	Range:		Range:	
Manufacturer:	PDC Laboratories, Inc	Manufacturer:		Manufacturer:	
Lot #:	NA	Lot #:		Lot #:	
exp:	NA	exp:		exp:	

Notes:	*See bottle for chart of values based on Temperature

Multiparameter Meter Calibration Checklist (continued)

Values are tested at the beginning of the day, at mid-day, and at the end of the day to document potential drift.
CCV checks are conducted ~ every 4 hours, unless only one well is read then is not required.

Initial Calibration Check/Calibration: 1200

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4a	4.08	s.u.	±0.1 s.u.	Pass	N/A	N/A
7a	6.93	s.u.	±0.1 s.u.			
10a	10.07	s.u.	±0.1 s.u.			
SC Zero (DI)	18.84	µS/cm	0<25 µS/cm			
SC 2000	2031.2	µS/cm	±5%			
ORP	239.5	mV	±15 mV			
DO (Zero pt)	0.06	mg/L	±0.1			
DO (Saturated)	98.8	%	97-100%			
Turbidity (DI)	0.0	NTU	<2 NTU			

ICV (Initial Calibration Verification)

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?
4b	4.04	s.u.	±0.15 s.u.	Pass	N/A
7b	7.04	s.u.	±0.15 s.u.		
10b	10.01	s.u.	±0.15 s.u.		
SC1000	1009.4	µS/cm	±5%		

CCV (Continued Calibration Verification): 1611

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4	4.03	s.u.	±0.1 s.u.	Pass	N/A	N/A
7	7.09	s.u.	±0.1 s.u.			
10	9.93	s.u.	±0.1 s.u.			
SC 1000	997.3	µS/cm	±5%			
DO (Zero pt)	0.0	mg/L	±0.1 mg/L			
Turbidity (DI)	1.10	NTU	<2 NTU			

CCV (Continued Calibration Verification):

Approx. every 4 hrs, unless only one well

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading
4		s.u.	±0.1 s.u.			
7*		s.u.	±0.1 s.u.			
10		s.u.	±0.1 s.u.			
SC 1000		µS/cm	±5%			
DO (Zero pt)		mg/L	±0.1 mg/L			
Turbidity (DI)		NTU	<2 NTU			
Comments:						

Signature: Joseph R Reed

Date: 3/21/22

ANALYTICAL REPORT

April 26, 2022

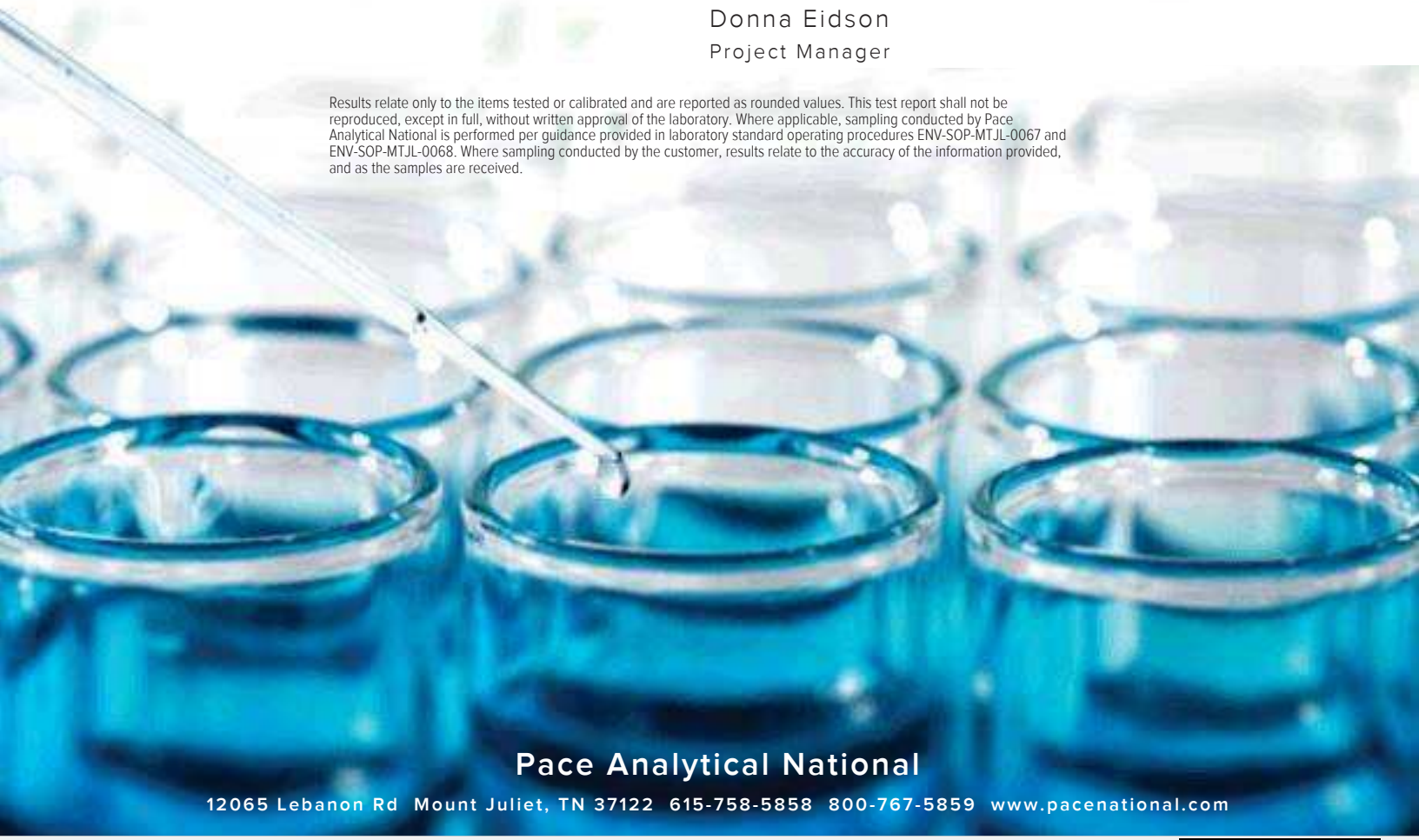
Pace IR - Peoria, IL

Sample Delivery Group:	L1476162
Samples Received:	03/29/2022
Project Number:	FC03755
Description:	NRT Coffeen
Site:	001
Report To:	Gail Schindler

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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G301 L1476162-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	03/21/22 14:20	03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1846703	1	04/13/22 09:59	04/18/22 12:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1850246	1	04/21/22 11:18	04/22/22 21:49	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1850246	1	04/21/22 11:18	04/22/22 21:49	RGT	Mt. Juliet, TN

G302 L1476162-02 Non-Potable Water

Collected by	Collected date/time	Received date/time
	03/21/22 13:29	03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1846703	1	04/13/22 09:59	04/18/22 12:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1850246	1	04/21/22 11:18	04/22/22 21:49	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1850246	1	04/21/22 11:18	04/22/22 21:49	RGT	Mt. Juliet, TN

G303 L1476162-03 Non-Potable Water

Collected by	Collected date/time	Received date/time
	03/21/22 16:17	03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1846703	1	04/13/22 09:59	04/18/22 12:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1850246	1	04/21/22 11:18	04/22/22 21:49	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1850246	1	04/21/22 11:18	04/22/22 21:49	RGT	Mt. Juliet, TN

G306 L1476162-04 Non-Potable Water

Collected by	Collected date/time	Received date/time
	03/21/22 16:04	03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1846703	1	04/13/22 09:59	04/18/22 12:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1850246	1	04/21/22 11:18	04/22/22 21:49	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1850246	1	04/21/22 11:18	04/22/22 21:49	RGT	Mt. Juliet, TN

G307 L1476162-05 Non-Potable Water

Collected by	Collected date/time	Received date/time
	03/21/22 15:23	03/29/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1846703	1	04/13/22 09:59	04/18/22 12:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1850246	1	04/21/22 11:18	04/22/22 21:49	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1850246	1	04/21/22 11:18	04/22/22 21:49	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

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	-0.453	U	0.338	0.646	04/18/2022 12:20	WG1846703
(T) Barium	*89.4*			*62.0-143*	*04/18/2022 12:20*	WG1846703
(T) Yttrium	*94.7*			*79.0-136*	*04/18/2022 12:20*	WG1846703

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.000	U	0.348	0.703	04/22/2022 21:49	WG1850246

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	-0.0395	U	0.0815	0.278	04/22/2022 21:49	WG1850246
(T) Barium-133	*95.3*			*30.0-143*	*04/22/2022 21:49*	WG1850246

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	-0.525	U	0.304	0.587	04/18/2022 12:20	WG1846703
(T) Barium	*91.6*			*62.0-143*	*04/18/2022 12:20*	WG1846703
(T) Yttrium	*94.8*			*79.0-136*	*04/18/2022 12:20*	WG1846703

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.258	U	0.412	0.691	04/22/2022 21:49	WG1850246

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.258	J	0.278	0.364	04/22/2022 21:49	WG1850246
(T) Barium-133	*95.6*			*30.0-143*	*04/22/2022 21:49*	WG1850246

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	-0.307	U	0.315	0.602	04/18/2022 12:20	WG1846703
(T) Barium	*92.1*			*62.0-143*	*04/18/2022 12:20*	WG1846703
(T) Yttrium	*96.8*			*79.0-136*	*04/18/2022 12:20*	WG1846703

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.290	J	0.391	0.649	04/22/2022 21:49	WG1850246

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.290		0.232	0.242	04/22/2022 21:49	WG1850246
(T) Barium-133	*100*			*30.0-143*	*04/22/2022 21:49*	WG1850246

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.262	J	0.285	0.524	04/18/2022 12:20	WG1846703
(T) Barium	*98.1*			*62.0-143*	*04/18/2022 12:20*	WG1846703
(T) Yttrium	*93.6*			*79.0-136*	*04/18/2022 12:20*	WG1846703

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.431	J	0.353	0.596	04/22/2022 21:49	WG1850246

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.169	J	0.209	0.285	04/22/2022 21:49	WG1850246
(T) Barium-133	*97.5*			*30.0-143*	*04/22/2022 21:49*	WG1850246

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.0336	U	0.297	0.554	04/18/2022 12:20	WG1846703
(T) Barium	*88.5*			*62.0-143*	*04/18/2022 12:20*	WG1846703
(T) Yttrium	*99.6*			*79.0-136*	*04/18/2022 12:20*	WG1846703

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.0336	U	0.302	0.605	04/22/2022 21:49	WG1850246

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	-0.0147	U	0.0527	0.242	04/22/2022 21:49	WG1850246
(T) Barium-133	*97.9*			*30.0-143*	*04/22/2022 21:49*	WG1850246

Method Blank (MB)

(MB) R3783293-1 04/15/22 12:10

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-228	-0.0673	U	0.212	0.427
(T) Barium	*95.4*		*95.4*	
(T) Yttrium	*98.3*		*98.3*	

L1475371-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1475371-01 04/18/22 12:20 • (DUP) R3783293-5 04/15/22 12:10

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	-0.0465	0.290	0.531	0.504	0.498	0.531	1	200	0.956	J	20	3
(T) Barium	*91.1*			*93.3*	*93.3*							
(T) Yttrium	*104*			*97.4*	*97.4*							

Laboratory Control Sample (LCS)

(LCS) R3783293-2 04/15/22 12:10

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.71	94.2	80.0-120	
(T) Barium			*105*		
(T) Yttrium			*99.4*		

L1475323-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1475323-01 04/15/22 12:10 • (MS) R3783293-3 04/15/22 12:10 • (MSD) R3783293-4 04/15/22 12:10

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	0.443	19.4	21.5	113	126	1	70.0-130			10.4		20
(T) Barium		*89.3*			*98.8*	*104*							
(T) Yttrium		*101*			*96.8*	*94.6*							

Method Blank (MB)

(MB) R3785196-1 04/22/22 21:49

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-226	0.0641		0.0309	0.0214
(T) Barium-133	*99.6*		*99.6*	

L1476162-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1476162-05 04/22/22 21:49 • (DUP) R3785196-5 04/22/22 21:49

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-226	-0.0147	0.0527	0.242	-0.0487	0.153	0.242	1	0.000	0.210	U	20	3
(T) Barium-133	*97.9*			*98.1*	*98.1*							

Laboratory Control Sample (LCS)

(LCS) R3785196-2 04/22/22 21:49

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	4.95	98.7	80.0-120	
(T) Barium-133			*99.9*		

L1482224-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1482224-01 04/22/22 21:49 • (MS) R3785196-3 04/22/22 21:49 • (MSD) R3785196-4 04/22/22 21:49

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	20.0	0.439	17.6	19.9	85.8	97.5	1	75.0-125			12.5		20
(T) Barium-133		*95.6*			*102*	*97.8*							

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.

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 [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	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 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] 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.

A154

Internal Transfer Chain of Custody

Pace Analytical®

State of Origin: IL
Cert. Needed: [X] YES [ ] NO

Workorder: FC03755 **Workorder Name:** NRT Coffeen **Owner Received Date:** 3/21/2022 **Results Requested By:** 4/13/2022

Report To:	Subcontract To:
Gail Schindler Pace Analytical - IL/MO 2231 W. Altorfer Drive Peoria, IL 61615 800-752-6651	Pace Analytical Services, LLC 12065 Lebanon Road Mt. Juliet, TN 37122 (615)758-5858

Requested Analysis

L1476162

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	Radium 226/228	LAB USE ONLY
1	G301	Grab	3/21/2022 14:20	FC03755-01	GW		X	-01
2	G302	Grab	3/21/2022 13:29	FC03755-02	GW		X	-02
3	G303	Grab	3/21/2022 16:17	FC03755-03	GW		X	-03
4	G306	Grab	3/21/2022 16:04	FC03755-04	GW		X	-04
5	G307	Grab	3/21/2022 15:23	FC03755-05	GW		X	-05
6								
7								
8								
9								
10								

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	[signature]	3-23-22 12:55	[signature]	3/24/22 0900	
2					
3					

Cooler Temperature on Receipt ______ °C	Custody Seal (Y) or N	Received on Ice (Y) or N	Sample Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

FMT-ALL-C-002rev.00 24March2009 Page 1 of 1

10.4ba=10.4 DEA7

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

L1476162

Pace Analytical®
www.pacelabs.com

Ship to :
Pace Analytical Services, LLC
12065 Lebanon Rd
Mt Juliet, TN 37122

(615)758-5858

INTER_LABORATORY WORK ORDER # FC03755
(To be complete by sending lab)

Sending Project No:	FC03755
Receiving Project No:	
Check Box for Consolidated Invoice:	
Date Prepared:	3/22/2022
REQUESTED COMPLETION DATE:	4/13/2022

Sending Region	IR72-IL/MO	Sending Project Mgr.	Gail Schindler
Receiving Region	IR80-NATIONAL	External Client	Coffeen
State of Sample Origin	IL	QC Deliverable	**STD Report**

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? NA Cert Needed: IL

WORK REQUESTED						
Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Unit Price	Amount
Radium 226/228		1		5	$150.00	$750.00
					TOTAL	$750.00

Special Requirements: _____

Receiving Region Department	Acctg. Code	Totals from above	Revenue Allocation	
			Receiving Region (80%)	Client Services Dept. Sending Region (20%)
radiological	38	$750.00	$600.00	$150.00
* Custom Revenue Allocation		TOTAL	$600.00	$150.00

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: [ ] Yes [X] No

CONFIRMATION OF WORK COMPLETED

Date Completed: _____ Receiving Project Manager: _____

Original sent to the receiving lab - Copy kept at the sending lab.
When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

RAMBOLL
234 W. FLORIDA STREET, 5th FLOOR
MILWAUKEE, WI 53204
TEL: 414.837.3607

RAMBOLL - MILWAUKEE
NRT COFFEEN CCR ASH 1

DCW
FC08755-07

CHAIN OF CUSTODY #: 1.
DATE: 3/21/22
PAGE: 1 OF 1

LABORATORY SAMPLES SUBMITTED TO:
Pace Analytical Services
ADDRESS:
2231 W Altorfer Drive
CITY:
Peoria, IL 61615
TEL: **309-683-1716**
FAX: **309-692-9689**
E-MAIL: gschindler@pdclab.com

CLIENT PROJECT NAME: **Coffeen Ash Pond 1**
PROJECT NUMBER / TASK NUMBER: **2285 / Unit 101**
PROJECT CONTACT: **Gail Schindler**
QUOTE NO.:
SAMPLER(S): (SIGNATURE) Joseph R Reed

TURNAROUND TIME
☐ STANDARD ☐ 24 HR ☐ 48 HR ☐ 2 HR ☒ 5 DAYS

Data Package: **Level 2** Level 4

Preservatives: A = none, B= HCL, C = H_2SO_4, D = HNO_3, E = methanol, F = Sodium Bisulfate, G = zinc acetate, H = other

Preservation Code (pick letter)
Filtered (Yor N)

	A	d	D
Filtered (Yor N)	N	N	N

SPECIAL REQUIREMENTS

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	QC SAMPLE	FIELD COMMENTS	SAMPLE DATE	SAMPLE TIME	MATRIX	SAMPLE TYPE	SAMPLE INTERVAL (ft) TOP	SAMPLE INTERVAL (ft) BOTTOM	#Cont	Cl, F, SO4, TDS, CO3, HCO3	Ca, Mg, Na, K	Radium 226/228
	G301			3/21/22	1420	GW	Grab						X
	G302				1329								X
	G303				1617								X
	G306				1604								X
	G307				1523								X
	XPW-01				1527						X	X	
	XPW-02				1608						X	X	

Relinquished by: (Signature) Joseph R Reed	Received by: (Signature)	Date: 3/21/22	Time: 1923
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date: 3/21/22	Time: 1923

2.8

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

November 17, 2022

John Romang
Vistra - Coffeen
134 CIPS Lane
Coffeen, IL 62017

Dear John Romang:

Please find enclosed the analytical results for the sample(s) the laboratory received. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of Pace Analytical Services, LLC.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

Pace Analytical Services appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the Director of Client Services, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-683-1764 or lisa.grant@pacelabs.com.

