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ANNUAL REPORT ON

GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT LANDFILL A.B. BROWN GENERATING STATION POSEY COUNTY, INDIANA

by
Haley & Aldrich, Inc.
Greenville, South Carolina

for
Southern Indiana Gas and Electric Company
Evansville, Indiana

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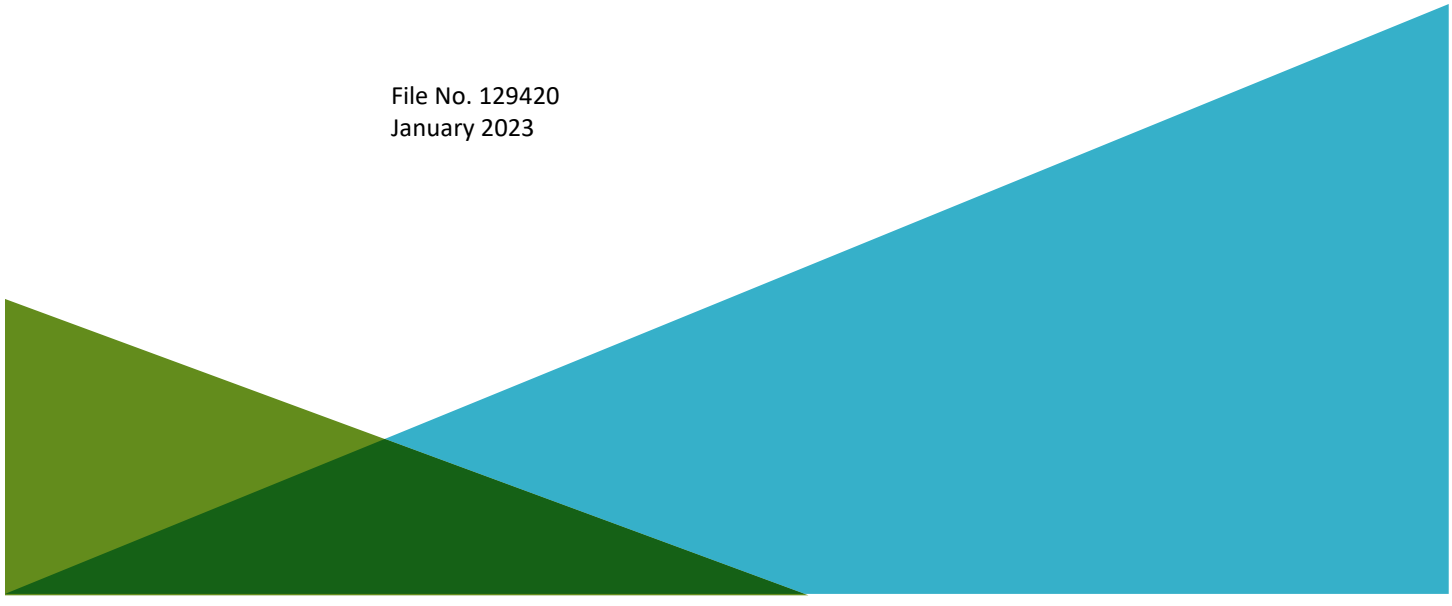


Table of Contents

List of Tables

List of Figures

List of Appendices

1. Annual Groundwater Monitoring Report Summary

1.1 CODE OF FEDERAL REGULATIONS TITLE 40 (40 CFR) § 257.90(e)(6) SUMMARY

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:

1.1.1 40 CFR § 257.90(e)(6)(i) – Status of Monitoring Program at Start of Reporting Period

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;

At the start of the current annual reporting period (1 January 2022), the Landfill at A.B. Brown Generating Station (ABB) was operating under an assessment monitoring program in compliance with 40 CFR § 257.95.

1.1.2 40 CFR § 257.90(e)(6)(ii) – Status of Monitoring Program at End of Reporting Period

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;

At the end of the current annual reporting period (31 December 2022), the Landfill was operating under an assessment monitoring program in compliance with 40 CFR § 257.95.

1.1.3 40 CFR § 257.90(e)(6)(iii) – Statistically Significant Increases

If it was determined that there was a statistically significant increase over background for one or more constituents listed in appendix III to this part pursuant to § 257.94(e):

1.1.3.1 40 CFR § 257.90(e)(6)(iii)(A)

Identify those constituents listed in appendix III to this part and the names of the monitoring wells associated with such an increase; and

The Landfill was operating under an assessment monitoring program throughout 2022; therefore, no statistical evaluations were conducted on Appendix III constituents in 2022.

1.1.3.2 40 CFR § 257.90(e)(6)(iii)(B)

Provide the date when the assessment monitoring program was initiated for the CCR unit.

An assessment monitoring program was established on 15 August 2018 for the Landfill to meet the requirements of 40 CFR § 257.95. The Landfill has remained in assessment monitoring since that time.

1.1.4 40 CFR § 257.90(e)(6)(iv) – Statistically Significant Levels

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 to this part pursuant to § 257.95(g) include all of the following:

1.1.4.1 40 CFR § 257.90(e)(6)(iv)(A) – Statistically Significant Level Constituents

Identify those constituents listed in appendix IV to this part and the names of the monitoring wells associated with such an increase;

Statistical analyses were completed in 2022 following the November 2021 and May 2022 semiannual assessment monitoring events as described in § 257.93(h)(2). Statistically significant levels (SSLs) were not identified at any of the monitoring wells in 2022. A summary of the statistical analysis is included in Appendix A.

1.1.4.2 40 CFR § 257.90(e)(6)(iv)(B) – Initiation of the Assessment of Corrective Measures

Provide the date when the assessment of corrective measures was initiated for the CCR unit;

An assessment of corrective measures has not been initiated for this unit since no SSLs were identified through year end 2022. The Landfill remained in assessment monitoring during 2022.

1.1.4.3 40 CFR § 257.90(e)(6)(iv)(C) – Assessment of Corrective Measures Public Meeting

Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and

An assessment of corrective measures is not required and therefore has not been initiated for the Landfill through year end 2022; therefore, a public meeting was not held.

1.1.4.4 40 CFR § 257.90(e)(6)(iv)(D) – Completion of the Assessment of Corrective Measures

Provide the date when the assessment of corrective measures was completed for the CCR unit.

An assessment of corrective measures has not been completed for this unit since no SSLs have been identified through year end 2022. The Landfill remained in assessment monitoring during 2022.

1.1.5 40 CFR § 257.90(e)(6)(v) – Selection of Remedy

Whether a remedy was selected pursuant to § 257.97 during the current annual reporting period, and if so, the date of remedy selection; and

Since an assessment of corrective measures has not been required, the selection of remedy under § 257.97 is not required.

1.1.6 40 CFR § 257.90(e)(6)(vi) – Remedial Activities

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

Remedial activities were not required in 2022; therefore, no demonstration or certification is applicable.

1.2 40 CFR § 257.90(a)

Except as provided for in § 257.100 for inactive CCR surface impoundments, all CCR landfills, CCR surface impoundments, and lateral expansions of CCR units are subject to the groundwater monitoring and corrective action requirements under § 257.90 through § 257.98.

The Landfill at ABB is subject to the groundwater monitoring and corrective action requirements described under 40 CFR § 257.90 through § 257.98 (Rule). The remainder of this document addresses the requirement for the Owner/Operator to prepare an Annual Groundwater Monitoring and Corrective Action Report per § 257.90(e).

1.3 40 CFR § 257.90(e) – SUMMARY

Annual groundwater monitoring and corrective action report. For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this subpart, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by § 257.105(h)(1).

This Annual Groundwater Monitoring and Corrective Action Report documents the activities completed in 2022 for the Landfill as required by the Rule. Semi-annual groundwater sampling and analysis was conducted per the requirements described in § 257.93, and the status of the groundwater monitoring program described in § 257.95 is provided in this report. Field forms pertaining to those sampling events are included as Appendix B and laboratory analytical reports are included as Appendix C.

1.3.1 Status of the Groundwater Monitoring Program

Annual and semi-annual groundwater sampling continued in May 2022 and November 2022 as required by § 257.95(b) and 257.95(d)(1). Statistical analyses were completed within 90-days following completion of the sampling and analysis events as described in § 257.93(h)(2). Intrawell statistical analysis was used to evaluate cobalt, arsenic, and lithium as a result of the Alternate Source

Demonstration dated 24 July 2019. The results of the statistical analysis continued to demonstrate that SSLs of Appendix IV constituents were not present in groundwater downgradient of the Landfill. Although SSLs were not identified, some concentrations are above background, therefore in accordance with 257.95(f), the Landfill will continue with semiannual assessment monitoring.

1.3.2 Key Actions Completed

The following key actions were completed in 2022:

- Per the requirements of 257.93(c) of the Rule, static water level measurements were collected during each sampling event to evaluate groundwater flow direction and rate.
- Completed a statistical analyses of assessment monitoring results to evaluate potential SSLs.
- Prepared 2021 Annual Report including:
  - Pursuant to § 257.105(h)(1), the Annual Report was placed in the facility's operating record;
  - Pursuant to § 257.106(h)(1), the notification was sent to the relevant State Director and/or Tribal authority within 30 days of the Annual Report being placed in the facility's operating record [§ 257.106(d)];
  - Pursuant to § 257.107(h)(1), the Annual Report was posted to the CCR Website within 30 days of the Annual Report being placed in the facility's operating record [§ 257.107(d) and 257.107(h)(1)];
- Collected and analyzed two rounds of groundwater samples in accordance with § 257.95(b) and § 257.95(d)(1).

1.3.3 Problems Encountered

Problems such as damaged wells, issues with sample collection or lack of sampling, or problems with laboratory analyses were not encountered at the ABB Landfill in 2022.

1.3.4 Actions to Resolve Problems

Actions to resolve problems were not required.

1.3.5 Project Key Activities for Upcoming Year

Key activities to be completed in 2022 include the following:

- Continue semiannual assessment monitoring in accordance with § 257.95.
- Complete statistical analyses of the semiannual groundwater sampling results as required by § 257.93(h)(2).

1.4 40 CFR § 257.90(e) – INFORMATION

At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:

1.4.1 40 CFR § 257.90(e)(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;

As required by § 257.90(e)(1), a map showing the locations of the Landfill and associated upgradient and downgradient wells is presented as Figure 1. Groundwater elevation contours for the May 2022 event are presented as Figure 2. Groundwater elevation contours created for the November 2022 event are presented as Figure 3.

1.4.2 40 CFR § 257.90(e)(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;

Additional monitoring wells were not installed nor were any monitoring wells decommissioned during 2022. However, location and construction details of the existing monitoring well network for the Landfill is provided for reference as Table 1.

1.4.3 40 CFR § 257.90(e)(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;

In accordance with § 257.95(b) and § 257.95(d)(1), two independent samples from each background and downgradient monitoring well were collected and analyzed. A summary table including the sample names, dates of sample collection, reason for sample collection (detection or assessment), and monitoring data obtained for the groundwater monitoring program for the Landfill is presented in Table 2 of this report.

1.4.4 40 CFR § 257.90(e)(4)

A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels); and

The results of the statistical analyses for the November 2021 and May 2022 sampling events continued to demonstrate that SSLs of Appendix IV constituents were not present in groundwater downgradient of the Landfill. Although SSLs were not present, nine monitoring wells had concentrations above background in May 2022; therefore, in accordance with 257.95(f), the Landfill will continue with semiannual assessment monitoring. Statistical analysis for the November 2022 sampling event is

ongoing and will be completed within 90 days after sampling and analysis to determine if a statistically significant increase over background has occurred.

1.4.5 40 CFR § 257.90(e)(5)

Other information required to be included in the annual report as specified in § 257.90 through § 257.98.

Other information including development of groundwater protection standards, recording of groundwater monitoring results in the operating record, and an evaluation of alternate sources was discussed in prior annual reports.

TABLES

TABLE 1

GROUNDWATER MONITORING WELL LOCATION AND CONSTRUCTION DETAILS

A.B. BROWN GENERATING STATION - LANDFILL

MOUNT VERNON, INDIANA

Well	CCR Unit	Date Installed	Easting	Northing	Top of Pad Elevation (ft msl)	Top of Riser Elevation (ft msl)	Surface Grout (ft bgs)	Bentonite (ft bgs)	Sand Pack (ft bgs)	Screen Zone (ft bgs)	Screen Length (ft)	Well Radius (in)	Status
CCR-LF-1	Landfill	March 2016	2771247.76	970812.18	432.80	435.63	0.0 - 3.0	3.0 - 7.0	7.0 - 19.0	9.00 - 19.00	10	2	Active
CCR-LF-2	Landfill	March 2016	2772205.05	970681.32	470.10	473.00	0.0 - 30.0	30.0 - 32.0	32.0 - 45.0	35.00 - 45.00	10	2	Active
CCR-LF-3	Landfill	March 2016	2773138.97	970949.70	482.00	484.75	0.0 - 21.0	21.0 - 23.0	23.0 - 35.0	25.00 - 35.00	10	2	Active
CCR-LF-4	Landfill	March 2016	2772876.83	972312.24	476.60	478.85	0.0 - 40.8	40.8 - 43.0	43.0 - 55.0	45.00 - 55.00	10	2	Active
CCR-LF-5	Landfill	March 2016	2772003.91	972228.16	427.50	430.41	0.0 - 16.0	16.0 - 18.0	18.0 - 30.0	20.00 - 30.00	10	2	Active
CCR-LF-6	Landfill	March 2016	2771046.15	972269.53	409.20	412.05	0.0 - 0.0	0.0 - 2.66	2.66 - 9.66	4.66 - 9.66	5	2	Active
CCR-BK-1R	Background	March 2016	2770919.08	974083.40	480.10	483.39	0.0 - 50.0	50.0 - 52.0	52.0 - 64.0	54.00 - 64.00	10	2	Active
CCR-BK-2	Background	March 2016	2769728.14	972854.33	427.50	430.60	0.0 - 11.5	11.5 - 13.5	13.5 - 25.5	15.50 - 25.50	10	2	Active

Notes:

bgs = below ground surface

ft = feet

in = inches

msl = mean sea level

Datum of Elevations in NAVD 88

TABLE 2
SUMMARY OF GROUNDWATER QUALITY DATA - MAY THROUGH NOVEMBER 2022
A.B. BROWN GENERATION STATION - LANDFILL
MOUNT VERNON, INDIANA

Location Group	Action Level	Background			
Location Name	Maximum	CCR-BK-1R	CCR-BK-1R	CCR-BK-2	CCR-BK-2
Sample Name	Contaminant	CCR-BK-1-20220518	CCR-BK-1-20221108	CCR-BK-2-20220518	CCR-BK-2-20221108
Sample Date	Level/ Regional	05/18/2022	11/08/2022	05/18/2022	11/08/2022
Lab Sample ID	Screening Levels	180-138328-3	180-147725-6	180-138328-4	180-147725-7
Detection Monitoring - EPA Appendix III Constituents (mg/L)					
Boron, Total	NA	0.08 U	0.08 U	0.08 U	0.08 U
Calcium, Total	NA	**49**	**47**	**47**	**39**
Chloride	NA	**7 J-**	**8.9**	**36 J-**	**19**
Fluoride	4	**0.33 J+**	0.23 U	**0.34 J+**	0.11 U
pH (lab) (pH units)	NA	**7.6 J**	**7.5 J**	**7.3 J**	**7.4 J**
Sulfate	NA	**31 J-**	**41**	**64 J-**	**22**
Total Dissolved Solids (TDS)	NA	**300**	**290**	**270**	**240**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)					
Antimony, Total	0.006	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic, Total	0.01	0.001 U	0.001 U	0.001 U	0.001 U
Barium, Total	2	**0.038**	**0.063**	**0.037**	**0.036**
Beryllium, Total	0.004	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium, Total	0.005	0.001 U	0.001 U	0.001 U	0.001 U
Chromium, Total	0.1	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt, Total	0.006	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Fluoride	4	**0.33 J+**	0.23 U	**0.34 J+**	0.11 U
Lead, Total	0.015	**0.00018 J**	0.001 U	0.001 U	0.001 U
Lithium, Total	0.04	**0.0025 J**	**0.0065**	**0.0025 J**	**0.0021 J**
Mercury, Total	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum, Total	0.1	**0.00074 J**	**0.0011 J**	**0.00063 J**	0.005 U
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U	0.005 U
Thallium, Total	0.002	0.001 U	0.001 U	0.001 U	0.001 U
Radiological (pCi/L)					
Radium-226	NA	1 U ± 0.201	**0.39 ± 0.207**	1 UJ ± 0.114	1 U ± 0.21
Radium-228	NA	1 U ± 0.332	1 U ± 0.297	1 U ± 0.202	1 U ± 0.494
Radium-226 & 228	5	**0.576 ± 0.388**	5 UJ ± 0.362	5 U ± 0.232	0.894 U ± 0.537
Field Parameters					
Temperature (Deg C)	NA	**15.59**	**15.59**	**14.78**	**21.9**
Dissolved Oxygen, Field (mg/L)	NA	**6.26**	**5.04**	**0.56**	**3.28**
Conductivity, Field (mS/cm)	NA	**0.49655**	**0.332**	**0.52726**	**0.286**
Oxidation Reduction Potential (ORP), Field (mv)	NA	**187.3**	**92.8**	**174**	**77**
Turbidity, Field (NTU)	NA	**0**	**6.6**	**0.32**	**110**
pH, Field (SU)	NA	**6.85**	**6.59**	**6.9**	**6.46**

ABBREVIATIONS AND NOTES:

CCR: Coal Combustion Residuals.
mg/L: milligram per liter.
pCi/L: picoCurie per liter.
USEPA: United States Environmental Protection Agency.
Results in **bold** are detected.

- USEPA. 2016. Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities. July 26. 40 CFR Part 257.
https://www.epa.gov/coalash/coal-ash-rule

TABLE 2
SUMMARY OF GROUNDWATER QUALITY DATA - MAY THROUGH NOVEMBER 2022
A.B. BROWN GENERATION STATION - LANDFILL
MOUNT VERNON, INDIANA

Location Group	Action Level	Downgradient						
Location Name	Maximum	CCR-LF-1	CCR-LF-1	CCR-LF-2	CCR-LF-2	CCR-LF-2	CCR-LF-3	CCR-LF-3
Sample Name	Contaminant	CCR-LF-1-20220517	CCR-LF-1-20221102	CCR-LF-2-20220518	BLIND DUPLICATE 3-20220518	CCR-LF-2-20221102	CCR-LF-3-20220518	CCR-LF-3-20221103
Sample Date	Level/ Regional	05/17/2022	11/02/2022	05/18/2022	05/18/2022	11/02/2022	05/18/2022	11/03/2022
Lab Sample ID	Screening Levels	180-138324-1	180-147566-1	180-138324-2	180-138324-7	180-147566-2	180-138324-3	180-147566-3
Detection Monitoring - EPA Appendix III Constituents (mg/L)								
Boron, Total	NA	**0.075 J**	**0.056**	**4.5**	**4.9**	**4.5**	**0.19**	**0.2**
Calcium, Total	NA	**300**	**270**	**390**	**390**	**330**	**320**	**270**
Chloride	NA	**20**	**22**	**370**	**320**	**360**	**32**	**29**
Fluoride	4	0.14 U	**0.22 J**	2.5 U	**0.29 J+**	**0.52**	**0.18 J+**	**0.23 J**
pH (lab) (pH units)	NA	**7.4 J**	**7.3 J**	**7.2 J**	**6.7 J**	**7.2 J**	**7.6 J**	**7.5 J**
Sulfate	NA	**1200**	**1000**	**13000**	**14000**	**13000**	**1300**	**1200**
Total Dissolved Solids (TDS)	NA	**2000**	**1900**	**22000**	**22000**	**21000**	**2300**	**2100**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)								
Antimony, Total	0.006	0.002 U	**0.00062 J**	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic, Total	0.01	**0.00041 J**	0.005 U	**0.0014**	**0.0014**	**0.0017 J**	0.001 U	0.005 U
Barium, Total	2	**0.029**	**0.035**	**0.012**	**0.012**	**0.015**	**0.016**	**0.017**
Beryllium, Total	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium, Total	0.005	0.001 U	0.001 U	**0.0077**	**0.0083**	**0.0099**	0.001 U	0.001 U
Chromium, Total	0.1	0.002 U	0.005 U	0.002 U	0.002 U	0.005 U	**0.0017 J**	0.005 U
Cobalt, Total	0.006	0.0005 U	0.001 U	**0.012**	**0.013**	**0.011**	**0.0003 J**	0.001 U
Fluoride	4	0.14 U	**0.22 J**	2.5 U	**0.29 J+**	**0.52**	**0.18 J+**	**0.23 J**
Lead, Total	0.015	0.001 U	0.001 U	**0.00053 J**	**0.00063 J**	**0.0014**	0.001 U	0.001 U
Lithium, Total	0.04	**0.0038 J**	0.008 U	**0.016**	**0.017**	**0.017 J+**	0.005 U	0.008 U
Mercury, Total	0.002	**0.00013 J**	0.0002 U	0.0002 U	0.0002 U	**0.00014 J**	0.0002 U	0.0002 U
Molybdenum, Total	0.1	**0.00069 J**	**0.0013 J**	**0.0022 J**	**0.0023 J**	**0.0024 J**	**0.00094 J**	0.005 U
Selenium, Total	0.05	0.005 U	0.005 U	**0.0019 J**	**0.002 J**	**0.0022 J**	0.005 U	0.005 U
Thallium, Total	0.002	0.001 U	**0.00056 J**	**0.00072 J**	**0.00084 J**	**0.00096 J**	0.001 U	0.001 U
Radiological (pCi/L)								
Radium-226	NA	**0.585 ± 0.39**	**0.395 ± 0.261**	**0.583 ± 0.375**	**0.658 ± 0.405**	**0.673 ± 0.327**	1 U ± 0.176	**0.401 ± 0.235**
Radium-228	NA	1 U ± 0.675	1 U ± 0.533	**2.34 J+ ± 0.68**	1.6 U ± 0.742	**2.1 J ± 0.727**	1 U ± 0.336	1 U ± 0.451
Radium-226 & 228	5	**1.27 J ± 0.78**	**1.24 J+ ± 0.593**	**2.93 J+ ± 0.777**	**2.26 J+ ± 0.845**	**2.78 J ± 0.797**	**0.574 ± 0.379**	**1.36 J+ ± 0.509**
Field Parameters								
Temperature (Deg C)	NA	**20.44**	**19.92**	**17.45**	**17.45**	**17.33**	**16.61**	**17.71**
Dissolved Oxygen, Field (mg/L)	NA	**3.35**	**1.52**	**2.45**	**2.45**	**0.22**	**6.56**	**6.71**
Conductivity, Field (mS/cm)	NA	**2.0136**	**1.593**	**22.845**	**22.845**	**16.038**	**2.325**	**1.676**
Oxidation Reduction Potential (ORP), Field (mv)	NA	**102.8**	**30.6**	**134.3**	**134.3**	**131.5**	**177.8**	**41.4**
Turbidity, Field (NTU)	NA	**985.9**	**1.03**	-	**0**	**111.8**	**535.32**	**0.44**
pH, Field (SU)	NA	**6.61**	**6.31**	**6.51**	**6.51**	**6.3**	**6.87**	**6.54**

ABBREVIATIONS AND NOTES:

CCR: Coal Combustion Residuals.
mg/L: milligram per liter.
pCi/L: picoCurie per liter.
USEPA: United States Environmental Protection Agency.
Results in **bold** are detected.

- USEPA. 2016. Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities. July 26. 40 CFR Part 257.
https://www.epa.gov/coalash/coal-ash-rule

TABLE 2
SUMMARY OF GROUNDWATER QUALITY DATA - MAY THROUGH NOVEMBER 2022
A.B. BROWN GENERATION STATION - LANDFILL
MOUNT VERNON, INDIANA