Sincerely,

Gail Schindler
Project Manager
(309) 692-9688 x1716
gail.schindler@pacelabs.com

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as in compliance

Work Order FH05103

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

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Work Order FH05289

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

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Work Order FH05292

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
YES	Short hold time analysis
YES	Current PDC COC submitted
YES	Case narrative provided

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Case Narrative

Do not have elevation information for G406, G407 and G281 therefore unable to report Elevation of Top of Casing. Also do not have Total Depth for these wells because of dedicated bladder pump.

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ANALYTICAL RESULTS

Sample: FH05103-01
Name: G301
Alias:

Sampled: 08/23/22 17:59
Received: 08/24/22 16:35
Matrix: Ground Water - Grab
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	15	mg/L		08/29/22 14:38	10	10	08/29/22 14:38	CRD	EPA 300.0 REV 2.1
Fluoride	0.305	mg/L		08/29/22 14:20	1	0.250	08/29/22 14:20	CRD	EPA 300.0 REV 2.1
Sulfate	650	mg/L		08/29/22 14:56	100	100	08/29/22 14:56	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	7.28	Feet		08/23/22 17:59	1		08/23/22 17:59	FIELD	Field*
Dissolved oxygen, Field	0.19	mg/L		08/23/22 17:59	1		08/23/22 17:59	FIELD	Field*
Oxidation Reduction Potential	1.40	mV		08/23/22 17:59	1	-500	08/23/22 17:59	FIELD	Field*
pH, Field Measured	6.55	pH Units		08/23/22 17:59	1		08/23/22 17:59	FIELD	Field*
Specific Conductance, Field Measured	1248	umhos/cm		08/23/22 17:59	1		08/23/22 17:59	FIELD	Field*
Temperature, Field Measured	18.9	°C		08/23/22 17:59	1		08/23/22 17:59	FIELD	Field*
Turbidity, Field Measured	2.17	NTU		08/23/22 17:59	1	0.00	08/23/22 17:59	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	140	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Solids - total dissolved solids (TDS)	1100	mg/L		08/25/22 16:20	1	26	08/25/22 17:36	CGL	SM 2540C
Total Metals - PIA									
Arsenic	< 1.0	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:02	JMW	EPA 6020A
Barium	25	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:02	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:02	JMW	EPA 6020A
Boron	2200	ug/L		08/29/22 09:01	5	10	09/13/22 14:02	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:02	JMW	EPA 6020A
Calcium	130	mg/L	Q4	08/29/22 09:01	5	0.20	09/13/22 14:02	JMW	EPA 6020A
Chromium	< 4.0	ug/L		08/29/22 09:01	5	4.0	09/13/22 14:02	JMW	EPA 6020A
Cobalt	2.6	ug/L		08/29/22 09:01	5	2.0	09/13/22 14:02	JMW	EPA 6020A
Lead	1.4	ug/L		08/29/22 09:01	5	1.0	09/14/22 09:09	JMW	EPA 6020A
Magnesium	51	mg/L	Q4	08/29/22 09:01	5	0.10	09/13/22 14:02	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:02	JMW	EPA 6020A
Potassium	1.9	mg/L		08/29/22 09:01	5	0.10	09/13/22 14:02	JMW	EPA 6020A
Selenium	< 1.0	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:02	JMW	EPA 6020A
Sodium	140	mg/L		08/29/22 09:01	5	0.10	09/13/22 14:02	JMW	EPA 6020A
Lithium	< 20	ug/L		08/29/22 09:01	1	20	09/08/22 13:26	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FH05103-02
Name: G302
Alias:

Sampled: 08/23/22 17:00
Received: 08/24/22 16:35
Matrix: Ground Water - Grab
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	< 10	mg/L		09/07/22 13:51	10	10	09/07/22 13:51	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		09/07/22 13:33	1	0.250	09/07/22 13:33	CRD	EPA 300.0 REV 2.1
Sulfate	290	mg/L		09/07/22 14:09	100	100	09/07/22 14:09	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	9.52	Feet		08/23/22 17:00	1		08/23/22 17:00	FIELD	Field*
Dissolved oxygen, Field	1.8	mg/L		08/23/22 17:00	1		08/23/22 17:00	FIELD	Field*
Oxidation Reduction Potential	-133	mV		08/23/22 17:00	1	-500	08/23/22 17:00	FIELD	Field*
pH, Field Measured	6.88	pH Units		08/23/22 17:00	1		08/23/22 17:00	FIELD	Field*
Specific Conductance, Field Measured	1234	umhos/cm		08/23/22 17:00	1		08/23/22 17:00	FIELD	Field*
Temperature, Field Measured	18.9	°C		08/23/22 17:00	1		08/23/22 17:00	FIELD	Field*
Turbidity, Field Measured	2.20	NTU		08/23/22 17:00	1	0.00	08/23/22 17:00	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	400	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Solids - total dissolved solids (TDS)	860	mg/L		08/26/22 12:00	1	26	08/26/22 15:31	JAA/ZEJ	SM 2540C
Total Metals - PIA									
Arsenic	< 1.0	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:06	JMW	EPA 6020A
Barium	24	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:06	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:06	JMW	EPA 6020A
Boron	1700	ug/L		08/29/22 09:01	5	10	09/13/22 14:06	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:06	JMW	EPA 6020A
Calcium	140	mg/L		08/29/22 09:01	5	0.20	09/13/22 14:06	JMW	EPA 6020A
Chromium	< 4.0	ug/L		08/29/22 09:01	5	4.0	09/13/22 14:06	JMW	EPA 6020A
Cobalt	3.1	ug/L		08/29/22 09:01	5	2.0	09/13/22 14:06	JMW	EPA 6020A
Lead	< 1.0	ug/L		08/29/22 09:01	5	1.0	09/14/22 09:12	JMW	EPA 6020A
Magnesium	62	mg/L		08/29/22 09:01	5	0.10	09/13/22 14:06	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:06	JMW	EPA 6020A
Potassium	1.1	mg/L		08/29/22 09:01	5	0.10	09/13/22 14:06	JMW	EPA 6020A
Selenium	< 1.0	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:06	JMW	EPA 6020A
Sodium	110	mg/L		08/29/22 09:01	5	0.10	09/13/22 14:06	JMW	EPA 6020A
Lithium	< 20	ug/L		08/29/22 09:01	1	20	09/08/22 13:33	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FH05103-03
Name: G307
Alias:

Sampled: 08/24/22 12:15
Received: 08/24/22 16:35
Matrix: Ground Water - Grab
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	14	mg/L		08/29/22 15:32	10	10	08/29/22 15:32	CRD	EPA 300.0 REV 2.1
Fluoride	0.264	mg/L		08/29/22 15:14	1	0.250	08/29/22 15:14	CRD	EPA 300.0 REV 2.1
Sulfate	730	mg/L		08/29/22 15:51	100	100	08/29/22 15:51	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	0.3	Feet		08/24/22 12:15	1		08/24/22 12:15	FIELD	Field*
Dissolved oxygen, Field	4.0	mg/L		08/24/22 12:15	1		08/24/22 12:15	FIELD	Field*
Oxidation Reduction Potential	-79.0	mV		08/24/22 12:15	1	-500	08/24/22 12:15	FIELD	Field*
pH, Field Measured	7.02	pH Units		08/24/22 12:15	1		08/24/22 12:15	FIELD	Field*
Specific Conductance, Field Measured	1100	umhos/cm		08/24/22 12:15	1		08/24/22 12:15	FIELD	Field*
Temperature, Field Measured	19.5	°C		08/24/22 12:15	1		08/24/22 12:15	FIELD	Field*
Turbidity, Field Measured	1.00	NTU		08/24/22 12:15	1	0.00	08/24/22 12:15	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	120	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Solids - total dissolved solids (TDS)	1400	mg/L		08/30/22 10:20	1	26	08/30/22 12:21	ZEJ	SM 2540C
Total Metals - PIA									
Arsenic	3.1	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:09	JMW	EPA 6020A
Barium	55	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:09	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:09	JMW	EPA 6020A
Boron	2000	ug/L		08/29/22 09:01	5	10	09/13/22 14:09	JMW	EPA 6020A
Cadmium	2.9	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:09	JMW	EPA 6020A
Calcium	210	mg/L		08/29/22 09:01	5	0.20	09/13/22 14:09	JMW	EPA 6020A
Chromium	14	ug/L		08/29/22 09:01	5	4.0	09/13/22 14:09	JMW	EPA 6020A
Cobalt	4.7	ug/L		08/29/22 09:01	5	2.0	09/13/22 14:09	JMW	EPA 6020A
Lead	7.6	ug/L		08/29/22 09:01	5	1.0	09/14/22 09:16	JMW	EPA 6020A
Magnesium	72	mg/L		08/29/22 09:01	5	0.10	09/13/22 14:09	JMW	EPA 6020A
Molybdenum	1.4	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:09	JMW	EPA 6020A
Potassium	5.1	mg/L		08/29/22 09:01	5	0.10	09/13/22 14:09	JMW	EPA 6020A
Selenium	< 1.0	ug/L		08/29/22 09:01	5	1.0	09/13/22 14:09	JMW	EPA 6020A
Sodium	94	mg/L		08/29/22 09:01	5	0.10	09/13/22 14:09	JMW	EPA 6020A
Lithium	< 20	ug/L		08/29/22 09:01	1	20	09/08/22 13:34	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FH05103-04
Name: XPW01
Alias:

Sampled: 08/24/22 11:10
Received: 08/24/22 16:35
Matrix: Ground Water - Grab
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	15	mg/L		08/29/22 16:27	10	10	08/29/22 16:27	CRD	EPA 300.0 REV 2.1
Sulfate	760	mg/L		08/29/22 16:45	100	100	08/29/22 16:45	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	4.02	Feet		08/24/22 11:10	1		08/24/22 11:10	FIELD	Field*
Dissolved oxygen, Field	3.4	mg/L		08/24/22 11:10	1		08/24/22 11:10	FIELD	Field*
Oxidation Reduction Potential	-72.0	mV		08/24/22 11:10	1	-500	08/24/22 11:10	FIELD	Field*
pH, Field Measured	7.69	pH Units		08/24/22 11:10	1		08/24/22 11:10	FIELD	Field*
Specific Conductance, Field Measured	1140	umhos/cm		08/24/22 11:10	1		08/24/22 11:10	FIELD	Field*
Temperature, Field Measured	20.0	°C		08/24/22 11:10	1		08/24/22 11:10	FIELD	Field*
Turbidity, Field Measured	0.500	NTU		08/24/22 11:10	1	0.00	08/24/22 11:10	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	100	mg/L		09/02/22 17:51	1	10	09/02/22 17:51	CGL	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		09/02/22 17:51	1	10	09/02/22 17:51	CGL	SM 2320B 1997*
Solids - total dissolved solids (TDS)	1400	mg/L		08/30/22 10:20	1	26	08/30/22 12:21	ZEJ	SM 2540C
Total Metals - PIA									
Calcium	250	mg/L		08/29/22 09:01	5	0.20	09/13/22 14:13	JMW	EPA 6020A
Magnesium	29	mg/L		08/29/22 09:01	5	0.10	09/13/22 14:13	JMW	EPA 6020A
Potassium	23	mg/L		08/29/22 09:01	5	0.10	09/13/22 14:13	JMW	EPA 6020A
Sodium	90	mg/L		08/29/22 09:01	5	0.10	09/13/22 14:13	JMW	EPA 6020A

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ANALYTICAL RESULTS

Sample: FH05103-05
Name: XPW02
Alias:

Sampled: 08/24/22 10:30
Received: 08/24/22 16:35
Matrix: Ground Water - Grab
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	7.2	mg/L		08/29/22 17:03	1	1.0	08/29/22 17:03	CRD	EPA 300.0 REV 2.1
Sulfate	340	mg/L		08/29/22 18:15	100	100	08/29/22 18:15	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	9.03	Feet		08/24/22 10:30	1		08/24/22 10:30	FIELD	Field*
Dissolved oxygen, Field	3.9	mg/L		08/24/22 10:30	1		08/24/22 10:30	FIELD	Field*
Oxidation Reduction Potential	-61.0	mV		08/24/22 10:30	1	-500	08/24/22 10:30	FIELD	Field*
pH, Field Measured	6.99	pH Units		08/24/22 10:30	1		08/24/22 10:30	FIELD	Field*
Specific Conductance, Field Measured	717.0	umhos/cm		08/24/22 10:30	1		08/24/22 10:30	FIELD	Field*
Temperature, Field Measured	19.9	°C		08/24/22 10:30	1		08/24/22 10:30	FIELD	Field*
Turbidity, Field Measured	2.10	NTU		08/24/22 10:30	1	0.00	08/24/22 10:30	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	150	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Solids - total dissolved solids (TDS)	760	mg/L		08/30/22 10:20	1	26	08/30/22 12:21	ZEJ	SM 2540C
Total Metals - PIA									
Calcium	140	mg/L		08/29/22 09:01	5	0.20	09/13/22 14:16	JMW	EPA 6020A
Magnesium	19	mg/L		08/29/22 09:01	5	0.10	09/13/22 14:16	JMW	EPA 6020A
Potassium	16	mg/L		08/29/22 09:01	5	0.10	09/13/22 14:16	JMW	EPA 6020A
Sodium	51	mg/L		08/29/22 09:01	5	0.10	09/13/22 14:16	JMW	EPA 6020A

Sample: FH05103-06
Name: SG02
Matrix: Ground Water - Grab

Sampled: 08/23/22 00:00
Received: 08/24/22 16:35
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Field - PIA									
Depth, From Measuring Point	7.45	Feet		08/23/22 00:00	1		08/23/22 00:00	FIELD	Field*

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ANALYTICAL RESULTS

Sample: FH05103-07
Name: SG03
Matrix: Ground Water - Grab

Sampled: 08/23/22 00:00
Received: 08/24/22 16:35
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Field - PIA									
Depth, From Measuring Point	9.81	Feet		08/23/22 00:00	1		08/23/22 00:00	FIELD	Field*

Sample: FH05103-08
Name: XSG-01
Matrix: Ground Water - Grab

Sampled: 08/23/22 00:00
Received: 08/24/22 16:35
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Field - PIA									
Depth, From Measuring Point	3.07	Feet		08/23/22 00:00	1		08/23/22 00:00	FIELD	Field*

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ANALYTICAL RESULTS

Sample: FH05289-01
Name: G303
Alias:

Sampled: 08/24/22 14:20
Received: 08/25/22 14:58
Matrix: Ground Water - Grab
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	28	mg/L		09/07/22 17:28	10	10	09/07/22 17:28	CRD	EPA 300.0 REV 2.1
Sulfate	760	mg/L		09/07/22 17:46	100	100	09/07/22 17:46	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	6.33	Feet		08/24/22 14:20	1		08/24/22 14:20	FIELD	Field*
Dissolved oxygen, Field	0.60	mg/L		08/24/22 14:20	1		08/24/22 14:20	FIELD	Field*
Oxidation Reduction Potential	-43.0	mV		08/24/22 14:20	1	-500	08/24/22 14:20	FIELD	Field*
pH, Field Measured	6.74	pH Units		08/24/22 14:20	1		08/24/22 14:20	FIELD	Field*
Specific Conductance, Field Measured	2200	umhos/cm		08/24/22 14:20	1		08/24/22 14:20	FIELD	Field*
Temperature, Field Measured	19.2	°C		08/24/22 14:20	1		08/24/22 14:20	FIELD	Field*
Turbidity, Field Measured	17.1	NTU		08/24/22 14:20	1	0.00	08/24/22 14:20	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	610	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Fluoride	0.268	mg/L		09/20/22 15:20	1	0.250	09/20/22 15:20	ANK	SM 4500F C 1997
Solids - total dissolved solids (TDS)	1900	mg/L		08/30/22 13:32	1	26	08/30/22 15:30	ZEJ	SM 2540C
Total Metals - PIA									
Arsenic	1.9	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:22	JMW	EPA 6020A
Barium	20	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:22	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/13/22 16:50	JMW	EPA 6020A
Boron	1900	ug/L		08/30/22 09:01	5	10	09/13/22 10:05	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:22	JMW	EPA 6020A
Calcium	200	mg/L		08/30/22 09:01	5	0.20	09/12/22 13:22	JMW	EPA 6020A
Chromium	< 4.0	ug/L		08/30/22 09:01	5	4.0	09/12/22 13:22	JMW	EPA 6020A
Cobalt	6.9	ug/L		08/30/22 09:01	5	2.0	09/12/22 13:22	JMW	EPA 6020A
Lead	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:22	JMW	EPA 6020A
Magnesium	150	mg/L		08/30/22 09:01	5	0.10	09/13/22 10:05	JMW	EPA 6020A
Molybdenum	1.3	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:22	JMW	EPA 6020A
Potassium	2.3	mg/L		08/30/22 09:01	5	0.10	09/12/22 13:22	JMW	EPA 6020A
Selenium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:22	JMW	EPA 6020A
Sodium	170	mg/L		08/30/22 09:01	5	0.10	09/12/22 13:22	JMW	EPA 6020A
Lithium	36	ug/L		08/30/22 09:01	1	20	09/08/22 14:57	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FH05289-02
Name: G306
Alias:

Sampled: 08/24/22 15:55
Received: 08/25/22 14:58
Matrix: Ground Water - Grab
PO #: 1164124

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	< 1.0	mg/L		09/07/22 18:04	1	1.0	09/07/22 18:04	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		09/07/22 18:04	1	0.250	09/07/22 18:04	CRD	EPA 300.0 REV 2.1
Sulfate	210	mg/L		09/07/22 18:22	50	50	09/07/22 18:22	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	8.56	Feet		08/24/22 15:55	1		08/24/22 15:55	FIELD	Field*
Dissolved oxygen, Field	3.2	mg/L		08/24/22 15:55	1		08/24/22 15:55	FIELD	Field*
Oxidation Reduction Potential	69.0	mV		08/24/22 15:55	1	-500	08/24/22 15:55	FIELD	Field*
pH, Field Measured	6.56	pH Units		08/24/22 15:55	1		08/24/22 15:55	FIELD	Field*
Specific Conductance, Field Measured	771.0	umhos/cm		08/24/22 15:55	1		08/24/22 15:55	FIELD	Field*
Temperature, Field Measured	19.9	°C		08/24/22 15:55	1		08/24/22 15:55	FIELD	Field*
Turbidity, Field Measured	3.10	NTU		08/24/22 15:55	1	0.00	08/24/22 15:55	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	300	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Solids - total dissolved solids (TDS)	610	mg/L		08/30/22 13:32	1	26	08/30/22 15:30	ZEJ	SM 2540C
Total Metals - PIA									
Arsenic	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:35	JMW	EPA 6020A
Barium	29	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:35	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/13/22 16:53	JMW	EPA 6020A
Boron	3000	ug/L		08/30/22 09:01	5	10	09/13/22 10:09	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:35	JMW	EPA 6020A
Calcium	100	mg/L		08/30/22 09:01	5	0.20	09/12/22 13:35	JMW	EPA 6020A
Chromium	< 4.0	ug/L		08/30/22 09:01	5	4.0	09/12/22 13:35	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		08/30/22 09:01	5	2.0	09/12/22 13:35	JMW	EPA 6020A
Lead	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:35	JMW	EPA 6020A
Magnesium	38	mg/L		08/30/22 09:01	5	0.10	09/13/22 10:09	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:35	JMW	EPA 6020A
Potassium	0.31	mg/L		08/30/22 09:01	5	0.10	09/12/22 13:35	JMW	EPA 6020A
Selenium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 13:35	JMW	EPA 6020A
Sodium	45	mg/L		08/30/22 09:01	5	0.10	09/12/22 13:35	JMW	EPA 6020A
Lithium	< 20	ug/L		08/30/22 09:01	1	20	09/08/22 14:59	TJJ	EPA 6010B

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ANALYTICAL RESULTS

Sample: FH05292-07
Name: G281
Alias:

Sampled: 08/25/22 11:21
Received: 08/25/22 11:34
Matrix: Ground Water - Grab
PO #: 1164123

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	69	mg/L		08/25/22 21:54	10	10	08/25/22 21:54	CRD	EPA 300.0 REV 2.1
Sulfate	310	mg/L		08/25/22 22:12	50	50	08/25/22 22:12	CRD	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	7.05	Feet		08/25/22 11:21	1		08/25/22 11:21	FIELD	Field*
Dissolved oxygen, Field	1.0	mg/L		08/25/22 11:21	1		08/25/22 11:21	FIELD	Field*
Oxidation Reduction Potential	4.00	mV		08/25/22 11:21	1	-500	08/25/22 11:21	FIELD	Field*
pH, Field Measured	6.83	pH Units		08/25/22 11:21	1		08/25/22 11:21	FIELD	Field*
Specific Conductance, Field Measured	1060	umhos/cm		08/25/22 11:21	1		08/25/22 11:21	FIELD	Field*
Temperature, Field Measured	21.0	°C		08/25/22 11:21	1		08/25/22 11:21	FIELD	Field*
Turbidity, Field Measured	118	NTU		08/25/22 11:21	1	0.00	08/25/22 11:21	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	390	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		09/02/22 08:53	1	10	09/02/22 08:53	CGL/HRF	SM 2320B 1997*
Fluoride	0.302	mg/L		09/01/22 11:44	1	0.250	09/01/22 11:44	TTH	SM 4500F C 1997
Solids - total dissolved solids (TDS)	980	mg/L		08/31/22 10:27	1	26	08/31/22 15:11	ZEJ	SM 2540C
Total Metals - PIA									
Arsenic	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/13/22 11:20	JMW	EPA 6020A
Barium	68	ug/L		08/30/22 09:01	5	1.0	09/12/22 14:01	JMW	EPA 6020A
Beryllium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/14/22 08:38	JMW	EPA 6020A
Boron	14	ug/L		08/30/22 09:01	5	10	09/13/22 11:20	JMW	EPA 6020A
Cadmium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/13/22 11:20	JMW	EPA 6020A
Calcium	150	mg/L		08/30/22 09:01	5	0.20	09/12/22 14:01	JMW	EPA 6020A
Chromium	< 4.0	ug/L		08/30/22 09:01	5	4.0	09/12/22 14:01	JMW	EPA 6020A
Cobalt	< 2.0	ug/L		08/30/22 09:01	5	2.0	09/12/22 14:01	JMW	EPA 6020A
Lead	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 14:01	JMW	EPA 6020A
Magnesium	67	mg/L		08/30/22 09:01	5	0.10	09/13/22 11:20	JMW	EPA 6020A
Molybdenum	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/13/22 11:20	JMW	EPA 6020A
Potassium	0.73	mg/L		08/30/22 09:01	5	0.10	09/12/22 14:01	JMW	EPA 6020A
Selenium	< 1.0	ug/L		08/30/22 09:01	5	1.0	09/12/22 14:01	JMW	EPA 6020A
Sodium	100	mg/L		08/30/22 09:01	5	0.10	09/12/22 14:01	JMW	EPA 6020A
Lithium	< 20	ug/L		08/30/22 09:01	1	20	09/08/22 15:17	TJJ	EPA 6010B

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B241894 - No Prep - SM 2540C									
Blank (B241894-BLK1)				Prepared & Analyzed: 08/25/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B241894-BS1)				Prepared & Analyzed: 08/25/22					
Solids - total dissolved solids (TDS)	967	mg/L		1000		97	84.9-109		
Batch B241964 - No Prep - SM 2540C									
Blank (B241964-BLK1)				Prepared & Analyzed: 08/26/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B241964-BS1)				Prepared & Analyzed: 08/26/22					
Solids - total dissolved solids (TDS)	977	mg/L		1000		98	84.9-109		
Batch B241995 - No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B241995-CCB1)				Prepared & Analyzed: 08/25/22					
Sulfate	0.00	mg/L							
Chloride	0.0738	mg/L							
Calibration Check (B241995-CCV1)				Prepared & Analyzed: 08/25/22					
Sulfate	4.94	mg/L		5.000		99	90-110		
Chloride	4.52	mg/L		5.000		90	90-110		
Batch B242079 - SW 3015 - EPA 6020A									
Blank (B242079-BLK1)				Prepared: 08/29/22 Analyzed: 09/12/22					
Arsenic	< 1.0	ug/L							
Barium	< 1.0	ug/L							
Beryllium	< 1.0	ug/L							
Boron	< 10	ug/L							
Cadmium	< 1.0	ug/L							
Calcium	< 0.20	mg/L							
Chromium	< 4.0	ug/L							
Cobalt	< 2.0	ug/L							
Lead	< 1.0	ug/L							
Magnesium	< 0.10	mg/L							
Molybdenum	< 1.0	ug/L							
Potassium	< 0.10	mg/L							
Selenium	< 1.0	ug/L							
Sodium	< 0.10	mg/L							
Lithium	< 20	ug/L							
LCS (B242079-BS1)				Prepared: 08/29/22 Analyzed: 09/13/22					
Arsenic	511	ug/L		555.6		92	80-120		
Barium	508	ug/L		555.6		92	80-120		
Beryllium	578	ug/L		555.6		104	80-120		
Boron	621	ug/L		555.6		112	80-120		
Cadmium	525	ug/L		555.6		95	80-120		

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B242079 - SW 3015 - EPA 6020A									
LCS (B242079-BS1)				Prepared: 08/29/22 Analyzed: 09/13/22					
Calcium	5.82	mg/L		5.556		105	80-120		
Chromium	602	ug/L		555.6		108	80-120		
Cobalt	509	ug/L		555.6		92	80-120		
Lead	579	ug/L		555.6		104	80-120		
Magnesium	6.08	mg/L		5.556		109	80-120		
Molybdenum	566	ug/L		555.6		102	80-120		
Potassium	5.91	mg/L		5.556		106	80-120		
Selenium	532	ug/L		555.6		96	80-120		
Sodium	6.14	mg/L		5.556		111	80-120		
Lithium	568	ug/L		555.6		102	80-120		
Matrix Spike (B242079-MS1)	**Sample: FH05103-01**			Prepared: 08/29/22 Analyzed: 09/13/22					
Arsenic	509	ug/L		555.6	ND	92	75-125		
Boron	2720	ug/L		555.6	2160	100	75-125		
Cadmium	514	ug/L		555.6	ND	93	75-125		
Calcium	129	mg/L	Q4	5.556	130	NR	75-125		
Chromium	598	ug/L		555.6	3.07	107	75-125		
Lead	566	ug/L		555.6	1.37	102	75-125		
Magnesium	53.3	mg/L	Q4	5.556	50.6	48	75-125		
Molybdenum	556	ug/L		555.6	ND	100	75-125		
Selenium	515	ug/L		555.6	ND	93	75-125		
Lithium	542	ug/L		555.6	6.38	96	75-125		
Matrix Spike Dup (B242079-MSD1)	**Sample: FH05103-01**			Prepared: 08/29/22 Analyzed: 09/13/22					
Arsenic	506	ug/L		555.6	ND	91	75-125	0.7	20
Boron	2670	ug/L		555.6	2160	91	75-125	2	20
Cadmium	512	ug/L		555.6	ND	92	75-125	0.4	20
Calcium	128	mg/L	Q4	5.556	130	NR	75-125	0.7	20
Chromium	599	ug/L		555.6	3.07	107	75-125	0.2	20
Lead	573	ug/L		555.6	1.37	103	75-125	1	20
Magnesium	53.4	mg/L	Q4	5.556	50.6	50	75-125	0.1	20
Molybdenum	559	ug/L		555.6	ND	101	75-125	0.6	20
Selenium	518	ug/L		555.6	ND	93	75-125	0.5	20
Lithium	571	ug/L		555.6	6.38	102	75-125	5	200
Batch B242199 - SW 3015 - EPA 6020A									
Blank (B242199-BLK1)				Prepared: 08/30/22 Analyzed: 09/06/22					
Arsenic	< 1.0	ug/L							
Barium	< 1.0	ug/L							
Beryllium	< 1.0	ug/L							
Boron	< 10	ug/L							
Cadmium	< 1.0	ug/L							
Calcium	< 0.20	mg/L							
Chromium	< 4.0	ug/L							
Cobalt	< 2.0	ug/L							
Lead	< 1.0	ug/L							

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B242199 - SW 3015 - EPA 6020A									
Blank (B242199-BLK1)				Prepared: 08/30/22 Analyzed: 09/06/22					
Magnesium	< 0.10	mg/L							
Molybdenum	< 1.0	ug/L							
Potassium	< 0.10	mg/L							
Selenium	< 1.0	ug/L							
Sodium	< 0.10	mg/L							
Lithium	< 20	ug/L							
LCS (B242199-BS1)				Prepared: 08/30/22 Analyzed: 09/06/22					
Arsenic	532	ug/L		555.6		96	80-120		
Barium	541	ug/L		555.6		97	80-120		
Beryllium	496	ug/L		555.6		89	80-120		
Boron	535	ug/L		555.6		96	80-120		
Cadmium	513	ug/L		555.6		92	80-120		
Calcium	5.46	mg/L		5.556		98	80-120		
Chromium	563	ug/L		555.6		101	80-120		
Cobalt	578	ug/L		555.6		104	80-120		
Lead	553	ug/L		555.6		100	80-120		
Magnesium	5.60	mg/L		5.556		101	80-120		
Molybdenum	521	ug/L		555.6		94	80-120		
Potassium	5.58	mg/L		5.556		100	80-120		
Selenium	527	ug/L		555.6		95	80-120		
Sodium	6.23	mg/L		5.556		112	80-120		
Lithium	530	ug/L		555.6		95	80-120		
Batch B242215 - No Prep - SM 2540C									
Blank (B242215-BLK1)				Prepared & Analyzed: 08/30/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B242215-BS1)				Prepared & Analyzed: 08/30/22					
Solids - total dissolved solids (TDS)	1030	mg/L		1000		103	84.9-109		
Batch B242244 - No Prep - SM 2540C									
Blank (B242244-BLK1)				Prepared & Analyzed: 08/30/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B242244-BS1)				Prepared & Analyzed: 08/30/22					
Solids - total dissolved solids (TDS)	1060	mg/L		1000		106	84.9-109		
Duplicate (B242244-DUP2)	**Sample: FH05292-01**			Prepared & Analyzed: 08/30/22					
Solids - total dissolved solids (TDS)	1450	mg/L			1410			3	5
Batch B242277 - No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B242277-CCB1)				Prepared & Analyzed: 08/29/22					
Chloride	0.610	mg/L							
Fluoride	0.00	mg/L							
Sulfate	0.00	mg/L							
Calibration Check (B242277-CCV1)				Prepared & Analyzed: 08/29/22					
Chloride	4.59	mg/L		5.000		92	90-110		

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QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B242277 - No Prep - EPA 300.0 REV 2.1									
Calibration Check (B242277-CCV1)				Prepared & Analyzed: 08/29/22					
Fluoride	4.88	mg/L		5.000		98	90-110		
Sulfate	4.83	mg/L		5.000		97	90-110		
Batch B242353 - No Prep - SM 2540C									
Blank (B242353-BLK1)				Prepared & Analyzed: 08/31/22					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B242353-BS1)				Prepared & Analyzed: 08/31/22					
Solids - total dissolved solids (TDS)	873	mg/L		1000		87	84.9-109		
Batch B242487 - No Prep - SM 4500F C 1997									
Calibration Blank (B242487-CCB1)				Prepared & Analyzed: 09/01/22					
Fluoride	0.00900	mg/L							
Calibration Blank (B242487-CCB2)				Prepared & Analyzed: 09/01/22					
Fluoride	0.00900	mg/L							
Calibration Check (B242487-CCV1)				Prepared & Analyzed: 09/01/22					
Fluoride	0.665	mg/L		0.7000		95	90-110		
Calibration Check (B242487-CCV2)				Prepared & Analyzed: 09/01/22					
Fluoride	0.689	mg/L		0.7000		98	90-110		
Matrix Spike (B242487-MS2)	**Sample: FH05292-07**			Prepared & Analyzed: 09/01/22					
Fluoride	1.36	mg/L		1.000	0.302	105	80-120		
Matrix Spike Dup (B242487-MSD2)	**Sample: FH05292-07**			Prepared & Analyzed: 09/01/22					
Fluoride	1.35	mg/L		1.000	0.302	105	80-120	0.2	20
Batch B242713 - No Prep - SM 2320B 1997									
Duplicate (B242713-DUP6)	**Sample: FH05292-04**			Prepared & Analyzed: 09/02/22					
Alkalinity - bicarbonate as CaCO3	275	mg/L			262			5	10
Batch B242714 - No Prep - SM 2320B 1997									
Duplicate (B242714-DUP6)	**Sample: FH05292-04**			Prepared & Analyzed: 09/02/22					
Alkalinity - carbonate as CaCO3	< 10	mg/L			ND				10
Batch B243029 - No Prep - EPA 300.0 REV 2.1									
Calibration Blank (B243029-CCB1)				Prepared & Analyzed: 09/07/22					
Chloride	0.399	mg/L							
Sulfate	0.00	mg/L							
Fluoride	0.00	mg/L							
Calibration Check (B243029-CCV1)				Prepared & Analyzed: 09/07/22					
Sulfate	4.95	mg/L		5.000		99	90-110		
Fluoride	5.02	mg/L		5.000		100	90-110		
Chloride	4.81	mg/L		5.000		96	90-110		
Batch B244412 - No Prep - SM 4500F C 1997									
Calibration Blank (B244412-CCB1)				Prepared & Analyzed: 09/20/22					

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B244412 - No Prep - SM 4500F C 1997									
Calibration Blank (B244412-CCB1)				Prepared & Analyzed: 09/20/22					
Fluoride	0.0160	mg/L							
Calibration Blank (B244412-CCB2)				Prepared & Analyzed: 09/20/22					
Fluoride	0.0180	mg/L							
Calibration Check (B244412-CCV1)				Prepared & Analyzed: 09/20/22					
Fluoride	0.681	mg/L		0.7000		97	90-110		
Calibration Check (B244412-CCV2)				Prepared & Analyzed: 09/20/22					
Fluoride	0.682	mg/L		0.7000		97	90-110		
Matrix Spike (B244412-MS1)	**Sample: FH05289-01**			Prepared & Analyzed: 09/20/22					
Fluoride	1.27	mg/L		1.000	0.268	100	80-120		
Matrix Spike Dup (B244412-MSD1)	**Sample: FH05289-01**			Prepared & Analyzed: 09/20/22					
Fluoride	1.28	mg/L		1.000	0.268	101	80-120	0.4	20

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

NOTES

Specifications regarding method revisions, method modifications, and calculations used for analysis are available upon request. Please contact your project manager.