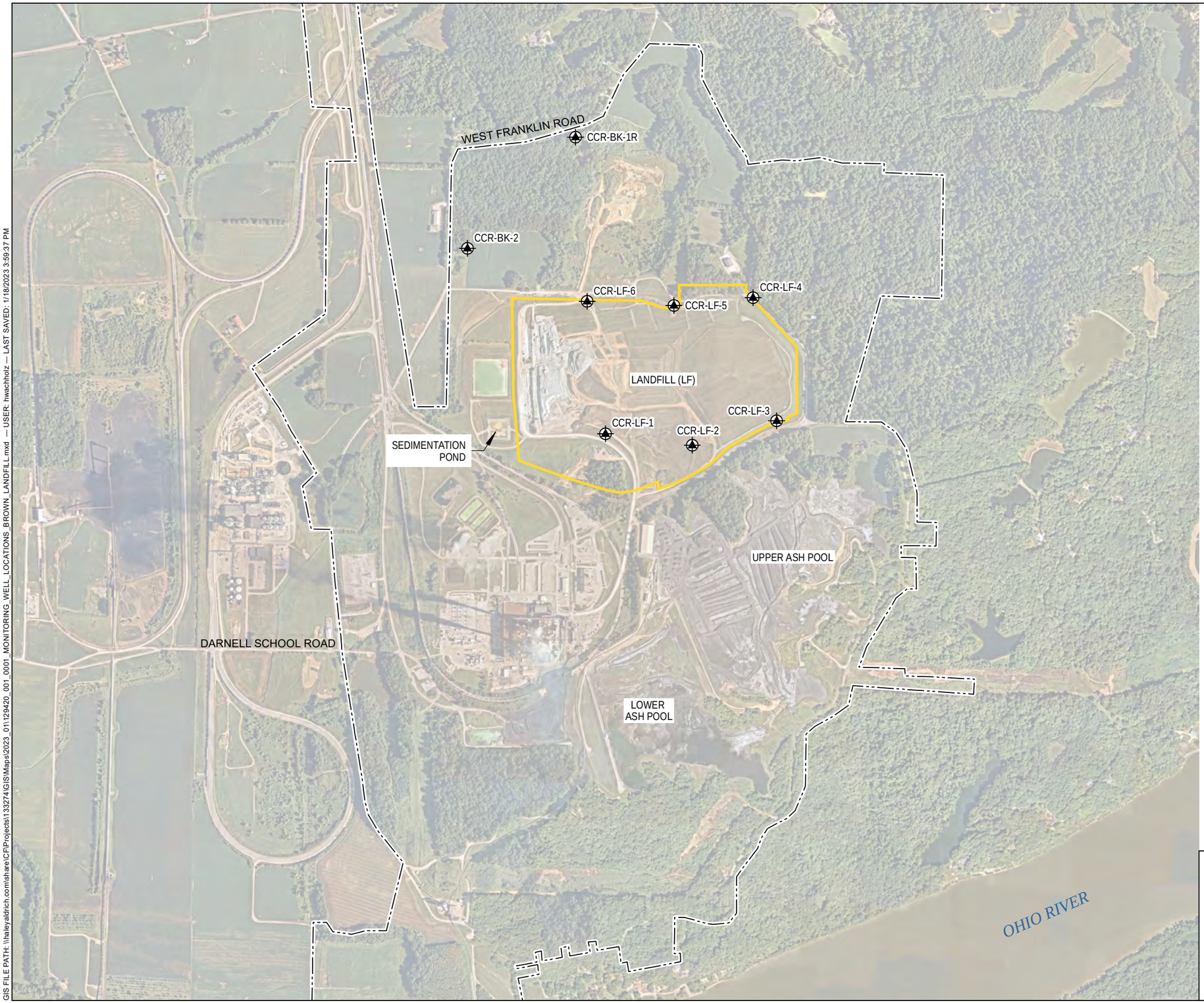
Location Group	Action Level	Downgradient						
Location Name	Maximum	CCR-LF-4	CCR-LF-4	CCR-LF-4	CCR-LF-5	CCR-LF-5	CCR-LF-6	CCR-LF-6
Sample Name	Contaminant	CCR-LF-4-20220517	CCR-LF-4-20221103	BLIND DUP 3-20221103	CCR-LF-5-20220517	CCR-LF-5-20221103	CCR-LF-6-20220517	CCR-LF-6-20221103
Sample Date	Level/ Regional	05/17/2022	11/03/2022	11/03/2022	05/17/2022	11/03/2022	05/17/2022	11/03/2022
Lab Sample ID	Screening Levels	180-138324-4	180-147566-4	180-147566-7	180-138324-5	180-147566-5	180-138324-6	180-147566-6
Detection Monitoring - EPA Appendix III Constituents (mg/L)								
Boron, Total	NA	**0.38**	**0.33**	**1.1**	**1**	**1.1**	**0.59**	**0.36**
Calcium, Total	NA	**420**	**380**	**410**	**450**	**420**	**240**	**160**
Chloride	NA	**140**	**160**	**330**	**320**	**310**	**35**	**18**
Fluoride	4	**0.34 J+**	**0.26**	**0.17**	**0.2 J+**	**0.17**	**0.25 J+**	**0.33**
pH (lab) (pH units)	NA	**6.8 J**	**7.1 J**	**7.5 J**	**7.1 J**	**7.4 J**	**7.1 J**	**7.6 J**
Sulfate	NA	**8000**	**9400**	**2700**	**2200**	**2300**	**810**	**430**
Total Dissolved Solids (TDS)	NA	**13000**	**14000**	**4800**	**4400**	**4700**	**1500**	**960**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)								
Antimony, Total	0.006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic, Total	0.01	**0.035**	**0.024**	0.005 U	0.001 U	0.005 U	0.001 U	0.005 U
Barium, Total	2	**0.011**	**0.011**	**0.021**	**0.022**	**0.024**	**0.018**	**0.021**
Beryllium, Total	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium, Total	0.005	0.001 U	0.001 U	0.001 U	0.001 U	**0.0002 J**	**0.0003 J**	0.001 U
Chromium, Total	0.1	0.002 U	0.005 U	0.005 U	0.002 U	0.005 U	0.002 U	0.005 U
Cobalt, Total	0.006	**0.00084**	**0.00072 J**	0.001 U	0.0005 U	0.001 U	**0.00051**	**0.00026 J**
Fluoride	4	**0.34 J+**	**0.26**	**0.17**	**0.2 J+**	**0.17**	**0.25 J+**	**0.33**
Lead, Total	0.015	**0.00058 J**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lithium, Total	0.04	**0.079**	**0.082**	**0.021**	**0.019**	**0.022**	**0.015**	**0.013 J+**
Mercury, Total	0.002	0.0002 U	0.0002 U	**0.00027**	**0.00017 J**	**0.00032**	0.0002 U	0.0002 U
Molybdenum, Total	0.1	**0.029**	**0.027**	0.005 U	**0.00064 J**	0.005 U	**0.00067 J**	**0.0014 J**
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	**0.0012 J**
Thallium, Total	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.00032 J**
Radiological (pCi/L)								
Radium-226	NA	**4.21 ± 0.948**	**4.11 ± 0.735**	1 U ± 0.543	1 U ± 0.209	1 U ± 0.167	1 U ± 0.231	1 U ± 0.149
Radium-228	NA	1 U ± 0.604	**2.68 ± 0.726**	1 U ± 1.44	1 U ± 0.31	1 U ± 0.581	1 U ± 0.318	1 U ± 0.545
Radium-226 & 228	5	**4.8 J ± 1.12**	**6.79 ± 1.03**	5 UJ ± 1.54	5 U ± 0.374	5 UJ ± 0.605	5 U ± 0.393	5 UJ ± 0.565
Field Parameters								
Temperature (Deg C)	NA	**16.2**	**15.57**	**17.16**	**16.59**	**17.16**	**20.58**	**19.01**
Dissolved Oxygen, Field (mg/L)	NA	**1**	**0.37**	**0.12**	**0.16**	**0.12**	**1.57**	**0.72**
Conductivity, Field (mS/cm)	NA	**13.872**	**10.382**	**3.67**	**4.8927**	**3.67**	**1.5694**	**0.82988**
Oxidation Reduction Potential (ORP), Field (mv)	NA	**-63**	**16.6**	**60.2**	**17.6**	**60.2**	**111.1**	**40**
Turbidity, Field (NTU)	NA	**6.03**	**22.65**	**19.06**	**27.14**	**19.06**	-	**17.21**
pH, Field (SU)	NA	**6.62**	**6.36**	**6.63**	**6.81**	**6.63**	**6.74**	**6.69**

ABBREVIATIONS AND NOTES:

CCR: Coal Combustion Residuals.
mg/L: milligram per liter.
pCi/L: picoCurie per liter.
USEPA: United States Environmental Protection Agency.
Results in **bold** are detected.

- USEPA. 2016. Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities. July 26. 40 CFR Part 257.
https://www.epa.gov/coalash/coal-ash-rule

FIGURES



LEGEND

- CCR MONITORING WELL
- PROPERTY BOUNDARY
- CCR REGULATED UNIT BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: NEARMAP, 24 AUGUST 2022

N

0 1,100 2,200
SCALE IN FEET

HALEY ALDRICH

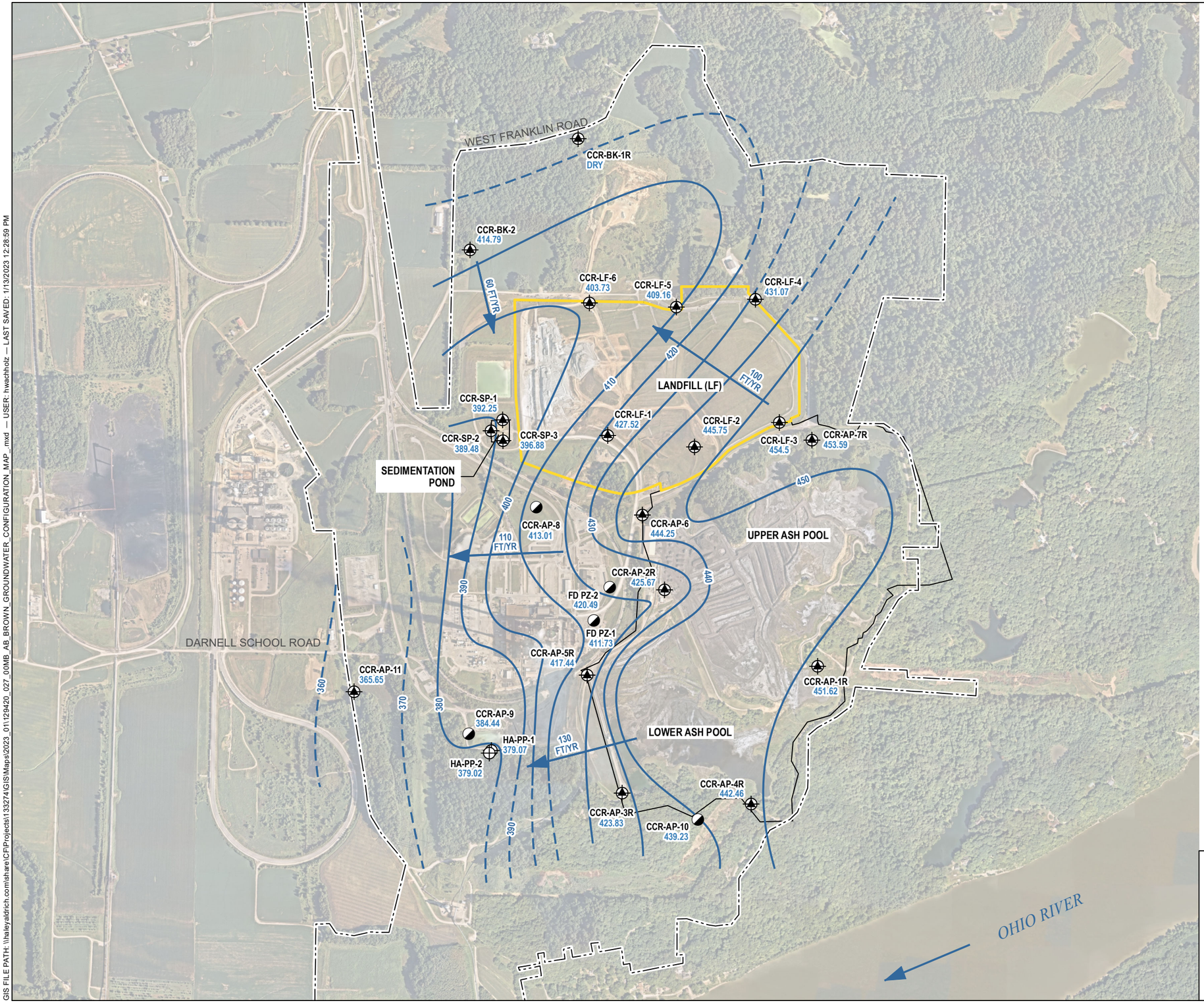
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
A.B. BROWN GENERATING STATION
MOUNT VERNON, INDIANA

GROUNDWATER MONITORING WELL LOCATIONS - LANDFILL

JANUARY 2023

FIGURE 1

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\133274\GIS\Maps\2023_01\129420_001_0001_MONITORING_WELL_LOCATIONS_BROWN_LANDFILL.mxd — USER: hwachholz — LAST SAVED: 1/18/2023 3:59:37 PM



LEGEND

- CCR MONITORING WELL
- NATURE AND EXTENT MONITORING WELL
- CCR PIEZOMETER WELL
- GROUNDWATER ELEVATION CONTOUR, 10-FT INTERVAL, DASHED WHERE INFERRED
- GROUNDWATER FLOW DIRECTION
- CCR REGULATED UNIT BOUNDARY
- ASH POND/SEDIMENTATION POND
- PROPERTY BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. CCR REGULATED UNITS INCLUDE THE ASH POND, LANDFILL, AND SEDIMENTATION POND.