* Not a TNI accredited analyte

Certifications

CHI - McHenry, IL - 4314-A W. Crystal Lake Road, McHenry, IL 60050
TNI Accreditation for Drinking Water and Wastewater Fields of Testing through IL EPA Accreditation No. 100279
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17556

PIA - Peoria, IL - 2231 W. Altorfer Drive, Peoria, IL 61615
TNI Accreditation for Drinking Water, Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. 100230
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17553
Drinking Water Certifications/Accreditations: Iowa (240); Kansas (E-10338); Missouri (870)
Wastewater Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)
Solid and Hazardous Material Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

SPMO - Springfield, MO - 1805 W Sunset Street, Springfield, MO 65807
USEPA DMR-QA Program

STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042
TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389
TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. - 200080
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory, Registry No. 171050
Missouri Department of Natural Resources - Certificate of Approval for Microbiological Laboratory Service - No. 1050

Qualifiers

Q4 The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.

Gail J Schindler

Certified by: Gail Schindler, Project Manager

FHO5103

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:

Company:	Vistra Corp
Address:	13498 E. 900th St
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	standard

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Jason Stuckey
Purchase Order No.:	
Project Name:	Coffeen
Project Number:	2285

Section C Invoice Information:

Attention:	Jason Stuckey
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	COF_257_101	COF_257_102	COF_257_103	COF_257_104	COF_257_105	COF_WPCP_102	COF_WPCP_103_104	COF_WPCP_106	COF_811_105	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	G208	WT	G	8/23/22	1723		6	X	X	X		X															
2	G209				1535		7																				
3	G210				1630		6																				
4	G215				1745		7																				
5	G216				1626		6																				
6	G217				1523		6																				
7	G218				1401		7																				
8	G274				1547		6																				
9	G278				1325		6																				
10	G301				1759		3																				
11	G302				1700		3																				
12																											
13																											
14																											
15																											
16																											

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
COF-Q3-2022 Rev 1		8-24-22	1338		8-24-22	1340	
		8-24-22	1635		8-24-22	1635	21

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joe Reed

SIGNATURE of SAMPLER: Joe Reed

DATE Signed (MM/DD/YY): 8/23/22

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

FH05103

CHAIN-OF-CUSTODY / Analytical Request Document

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Section A Required Client Information:

Company:	Vistra Corp
Address:	13498 E. 900th St
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	standard

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Jason Stuckey
Purchase Order No.:	
Project Name:	Colleen
Project Number:	2285

Section C Invoice Information:

Attention:	Jason Stuckey
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	COF_257_101	COF_257_102	COF_257_103	COF_257_104	COF_257_105	COF_WPCP_102	COF_WPCP_103_104	COF_WPCP_106	COF_811_105	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	XPW01	WT	G	8/24/22	1110		2	X		X																	
2	XPW02				1030		2	X		X																	
3	G111				950		4	X	X	X		X															
4	G125				956		6																				
5	G126				1129		4																				
6	G154				1045		5																				
7	G155				941		4																				
8	G401				~~1144~~		0																				
9	G211				1041		8																				
10	G212				1202		7																				
11	~~G303~~ G307				1215		3																				
12	G410				1110																						
13	G411				956																						
14	G277 ✱	GS			0940																						
15	G106 ✱	8-24-22		8/23/22	1058																						
16																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
COF-Q3-2022 Rev 1		8-24-22	13:37		8-24-22	1400
		8-24-22	1635	Paul Schindler	8-24-22	1635

SAMPLE CONDITIONS: Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joe Reed

SIGNATURE of SAMPLER: Joseph A Reed

DATE Signed (MM/DD/YY): 8/24/22

FH05289

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:

Company:	Vistra Corp
Address:	13498 E. 900th St
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	standard

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Jason Stuckey
Purchase Order No.:	
Project Name:	Coffeen
Project Number:	2285

Section C Invoice Information:

Attention:	Jason Stuckey
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	COF_257_101	COF_257_102	COF_257_103	COF_257_104	COF_257_105	COF_WPCP_102	COF_WPCP_103_104	COF_WPCP_106	COF_811_105	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	G151	WT	G	8/24/22	1406		4																				
2	G152				1329		4																				
3	G153				1513		4																				
4	G213				1554		6																				
5	G214				1647		6																				
6	G270				1414		7																				
7	G271				1536		7																				
8	G272				1640		6																				
9	G279				1602		7																				
10	G280				1658		7																				
11	G303				1420		3																				
12	G306				1555		3																				
13	G402				1356		5																				
14	G403				1507		5																				
15	G404				1538		6																				
16	G405	↓	↓	↓	1701		5																				

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
COF-Q3-2022 Rev 1	Joseph T Reed	8/25/22	1758	Gail Schindler	8/25/22	1458	2.2

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joe Reed

SIGNATURE of SAMPLER: Joseph T Reed

DATE Signed (MM/DD/YY): 8/24/22

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.2			

FH05292

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:

Company:	Vistra Corp
Address:	13498 E. 900th St
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	standard

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Jason Stuckey
Purchase Order No.:	
Project Name:	Coffeen
Project Number:	2285

Section C Invoice Information:

Attention:	Jason Stuckey
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	COF_257_101	COF_257_102	COF_257_103	COF_257_104	COF_257_105	COF_WPCP_102	COF_WPCP_103_104	COF_WPCP_106	COF_811_105	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	G151	WT	G	8/24/22	1406		4																				
2	G152				1329		4																				
3	G133				1513		4																				
4	G213				1554		6																				
5	G214				1647		6																				
6	G270				1414		7																				
7	G271				1536		7																				
8	G272				1640		6																				
9	G279				1602		7																				
10	G280				1658		7																				
11	G303				1420		3																				
12	G306				1555		3																				
13	G402				1356		5																				
14	G403				1507		5																				
15	G404				1538		6																				
16	G405	↓	↓	↓	1701		5																				

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
COF-Q3-2022 Rev 1	Joseph Reed	8/25/22	1758	Gail Schneider	8/25/22	1458	3.2

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joe Reed

SIGNATURE of SAMPLER: Joseph Reed DATE Signed (MM/DD/YY): 8/24/22

Temp in °C | Received on ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

FH052292

CHAIN-OF-CUSTODY / Analytical Request Document

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Section A Required Client Information:

Company:	Vistra Corp
Address:	13498 E. 900th St
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	standard

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Jason Stuckey
Purchase Order No.:	
Project Name:	Coffeen
Project Number:	2285

Section C Invoice Information:

Attention:	Jason Stuckey
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test ↓ Y/N	COF_257_101	COF_257_102	COF_257_103	COF_257_104	COF_257_105	COF_WPCP_102	COF_WPCP_103_104	COF_WPCP_106	COF_811_105	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	G406	WT	G	8/24/22	1408		5																			
2	G407	WT	G	8/24/22	1235		5																			
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
COF-Q3-2022 Rev 1	Joseph R Reed	8/25/22	1158	Gail Schendel	8/25/22	1458	2.2

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joe Reed

SIGNATURE of SAMPLER: Joseph R Reed

DATE Signed (MM/DD/YY): 8/24/22

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

FHOS292

CHAIN-OF-CUSTODY / Analytical Request Document

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Section A Required Client Information:

Company:	Vistra Corp
Address:	13498 E. 900th St
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	standard

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Jason Stuckey
Purchase Order No.:	
Project Name:	
Project Number:	2285

Section C Invoice Information:

Attention:	Jason Stuckey
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N ↓Analysis Test	COF_257_101	COF_257_102	COF_257_103	COF_257_104	COF_257_105	COF_WPCP_102	COF_WPCP_103_104	COF_WPCP_106	COF_811_105	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	R205	WT	G	8/25/22	0952		6	X	X	X		X															
2	6273	WT	G	8/25/22	1058		7	X	X	X		X															
3	6281	WT	G	8/25/22	1121		5	X		X		X															
4	NE Riser	WT	G	8/25/22	1005		3	X		X																	
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											
13																											
14																											
15																											
16																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
COF-Q3-2022 Rev 1		8/25/22	1458	Paul Schendler	8-25-22	1458	3.8

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Aaron Robertson

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 8/25/2022

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

COFFEEN DTW FORM Date: 8/23/2022

WELL	DTW		WELL	DTW		WELL	DTW	
G101	7.65	Pump	G206	11.21	Pump	G283	8.06	
G102	6.79	Pump	G206D	31.28	pump	G284	12.06	
G103	10.00	Pump	G207	11.33	22.80	G285	6.44	Top of pump 8.64
R104	7.77	Pump	G208	11.04	Pump	G286	Dry	Top of pump 9.70
G105	8.60	Pump	G209	10.72	Pump	G287	Dry	
G106	9.65	Pump	G210	11.03	Pump	G288	7.68	
G107	10.53	Pump	G211	10.87	pump	G301	7.07	
G108	11.39	Pump	G212	12.08	Pump	G302	9.15	
G109	11.50	pump	G213	12.18	Pump	G303	6.06	
G110	12.18	Pump	G214	14.85	Pump	G305	7.61	
G111	13.40	pump	G215	14.61	Pump	G306	8.12	
G119	15.00	Pump	G216	13.92	Pump	G307	0.00	Artesian
G120	15.07	Pump	G217	15.60	Pump	G307D	9.79	
G121	16.15	Pump	G218	14.23	Pump	G308	7.24	
G122	15.66	Pump	G270	4.03	Pump	G309	7.24	
G123	13.46	Pump	G271	16.68	pump	G310	8.89	
G124	14.22	Pump	G272	10.19	pump	G311	7.85	
G125	14.37	Pump	G273	11.23	pump	G311D	23.78	
G126	9.69	Pump	G274	14.70	pump	G312	11.28	
G151	16.31	Pump	G275	Dry	13.44	G313	2.38	
G152	11.45	pump	G275D	39.49	pump	G314	3.30	
G153	11.77	Pump	G276	27.34	Pump	G314D	18.00	
G154	13.00	Pump	G277	19.62	Pump	G315	3.31	
G155	12.56	Pump	G278	22.66	~~Pump~~ 24.88	G316	12.18	
G200	6.21	pump	G279	23.00	Pump	G317	33.97	
R201	5.97	pump	G280	14.10	pump	G401	21.52	
R205	6.36	pump	G281	6.85	pump	G402	10.01	
G403	8.54	pump	T409	14.28				

√? G404	5.41	pump	TA31	7.89	23.05	G1001	unable	to locate
√? G405	6.78	pump	TA33	9.35		G1003	⊥	⊥
√ G406	11.89	pump	TA34	9.57				
√ G407	7.27	pump	TR32	5.91				
√? G410	8.81	pump	X201	~	—			
√ G411	7.78	pump	√XPW01	7.90				
G45D	9.23		√XPW02	8.88				
√ G46D	10.11		√XSG01	3.07				
MW03D	30.26							
MW04S	7.19							
MW05S	8.08							
MW10S	6.05							
MW11D	5.12							
MW11S	4.41							
MW12D	12.93	50.20						
MW12S	Was pea-cap							
MW16D	11.75	53.35						
MW16S	9.45	22.18						
MW20S	10.21	16.20						
NE RISER	—	—						
√ SG02	7.45							
√ SG03	9.81							
SG04	6.16							
T127	14.44							
T128	14.50							
T202	6.44							
T406	7.10							
T408	7.09							

SITE **COFFEEN GMZ**

WELL/SAMPLE POINT **G281**

Date: 8/25/2022 Start Time: 1010 Finish/Sample Time: 1121

Well Depth (Bottom) From MP: _____ ft

Depth to Water From MP: 2.05 ft

Water Column Length: _____ ft

Well Water Volume: _____ L

Total Purge Volume: 1000 (mL) / L

Reading	Time	pH	Spec Con	Temp	DO	Turbidity	ORP
(Units)		(s.u.)	(umhos/cm)	(deg C)	(mg/L)	(NTU)	(mV)
1	1030	6.83	1060	20.8	0.92	117.0	-7.0
2	1032	6.83	1060	20.9	1.02	117.0	-1.0
3	1034	6.83	1060	21.0	1.02	118.0	4.0
4							
5							

DTW
7.18
7.18
7.18

Sampled with: bladder

Sample Appearance:

Odor:	☒ None	☐ Slight	☐ Mod.	☐ Strong
Color	☐ None	☐ Slight	☐ Mod.	☐ Strong
Turb	☐ None	☐ Slight	☒ Mod	☐ Strong

Weather:/Environment _____

Remarks: _____

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
	Phenols (A,G,250mL, H2SO4)
1	Cyanide (P, 250mL, NaOH)
1	Metals (P, 250mL, HNO3)
1	General (P, 500mL)
1	P, 2.5L, HNO3

Filtered	
Qty	Bottles
1	Metals (P,250mL, HNO3)
	General (P,500mL)
	In-Line Filters Used

Comments _____

Sampler's Signature: _____

SITE **COFFEEN**

G301

Date: 8/23/22 Start Time: 1705 Finish/Sample Time: 1759

Well Depth (Bottom) From MP: Pump ft Purge Rate: 100 mL/min

Depth to Water From MP: 7.28 ft Total Purge Volume: 2.1 L / Gal

Reading	Time	DTW	Purge	pH	Spec Con	Temp	Turbidity	DO	ORP
(Units)		feet	Volume	s.u.	umhos/cm	deg C	NTU	mg/L	mV
1	1720	7.32	100	6.54	1258.1	19.00	2.82	0.20	-1.1
2	1722	7.32	100	6.54	1250.3	18.93	2.34	0.19	0.1
3	1724	7.32	100	6.55	1247.9	18.90	2.17	0.19	1.4
4									
5									

Sampled with: AT 600

Sample Appearance: Odor: ☐ None ☐ Slight ☐ Mod. ☐ Strong

Color ☐ None ☐ Slight ☐ Mod. ☐ Strong

Turb ☐ None ☐ Slight ☐ Mod ☐ Strong

Weather:/Environment

Remarks:

End DTW 7.31

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
1	Plastic 2.5 L
1	Metals (P, 250mL, HNO3)
1	General (P, 500mL)

Filtered	
Qty	Bottles

Comments

Sampler's Signature: Joseph R Rad

SITE **COFFEEN**

G302

Date: 8/23/22 Start Time: 1610 Finish/Sample Time: 1700

Well Depth (Bottom) From MP: Pump ft Purge Rate: 100mL/min

Depth to Water From MP: 9.52 ft Total Purge Volume: 1.5 L / Gal
+ 600mL
= 2.1 L

Reading	Time	DTW	Purge	pH	Spec Con	Temp	Turbidity	DO	ORP
(Units)		feet	Volume	s.u.	umhos/cm	deg C	NTU	mg/L	mV
1	1625	10.01	100	6.88	1265.1	19.10	2.22	1.87	-140.4
2	1627	10.00	100	6.84	1249.8	18.99	2.13	1.79	-137.5
3	1629	10.00	100	6.88	1233.5	18.91	2.29	1.75	~~-137.4~~ -133.4
4									
5									

Sampled with: AT 600

Sample Appearance:
Odor: ☒ None ☐ Slight ☐ Mod. ☐ Strong
Color ☒ None ☐ Slight ☐ Mod. ☐ Strong
Turb ☒ None ☐ Slight ☐ Mod ☐ Strong

End DTW 10.01

Weather:/Environment 80's Sunny

Remarks:

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
1	Plastic 2.5 L
1	Metals (P, 250mL, HNO3)
1	General (P, 500mL)

Filtered	
Qty	Bottles

Comments

Sampler's Signature: Joseph R Reed

SITE **COFFEEN**

~~G307~~ G303

Date: 8/24/22 Start Time: 1329 Finish/Sample Time: 1420

Well Depth (Bottom) From MP: Pump ft Purge Rate: 100 mL/min

Depth to Water From MP: 6.33 ft Total Purge Volume: 2.1 L / Gal

Reading	Time	DTW	Purge	pH	Spec Con	Temp	Turbidity	DO	ORP
(Units)		feet	Volume	s.u.	umhos/cm	deg C	NTU	mg/L	mV
1	1341	7.05	100	6.73	2200	19.19	11.9	0.61	-41.1
2	1343	7.05	100	6.74	2200	19.10	8.37	0.57	-43.0
3	1345	7.05	100	6.74	2200	19.17	17.09	0.60	-43.0
4									
5									

Sampled with: Horiba

Sample Appearance:
Odor: ☒ None ☐ Slight ☐ Mod. ☐ Strong
Color ☒ None ☐ Slight ☐ Mod. ☐ Strong
Turb ☒ None ☐ Slight ☐ Mod ☐ Strong

End DTW 7.07

Weather:/Environment

Remarks:

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
1	Plastic 2.5 L
1	Metals (P, 250mL, HNO3)
1	General (P, 500mL)

Filtered	
Qty	Bottles

Comments

Sampler's Signature: Joseph R Reed

SITE **COFFEEN**

G306

Date: 8/24/22 Start Time: 1459 Finish/Sample Time: 1555

Well Depth (Bottom) From MP: Pump ft Purge Rate: 100 mL/min

Depth to Water From MP: 8.56 ft Total Purge Volume: 2.1 L / Gal

Reading	Time	DTW	Purge	pH	Spec Con	Temp	Turbidity	DO	ORP
(Units)		feet	Volume	s.u.	umhos/cm	deg C	NTU	mg/L	mV
1	1513	8.91	100	6.56	981	20.10	5.0	3.30	59
2	1517	8.92	100	6.56	975	19.95	4.8	3.27	68
3	1519	8.92	100	6.56	971	19.88	3.1	3.19	69
4									
5									

Sampled with: Horiba

End DTW 9.39

Sample Appearance: Odor: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Color ☒ None ☐ Slight ☐ Mod. ☐ Strong

Turb ☒ None ☐ Slight ☐ Mod ☐ Strong

Weather:/Environment

Remarks:

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
1	Plastic 2.5 L
1	Metals (P, 250mL, HNO3)
1	General (P, 500mL)

Filtered	
Qty	Bottles

Comments

Sampler's Signature: Joseph R Rad

SITE **COFFEEN**

~~G303~~ G307

Date: 8/24/22 Start Time: ~~1400~~ JR 1122 Finish/Sample Time: 1215

Well Depth (Bottom) From MP: ~~Pump~~ ft Purge Rate: 100 mL/min

Depth to Water From MP: 0.3 ft Total Purge Volume: 2.1 L / Gal

Reading	Time	DTW	Purge	pH	Spec Con	Temp	Turbidity	DO	ORP
(Units)		feet	Volume	s.u.	umhos/cm	deg C	NTU	mg/L	mV
1	1138	0.3	100	7.04	1100	19.51	1.1	-77	4.4
2	1140	0.3	100	7.03	1100	19.50	0.8	-80	3.9
3	1142	0.3	100	7.02	1100	19.47	1.0	-79	4.0
4									
5									

Sampled with: Horiba

Sample Appearance: Odor: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Color ☒ None ☐ Slight ☐ Mod. ☐ Strong

Turb ☒ None ☐ Slight ☐ Mod ☐ Strong

Weather:/Environment

Remarks:

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
1	Plastic 2.5 L
1	Metals (P, 250mL, HNO3)
1	General (P, 500mL)

Filtered	
Qty	Bottles

Comments

Sampler's Signature: Joseph R Rad

SITE **COFFEEN**

XPW01

Date: 8/24/22 Start Time: 1036 Finish/Sample Time: 1110

Well Depth (Bottom) From MP: Pump ft Purge Rate: 100 mL/min

Depth to Water From MP: 4.02 ft Total Purge Volume: 2.1 L / Gal

Reading	Time	DTW	Purge	pH	Spec Con	Temp	Turbidity	DO	ORP
(Units)		feet	Volume	s.u.	umhos/cm	deg C	NTU	mg/L	mV
1	1053	4.02	100	7.75	1140	20.01	0.5	3.56	-85
2	1055	4.02	100	7.71	1150	19.99	0.4	3.41	-79
3	1057	4.02	100	7.69	1140	19.97	0.5	3.36	-72
4									
5									

Sampled with: Horiba

Sample Appearance:

Odor: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Color ☒ None ☐ Slight ☐ Mod. ☐ Strong

Turb ☒ None ☐ Slight ☐ Mod ☐ Strong

Weather:/Environment

Remarks:

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
	Plastic 2.5 L
1	Metals (P, 250mL, HNO3)
1	General (P, 500mL)

Filtered	
Qty	Bottles

Comments

Sampler's Signature: Joseph R Red

SITE **COFFEEN**

XPW02

Date: 8/24/22 Start Time: 955 Finish/Sample Time: 1030

Well Depth (Bottom) From MP: _____ ft Purge Rate: 100 mL/min

Depth to Water From MP: 9.03 ft Total Purge Volume: 2 L / Gal

Reading	Time	DTW	Purge	pH	Spec Con	Temp	Turbidity	DO	ORP
(Units)		feet	Volume	s.u.	umhos/cm	deg C	NTU	mg/L	mV
1	1012	9.06	100	7.0	715	19.98	5.5	4.01	-70
2	1014	9.06	100	7.0	715	19.91	3.8	4.11	-68
3	1016	9.06	100	6.99	717	19.89	2.1	3.90	-61
4									
5									

Sampled with: Horiba

Sample Appearance: Odor: ☐ None ☐ Slight ☐ Mod. ☐ Strong

Color ☐ None ☐ Slight ☐ Mod. ☐ Strong

Turb ☐ None ☐ Slight ☐ Mod ☐ Strong

Weather:/Environment 80's Sunny

Remarks:

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
	Plastic 2.5 L
1	Metals (P, 250mL, HNO3)
1	General (P, 500mL)

Filtered	
Qty	Bottles

Comments

Sampler's Signature: Joseph R Reed

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Joe Reed	Location:	Colfeen
Weather:		Environment:	

Multiparameter Water Meter	Make:	AquaTroll	Model:	600	Serial Number: 846000
Water Level Meter	Make:	Solinst	Model:	101	Serial Number: 269022

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.01	s.u.	±0.1 s.u.	P	No		MSI	L315-04	11/22/2023
pH 7.00a	7.00	s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
pH 10.00a	9.96	s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC Zero (DI)	0.0	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1989.1	µS/cm	±5%				Geotech	1GK328	Nov-22
ORP	217.3	mV	±15 mV				InSitu	1GL481	Sep-22
DO (Zero pt)	0.21	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	98.9	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification) — Time:

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.99	s.u.	±0.15 s.u.	P	None	Geotech	1GF009	Jun-23
pH 7.00b	7.02	s.u.	±0.15 s.u.			Geotech	0GJ268	Oct-22
pH 10.00b	10.01	s.u.	±0.15 s.u.			Geotech	1GF458	Jun-23
SC 1000	999.1	µS/cm	±5%			Ricca	2108D48	Jul-23

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): — Time: 1900

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.02	s.u.	±0.1 s.u.	Pass	No		MSI	L315-04	11/22/2023
pH 7.00a	7.05	s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
pH 10.00a	10.01	s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000	1031.1	µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)	0.04	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	0.1	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): — Time:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	L315-04	11/22/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature:	Joseph R Reed	Date:	8/23/22

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Sam Grant	Location:	Coffeen
Weather:	80-84°F, sunny, wind 2mph SW	Environment:	grass/gravel road

Multiparameter Water Meter	Make: InSitu	Model: Aquatroll 600	Serial Number:	739449	
Water Level Meter	Make: Heron	Model: Dipper-T	Serial Number:	19FF22G152HR	

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.08	s.u.	±0.1 s.u.	P	3-pt.	4.00	MSI	L153-17	6/8/2023
pH 7.00a	7.16	s.u.	±0.1 s.u.	P		7.00	MSI	L172-33	8/23/2023
pH 10.00a	10.05	s.u.	±0.1 s.u.	P		10.00	MSI	L118-08	5/12/2023
SC Zero (DI)	11.71	µS/cm	0<25 µS/cm	P	N	NA	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1969.4	µS/cm	±5%				Geotech	1GJ517	Oct-22
ORP	217.8 @ 25.73	mV	±15 mV				InSitu	1Gk507	Aug-22
DO (Zero pt)	0.07	mg/L	±0.1				Fischer Chemical	168261	8/26/2025
DO (Saturated)	100.00	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	1.10	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification) Time: 1304

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.92	s.u.	±0.15 s.u.	P	None	Geotech	1GH562	Aug-22
pH 7.00b	6.87	s.u.	±0.15 s.u.			Geotech	1GD360	Apr-22
pH 10.00b	9.94	s.u.	±0.15 s.u.			Geotech	1GE278	Mar-22
SC 1000	980.71	µS/cm	±5%			Ricca	2107D48	Jul-23

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): Time: 1904

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.05	s.u.	±0.1 s.u.	P	N	NA	MSI	L153-17	6/8/2023
pH 7.00a	7.08	s.u.	±0.1 s.u.				MSI	L172-33	8/23/2023
pH 10.00a	10.04	s.u.	±0.1 s.u.				MSI	L118-08	5/12/2023
SC 1000	1003.9	µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)	0.09	mg/L	±0.1 mg/L				Fischer Chemical	168261	8/26/2025
Turbidity (DI)	1.11	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): Time:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	L153-17	6/8/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	8/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L118-08	5/12/2023
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Fischer Chemical	168261	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature:	Sam Grant	Date:	8-23-22

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Austin Moore Brendan Glenn	Location:	Coffeen Power Station
Weather:	H:81° L:57° W:SW 0MPH Sunny	Environment:	Grassy

Multiparameter Water Meter	Make: Aquatroll	Model: 600	Serial Number: 762098		
Water Level Meter	Make: Solinst	Model: ~~101~~ Water tape 102	Serial Number: 336216		

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	7.02	s.u.	±0.1 s.u.	P			MSI	L315-04	11/22/2023
pH 7.00a	6.92	s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
pH 10.00a	9.98	s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC Zero (DI)	~~8.49~~ 6.37	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1911.2	µS/cm	±5%				Geotech	1GK328	Nov-22
ORP	213.6	mV	±15 mV				InSitu	1GL481	Sep-22
DO (Zero pt)	.03	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	98.39	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	1.05	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification) — Time: 0830

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.03	s.u.	±0.15 s.u.	P		Geotech	1GF009	Jun-23
pH 7.00b	6.85	s.u.	±0.15 s.u.			Geotech	0GJ268	Oct-22
pH 10.00b	9.93	s.u.	±0.15 s.u.			Geotech	1GF458	Jun-23
SC 1000	1024.3	µS/cm	±5%			Ricca	2108D48	Jul-23

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): — Time:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a 4.13	[illegible]	s.u.	±0.1 s.u.	F	Y	4.00	MSI	L315-04	11/22/2023
pH 7.00a	7.10	s.u.	±0.1 s.u.	P	Y	7.00	MSI	L172-33	6/23/2023
pH 10.00a	10.04	s.u.	±0.1 s.u.	P	Y	10.00	MSI	L354-22	1/5/2024
SC 1000	1026.0	µS/cm	±5%	P			Ricca	2108D48	Jul-23
DO (Zero pt)	0.05	mg/L	±0.1 mg/L	P			Macron	#000228049	8/26/2025
Turbidity (DI)	1.41	NTU	<2 NTU	P			Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): — Time:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	L315-04	11/22/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature:	Austin Moore	Date:	8/23/22

Brendan Glenn

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Kyle Jones	Location:	Coffee
Weather:	81° to 94° sunny	Environment:	Dry

Multiparameter Water Meter	Make:	Pelican	Model:	Horiba	Serial Number:	U4V1FVHF
Water Level Meter	Make:		Model:		Serial Number:	

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.08	s.u.	±0.1 s.u.	P	No	No	MSI	L344-09	12/14/2023
~~pH 7.00a~~	—	s.u.	±0.1 s.u.				MSI	L343-07	12/9/2023
~~pH 10.00a~~	—	s.u.	±0.1 s.u.				MSI	M082-04	3/25/2024
SC Zero (DI)	4,49 @	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
~~SC 2000~~	—	µS/cm	±5%				Geotech	1GK328	Nov-22
~~ORP~~	—	mV	±15 mV				InSitu	1GL481	Sep-22
DO (Zero pt)	9.50	mg/L	±0.1				Macron	#000228049	8/26/2025
~~DO (Saturated)~~	—	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.3	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification) Time: 8:35 AM

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
~~pH 4.00b~~	—	s.u.	±0.15 s.u.			Geotech	1GF009	Jun-23
~~pH 7.00b~~	—	s.u.	±0.15 s.u.	NA	No	Geotech	0GJ268	Oct-22
~~pH 10.00b~~	—	s.u.	±0.15 s.u.			Geotech	1GF458	Jun-23
~~SC 1000~~	—	µS/cm	±5%			Ricca	1111A87	Nov-22

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): Time: 7:09 PM

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.03	s.u.	±0.1 s.u.	P	No	No	MSI	L315-04	11/22/2023
pH 7.00a	—	s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
pH 10.00a	—	s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000	—	µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)	7.30	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	1.25	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): Time:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	L315-04	11/22/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature:	[signature]	Date:	8-23-22

Multiparameter Meter Field Calibration Checklist

Field Personnel:	AP	Location:	Colleen
Weather:	72°-76°F sunny wind NW 1mph	Environment:	grass, gravel, dirt
Multiparameter Water Meter	Make: Horiba	Model: U-5000	Serial Number: PW2GV503
Water Level Meter	Make: Heron	Model: Dipper T2	Serial Number: 19ft 220131ML

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.02	s.u.	±0.1 s.u.	P	No	—	MSI	L344-09	12/14/2023
~~pH 7.00a~~	—	s.u.	±0.1 s.u.	—	—	—	MSI	L343-07	12/9/2023
~~pH 10.00a~~	—	s.u.	±0.1 s.u.	—	—	—	MSI	M082-04	3/25/2024
~~SC Zero (DI)~~	—	µS/cm	0<25 µS/cm	—	—	—	Pace Labs	N/A (DI)	N/A (DI)
SC ~~2000~~	4770	µS/cm	±5%	P	No	—	Geotech	1GK328	Nov-22
~~ORP~~	—	mV	±15 mV	—	—	—	InSitu	1GL481	Sep-22
DO (Zero pt)	9.75	mg/L	±0.1	P	No	—	Macron	#000228049	8/26/2025
~~DO (Saturated)~~	—	%	97-100%	—			Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU	P	No	—	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: 0835			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	—	s.u.	±0.15 s.u.	—	—	Geotech	1GF009	Jun-23
pH 7.00b	—	s.u.	±0.15 s.u.	—	—	Geotech	0GJ268	Oct-22
pH 10.00b	—	s.u.	±0.15 s.u.	—	—	Geotech	1GF458	Jun-23
SC 1000	—	µS/cm	±5%	—	—	Ricca	1111A87	Nov-22

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 1833				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.08	s.u.	±0.1 s.u.	P	No	—	MSI	L315-04	11/22/2023
pH 7.00a	—	s.u.	±0.1 s.u.	—	—	—	MSI	L172-33	6/23/2023
pH 10.00a	—	s.u.	±0.1 s.u.	—	—	✓	MSI	L354-22	1/5/2024
SC ~~1000~~	4820	µS/cm	±5%	P	No	—	Ricca	2108D48	Jul-23
DO (Zero pt)	9.69	mg/L	±0.1 mg/L	P	No	—	Macron	#000228049	8/26/2025
Turbidity (DI)	0.0	NTU	<2 NTU	P	No	✓	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time:				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	L315-04	11/22/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature:		Date:	8/23/22

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Kyle Lane	Location:	Coffeen
Weather:	81° Sunny	Environment:	Dry and Dusty

Multiparameter Water Meter	Make:	In-Situ	Model:	AT 600	Serial Number: 762098
Water Level Meter	Make:	Solinst	Model:	101	Serial Number: 269027

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.06	s.u.	±0.1 s.u.	P	N/A	N/A	MSI	L315-04	11/22/2023
pH 7.00a	7.03	s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
pH 10.00a	10.05	s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC Zero (DI)	23.58	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1,958.0	µS/cm	±5%				Geotech	1GK328	Nov-22
ORP 22.4	216.5	mV	±15 mV				InSitu	1GL481	Sep-22
DO (Zero pt)	0.01	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	99.46	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.83	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: 08:12			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.06	s.u.	±0.15 s.u.	P	N/A	Geotech	1GF009	Jun-23
pH 7.00b	6.93	s.u.	±0.15 s.u.			Geotech	0GJ268	Oct-22
pH 10.00b	10.02	s.u.	±0.15 s.u.			Geotech	1GF458	Jun-23
SC 1000	1,013.2	µS/cm	±5%			Ricca	2108D48	Jul-23

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 17:03				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.05	s.u.	±0.1 s.u.	P	N/A	N/A	MSI	L315-04	11/22/2023
pH 7.00a	7.01	s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
pH 10.00a	9.98	s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000	997.8	µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)	0.01	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	0.41	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time:				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	L315-04	11/22/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature:	[signature]	Date:	8-24-2022

Multiparameter Meter Field Calibration Checklist

Field Personnel:	AP				Location:	Colleen	
Weather:	70°-80°F sunny wind W 0 mph				Environment:	gravel gravel dirt	
Multiparameter Water Meter	Make:	Horiba	Model:	U5000	Serial Number:	PW2GYJ03	
Water Level Meter	Make:	Heron	Model:	Dipper T2	Serial Number:	19FH220213 IM	

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.08	s.u.	±0.1 s.u.	P	NO	—	MSI	L344-09	12/14/2023
pH 7.00a	—	s.u.	±0.1 s.u.	—	—	—	MSI	L343-07	12/9/2023
pH 10.00a	—	s.u.	±0.1 s.u.	—	—	—	MSI	M082-04	3/25/2024
SC Zero (DI)	—	µS/cm	0<25 µS/cm	—	—	—	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	4500	µS/cm	±5%	P	NO	—	Geotech	1GK328	Nov-22
ORP	—	mV	±15 mV	—	—	—	InSitu	1GL481	Sep-22
DO (Zero pt)	9.48	mg/L	±0.1	P	NO	—	Macron	#000228049	8/26/2025
DO (Saturated)	—	%	97-100%	—	—	—	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU	P	No	—	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)