3. GROUNDWATER ELEVATIONS WERE MEASURED 16 MAY 2022.

4. APPROXIMATE GROUNDWATER FLOW RATE CALCULATED USING $V = ki/n_e$ WHERE
V= GROUNDWATER FLOW VELOCITY IN FEET PER
k = HORIZONTAL HYDRAULIC CONDUCTIVITY IN FEET PER DAY
i = HORIZONTAL GROUNDWATER GRADIENT IN FEET PER FOOT
n_e = ASSUMED EFFECTIVE POROSITY

5. AERIAL IMAGERY SOURCE: NEARMAP, 24 AUGUST 2022

N

0 1,100 2,200
SCALE IN FEET

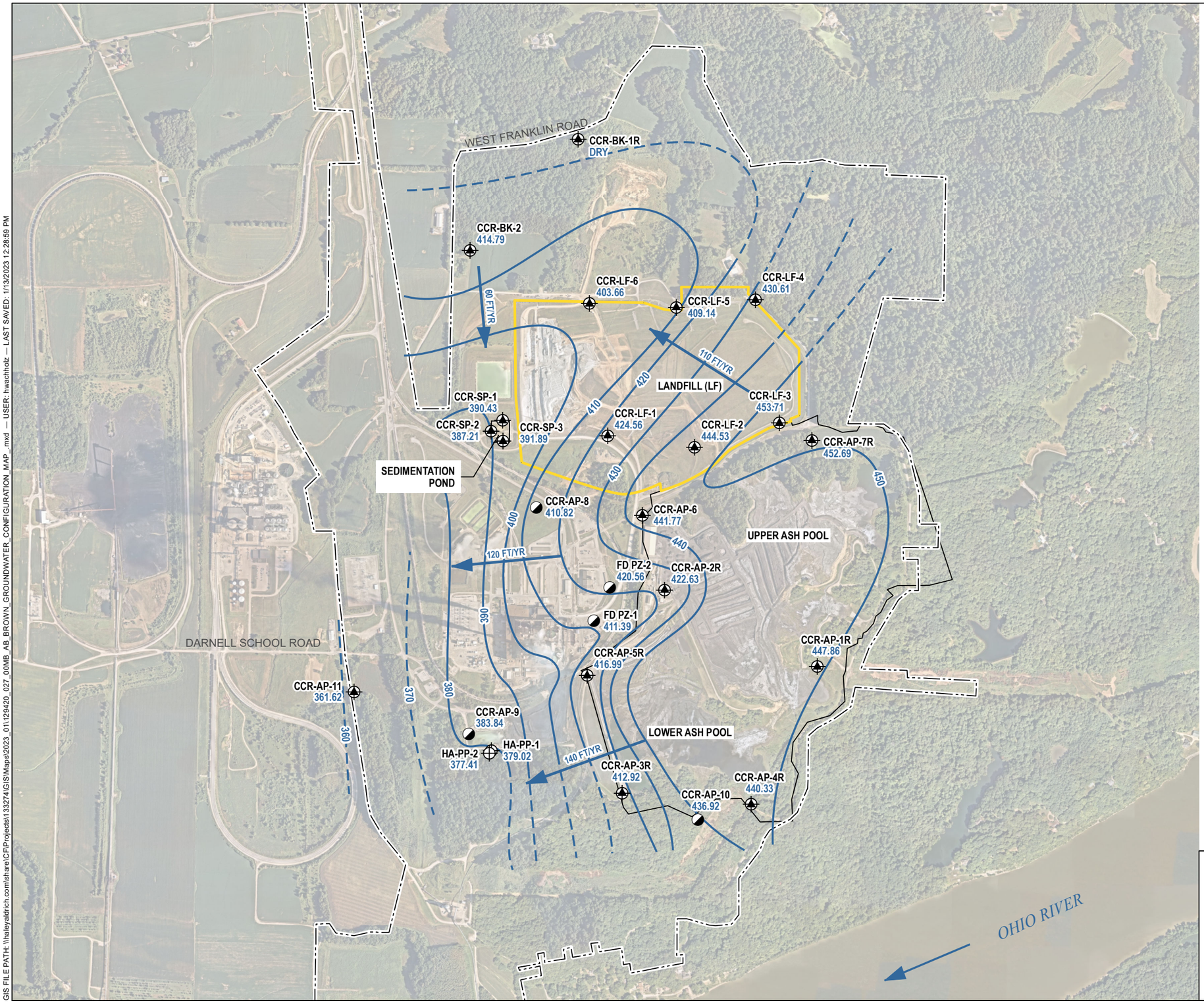
HALEY ALDRICH

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
A.B. BROWN GENERATING STATION
MOUNT VERNON, INDIANA

WATER TABLE CONFIGURATION MAP MAY 2022

JANUARY 2023

FIGURE 2



LEGEND

- CCR MONITORING WELL
- NATURE AND EXTENT MONITORING WELL
- CCR PIEZOMETER WELL
- GROUNDWATER ELEVATION CONTOUR, 10-FT INTERVAL, DASHED WHERE INFERRED
- GROUNDWATER FLOW DIRECTION
- CCR REGULATED UNIT BOUNDARY
- ASH POND/SEDIMENTATION POND
- PROPERTY BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. CCR REGULATED UNITS INCLUDE THE ASH POND, LANDFILL, AND SEDIMENTATION POND.

3. GROUNDWATER ELEVATIONS WERE MEASURED 1 NOVEMBER 2022.

4. APPROXIMATE GROUNDWATER FLOW RATE CALCULATED USING
$V = ki/n_e$ WHERE
V= GROUNDWATER FLOW VELOCITY IN FEET PER
k = HORIZONTAL HYDRAULIC CONDUCTIVITY IN FEET PER DAY
i = HORIZONTAL GROUNDWATER GRADIENT IN FEET PER FOOT
n_e = ASSUMED EFFECTIVE POROSITY

5. AERIAL IMAGERY SOURCE: NEARMAP, 24 AUGUST 2022

N

0 1,100 2,200
SCALE IN FEET

HALEY ALDRICH

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
A.B. BROWN GENERATING STATION
MOUNT VERNON, INDIANA

WATER TABLE CONFIGURATION MAP NOVEMBER 2022

JANUARY 2023

FIGURE 3

GIS FILE PATH: \\haleyaldrich.com\share\CP\Projects\133274\GIS\Maps\2023_01\129420_027_00MB_AB_BROWN_GROUNDWATER_CONFIGURATION_MAP_.mxd — USER: hwachholz — LAST SAVED: 1/13/2023 12:28:59 PM

APPENDIX A
Summary of Statistical Analysis

HALEY & ALDRICH, INC.
400 Augusta Street
Suite 100
Greenville, SC 29601
864.214.8750

TECHNICAL MEMORANDUM

25 March 2022
File No. 0129420

TO: Southern Indiana Gas and Electric Company

FROM: Haley & Aldrich, Inc.
Mark Miesfeldt, Lead Hydrogeologist
Steven F. Putrich, P.E., Project Principal

SUBJECT: Statistical Evaluation of the November 2021 Semi-annual Groundwater Assessment Monitoring Data
Southern Indiana Gas and Electric Company
Landfill
A.B. Brown Generating Station; Posey County, Indiana

Pursuant to Title 40 Code of Federal Regulations (40 CFR) § 257.93 and § 257.95 (Rule), this memorandum summarizes the statistical evaluation of the analytical results for the November 2021 semi-annual assessment monitoring event for the A.B. Brown Generating Station Landfill. Haley & Aldrich, Inc. (Haley & Aldrich) completed this statistical evaluation to determine if Appendix IV groundwater monitoring constituents have been detected in downgradient wells at statistically significant levels (SSL) greater than Groundwater Protection Standards (GWPS), consistent with the requirements in 40 CFR § 257.95.

Methods used during this statistical analysis are described in the *Statistical Data Analysis Plan for the A.B Brown Generating Station Landfill* (Haley & Aldrich, 2017). A summary of how applicable performance standards described in § 257.93 (g) were achieved include:

- § 257.93 (g) (1) – Data set distribution was evaluated using basic summary statistics, graphical methods, and the Shapiro-Wilks Test of Normality. Parametric methods were used where normal distributions were identified. Those data sets were evaluated for outliers using box plots, Dixon's test and Rosner's test. Outlier identification and data set distribution groups are summarized in Table I.
- § 257.93 (g) (2) – Not applicable
- § 257.93 (g) (3) – Not applicable
- § 257.93 (g) (4) – Levels of confidence and additional supporting information for the use of tolerance intervals and prediction limits are included in Table I.
- § 257.93 (g) (5) – Non-detect values were accounted for by simple substitution, where the detection limit replaced the non-detect result. Non-detect values are identified and summarized in Table I.

- § 257.93 (g) (6) – Time series plots for groundwater monitoring wells included in this evaluation were reviewed to identify potential seasonal variability. No additional statistics to account for seasonality of spatial variability were necessary.

Data from the groundwater sampling event for the downgradient monitoring wells (CCR-LF-1 through CCR-LF-6) were compared to the GWPS established from the background dataset for the upgradient monitoring wells (CCR-BK-1 and CCR-BK-2) for detected Appendix IV constituents. GWPS for each of the Appendix IV constituents have been set equal to the highest value of the maximum contaminant level, regional screening level, or background concentration. The results of the assessment monitoring statistical evaluation are discussed below and provided in Table I.

Development of GWPS

The Rule provides four specific options for statistical evaluation of groundwater quality data collected at a coal combustion residual (CCR) unit (40 CFR §257.93(f) (1-4)). Haley & Aldrich certified the tolerance limit (TL) as the statistical method used for developing background concentration for the GWPS on 14 January 2019. As noted above, the GWPS for each of the Appendix IV constituents have been set equal to the highest value of the maximum contaminant level (MCL), regional screening level (RSL), or background concentration. The most recent groundwater sampling result from each compliance well was compared to the GWPS to determine if additional statistical testing is warranted.

STATISTICAL EVALUATION

An interwell statistical evaluation was used to identify SSLs. An interwell evaluation compares the most recent values from downgradient compliance wells to a background dataset composed of upgradient well data. Because the CCR unit is in assessment monitoring, no statistical evaluations were conducted on Appendix III (detection monitoring) constituents.

The parametric TL method was used to complete statistical evaluations of the referenced dataset. The TL procedure is one in which a concentration limit for each constituent is established from the distribution of the background data, with a minimum 95 percent confidence level. The upper endpoint of a tolerance interval is called the UTL. Depending on the data distribution, parametric or non-parametric TL procedures are used to evaluate groundwater monitoring data using this method. Parametric TLs utilize normally distributed data or data normalized via a transformation of the sample background data used to construct the limit. If the data are non-normal and a transformation is not indicated, non-parametric procedures (order statistics or bootstrap methods) are used to calculate the TL. If all the background data are non-detect, a maximum reporting limit may serve as an appropriate UTL.

These statistical evaluations were conducted using the background dataset for detected Appendix IV constituents using parametric TL. If an Appendix IV constituent concentration from the November 2021 sampling event was greater than the GWPS, the lower confidence limit (LCL) for the downgradient well constituent was used to evaluate if an SSL was indicated. The LCL is the lower end of the confidence interval range, which is an estimated concentration range intended to contain the true mean or median

of the population from which the sample is drawn. The confidence interval range is designed to locate the true population mean or median with a high degree of statistical confidence, or conversely, with a low probability of error.

The UTLs were calculated from the background well dataset using Chemstat software after testing for outlier sample results that would warrant removal from the dataset based on likely error in sampling or measurement. Both visual and statistical outlier tests for the background data were performed using Chemstat and U.S. Environmental Protection Agency's ProUCL 5.1 software, and a visual inspection of the data was performed using box plots and distribution plots for the downgradient sample data. No sample data were identified as outliers that warranted removal from the dataset.

BACKGROUND DISTRIBUTIONS

The groundwater analytical results for each sampling event from the background sample locations were combined to calculate the UTL for each detected Appendix IV constituent. The variability and distribution of the pooled dataset was evaluated to determine the method for UTL calculation. The background concentrations were periodically updated per the document *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009* (Unified Guidance).

TREND SUMMARY

Mann Kendall trend analyses were performed on data sets of sufficient sample size. Results of the trend analysis are included on Table I. In summary, 82 percent of trends analyzed are identified as stable or decreasing. No increasing trends resulting in an SSL were identified.

RESULTS OF APPENDIX IV DOWNGRADIENT STATISTICAL COMPARISONS

The sample concentrations from the downgradient wells for each of the detected Appendix IV constituents from the November 2021 assessment monitoring event were compared to their respective GWPS (Table I). A sample concentration greater than the GWPS is considered to represent an SSL. Based on previous compliance sampling events and statistical evaluations, interwell comparisons were used to evaluate constituents not subject to an Alternative Source Demonstration (ASD) in downgradient monitoring wells. Because a successful ASD was completed for cobalt, arsenic, and lithium, an intrawell statistical analysis was used to evaluate those constituents. Based on this statistical evaluation, an SSL greater than the GWPS was not identified at the Landfill. As a result, the Landfill will remain in Assessment Monitoring.