Time: 0819

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b		s.u.	±0.15 s.u.			Geotech	1GF009	Jun-23
pH 7.00b		s.u.	±0.15 s.u.			Geotech	0GJ268	Oct-22
pH 10.00b		s.u.	±0.15 s.u.			Geotech	1GF458	Jun-23
SC 1000		µS/cm	±5%			Ricca	1111A87	Nov-22

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):

Time: 1720

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.07	s.u.	±0.1 s.u.	P	NO	N/A	MSI	L315-04	11/22/2023
pH 7.00a	—	s.u.	±0.1 s.u.	—	—	—	MSI	L172-33	6/23/2023
pH 10.00a	—	s.u.	±0.1 s.u.	—	—	—	MSI	L354-22	1/5/2024
SC 1000	4550	µS/cm	±5%	P	No	—	Ricca	2108D48	Jul-23
DO (Zero pt)	10.02	mg/L	±0.1 mg/L	P	No	—	Macron	#000228049	8/26/2025
Turbidity (DI)	0.0	NTU	<2 NTU	P	No	—	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):

Time:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	L315-04	11/22/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments: horiba station used

Signature: [signature]

Date: 8/24/2022

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Sam Grant	Location:	Cofteen
Weather:	70-82°F, sunny, wind 0mph	Environment:	gravel road, tall grass

Multiparameter Water Meter	Make:	InSitu	Model:	Aquatroll 600	Serial Number:	739449	
Water Level Meter	Make:	Heron	Model:	Dipper-T	Serial Number:	19FF220115ZHB	

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.81	s.u.	±0.1 s.u.	F	3-pt.	4.00	MSI	L153-17	6/8/2023
pH 7.00a	6.89	s.u.	±0.1 s.u.	P		7.00	MSI	L172-33	8/23/2023
pH 10.00a	9.92	s.u.	±0.1 s.u.	P		10.00	MSI	L118-08	5/12/2023
SC Zero (DI)	21.17	µS/cm	0<25 µS/cm	P	N	NA	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1928.1	µS/cm	±5%				Geotech	1GJ517	Oct-22
ORP	224.1 @ 24.15C	mV	±15 mV				InSitu	1Gk507	Aug-22
DO (Zero pt)	0.02	mg/L	±0.1				Fischer Chemical	168261	8/26/2025
DO (Saturated)	97.81	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.07	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: 0930			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.01	s.u.	±0.15 s.u.	P	None	Geotech	1GH562	Aug-22
pH 7.00b	6.87	s.u.	±0.15 s.u.			Geotech	1GD360	Apr-22
pH 10.00b	9.89	s.u.	±0.15 s.u.			Geotech	1GE278	Mar-22
SC 1000	1020.9	µS/cm	±5%			Ricca	2107D48	Jul-23

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 1728				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.09	s.u.	±0.1 s.u.	P	N	NA	MSI	L153-17	6/8/2023
pH 7.00a	7.08	s.u.	±0.1 s.u.				MSI	L172-33	8/23/2023
pH 10.00a	10.10	s.u.	±0.1 s.u.				MSI	L118-08	5/12/2023
SC 1000	1023.9	µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)	0.09	mg/L	±0.1 mg/L				Fischer Chemical	168261	8/26/2025
Turbidity (DI)	0.00	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time:				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	L153-17	6/8/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	8/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L118-08	5/12/2023
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Fischer Chemical	168261	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature:	Sam R Grant	Date:	8-24-22

Multiparameter Meter Field Calibration Checklist

Field Personnel:	RALEB DESKE	Location:	COFFEEN
Weather:	60° SUNNY WIND 5MPH W	Environment:	GRASSY

Multiparameter Water Meter	Make: AT	Model: 6000	Serial Number:	762193	
Water Level Meter	Make: WT	Model: HERON	Serial Number:	19FF2111192HB	

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.02	s.u.	±0.1 s.u.	PASS	NO	N/A	MSI	L315-04	11/22/2023
pH 7.00a	7.01	s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
pH 10.00a	10.01	s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC Zero (DI)	~~3.20~~	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2038.5	µS/cm	±5%				Geotech	1GK328	Nov-22
ORP	160.40	mV	±15 mV				InSitu	1GL481	Sep-22
DO (Zero pt)	0.08	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	99	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	1.32	NTU	<2 NTU			—	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification) — Time: 1103

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.93	s.u.	±0.15 s.u.	PASS	NO	Geotech	1GF009	Jun-23
pH 7.00b	7.04	s.u.	±0.15 s.u.			Geotech	0GJ268	Oct-22
pH 10.00b	9.99	s.u.	±0.15 s.u.			Geotech	1GF458	Jun-23
SC 1000	998.4	µS/cm	±5%			Ricca	2108D48	Jul-23

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): — Time: 1700

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.01	s.u.	±0.1 s.u.	PASS	NO	N/A	MSI	L315-04	11/22/2023
pH 7.00a	7.06	s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
pH 10.00a	10.03	s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000	994.4	µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)	0.00	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	1.24	NTU	<2 NTU			—	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): — Time:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	L315-04	11/22/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature: [signature] Date: 8/24/22

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Austin Moore	Location:	Coffeen
Weather:	82°-57° Sunny wind SSE 1mph	Environment:	Grassy

Multiparameter Water Meter	Make:	~~AT 600~~ AM	Model:	600	Serial Number: 846000
Water Level Meter	Make:	Solinst	Model:	BNT	Serial Number: 336216

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.03	s.u.	±0.1 s.u.	P			MSI	L315-04	11/22/2023
pH 7.00a	7.01	s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
pH 10.00a	10.01	s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC Zero (DI)	4.78	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1921.8	µS/cm	±5%				Geotech	1GK328	Nov-22
ORP	231.8	mV	±15 mV				InSitu	1GL481	Sep-22
DO (Zero pt)	0.01	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	97.83	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	1.85	NTU	<2 NTU	—			Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification) — Time: 0810

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.06	s.u.	±0.15 s.u.	P		Geotech	1GF009	Jun-23
pH 7.00b	6.86	s.u.	±0.15 s.u.			Geotech	0GJ268	Oct-22
pH 10.00b	9.89	s.u.	±0.15 s.u.			Geotech	1GF458	Jun-23
SC 1000	988.20	µS/cm	±5%	✓		Ricca	2108D48	Jul-23

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): — Time: 1722

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.01	s.u.	±0.1 s.u.	P			MSI	L315-04	11/22/2023
pH 7.00a	6.99	s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
pH 10.00a	9.96	s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000	969.04	µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)	0.07	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	1.66	NTU	<2 NTU	✓			Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): — Time:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	L315-04	11/22/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature:	Austin Moore	Date:	24-Aug-22

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Joe Reed	Location:	Cofferen
Weather:	80's Sunny	Environment:	grassy

Multiparameter Water Meter	Make:	Horiba	Model:		Serial Number:
Water Level Meter	Make:	Solinst	Model:	101	Serial Number:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.01	s.u.	±0.1 s.u.	P	N/A		MSI	L315-04	11/22/2023
pH 7.00a		s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
pH 10.00a		s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC Zero (DI)		µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	4490	µS/cm	±5%	P			Geotech	1GK328	Nov-22
ORP	253	mV	±15 mV	P			InSitu	1GL481	Sep-22
DO (~~Zero pt~~)	10.61	mg/L	±0.1	P			Macron	#000228049	8/26/2025
DO (~~Saturated~~)		%	97-100%	P			Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU	P			Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: 835			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b		s.u.	±0.15 s.u.			Geotech	1GF009	Jun-23
pH 7.00b		s.u.	±0.15 s.u.			Geotech	0GJ268	Oct-22
pH 10.00b		s.u.	±0.15 s.u.			Geotech	1GF458	Jun-23
SC 1000		µS/cm	±5%			Ricca	2108D48	Jul-23

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: 1730				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.01	s.u.	±0.1 s.u.	P	N/A		MSI	L315-04	11/22/2023
pH 7.00a		s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
pH 10.00a		s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000	4500	µS/cm	±5%	P			Ricca	2108D48	Jul-23
DO (Zero pt)	10.21	mg/L	±0.1 mg/L	P			Macron	#000228049	8/26/2025
Turbidity (DI)	0.0	NTU	<2 NTU	P			Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time:				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	L315-04	11/22/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature:	Joseph R Reed	Date:	8/24/22

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Brendan Glennon	Location:	Coffeen Power Plant
Weather:	84°-59° Mostly Sunny W: SW 3 MPH	Environment:	Gravel, Grassy
Multiparameter Water Meter	Make: Aquatroll	Model: 600	Serial Number: 846000
Water Level Meter	Make:	Model:	Serial Number:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.96	s.u.	±0.1 s.u.	P	Y	4.00	MSI	L315-04	11/22/2023
pH 7.00a	7.34	s.u.	±0.1 s.u.	F	Y	7.00	MSI	L172-33	6/23/2023
pH 10.00a	10.62	s.u.	±0.1 s.u.	F	Y	10.00	MSI	L354-22	1/5/2024
SC Zero (DI)	19.60	µS/cm	0<25 µS/cm	P			Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1,918.2	µS/cm	±5%	P			Geotech	1GK328	Nov-22
ORP	234.2	mV	±15 mV	P			InSitu	1GL481	Sep-22
DO (Zero pt)	0.07	mg/L	±0.1	P			Macron	#000228049	8/26/2025
DO (Saturated)	97.58	%	97-100%	P	BG		Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	1.85	NTU	<2 NTU	P	BG		Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification) Time: 0858

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.01	s.u.	±0.15 s.u.	P		Geotech	1GF009	Jun-23
pH 7.00b	6.99	s.u.	±0.15 s.u.			Geotech	0GJ268	Oct-22
pH 10.00b	10.00	s.u.	±0.15 s.u.			Geotech	1GF458	Jun-23
SC 1000	1,014.2	µS/cm	±5%			Ricca	2108D48	Jul-23

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): Time: 1105

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.04	s.u.	±0.1 s.u.	P			MSI	L315-04	11/22/2023
pH 7.00a	7.01	s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
pH 10.00a	9.96	s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000	1006.6	µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)	0.02	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	1.90	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): Time:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	L315-04	11/22/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature:	Brendan Glennon	Date:	8/25/22

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Kyle Lane, Mason Anderson	Location:	Coffeen Power
Weather:	75° Sunny	Environment:	Dry and Dusty

Multiparameter Water Meter	Make: Pelican	Model: Horiba	Serial Number:	PW294J03	
Water Level Meter	Make: Heron	Model: Water Tape	Serial Number:	19FF2202131ML	

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.08	s.u.	±0.1 s.u.	P	NO	—	MSI	L344-09	12/14/2023
pH 7.00a	—	s.u.	±0.1 s.u.	—	—	—	MSI	L343-07	12/9/2023
pH 10.00a	—	s.u.	±0.1 s.u.	—	—	—	MSI	M082-04	3/25/2024
SC Zero (DI)	—	µS/cm	0<25 µS/cm	—	—	—	Pace Labs	N/A (DI)	N/A (DI)
~~SC 2000~~	4340	µS/cm	±5%	P	No	—	Geotech	1GK328	Nov-22
ORP	—	mV	±15 mV	—	—	—	InSitu	1GL481	Sep-22
DO (Zero pt)	10.19	mg/L	±0.1	P	No	—	Macron	#000228049	8/26/2025
DO (Saturated)	—	%	97-100%	—	—	—	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU	P	No	—	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification) — Time: 08:47

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	—	s.u.	±0.15 s.u.	—	—	Geotech	1GF009	Jun-23
pH 7.00b	—	s.u.	±0.15 s.u.	—	—	Geotech	0GJ268	Oct-22
pH 10.00b	—	s.u.	±0.15 s.u.	—	—	Geotech	1GF458	Jun-23
SC 1000	—	µS/cm	±5%	—	—	Ricca	1111A87	Nov-22

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): — Time: 1202

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.07	s.u.	±0.1 s.u.	P	NO	—	MSI	L315-04	11/22/2023
pH 7.00a	—	s.u.	±0.1 s.u.	—	—	—	MSI	L172-33	6/23/2023
pH 10.00a	—	s.u.	±0.1 s.u.	—	—	—	MSI	L354-22	1/5/2024
~~SC 1000~~	1408	µS/cm	±5%	P	NO	—	Ricca	2108D48	Jul-23
DO (Zero pt)	10.02	mg/L	±0.1 mg/L	P	NO	—	Macron	#000228049	8/26/2025
Turbidity (DI)	0.0	NTU	<2 NTU	P	No	—	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification): — Time:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	L315-04	11/22/2023
7.00a		s.u.	±0.1 s.u.				MSI	L172-33	6/23/2023
10.00a		s.u.	±0.1 s.u.				MSI	L354-22	1/5/2024
SC 1000		µS/cm	±5%				Ricca	2108D48	Jul-23
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature: [signature] Date: 8/25/2022

ANALYTICAL REPORT

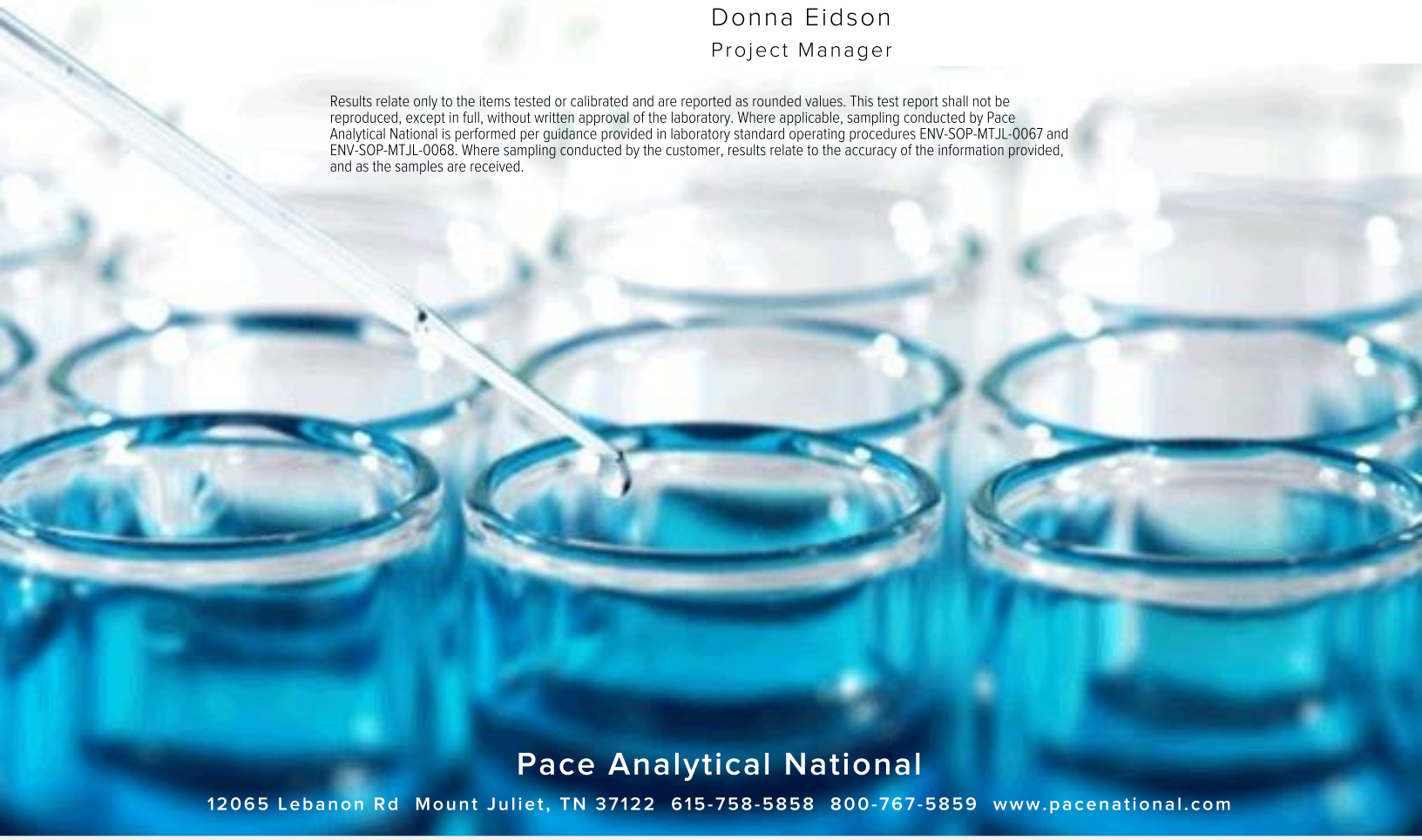
October 06, 2022

Pace IR - Peoria, IL

Sample Delivery Group:	L1533221
Samples Received:	09/07/2022
Project Number:	FH05307
Description:	Vistra-Coffeen
Site:	01
Report To:	Janet Clutters

Entire Report Reviewed By:

Donna Eidson
Project Manager



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

TABLE OF CONTENTS

G402 L1533221-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/24/22 13:56	09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932708	1	09/27/22 08:30	10/04/22 10:01	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933247	1	09/30/22 13:44	10/04/22 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933247	1	09/30/22 13:44	10/03/22 12:53	RGT	Mt. Juliet, TN