Tables:

Table I – Summary of Assessment Monitoring Statistical Evaluation – November 2021

TABLE

TABLE I
SUMMARY OF ASSESSMENT MONITORING STATISTICAL EVALUATION - NOVEMBER 2021
A.B. BROWN GENERATING STATION - LANDFILL
PREPARED: FEBRUARY 28, 2022

														MCL Comparison		Entire Data					Inter-well Analysis					Intra-well Analysis		GWPS		
Location Id	Frequency of Detection	Percent Non-Detects	Range of Non-Detect	Mean	50th Percentile (Median)	95th Percentile	Maximum Detect	Variance	Standard Deviation	Coefficient of Variance	CCR MCL/RSL	Report Result Unit	Detection Exceedances (Y/N)	Number of Detection Exceedances	Outlier Detected	Outlier Removed	Trend	Distribution Group*	Distribution Well*	November 2021 Concentration	Detect?	Upper Tolerance Limit	Lower Confidence Limit (LCL)	SSI (Exceedance above Background at Individual Well)	Upper Prediction Limit	Exceedance above Background at Individual Well	Groundwater Protection Standard (Higher of MCL/RSL or Upper Tolerance Limit)	Exceedance above GWPS at Individual Well	SSL
CCR Appendix-IV: Antimony, Total (mg/L)																														
CCR-BK-1	2/16	88%	0.002-0.002	0.00356	0.004	0.004	0.0009	6.992E-07	0.0011826	0.6638	0.006	mg/L	N	0	NA	NA	NA	Non-parametric				0.002					0.006		
CCR-BK-2	1/16	94%	0.002-0.002	0.00382	0.004	0.004	0.00096	2.794E-07	0.0007476	0.3924	0.006	mg/L	N	0	NA	NA	NA												
CCR-LF-1	2/15	87%	0.002-0.002	0.00362	0.004	0.004	0.00118	4.786E-07	0.0009784	0.5402	0.006	mg/L	N	0	NA	NA	NA			0.001	Y			N				N	FALSE
CCR-LF-2	1/15	93%	0.002-0.05	0.02	0.004	0.073	0.0042	0.000364	0.02698	2.696	0.006	mg/L	N	0	NA	NA	NA			0.002	N			N				N	FALSE
CCR-LF-3	2/15	87%	0.002-0.002	0.0037	0.004	0.004	0.0022	3.132E-07	0.0007916	0.4276	0.006	mg/L	N	0	NA	NA	NA			0.002	N			N				N	FALSE
CCR-LF-4	0/15	100%	0.002-0.02	0.0136	0.004	0.04		0.00013108	0.016192	2.382	0.006	mg/L	N	0	NA	NA	NA			0.002	N			N				N	FALSE
CCR-LF-5	1/15	93%	0.002-0.02	0.0062	0.004	0.0238	0.0011	0.00004246	0.009216	2.97	0.006	mg/L	N	0	NA	NA	NA			0.002	N			N				N	FALSE
CCR-LF-6	2/15	87%	0.002-0.002	0.00372	0.004	0.004	0.0022	2.528E-07	0.000711	0.3814	0.006	mg/L	N	0	NA	NA	NA			0.001	Y			N				N	FALSE
CCR Appendix-IV: Arsenic, Total (mg/L)																														
CCR-BK-1	12/17	29%	0.001-0.001	0.001868	0.002	0.0037	0.005	5.684E-07	0.0010662	1.1414	0.01	mg/L	N	0	Y	N	Stable	Non-parametric				0.0035					0.010		
CCR-BK-2	8/17	53%	0.001-0.001	0.00246	0.002	0.00609	0.007	1.5908E-06	0.0017838	1.4544	0.01	mg/L	N	0	N	N	Stable												
CCR-LF-1	13/17	24%	0.001-0.001	0.00184	0.00188	0.00349	0.0044	4.028E-07	0.0008976	0.9756	0.01	mg/L	N	0	Y	N	Stable	Normal		0.00220	Y			N	0.002	Y		N	FALSE
CCR-LF-2	11/17	35%	0.01-0.025	0.01152	0.0046	0.0305	0.0124	0.00007632	0.012354	2.144	0.01	mg/L	N	0	Y	N	Stable	Non-parametric		0.00100	Y			N	0.025	N		N	FALSE
CCR-LF-3	12/17	29%	0.001-0.001	0.00218	0.00112	0.00746	0.0176	0.000007824	0.003956	3.642	0.01	mg/L	N	0	Y	N	Stable	Non-parametric		0.00031	Y			N	0.009	N		N	FALSE
CCR-LF-4	17/17	0%	-	0.0344	0.036	0.0548	0.06	0.00008464	0.01301	0.758	0.01	mg/L	Y		N	N	Increase	Normal		0.02000	Y			Y	0.041	N		Y	FALSE [1]
CCR-LF-5	11/17	35%	0.001-0.01	0.00446	0.002	0.0235	0.03	0.0000312	0.007898	3.544	0.01	mg/L	Y	2	Y	N	Stable	Non-parametric		0.00150	Y			N	0.015	N		N	FALSE
CCR-LF-6	10/17	41%	0.001-0.001	0.00282	0.002	0.01238	0.0194	0.000010536	0.00459	3.256	0.01	mg/L	N	0	Y	N	Stable	Non-parametric		0.00430	Y			Y	0.010	N		N	FALSE
CCR Appendix-IV: Barium, Total (mg/L)																														
CCR-BK-1	17/17	0%	-	0.0794	0.074	0.1211	0.164	0.0002908	0.02412	0.6074	2	mg/L	N	0	Y	N	Stable	Non-parametric				0.150					2.000		
CCR-BK-2	17/17	0%	-	0.0898	0.074	0.1687	0.3	0.001485	0.0545	1.2142	2	mg/L	N	0	Y	N	Stable												
CCR-LF-1	17/17	0%	-	0.1058	0.09	0.2334	0.34	0.00212	0.0651	1.2298	2	mg/L	N	0	Y	N	Stable			0.170	Y			Y				N	FALSE
CCR-LF-2	13/17	24%	0.1-0.25	0.0844	0.026	0.305	0.042	0.00781	0.12498	2.96	2	mg/L	N	0	Y	N	Stable			0.011	Y			N				N	FALSE
CCR-LF-3	17/17	0%	-	0.0488	0.052	0.06	0.06	0.00003828	0.00875	0.3594	2	mg/L	N	0	N	N	Decrease			0.017	Y			N				N	FALSE
CCR-LF-4	13/17	24%	0.01-0.1	0.0452	0.026	0.2	0.032	0.0016586	0.0576	2.554	2	mg/L	N	0	Y	N	Stable			0.011	Y			N				N	FALSE
CCR-LF-5	17/17	0%	-	0.0542	0.052	0.0701	0.074	0.00003066	0.00783	0.2894	2	mg/L	N	0	N	N	Stable			0.037	Y			N				N	FALSE
CCR-LF-6	17/17	0%	-	0.0506	0.036	0.1245	0.196	0.0007718	0.03928	1.5532	2	mg/L	N	0	Y	N	Increase			0.098	Y			N				N	FALSE
CCR Appendix-IV: Beryllium, Total (mg/L)																														
CCR-BK-1	1/16	94%	0.001-0.001	0.00189	0.002	0.002	0.00024	9.368E-08	0.0004328	0.458	0.004	mg/L	N	0	NA	NA	NA	Non-parametric				0.001					0.004		
CCR-BK-2	2/16	88%	0.001-0.001	0.001822	0.002	0.002	0.0008	1.1696E-07	0.0004836	0.5308	0.004	mg/L	N	0	NA	NA	NA												
CCR-LF-1	0/15	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.004	mg/L	N	0	NA	NA	NA			0.001	N			N				N	FALSE
CCR-LF-2	4/15	73%	0.001-0.025	0.00836	0.002	0.0365	0.00056	0.0000924	0.013594	3.252	0.004	mg/L	N	0	N	N	NA			0.001	N			N				N	FALSE
CCR-LF-3	0/15	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.004	mg/L	N	0	NA	NA	NA			0.001	N			N				N	FALSE
CCR-LF-4	5/15	67%	0.001-0.01	0.00508	0.002	0.02	0.00068	0.00002906	0.007622	3.004	0.004	mg/L	N	0	N	N	Stable			0.001	N			N				N	FALSE
CCR-LF-5	1/15	93%	0.001-0.001	0.001892	0.002	0.002	0.00038	8.446E-08	0.000411	0.4344	0.004	mg/L	N	0	NA	NA	NA			0.000	Y			N				N	FALSE
CCR-LF-6	1/15	93%	0.001-0.001	0.001914	0.002	0.002	0.0007	5.44E-08	0.0003298	0.3448	0.004	mg/L	N	0	NA	NA	NA			0.000	Y			N				N	FALSE
CCR Appendix-IV: Cadmium, Total (mg/L)																														
CCR-BK-1	0/17	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.005	mg/L	N	0	NA	NA	NA	Non-parametric				0.001					0.005		
CCR-BK-2	0/17	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.005	mg/L	N	0	NA	NA	NA												
CCR-LF-1	0/17	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.005	mg/L	N	0	NA	NA	NA			0.0010	N			N				N	FALSE
CCR-LF-2	16/17	6%	0.025-0.025	0.01064	0.0086	0.02842	0.0168	0.00005446	0.010436	1.9614	0.005	mg/L	Y	4	Y	N	Increase		Non-parametric	0.0084	Y		0.0035	Y				N	FALSE
CCR-LF-3	4/17	76%	0.001-0.001	0.001592	0.002	0.002	0.00046	2.798E-07	0.000748	0.9394	0.005	mg/L	N	0	N	N	Stable			0.0010	N			N				N	FALSE
CCR-LF-4	1/17	94%	0.001-0.01	0.00612	0.002	0.02	0.000184	0.0000306	0.007822	2.552	0.005	mg/L	N	0	NA	NA	NA			0.0010	N			N				N	FALSE
CCR-LF-5	14/17	18%	0.001-0.01	0.00177	0.00046	0.0083	0.00078	0.000010836	0.004656	5.258	0.005	mg/L	N	0	Y	N	Increase			0.0002	Y			N				N	FALSE
CCR-LF-6	13/17	24%	0.001-0.001	0.001252	0.00038	0.00459	0.0094	0.000002396	0.002188	3.494	0.005	mg/L	N	0	Y	N	Stable			0.0047	Y			Y				N	FALSE
CCR Appendix-IV: Chromium, Total (mg/L)																														
CCR-BK-1	13/17	24%	0.002-0.002	0.00462	0.004	0.00922	0.0152	0.000004694	0.003064	1.324	0.1	mg/L	N	0	Y	N	Stable	Non-parametric				0.009					0.100		
CCR-BK-2	6/17	65%	0.002-0.002	0.0058	0.004	0.0122	0.0174	0.00000691	0.003718	1.283	0.1	mg/L	N	0	Y	N	Stable												
CCR-LF-1	11/17	35%	0.002-0.0032	0.00418	0.0036	0.00954	0.0124	0.000003402	0.002608	1.2502	0.1	mg/L	N	0	Y	N	Increase			0.0040	Y			N				N	FALSE
CCR-LF-2	7/17	59%	0.002-0.05	0.0196	0.004	0.061	0.0044	0.000351	0.0265	2.702	0.1	mg/L	N	0	Y	N	Stable			0.0020	N			N				N	FALSE
CCR-LF-3	13/17	24%	0.002-0.0035	0.00444	0.004	0.00687	0.0068	0.000000765	0.0012368	0.5562	0.1	mg/L	N	0	N	N	Stable			0.0015	Y			N				N	FALSE
CCR-LF-4	4/17	76%	0.002-0.02	0.01198	0.004	0.04	0.0042	0.00012508	0.015816	2.642	0.1	mg/L	N	0	N	N	NA			0.0020	N			N				N	FALSE
CCR-LF-5	9/17	47%	0.002-0.02	0.00778	0.004	0.0414	0.044	0.00008154	0.01277	3.284	0.1	mg/L	N	0	Y	N	Stable			0.0026	Y			N				N	FALSE
CCR-LF-6	4/17	76%	0.002-0.0023	0.00456	0.004	0.01036	0.014	0.000004022	0.002836	1.2456	0.1	mg/L	N	0	Y	N	NA			0.0070	Y			N				N	FALSE
CCR Appendix-IV: Cobalt, Total (mg/L)																														
CCR-BK-1	15/17	12%	0.0005-0.0005	0.000754	0.00051	0.00232	0.0028	5.483E-07	0.0007405	0.9819	0.006	mg/L	N	0	Y	N	Decreasing	Non-parametric				0.0062					0.006		
CCR-BK-2	9/17	47%	0.0005-0.0005	0.0009	0.0005	0.00244	0.0062	0.000002056	0.001434	1.593	0.006	mg/L	Y	1	Y	N	Stable												
CCR-LF-1	13/17	24%	0.0005-0.0005	0.000395	0.00041	0.000744	0.001	6.323E-08	0.0002514	0.6364	0.006	mg/L	N	0	N	N	Increase	Normal		0.00100	Y			N	0.001	N		N	FALSE
CCR-LF-2	17/17	0%	-	0.00944	0.0098	0.0132	0.014	0.000005864	0.002422	0.2566	0.006	mg/L	Y	16	Y	N	Increase	Normal		0.01100	Y			Y	0.018	N		Y	FALSE [1]
CCR-LF-3	12/17	29%	0.0005-0.0005	0.000448	0.00048	0.000712	0.00072	2.123E-08	0.0001457	0.325	0.006	mg/L	N	0	N	N	Stable	Normal		0.00050	N			N	0.001	N		N	FALSE
CCR-LF-4	17/17	0%	-	0.00111	0.0011	0.0018	0.0018	1.611E-07	0.0004014	0.362	0.006	mg/L	N	0	Y	N	Stable	Normal		0.00110	Y			N	0.003	N		N	FALSE
CCR-LF-5	13/17	24%	0.0005-0.005	0.000841	0.00034	0.00364	0.0033	0.000001721	0.001312	1.56	0.006	mg/L	N	0	Y	N	Stable	Non-parametric		0.00130	Y			N	0.005	N		N	FALSE
CCR-LF-6	14/17	18%	0.0005-0.0005	0.00127	0.00033	0.003888	0.016	0.00001444	0.003801	2.986	0.006	mg/L	Y	1	Y	N	Increase	Normal	Non-parametric	0.01600	Y		0.00021	Y	0.001	Y		N	FALSE
CCR Appendix-III: Fluoride (mg/L)																														
CCR-BK-1	16/17	6%	0.23-0.23	2.6	2.8	3.012	3.04	0.018544	0.38512	1.184	4	mg/L	N	0	Y	N	Stable	Non-parametric				0.380					4.000		
CCR-BK-2	16/17	6%	0.12-0.12	1.216	1.2	1.652	1.68	0.009384	0.274	1.8056	4	mg/L	N	0	N	N	Stable												
CCR-LF-1	15/17	12%	0.1-0.12	1.856	2	2.504	2.56	0.026864	0.4636	2	4	mg/L	N	0	N	N	Decrease			0.32	Y			N				N	FALSE
CCR-LF-2	2/17	88%	1-25	28	20	144	33.6	245.84	44.352	12.68	4	mg/L	Y	8	NA	NA	NA		Non-parametric	4.20	Y		1.00	Y				N	FALSE
CCR-LF-3	15/17	12%	0.1-0.25	1.792	1.68	2.72	2.72	0.0446	0.59736	2.672	4	mg/L	N	0	N	N	Stable			0.34	Y			N				N	FALSE
CCR-LF-4	6/17	65%	1-2.5	8.4	8	20	4.08	4.2992	5.8648	5.5944	4	mg/L	N	0	N	N	Stable			0.47	Y			Y				N	FALSE
CCR-LF-5	13/17	24%	0.5-1	2.544	1.84	6.6	3.04	0.36136	1.7	5.352	4	mg/L	N	0	Y	N	Increase			0.27	Y			N				N	FALSE
CCR-LF-6	17/17	0%	-	2.6	2.56	3.968	4.08	0.075952	0.77952	2.396	4	mg/L	N	0	N	N	Stable			0.32	Y			N				N	FALSE

TABLE I
SUMMARY OF ASSESSMENT MONITORING STATISTICAL EVALUATION - NOVEMBER 2021
A.B. BROWN GENERATING STATION - LANDFILL
PREPARED: FEBRUARY 28, 2022

													MCL Comparison		Entire Data					Inter-well Analysis					Intra-well Analysis		GWPS		
Location Id	Frequency of Detection	Percent Non-Detects	Range of Non-Detect	Mean	50th Percentile (Median)	95th Percentile	Maximum Detect	Variance	Standard Deviation	Coefficient of Variance	CCR MCL/RSL	Report Result Unit	Detection Exceedances (Y/N)	Number of Detection Exceedances	Outlier Detected	Outlier Removed	Trend	Distribution Group*	Distribution Well*	November 2021 Concentration	Detect?	Upper Tolerance Limit	Lower Confidence Limit (LCL)	SSI (Exceedance above Background at Individual Well)	Upper Prediction Limit	Exceedance above Background at Individual Well	Groundwater Protection Standard (Higher of MCL/RSL or Upper Tolerance Limit)	Exceedance above GWPS at Individual Well	SSL
CCR Appendix-IV: Lead, Total (mg/L)																													
CCR-BK-1	15/17	12%	0.001-0.001	0.001092	0.00104	0.00207	0.0022	0.000000275	0.0007414	1.359	0.015	mg/L	N	0	N	N	Stable	Non-parametric				0.011					0.015		
CCR-BK-2	7/17	59%	0.001-0.001	0.00346	0.002	0.01134	0.022	0.000012118	0.004924	2.85	0.015	mg/L	N	0	Y	N	Stable												
CCR-LF-1	9/16	44%	0.001-0.001	0.001606	0.002	0.00292	0.0038	3.944E-07	0.0008882	1.1058	0.015	mg/L	N	0	Y	N	Stable			0.002	Y			N				N	FALSE
CCR-LF-2	9/16	44%	0.001-0.025	0.0101	0.00196	0.0335	0.0028	0.00009318	0.013652	2.704	0.015	mg/L	N	0	Y	N	Stable			0.000	Y			N				N	FALSE
CCR-LF-3	2/16	88%	0.00047-0.001	0.0017	0.002	0.002	0.000148	2.148E-07	0.0006554	0.771	0.015	mg/L	N	0	NA	NA	NA			0.001	N			N				N	FALSE
CCR-LF-4	8/16	50%	0.001-0.01	0.0146	0.002	0.0821	0.158	0.000735	0.03834	5.256	0.015	mg/L	Y	2	Y	N	Stable			0.000	Y			N				N	FALSE
CCR-LF-5	8/16	50%	0.0004-0.01	0.0025	0.002	0.01032	0.0024	0.000010868	0.004662	3.74	0.015	mg/L	N	0	Y	N	Stable			0.001	Y			N				N	FALSE
CCR-LF-6	4/16	75%	0.00024-0.001	0.00185	0.002	0.00398	0.0064	9.874E-07	0.0014052	1.5186	0.015	mg/L	N	0	Y	N	NA			0.003	Y			N				N	FALSE
CCR Appendix-IV: Lithium, Total (mg/L)																													
CCR-BK-1	3/17	82%	0.005-0.05	0.0264	0.0086	0.05	0.0086	0.0005278	0.02297	0.8708	0.04	mg/L	N	0	N	N	NA	Non-parametric				0.050					0.050		
CCR-BK-2	2/17	88%	0.005-0.05	0.0316	0.05	0.05	0.0043	0.0005146	0.02268	0.7176	0.04	mg/L	N	0	N	N	NA												
CCR-LF-1	9/17	47%	0.0059-0.05	0.0242	0.0096	0.05	0.01	0.0004968	0.02229	0.9199	0.04	mg/L	N	0	N	N	Decrease	Non-parametric		0.0055	Y			N	0.050	N		N	FALSE
CCR-LF-2	12/17	29%	0.005-0.25	0.0462	0.028	0.154	0.041	0.003512	0.05926	1.282	0.04	mg/L	Y	1	Y	N	Stable	Non-parametric		0.0160	Y			N	0.250	N		N	FALSE
CCR-LF-3	3/17	82%	0.005-0.05	0.0273	0.018	0.05	0.018	0.0004957	0.02226	0.815	0.04	mg/L	N	0	N	N	NA	Non-parametric		0.0050	N			N	0.050	N		N	FALSE
CCR-LF-4	17/17	0%	-	0.0845	0.087	0.112	0.12	0.0003795	0.01948	0.2306	0.04	mg/L	Y	16	N	N	Decrease	Normal		0.0640	Y			Y	0.154	N		Y	FALSE [1]
CCR-LF-5	16/17	6%	0.05-0.05	0.0252	0.024	0.0348	0.031	0.0000539	0.007342	0.2916	0.04	mg/L	N	0	Y	N	Stable	Non-parametric		0.0200	Y			N	0.050	N		N	FALSE
CCR-LF-6	17/17	0%	-	0.0192	0.019	0.023	0.023	0.000006654	0.00258	0.1345	0.04	mg/L	N	0	N	N	Stable	Normal		0.0190	Y			N	0.029	N		N	FALSE
CCR Appendix-IV: Mercury, Total (mg/L)																													
CCR-BK-1	0/16	100%	0.0002-0.0002	0.0004	0.0004	0.0004		1.2296E-22	1.5682E-11	7.84E-08	0.002	mg/L	N	0	NA	NA	NA	Non-parametric				0.0002					0.002		
CCR-BK-2	2/16	88%	0.0002-0.0002	0.000388	0.0004	0.0004	0.0004	1.2096E-09	0.00004918	0.2538	0.002	mg/L	N	0	NA	NA	NA												
CCR-LF-1	0/16	100%	0.0002-0.0002	0.0004	0.0004	0.0004		1.2296E-22	1.5682E-11	7.84E-08	0.002	mg/L	N	0	NA	NA	NA			0.0002	N			N				N	FALSE
CCR-LF-2	0/16	100%	0.0002-0.0002	0.0004	0.0004	0.0004		1.2296E-22	1.5682E-11	7.84E-08	0.002	mg/L	N	0	NA	NA	NA			0.0002	N			N				N	FALSE
CCR-LF-3	0/16	100%	0.0002-0.0002	0.0004	0.0004	0.0004		1.2296E-22	1.5682E-11	7.84E-08	0.002	mg/L	N	0	NA	NA	NA			0.0002	N			N				N	FALSE
CCR-LF-4	0/16	100%	0.0002-0.0002	0.0004	0.0004	0.0004		1.2296E-22	1.5682E-11	7.84E-08	0.002	mg/L	N	0	NA	NA	NA			0.0002	N			N				N	FALSE
CCR-LF-5	10/16	38%	0.0002-0.0002	0.00028	0.00028	0.0004	0.0003	5.708E-09	0.00010684	0.7608	0.002	mg/L	N	0	N	N	Stable			0.0002	N			N				N	FALSE
CCR-LF-6	0/16	100%	0.0002-0.0002	0.0004	0.0004	0.0004		1.2296E-22	1.5682E-11	7.84E-08	0.002	mg/L	N	0	NA	NA	NA			0.0002	N			N				N	FALSE
CCR Appendix-IV: Molybdenum, Total (mg/L)																													
CCR-BK-1	15/17	12%	0.005-0.005	0.00187	0.0014	0.005	0.0034	0.000001926	0.001388	0.7407	0.1	mg/L	N	0	N	N	Decrease	Non-parametric				0.005					0.100		
CCR-BK-2	8/17	53%	0.005-0.005	0.00319	0.005	0.005	0.0025	0.000004133	0.002033	0.6377	0.1	mg/L	N	0	N	N	Stable												
CCR-LF-1	15/17	12%	0.005-0.005	0.0016	0.0012	0.005	0.0016	0.000001709	0.001307	0.8164	0.1	mg/L	N	0	Y	N	Decrease			0.0012	Y			N				N	FALSE
CCR-LF-2	11/17	35%	0.05-0.13	0.0241	0.0032	0.066	0.0048	0.001224	0.03499	1.45	0.1	mg/L	N	0	Y	N	Stable			0.0022	Y			N				N	FALSE
CCR-LF-3	16/17	6%	0.005-0.005	0.00199	0.0014	0.00512	0.0056	0.000001967	0.001403	0.7061	0.1	mg/L	N	0	Y	N	Increase			0.0010	Y			N				N	FALSE
CCR-LF-4	16/17	6%	0.005-0.005	0.0204	0.022	0.0262	0.027	0.00002774	0.005267	0.2588	0.1	mg/L	N	0	Y	N	Stable			0.0230	Y			Y				N	FALSE
CCR-LF-5	10/17	41%	0.005-0.05	0.00524	0.001	0.014	0.0023	0.0001371	0.01171	2.236	0.1	mg/L	N	0	Y	N	Stable			0.0008	Y			N				N	FALSE
CCR-LF-6	13/17	24%	0.005-0.005	0.00236	0.0012	0.00532	0.0066	0.000004153	0.002038	0.8631	0.1	mg/L	N	0	N	N	Stable			0.0066	Y			Y				N	FALSE
CCR Appendix-IV: Radium-226 & 228 (pCi/L)																													
CCR-BK-1	11/17	35%	0.121-0.336	1.044	0.852	2.756	4.92	0.545	1.044	1.9994	5	pCi/L	N	0	Y	N	Stable	Non-parametric				3.1					5.00		
CCR-BK-2	4/17	76%	-0.0961-2.74	1.312	0.434	5.752	6.26	1.8244	1.9102	2.912	5	pCi/L	N	0	N	N	Stable												
CCR-LF-1	17/17	0%	-	2.38	1.49	7.56	16.14	6.286	3.546	2.982	5	pCi/L	Y	2	Y	N	Stable		Normal	8.1	Y		1.87	Y				N	FALSE
CCR-LF-2	17/17	0%	-	4.26	4.3	6.48	7.74	0.7344	1.212	0.5686	5	pCi/L	N	0	Y	N	Increase			3.9	Y			Y				N	FALSE
CCR-LF-3	9/17	47%	0.188-1.68	1.112	0.886	2.606	2.2	0.2542	0.713	1.2822	5	pCi/L	N	0	Y	N	Stable			1.7	N			N				N	FALSE
CCR-LF-4	17/17	0%	-	9.32	9.24	14.252	16.28	4.352	2.95	0.6332	5	pCi/L	Y	12	N	N	Stable			4.6	Y			Y				N	FALSE
CCR-LF-5	5/17	71%	-0.0225-0.494	0.9	0.492	3.206	5.56	0.8194	1.28	2.846	5	pCi/L	N	0	NA	NA	NA			2.8	Y			N				N	FALSE
CCR-LF-6	6/17	65%	0.101-0.48	1.434	0.604	5.636	13.06	4.428	2.976	4.148	5	pCi/L	Y	2	NA	NA	NA		Non-parametric	6.5	Y		0.24	Y				N	FALSE
CCR Appendix-IV: Selenium, Total (mg/L)																													
CCR-BK-1	3/17	82%	0.005-0.005	0.00842	0.01	0.01	0.00134	0.000006024	0.003472	0.8248	0.05	mg/L	N	0	NA	NA	NA	Non-parametric				0.005					0.050		
CCR-BK-2	2/17	88%	0.005-0.005	0.009	0.01	0.01	0.00196	0.000003924	0.002802	0.623	0.05	mg/L	N	0	NA	NA	NA												
CCR-LF-1	4/16	75%	0.005-0.005	0.00804	0.01	0.01	0.0026	0.000005982	0.00346	0.8608	0.05	mg/L	N	0	NA	NA	NA			0.005	N			N				N	FALSE
CCR-LF-2	10/16	38%	0.05-0.13	0.0512	0.0082	0.172	0.0112	0.002454	0.07008	2.738	0.05	mg/L	N	0	Y	N	Increase			0.005	Y			N				N	FALSE
CCR-LF-3	10/16	38%	0.005-0.005	0.00606	0.0044	0.01	0.0048	0.000004988	0.003158	1.042	0.05	mg/L	N	0	N	N	Stable			0.005	N			N				N	FALSE
CCR-LF-4	3/16	81%	0.005-0.05	0.0308	0.01	0.1	0.0014	0.000828	0.0407	2.638	0.05	mg/L	N	0	NA	NA	NA			0.005	N			N				N	FALSE
CCR-LF-5	1/16	94%	0.005-0.05	0.01506	0.01	0.0505	0.00108	0.0002506	0.02238	2.972	0.05	mg/L	N	0	NA	NA	NA			0.005	N			N				N	FALSE
CCR-LF-6	3/16	81%	0.005-0.005	0.00876	0.01	0.01	0.0046	0.000003644	0.0027	0.6166	0.05	mg/L	N	0	NA	NA	NA			0.002	Y			N				N	FALSE
CCR Appendix-IV: Thallium, Total (mg/L)																													
CCR-BK-1	2/16	88%	0.001-0.001	0.001788	0.002	0.002	0.00054	1.6508E-07	0.0005746	0.6426	0.002	mg/L	N	0	NA	NA	NA	Non-parametric				0.001					0.002		
CCR-BK-2	3/16	81%	0.001-0.001	0.001678	0.002	0.002	0.00038	2.324E-07	0.0006818	0.8122	0.002	mg/L	N	0	NA	NA	NA												
CCR-LF-1	1/15	93%	0.001-0.001	0.001874	0.002	0.002	0.00011	1.1496E-07	0.0004796	0.5118	0.002	mg/L	N	0	NA	NA	NA			0.001	N			N				N	FALSE
CCR-LF-2	8/15	47%	0.001-0.025	0.0095	0.0015	0.0365	0.0015	0.00009534	0.013808	2.908	0.002	mg/L	N	0	N	N	Increase			0.001	Y			N				N	FALSE
CCR-LF-3	6/15	60%	0.001-0.001	0.001338	0.002	0.002	0.0008	0.000000354	0.0008416	1.2578	0.002	mg/L	N	0	N	N	Stable			0.001	N			N				N	FALSE
CCR-LF-4	4/15	73%	0.001-0.01	0.00632	0.002	0.02	0.0004	0.00003546	0.00842	2.662	0.002	mg/L	N	0	N	N	Stable			0.0010	N			N				N	FALSE
CCR-LF-5	3/15	80%	0.001-0.01	0.00286	0.002	0.0119	0.0006	0.000011116	0.004714	3.306	0.002	mg/L	N	0	NA	NA	NA			0.001	N			N				N	FALSE
CCR-LF-6	3/15	80%	0.001-0.001	0.001652	0.002	0.002	0.00034	2.508E-07	0.0007082	0.857	0.002	mg/L	N	0	NA	NA	NA			0.000	Y			N				N	FALSE