G403 L1533221-02 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/24/22 15:07	09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932708	1	09/27/22 08:30	10/04/22 10:01	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933247	1	09/30/22 13:44	10/04/22 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933247	1	09/30/22 13:44	10/03/22 12:53	RGT	Mt. Juliet, TN

G404 L1533221-03 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/24/22 15:38	09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932708	1	09/27/22 08:30	10/04/22 10:01	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933247	1	09/30/22 13:44	10/04/22 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933247	1	09/30/22 13:44	10/03/22 12:53	RGT	Mt. Juliet, TN

G405 L1533221-04 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/24/22 17:01	09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932708	1	09/27/22 08:30	10/04/22 10:01	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933247	1	09/30/22 13:44	10/04/22 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933247	1	09/30/22 13:44	10/03/22 12:53	RGT	Mt. Juliet, TN

G406 L1533221-05 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/24/22 14:08	09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932708	1	09/27/22 08:30	10/04/22 10:01	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933247	1	09/30/22 13:44	10/04/22 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933247	1	09/30/22 13:44	10/03/22 12:53	RGT	Mt. Juliet, TN

G407 L1533221-06 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/24/22 12:35	09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932708	1	09/27/22 08:30	10/04/22 10:01	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933247	1	09/30/22 13:44	10/04/22 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933247	1	09/30/22 13:44	10/03/22 12:53	RGT	Mt. Juliet, TN

SAMPLE SUMMARY

G281 L1533221-07 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/24/22 11:21	09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932708	1	09/27/22 08:30	10/04/22 10:01	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933247	1	09/30/22 13:44	10/04/22 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933247	1	09/30/22 13:44	10/03/22 12:53	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

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.273	J	0.266	0.480	10/04/2022 10:01	WG1932708
(T) Barium	*99.3*			*30.0-143*	*10/04/2022 10:01*	WG1932708
(T) Yttrium	*105*			*30.0-136*	*10/04/2022 10:01*	WG1932708

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.496	J	0.321	0.512	10/04/2022 10:01	WG1933247

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.223		0.180	0.179	10/03/2022 12:53	WG1933247
(T) Barium-133	*93.4*			*30.0-143*	*10/03/2022 12:53*	WG1933247

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.282	J	0.188	0.336	10/04/2022 10:01	WG1932708
(T) Barium	*102*			*30.0-143*	*10/04/2022 10:01*	WG1932708
(T) Yttrium	*101*			*30.0-136*	*10/04/2022 10:01*	WG1932708

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.506		0.291	0.440	10/04/2022 10:01	WG1933247

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.225	J	0.222	0.284	10/03/2022 12:53	WG1933247
(T) Barium-133	*99.0*			*30.0-143*	*10/03/2022 12:53*	WG1933247

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.726		0.198	0.337	10/04/2022 10:01	WG1932708
(T) Barium	*92.3*			*30.0-143*	*10/04/2022 10:01*	WG1932708
(T) Yttrium	*111*			*30.0-136*	*10/04/2022 10:01*	WG1932708

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.861		0.272	0.433	10/04/2022 10:01	WG1933247

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.135	J	0.186	0.272	10/03/2022 12:53	WG1933247
(T) Barium-133	*95.1*			*30.0-143*	*10/03/2022 12:53*	WG1933247

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.00		0.209	0.347	10/04/2022 10:01	WG1932708
(T) Barium	*97.4*			*30.0-143*	*10/04/2022 10:01*	WG1932708
(T) Yttrium	*107*			*30.0-136*	*10/04/2022 10:01*	WG1932708

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.06		0.254	0.431	10/04/2022 10:01	WG1933247

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0563	U	0.145	0.256	10/03/2022 12:53	WG1933247
(T) Barium-133	*91.2*			*30.0-143*	*10/03/2022 12:53*	WG1933247

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.848		0.209	0.352	10/04/2022 10:01	WG1932708
(T) Barium	*91.2*			*30.0-143*	*10/04/2022 10:01*	WG1932708
(T) Yttrium	*102*			*30.0-136*	*10/04/2022 10:01*	WG1932708

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.04		0.289	0.434	10/04/2022 10:01	WG1933247

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.192	J	0.199	0.254	10/03/2022 12:53	WG1933247
(T) Barium-133	*91.6*			*30.0-143*	*10/03/2022 12:53*	WG1933247

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.189	J	0.192	0.347	10/04/2022 10:01	WG1932708
(T) Barium	*96.8*			*30.0-143*	*10/04/2022 10:01*	WG1932708
(T) Yttrium	*106*			*30.0-136*	*10/04/2022 10:01*	WG1932708

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.227	J	0.253	0.453	10/04/2022 10:01	WG1933247

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0386	U	0.164	0.291	10/03/2022 12:53	WG1933247
(T) Barium-133	*95.1*			*30.0-143*	*10/03/2022 12:53*	WG1933247

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.22		0.223	0.363	10/04/2022 10:01	WG1932708
(T) Barium	*81.8*			*30.0-143*	*10/04/2022 10:01*	WG1932708
(T) Yttrium	*111*			*30.0-136*	*10/04/2022 10:01*	WG1932708

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.23		0.234	0.400	10/04/2022 10:01	WG1933247

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0117	U	0.0723	0.169	10/03/2022 12:53	WG1933247
(T) Barium-133	*95.1*			*30.0-143*	*10/03/2022 12:53*	WG1933247

Method Blank (MB)

(MB) R3844576-1 10/04/22 10:01

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / - pCi/l	MB MDA pCi/l
Radium-228	0.185	J	0.140	0.250
(T) Barium	*101*		*101*	
(T) Yttrium	*98.8*		*98.8*	

L1536080-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1536080-02 10/04/22 10:01 • (DUP) R3844576-5 10/04/22 10:01

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	0.397	0.265	0.470	0.662	0.278	0.470	1	50.0	0.688		20	3
(T) Barium	*113*			*102*	*102*							
(T) Yttrium	*104*			*113*	*113*							

Laboratory Control Sample (LCS)

(LCS) R3844576-2 10/04/22 10:01

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.04	101	80.0-120	
(T) Barium			*101*		
(T) Yttrium			*109*		

L1536080-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1536080-01 10/04/22 10:01 • (MS) R3844576-3 10/04/22 10:01 • (MSD) R3844576-4 10/04/22 10:01

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	1.54	16.6	15.6	90.1	84.3	1	70.0-130			6.09		20
(T) Barium		*110*			*110*	*107*							
(T) Yttrium		*108*			*112*	*105*							

Method Blank (MB)

(MB) R3845106-5 10/03/22 13:29

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-226	0.00185	U	0.00887	0.0216
(T) Barium-133	*102*		*102*	

L1533221-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1533221-07 10/03/22 12:53 • (DUP) R3845106-4 10/03/22 12:53

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	0.0117	0.0723	0.169	-0.0338	0.0662	0.169	1	200	0.464	U	20	3
(T) Barium-133	*95.1*			*98.0*	*98.0*							

Laboratory Control Sample (LCS)

(LCS) R3845106-1 10/03/22 12:53

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-226	5.02	4.71	93.8	80.0-120	
(T) Barium-133			*99.8*		

L1533194-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1533194-01 10/03/22 12:53 • (MS) R3845106-2 10/03/22 12:53 • (MSD) R3845106-3 10/03/22 12:53

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	20.0	0.300	18.8	20.6	92.5	101	1	75.0-125			8.99		20
(T) Barium-133		*96.6*			*97.9*	*97.2*							

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.

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 [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	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 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] 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.

A083

Internal Transfer Chain of Custody

Pace Analytical
www.pacelabs.com

State of Origin: IL
Cert. Needed: [X] YES [ ] NO

Workorder: FH05307 **Workorder Name:** Vistra - Coffeen

Owner Received Date: 8/25/2022

Results Requested By: 9/30/2022

Report To:	Subcontract To:
Janet Clutters	
Pace Analytical - IL/MO	Pace Analytical Services, LLC
2231 W. Altorfer Drive	12065 Lebanon Rd
Peoria, IL 61615	Mt Juliet, TN
800-752-6651	(615)758-5858

L1533221

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	Requested Analysis: Radium 226/228	LAB USE ONLY
1	G402	Grab	8/24/2022 13:56	FH05307-01	GW		X	-01
2	G403		8/24/2022 15:07	FH05307-02	GW		X	-02
3	G404		8/24/2022 15:38	FH05307-03	GW		X	-03
4	G405		8/24/2022 17:01	FH05307-04	GW		X	-04
5	G406		8/24/2022 14:08	FH05307-05	GW		X	-05
6	G407		8/24/2022 12:35	FH05307-06	GW		X	-06
7	G281		8/25/2022 11:21	FH05307-07	GW		X	-07
8								
9								
10								

Transfers	Released By	Date/Time	Reveived By	Date/Time	Comments
1	[signature]	8/1/22 1536	[signature]	9/6/22 1080	
2					
3					

Cooler Temperature on Receipt _____ °C	Custody Seal (Y) or N	Received on Ice (Y) or N	Sample Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

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		

ANALYTICAL REPORT

October 10, 2022

Pace IR - Peoria, IL

Sample Delivery Group:	L1533233
Samples Received:	09/07/2022
Project Number:	FH05104
Description:	Vistra-Coffeen
Site:	01
Report To:	Gail Schindler 2231 W. Altorfer Drive Peoria, IL 61615

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.

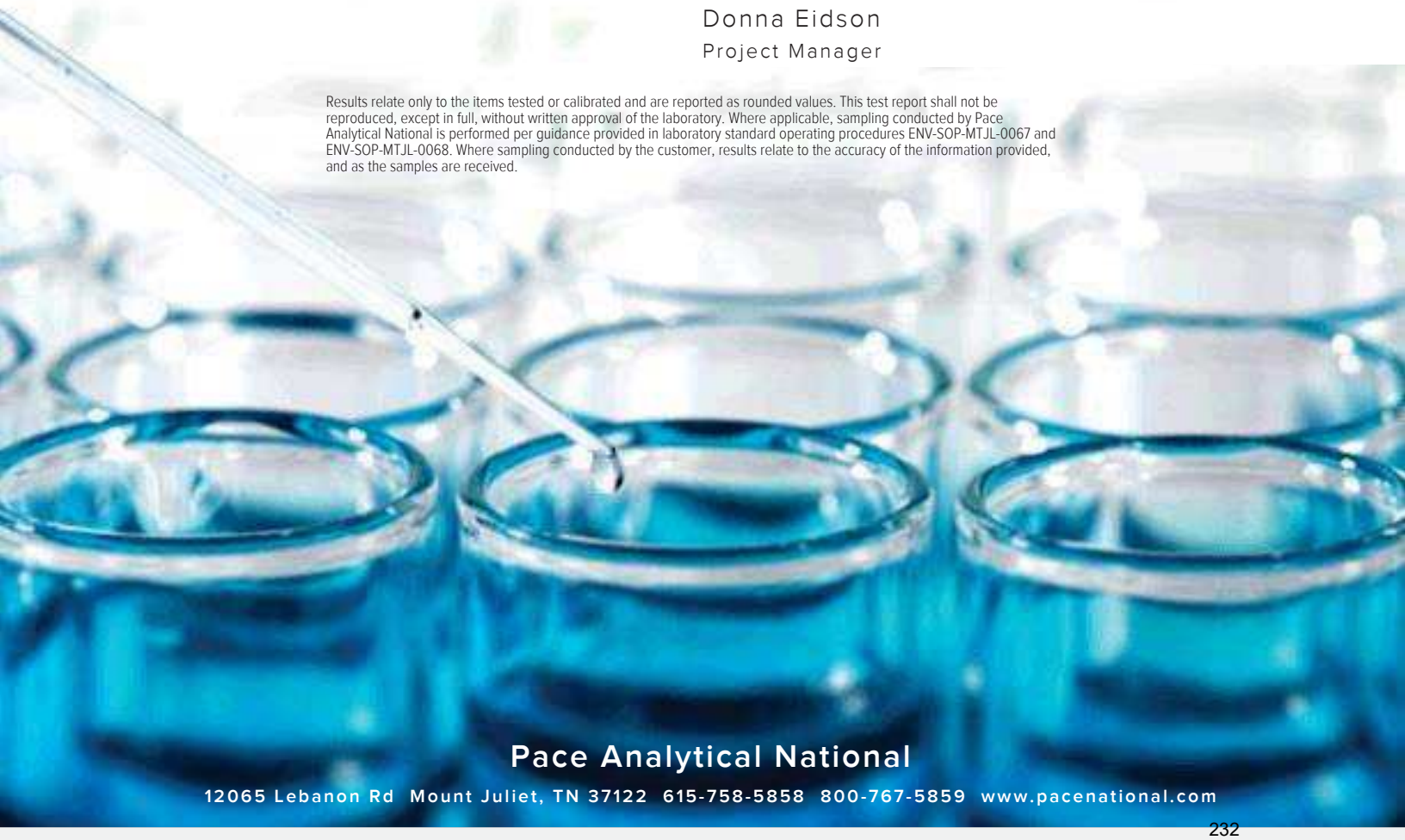


TABLE OF CONTENTS

G301 L1533233-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/23/22 17:59	09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932384	1	10/03/22 09:42	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1925716	1	09/19/22 14:00	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1925716	1	09/19/22 14:00	09/22/22 10:34	RGT	Mt. Juliet, TN

G302 L1533233-02 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/23/22 17:59	09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932384	1	10/03/22 09:42	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1925716	1	09/19/22 14:00	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1925716	1	09/19/22 14:00	09/22/22 10:34	RGT	Mt. Juliet, TN

G307 L1533233-03 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/24/22 12:15	09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932384	1	10/03/22 09:42	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1925716	1	09/19/22 14:00	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1925716	1	09/19/22 14:00	09/22/22 10:34	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

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.14		0.286	0.480	10/07/2022 10:10	WG1932384
(T) Barium	*88.6*			*30.0-143*	*10/07/2022 10:10*	WG1932384
(T) Yttrium	*98.4*			*30.0-136*	*10/07/2022 10:10*	WG1932384

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.42		0.363	0.540	10/07/2022 10:10	WG1925716

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.277		0.223	0.247	09/22/2022 10:34	WG1925716
(T) Barium-133	*99.3*			*30.0-143*	*09/22/2022 10:34*	WG1925716

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.160	U	0.298	0.535	10/07/2022 10:10	WG1932384
(T) Barium	*94.5*			*30.0-143*	*10/07/2022 10:10*	WG1932384
(T) Yttrium	*97.1*			*30.0-136*	*10/07/2022 10:10*	WG1932384

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.258	J	0.326	0.568	10/07/2022 10:10	WG1925716

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0980	J	0.131	0.191	09/22/2022 10:34	WG1925716
(T) Barium-133	*104*			*30.0-143*	*09/22/2022 10:34*	WG1925716

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.74		0.383	0.639	10/07/2022 10:10	WG1932384
(T) Barium	*83.0*			*30.0-143*	*10/07/2022 10:10*	WG1932384
(T) Yttrium	*108*			*30.0-136*	*10/07/2022 10:10*	WG1932384

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.74		0.391	0.665	10/07/2022 10:10	WG1925716

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.000	U	0.0770	0.184	09/22/2022 10:34	WG1925716
(T) Barium-133	*102*			*30.0-143*	*09/22/2022 10:34*	WG1925716

Method Blank (MB)

(MB) R3846060-1 10/07/22 10:10

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-228	0.360		0.145	0.252
(T) Barium	*106*		*106*	
(T) Yttrium	*102*		*102*	

L1533203-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1533203-02 10/07/22 10:10 • (DUP) R3846060-5 10/07/22 10:10

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	1.56	0.207	0.319	1.92	0.296	0.319	1	20.8	0.999		20	3
(T) Barium	*93.2*			*96.2*	*96.2*							
(T) Yttrium	*102*			*105*	*105*							

Laboratory Control Sample (LCS)

(LCS) R3846060-2 10/07/22 10:10

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	4.99	99.8	80.0-120	
(T) Barium			*104*		
(T) Yttrium			*99.2*		

L1539168-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1539168-04 10/07/22 10:10 • (MS) R3846060-3 10/07/22 10:10 • (MSD) R3846060-4 10/07/22 10:10

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	10.0	0.970	9.89	9.65	89.2	86.8	1	70.0-130			2.39		20
(T) Barium		*99.2*			*98.7*	*103*							
(T) Yttrium		*105*			*106*	*105*							

Method Blank (MB)

(MB) R3841270-1 09/22/22 10:34

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / -	MB MDA pCi/l
Radium-226	0.0198	U	0.0344	0.0561
(T) Barium-133	*93.0*		*93.0*	

L1530821-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1530821-13 09/22/22 10:34 • (DUP) R3841270-5 09/22/22 10:34

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-226	0.112	0.165	0.248	0.332	0.219	0.248	1	99.4	0.804		20	3
(T) Barium-133	*96.6*			*89.1*	*89.1*							

Laboratory Control Sample (LCS)

(LCS) R3841270-2 09/22/22 10:34

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	5.41	108	80.0-120	
(T) Barium-133			*92.8*		

L1530821-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1530821-06 09/22/22 10:34 • (MS) R3841270-3 09/22/22 10:34 • (MSD) R3841270-4 09/22/22 10:34

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	20.0	0.298	20.9	22.0	103	109	1	75.0-125			5.45		20
(T) Barium-133		*92.6*			*94.2*	*85.1*							

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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.