Notes:

1 - Constituent concentration compared using intra-well analysis and did not exceede the upper prediction limit and therefore was not detected at a statistically significant level.
** - Determined using the Shapiro-Wilks statistical test at a 5% significance level and a residual probability plot.*
CCR = Coal combustion residual
GWPS = Groundwater Protection Standards
mg/L = milligrams per liter
MCL = Maximum containment level
N/A = Not available
NT = Not tested
pCi/L = Pico curies per liter of air
RSL = Regional screening level
SSI = Statistically significant increase
SSL = Statistically significant level

HALEY & ALDRICH, INC.
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216.739.0555

TECHNICAL MEMORANDUM

14 September 2022
File No. 129420

TO: Southern Indiana Gas and Electric Company

FROM: Haley & Aldrich, Inc.
Todd Plating, Senior Project Manager
Steven F. Putrich, P.E., Project Principal

SUBJECT: Statistical Evaluation of the May 2022 Semi-annual Groundwater Assessment Monitoring Data
Southern Indiana Gas and Electric Company
Landfill
A.B. Brown Generating Station; Posey County, Indiana

Pursuant to Title 40 Code of Federal Regulations (40 CFR) § 257.93 and § 257.95 (Rule), this memorandum summarizes the statistical evaluation of the analytical results for the May 2022 semi-annual assessment monitoring event for the A.B. Brown Generating Station Landfill. Haley & Aldrich, Inc. (Haley & Aldrich) completed this statistical evaluation to determine if Appendix IV groundwater monitoring constituents have been detected in downgradient wells at statistically significant levels (SSL) greater than Groundwater Protection Standards (GWPS), consistent with the requirements in 40 CFR § 257.95.

Methods used during this statistical analysis are described in the *Statistical Data Analysis Plan for the A.B Brown Generating Station Landfill* (Haley & Aldrich, 2017). A summary of how applicable performance standards described in § 257.93 (g) were achieved include:

- § 257.93 (g) (1) – Data set distribution was evaluated using basic summary statistics, graphical methods, and the Shapiro-Wilks Test of Normality. Parametric methods were used where normal distributions were identified. Those data sets were evaluated for outliers using box plots, Dixon's test and Rosner's test. Outlier identification and data set distribution groups are summarized in Table I.
- § 257.93 (g) (2) – Not applicable
- § 257.93 (g) (3) – Not applicable
- § 257.93 (g) (4) – Levels of confidence and additional supporting information for the use of tolerance intervals and prediction limits are included in Table I.

- § 257.93 (g) (5) – Non-detect values were accounted for by simple substitution, where the detection limit replaced the non-detect result. Non-detect values are identified and summarized in Table I.
- § 257.93 (g) (6) – Time series plots for groundwater monitoring wells included in this evaluation were reviewed to identify potential seasonal variability. No additional statistics to account for seasonality of spatial variability were necessary.

Data from the groundwater sampling event for the downgradient monitoring wells (CCR-LF-1 through CCR-LF-6) were compared to the GWPS established from the background dataset for the upgradient monitoring wells (CCR-BK-1 and CCR-BK-2) for detected Appendix IV constituents. GWPS for each of the Appendix IV constituents have been set equal to the highest value of the maximum contaminant level, regional screening level, or background concentration. The results of the assessment monitoring statistical evaluation are discussed below and provided in Table I.

Development of GWPS

The Rule provides four specific options for statistical evaluation of groundwater quality data collected at a coal combustion residual (CCR) unit (40 CFR §257.93(f) (1-4)). Haley & Aldrich certified the tolerance limit (TL) as the statistical method used for developing background concentration for the GWPS on 14 January 2019. As noted above, the GWPS for each of the Appendix IV constituents have been set equal to the highest value of the maximum contaminant level (MCL), regional screening level (RSL), or background concentration. The most recent groundwater sampling result from each compliance well was compared to the GWPS to determine if additional statistical testing is warranted.

STATISTICAL EVALUATION

An interwell statistical evaluation was used to identify SSLs. An interwell evaluation compares the most recent values from downgradient compliance wells to a background dataset composed of upgradient well data. Because the CCR unit is in assessment monitoring, no statistical evaluations were conducted on Appendix III (detection monitoring) constituents.

The parametric TL method was used to complete statistical evaluations of the referenced dataset. The TL procedure is one in which a concentration limit for each constituent is established from the distribution of the background data, with a minimum 95 percent confidence level. The upper endpoint of a tolerance interval is called the UTL. Depending on the data distribution, parametric or non-parametric TL procedures are used to evaluate groundwater monitoring data using this method. Parametric TLs utilize normally distributed data or data normalized via a transformation of the sample background data used to construct the limit. If the data are non-normal and a transformation is not indicated, non-parametric procedures (order statistics or bootstrap methods) are used to calculate the TL. If all the background data are non-detect, a maximum reporting limit may serve as an appropriate UTL.

These statistical evaluations were conducted using the background dataset for detected Appendix IV constituents using parametric TL. If an Appendix IV constituent concentration from the May 2022

sampling event was greater than the GWPS, the lower confidence limit (LCL) for the downgradient well constituent was used to evaluate if an SSL was indicated. The LCL is the lower end of the confidence interval range, which is an estimated concentration range intended to contain the true mean or median of the population from which the sample is drawn. The confidence interval range is designed to locate the true population mean or median with a high degree of statistical confidence, or conversely, with a low probability of error.

The UTLs were calculated from the background well dataset using Chemstat software after testing for outlier sample results that would warrant removal from the dataset based on likely error in sampling or measurement. Both visual and statistical outlier tests for the background data were performed using Chemstat and U.S. Environmental Protection Agency's ProUCL 5.1 software, and a visual inspection of the data was performed using box plots and distribution plots for the downgradient sample data. No sample data were identified as outliers that warranted removal from the dataset.

BACKGROUND DISTRIBUTIONS

The groundwater analytical results for each sampling event from the background sample locations were combined to calculate the UTL for each detected Appendix IV constituent. The variability and distribution of the pooled dataset was evaluated to determine the method for UTL calculation. The background concentrations were periodically updated per the document *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009* (Unified Guidance).

TREND SUMMARY

Mann Kendall trend analyses were performed on data sets of sufficient sample size. Results of the trend analysis are included on Table I. In summary, 82 percent of trends analyzed are identified as stable or decreasing. No increasing trends resulting in an SSL were identified.

RESULTS OF APPENDIX IV DOWNGRADIENT STATISTICAL COMPARISONS

The sample concentrations from the downgradient wells for each of the detected Appendix IV constituents from the May 2022 assessment monitoring event were compared to their respective GWPS (Table I). A sample concentration greater than the GWPS is considered to represent an SSL. Based on previous compliance sampling events and statistical evaluations, interwell comparisons were used to evaluate constituents not subject to an Alternative Source Demonstration (ASD) in downgradient monitoring wells. Because a successful ASD was completed for cobalt, arsenic, and lithium, an intrawell statistical analysis was used to evaluate those constituents. Based on this statistical evaluation, an SSL greater than the GWPS was not identified at the Landfill. As a result, the Landfill will remain in Assessment Monitoring.

Tables:

Table I – Summary of Assessment Monitoring Statistical Evaluation – May 2022

TABLE

TABLE I
SUMMARY OF ASSESSMENT MONITORING STATISTICAL EVALUATION - MAY 2022
A.B. BROWN GENERATING STATION - LANDFILL
PREPARED: JULY 20, 2022