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MDA	Minimum Detectable Activity.
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RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
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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.
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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.

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 [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	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 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] 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.

A082

Internal Transfer Chain of Custody

Pace Analytical
www.pacelabs.com

State of Origin: IL
Cert. Needed: [X] YES [ ] NO

Workorder: FH05104 **Workorder Name:** VISTRA - COFFEEN

Owner Received Date: 8/24/2022

Results Requested By: 9/30/2022

Report To:	Subcontract To:
Gail Schindler Pace Analytical - IL/MO 2231 W. Altorfer Drive Peoria, IL 61615 800-752-6651	Pace Analytical Services, LLC 12065 Lebanon Rd Mt Juliet, TN (615)758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	Requested Analysis: Radium 226/228	LAB USE ONLY
1	G301	Grab	8/23/2022 17:59	FH05104-01	GW		X	01
2	G302	Grab	8/23/2022 17:59	FH05104-02	GW		X	02
3	G307	Grab	8/24/2022 12:15	FH05104-03	GW		X	03
4								
5								
6								
7								
8								
9								
10								

U533233

Transfers	Released By	Date/Time	Reveived By	Date/Time	Comments
1	[signature]	9/1/22 1334	[signature]	9/6/22 1030	Report as 226, 228 & combined 226/228. Include QC summary
2					
3					

Cooler Temperature on Receipt _____ °C	Custody Seal Y or N	Received on Ice Y or N	Sample Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

FMT-ALL-C-002rev.00 24March2009

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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		

ANALYTICAL REPORT

October 10, 2022

Pace IR - Peoria, IL

Sample Delivery Group:	L1533223
Samples Received:	09/07/2022
Project Number:	FH05291
Description:	Vistra-Coffeen
Site:	01
Report To:	Gail Schindler 2231 W. Altorfer Drive Peoria, IL 61615

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.

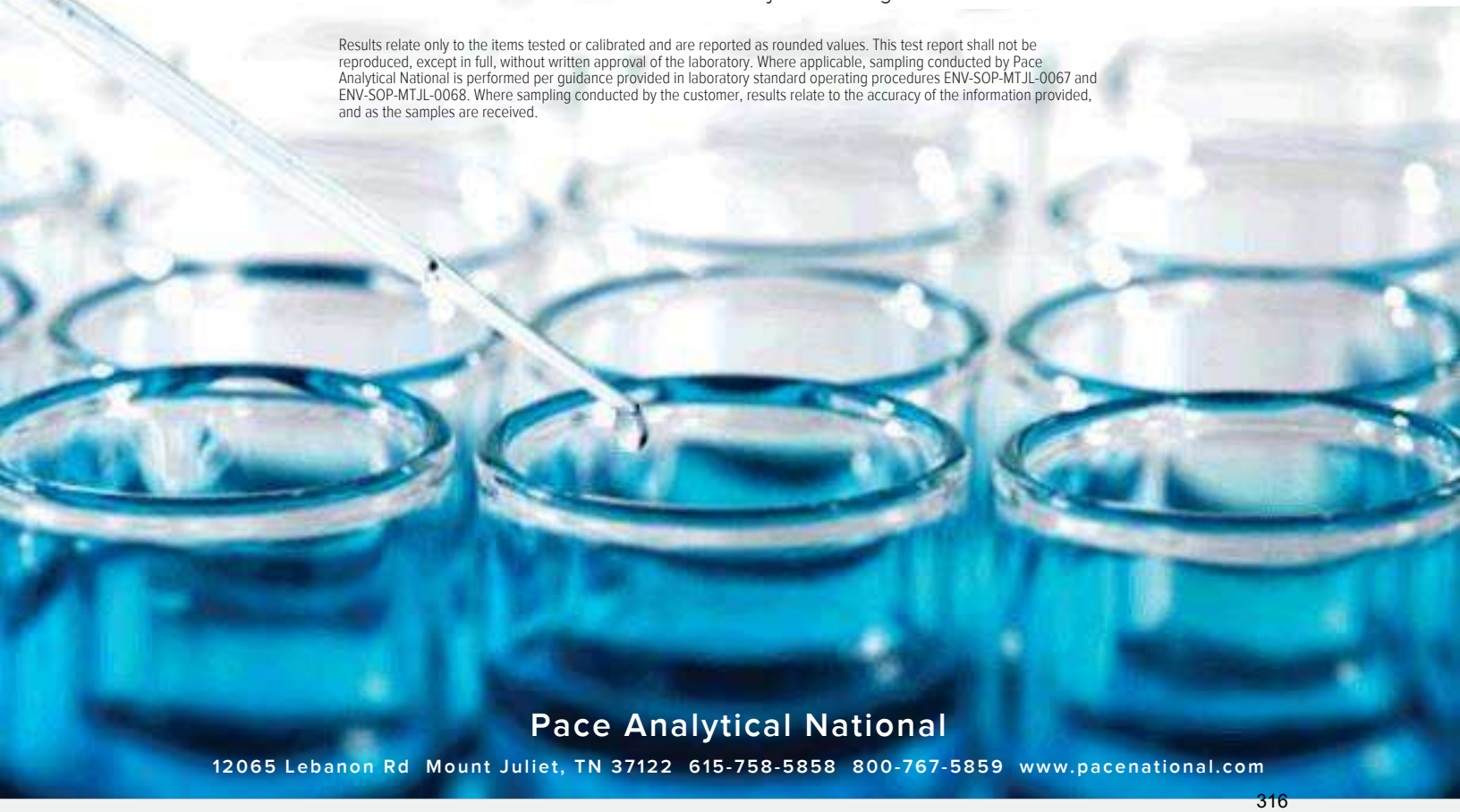

TABLE OF CONTENTS

G303 L1533223-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/24/22 14:20	09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932384	1	10/03/22 09:42	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1925716	1	09/19/22 14:00	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1925716	1	09/19/22 14:00	09/22/22 10:34	RGT	Mt. Juliet, TN

G306 L1533223-02 Non-Potable Water

Collected by	Collected date/time	Received date/time
	08/24/22 15:55	09/07/22 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1932384	1	10/03/22 09:42	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1925716	1	09/19/22 14:00	10/07/22 10:10	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1925716	1	09/19/22 14:00	09/22/22 10:34	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

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.705		0.255	0.439	10/07/2022 10:10	WG1932384
(T) Barium	*92.3*			*30.0-143*	*10/07/2022 10:10*	WG1932384
(T) Yttrium	*110*			*30.0-136*	*10/07/2022 10:10*	WG1932384

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.915		0.320	0.496	10/07/2022 10:10	WG1925716

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.210	J	0.194	0.231	09/22/2022 10:34	WG1925716
(T) Barium-133	*98.5*			*30.0-143*	*09/22/2022 10:34*	WG1925716

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.504		0.270	0.473	10/07/2022 10:10	WG1932384
(T) Barium	*94.8*			*30.0-143*	*10/07/2022 10:10*	WG1932384
(T) Yttrium	*102*			*30.0-136*	*10/07/2022 10:10*	WG1932384

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.701		0.325	0.520	10/07/2022 10:10	WG1925716

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.196	J	0.181	0.216	09/22/2022 10:34	WG1925716
(T) Barium-133	*97.9*			*30.0-143*	*09/22/2022 10:34*	WG1925716

Method Blank (MB)

(MB) R3846060-1 10/07/22 10:10

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-228	0.360		0.145	0.252
(T) Barium	*106*		*106*	
(T) Yttrium	*102*		*102*	

L1533203-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1533203-02 10/07/22 10:10 • (DUP) R3846060-5 10/07/22 10:10

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	1.56	0.207	0.319	1.92	0.296	0.319	1	20.8	0.999		20	3
(T) Barium	*93.2*			*96.2*	*96.2*							
(T) Yttrium	*102*			*105*	*105*							

Laboratory Control Sample (LCS)

(LCS) R3846060-2 10/07/22 10:10

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	4.99	99.8	80.0-120	
(T) Barium			*104*		
(T) Yttrium			*99.2*		

L1539168-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1539168-04 10/07/22 10:10 • (MS) R3846060-3 10/07/22 10:10 • (MSD) R3846060-4 10/07/22 10:10

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	10.0	0.970	9.89	9.65	89.2	86.8	1	70.0-130			2.39		20
(T) Barium		*99.2*			*98.7*	*103*							
(T) Yttrium		*105*			*106*	*105*							

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Method Blank (MB)

(MB) R3841270-1 09/22/22 10:34

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / - pCi/l	MB MDA pCi/l
Radium-226	0.0198	U	0.0344	0.0561
(T) Barium-133	*93.0*		*93.0*	

L1530821-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1530821-13 09/22/22 10:34 • (DUP) R3841270-5 09/22/22 10:34

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-226	0.112	0.165	0.248	0.332	0.219	0.248	1	99.4	0.804		20	3
(T) Barium-133	*96.6*			*89.1*	*89.1*							

Laboratory Control Sample (LCS)

(LCS) R3841270-2 09/22/22 10:34

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	5.41	108	80.0-120	
(T) Barium-133			*92.8*		

L1530821-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1530821-06 09/22/22 10:34 • (MS) R3841270-3 09/22/22 10:34 • (MSD) R3841270-4 09/22/22 10:34

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	20.0	0.298	20.9	22.0	103	109	1	75.0-125			5.45		20
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Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
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Georgia	NELAP	North Carolina [3]	41
Georgia [1]	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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	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 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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* 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.

A084

Internal Transfer Chain of Custody

State of Origin: IL
Cert. Needed: [X] YES [ ] NO

Pace Analytical
www.pacelabs.com

Workorder: FH05291 **Workorder Name:** Vistra - Coffeen

Owner Received Date: 8/25/2022

Results Requested By: 9/30/2022

Report To:	Subcontract To:
Gail Schindler Pace Analytical - IL/MO 2231 W. Altorfer Drive Peoria, IL 61615 800-752-6651	Pace Analytical Services, LLC 12065 Lebanon Rd Mt Juliet, TN (615)758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	Requested Analysis: Radium 226/228	LAB USE ONLY
1	G303	Grab	8/24/2022 14:20	FH05291-01	GW		X	01
2	G306	Grab	8/24/2022 15:55	FH05291-02	GW		X	02
3								
4								
5								
6								
7								
8								
9								
10								

L1533223

Transfers	Released By	Date/Time	Reveived By	Date/Time	Comments
1	[illegible]	8/11/22 1533	[illegible]	8/26/22 1030	Report as 226, 228 & combined 226/228. Include QC summary
2					
3					

Cooler Temperature on Receipt _____ °C	Custody Seal Y or N	Received on Ice Y or N	Sample Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

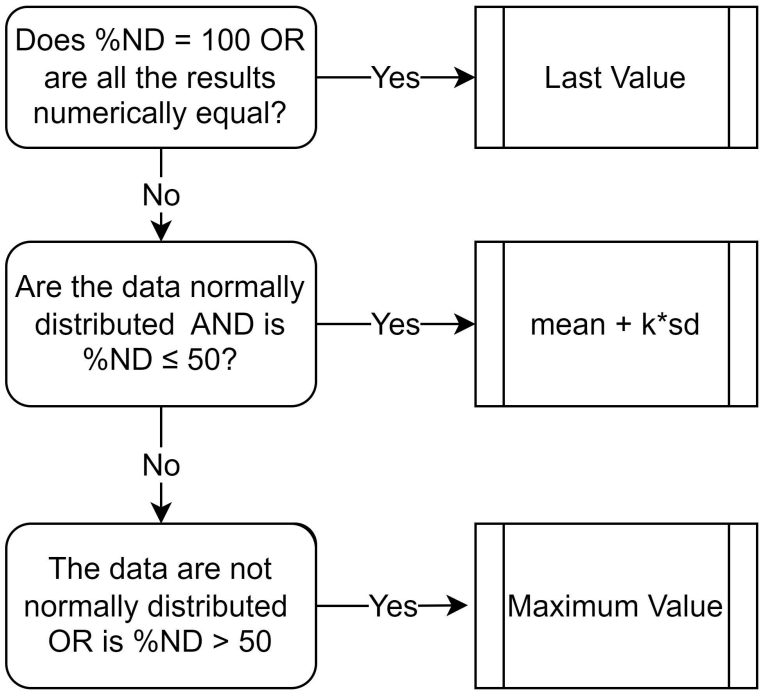
Amb

Sample Receipt Checklist

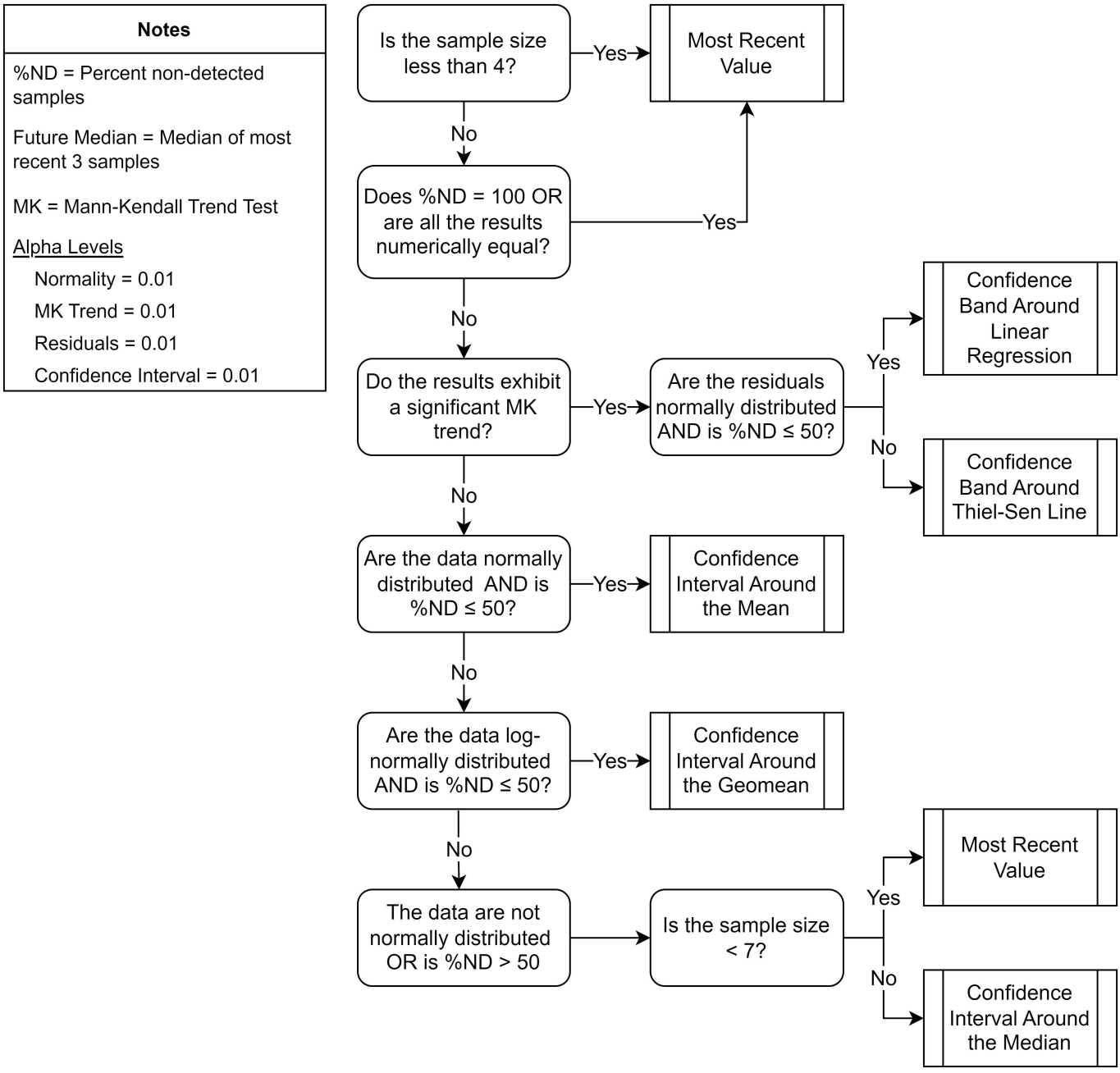
COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

APPENDIX B
STATISTICAL METHODOLGY FOR DETERMINATION OF BACKGROUND VALUES

Notes
%ND = Percent non-detected samples sd = standard deviation k = kappa for tolerance limit (95% confidence/95% coverage)



APPENDIX C
STATISTICAL METHODOLGY FOR DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS


Notes
%ND = Percent non-detected samples
Future Median = Median of most recent 3 samples
MK = Mann-Kendall Trend Test
Alpha Levels
Normality = 0.01
MK Trend = 0.01
Residuals = 0.01
Confidence Interval = 0.01
Is the sample size less than 4?
Yes
Most Recent Value
No
Does %ND = 100 OR are all the results numerically equal?
Yes
No
Do the results exhibit a significant MK trend?
Yes
Are the residuals normally distributed AND is %ND ≤ 50?
Yes
Confidence Band Around Linear Regression
No
Confidence Band Around Thiel-Sen Line
No
Are the data normally distributed AND is %ND ≤ 50?
Yes
Confidence Interval Around the Mean
No
Are the data log-normally distributed AND is %ND ≤ 50?
Yes
Confidence Interval Around the Geomean
No
The data are not normally distributed OR is %ND > 50
Is the sample size < 7?
Yes
Most Recent Value
No
Confidence Interval Around the Median