														MCL Comparison		Entire Data					Inter-well Analysis					Intra-well Analysis		GWPS		
Location Id	Frequency of Detection	Percent Non-Detects	Range of Non-Detect	Mean	50th Percentile (Median)	95th Percentile	Maximum Detect	Variance	Standard Deviation	Coefficient of Variance	CCR MCL/RSL	Report Result Unit	Detection Exceedances (Y/N)	Number of Detection Exceedances	Outlier Detected	Outlier Removed	Trend	Distribution Group*	Distribution Well*	May 2022 Concentration	Detect?	Upper Tolerance Limit	Lower Confidence Limit (LCL)	SSI (Exceedance above Background at Individual Well)	Upper Prediction Limit	Exceedance above Background at Individual Well	Groundwater Protection Standard (Higher of MCL/RSL or Upper Tolerance Limit)	Exceedance above GWPS at Individual Well	SSL
CCR Appendix-IV: Antimony, Total (mg/L)																														
CCR-BK-1	2/17	88%	0.002-0.002	0.00358	0.004	0.004	0.0009	6.622E-07	0.0011508	0.6414	0.006	mg/L	N	0	NA	NA	NA	Non-parametric				0.002					0.006		
CCR-BK-2	1/17	94%	0.002-0.002	0.00382	0.004	0.004	0.00096	2.636E-07	0.000726	0.38	0.006	mg/L	N	0	NA	NA	NA												
CCR-LF-1	2/16	88%	0.002-0.002	0.00364	0.004	0.004	0.00118	4.522E-07	0.000951	0.5216	0.006	mg/L	N	0	NA	NA	NA			0.002	N			N				N	FALSE
CCR-LF-2	1/16	94%	0.002-0.05	0.01902	0.004	0.067	0.0042	0.0003482	0.02638	2.776	0.006	mg/L	N	0	NA	NA	NA			0.002	N			N				N	FALSE
CCR-LF-3	2/16	88%	0.002-0.002	0.00372	0.004	0.004	0.0022	2.958E-07	0.000769	0.4134	0.006	mg/L	N	0	NA	NA	NA			0.002	N			N				N	FALSE
CCR-LF-4	0/16	100%	0.002-0.02	0.013	0.004	0.04		0.00012542	0.015838	2.436	0.006	mg/L	N	0	NA	NA	NA			0.002	N			N				N	FALSE
CCR-LF-5	1/16	94%	0.002-0.02	0.00606	0.004	0.0202	0.0011	0.00003986	0.00893	2.942	0.006	mg/L	N	0	NA	NA	NA			0.002	N			N				N	FALSE
CCR-LF-6	2/16	88%	0.002-0.002	0.00374	0.004	0.004	0.0022	2.386E-07	0.0006908	0.369	0.006	mg/L	N	0	NA	NA	NA			0.002	N			N				N	FALSE
CCR Appendix-IV: Arsenic, Total (mg/L)																														
CCR-BK-1	12/18	33%	0.001-0.001	0.001876	0.002	0.0035	0.005	5.364E-07	0.0010356	1.1044	0.01	mg/L	N	0	Y	N	Stable	Non-parametric				0.0035					0.010		
CCR-BK-2	8/18	56%	0.001-0.001	0.00242	0.002	0.00595	0.007	1.5056E-06	0.0017352	1.4294	0.01	mg/L	N	0	N	N	Stable												
CCR-LF-1	14/18	22%	0.001-0.001	0.001784	0.00178	0.00335	0.0044	0.000000408	0.0009032	1.013	0.01	mg/L	N	0	Y	N	Stable	Normal		0.00041	Y			N	0.002	N		N	FALSE
CCR-LF-2	12/18	33%	0.01-0.025	0.01104	0.0045	0.0275	0.0124	0.00007402	0.012166	2.204	0.01	mg/L	N	0	Y	N	Stable	Non-parametric		0.00140	Y			N	0.025	N		N	FALSE
CCR-LF-3	12/18	33%	0.001-0.001	0.00216	0.00118	0.0059	0.0176	0.000007378	0.003842	3.552	0.01	mg/L	N	0	Y	N	Stable	Non-parametric		0.00100	N			N	0.009	N		N	FALSE
CCR-LF-4	18/18	0%	-	0.0364	0.036	0.0625	0.07	0.00011414	0.015108	0.8322	0.01	mg/L	Y	32	N	N	Increase	Normal		0.03500	Y			Y	0.041	N		Y	FALSE [1]
CCR-LF-5	11/18	39%	0.001-0.01	0.00432	0.002	0.0225	0.03	0.00002958	0.00769	3.56	0.01	mg/L	Y	2	Y	N	Stable	Non-parametric		0.00100	N			N	0.015	N		N	FALSE
CCR-LF-6	10/18	44%	0.001-0.001	0.00278	0.002	0.0113	0.0194	0.000009952	0.004462	3.216	0.01	mg/L	N	0	Y	N	Stable	Non-parametric		0.00100	N			N	0.010	N		N	FALSE
CCR Appendix-IV: Barium, Total (mg/L)																														
CCR-BK-1	18/18	0%	-	0.0792	0.075	0.1145	0.164	0.0002746	0.02344	0.5916	2	mg/L	N	0	Y	N	Stable	Non-parametric				0.150					2.000		
CCR-BK-2	18/18	0%	-	0.0888	0.074	0.1485	0.3	0.001407	0.05304	1.1936	2	mg/L	N	0	Y	N	Stable												
CCR-LF-1	18/18	0%	-	0.1032	0.087	0.217	0.34	0.00206	0.06418	1.2438	2	mg/L	N	0	Y	N	Stable			0.029	Y			N				N	FALSE
CCR-LF-2	14/18	22%	0.1-0.25	0.0812	0.026	0.275	0.042	0.007462	0.12216	3.012	2	mg/L	N	0	Y	N	Stable			0.012	Y			N				N	FALSE
CCR-LF-3	18/18	0%	-	0.0478	0.051	0.06	0.06	0.00004364	0.009342	0.391	2	mg/L	N	0	N	N	Decrease			0.016	Y			N				N	FALSE
CCR-LF-4	14/18	22%	0.01-0.1	0.0438	0.025	0.2	0.032	0.0015784	0.05618	2.564	2	mg/L	N	0	Y	N	Stable			0.011	Y			N				N	FALSE
CCR-LF-5	18/18	0%	-	0.0536	0.052	0.0695	0.074	0.00003166	0.007958	0.2972	2	mg/L	N	0	N	N	Stable			0.022	Y			N				N	FALSE
CCR-LF-6	18/18	0%	-	0.0498	0.036	0.1135	0.196	0.0007334	0.0383	1.5388	2	mg/L	N	0	Y	N	Increase			0.018	Y			N				N	FALSE
CCR Appendix-IV: Beryllium, Total (mg/L)																														
CCR-BK-1	1/17	94%	0.001-0.001	0.001896	0.002	0.002	0.00024	8.834E-08	0.0004204	0.4432	0.004	mg/L	N	0	NA	NA	NA	Non-parametric				0.001					0.004		
CCR-BK-2	2/17	88%	0.001-0.001	0.001832	0.002	0.002	0.0008	1.1076E-07	0.0004706	0.5136	0.004	mg/L	N	0	NA	NA	NA												
CCR-LF-1	0/16	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.004	mg/L	N	0	NA	NA	NA			0.001	N			N				N	FALSE
CCR-LF-2	4/16	75%	0.001-0.025	0.00796	0.002	0.0335	0.00056	0.00008766	0.01324	3.324	0.004	mg/L	N	0	N	N	NA			0.001	N			N				N	FALSE
CCR-LF-3	0/16	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.004	mg/L	N	0	NA	NA	NA			0.001	N			N				N	FALSE
CCR-LF-4	5/16	69%	0.001-0.01	0.00488	0.002	0.02	0.00068	0.00002746	0.007412	3.036	0.004	mg/L	N	0	N	N	Stable			0.001	N			N				N	FALSE
CCR-LF-5	1/16	94%	0.001-0.001	0.001898	0.002	0.002	0.00038	7.936E-08	0.0003984	0.4196	0.004	mg/L	N	0	NA	NA	NA			0.001	N			N				N	FALSE
CCR-LF-6	1/16	94%	0.001-0.001	0.001918	0.002	0.002	0.0007	5.11E-08	0.0003198	0.3332	0.004	mg/L	N	0	NA	NA	NA			0.001	N			N				N	FALSE
CCR Appendix-IV: Cadmium, Total (mg/L)																														
CCR-BK-1	0/18	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.005	mg/L	N	0	NA	NA	NA	Non-parametric				0.001					0.005		
CCR-BK-2	0/18	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.005	mg/L	N	0	NA	NA	NA												
CCR-LF-1	0/18	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.005	mg/L	N	0	NA	NA	NA			0.0010	N			N				N	FALSE
CCR-LF-2	17/18	6%	0.025-0.025	0.0109	0.0086	0.0251	0.0168	0.00005196	0.010194	1.8694	0.005	mg/L	Y	6	Y	N	Increase		Non-parametric	0.0077	Y		0.0035	Y				N	FALSE
CCR-LF-3	4/18	78%	0.001-0.001	0.001616	0.002	0.002	0.00046	2.682E-07	0.0007324	0.907	0.005	mg/L	N	0	N	N	Stable			0.0010	N			N				N	FALSE
CCR-LF-4	1/18	94%	0.001-0.01	0.0059	0.002	0.02	0.000184	0.0000293	0.007656	2.596	0.005	mg/L	N	0	NA	NA	NA			0.0010	N			N				N	FALSE
CCR-LF-5	14/18	22%	0.001-0.01	0.001784	0.00047	0.0065	0.00078	0.000010218	0.00452	5.07	0.005	mg/L	N	0	Y	N	Increase			0.0010	N			N				N	FALSE
CCR-LF-6	14/18	22%	0.001-0.001	0.001216	0.0004	0.00385	0.0094	0.00000227	0.00213	3.502	0.005	mg/L	N	0	Y	N	Stable			0.0003	Y			N				N	FALSE
CCR Appendix-IV: Chromium, Total (mg/L)																														
CCR-BK-1	13/18	28%	0.002-0.002	0.0046	0.004	0.0083	0.0152	0.000004436	0.002978	1.297	0.1	mg/L	N	0	Y	N	Stable	Non-parametric				0.009					0.100		
CCR-BK-2	6/18	67%	0.002-0.002	0.0057	0.004	0.0114	0.0174	0.000006602	0.003634	1.276	0.1	mg/L	N	0	Y	N	Stable												
CCR-LF-1	11/18	39%	0.002-0.0032	0.00416	0.0038	0.0091	0.0124	0.000003208	0.002534	1.2168	0.1	mg/L	N	0	Y	N	Increase			0.0020	N			N				N	FALSE
CCR-LF-2	7/18	61%	0.002-0.05	0.01874	0.004	0.055	0.0044	0.0003374	0.02598	2.772	0.1	mg/L	N	0	Y	N	Stable			0.0020	N			N				N	FALSE
CCR-LF-3	14/18	22%	0.002-0.0035	0.00438	0.004	0.00685	0.0068	7.508E-07	0.0012254	0.5584	0.1	mg/L	N	0	N	N	Stable			0.0017	Y			N				N	FALSE
CCR-LF-4	4/18	78%	0.002-0.02	0.01154	0.004	0.04	0.0042	0.00011964	0.015468	2.682	0.1	mg/L	N	0	N	N	NA			0.0020	N			N				N	FALSE
CCR-LF-5	9/18	50%	0.002-0.02	0.00756	0.004	0.041	0.044	0.00007728	0.012432	3.286	0.1	mg/L	N	0	Y	N	Stable			0.0020	N			N				N	FALSE
CCR-LF-6	4/18	78%	0.002-0.0023	0.00452	0.004	0.0098	0.014	0.0000038	0.002758	1.219	0.1	mg/L	N	0	Y	N	NA			0.0020	N			N				N	FALSE
CCR Appendix-IV: Cobalt, Total (mg/L)																														
CCR-BK-1	15/18	17%	0.0005-0.0005	0.00074	0.000505	0.00229	0.0028	5.196E-07	0.0007209	0.9741	0.006	mg/L	N	0	Y	N	Decreasing	Non-parametric				0.0062					0.006		
CCR-BK-2	9/18	50%	0.0005-0.0005	0.000878	0.0005	0.002205	0.0062	0.000001944	0.001394	1.588	0.006	mg/L	Y	1	Y	N	Stable												
CCR-LF-1	13/18	28%	0.0005-0.0005	0.000401	0.00045	0.000728	0.001	6.012E-08	0.0002452	0.6115	0.006	mg/L	N	0	N	N	Increase	Normal		0.00050	N			N	0.001	N		N	FALSE
CCR-LF-2	18/18	0%	-	0.00958	0.0099	0.01315	0.014	0.000005884	0.002426	0.2533	0.006	mg/L	Y	17	Y	N	Increase	Normal		0.01200	Y			Y	0.018	N		Y	FALSE [1]
CCR-LF-3	13/18	28%	0.0005-0.0005	0.00044	0.00046	0.0007115	0.00072	2.12E-08	0.0001456	0.3309	0.006	mg/L	N	0	N	N	Stable	Normal		0.00030	Y			N	0.001	N		N	FALSE
CCR-LF-4	18/18	0%	-	0.00109	0.0011	0.0018	0.0018	1.556E-07	0.0003945	0.3607	0.006	mg/L	N	0	Y	N	Stable	Normal		0.00084	Y			N	0.003	N		N	FALSE
CCR-LF-5	13/18	28%	0.0005-0.005	0.000822	0.000345	0.003555	0.0033	0.000001626	0.001275	1.552	0.006	mg/L	N	0	Y	N	Stable	Non-parametric		0.00050	N			N	0.005	N		N	FALSE
CCR-LF-6	15/18	17%	0.0005-0.0005	0.00123	0.00033	0.003131	0.016	0.00001363	0.003691	3	0.006	mg/L	Y	1	Y	N	Increase	Normal	Non-parametric	0.00051	Y		0.00021	N	0.001	N		N	FALSE
CCR Appendix-III: Fluoride (mg/L)																														
CCR-BK-1	17/18	6%	0.23-0.23	2.608	2.72	2.996	3.04	0.017504	0.37424	1.1496	4	mg/L	N	0	Y	N	Stable	Non-parametric				0.380					4.000		
CCR-BK-2	17/18	6%	0.12-0.12	1.296	1.24	2.148	2.72	0.023936	0.4376	2.6976	4	mg/L	N	0	N	N	Stable												
CCR-LF-1	15/18	17%	0.1-0.14	1.816	1.92	2.472	2.56	0.028936	0.48112	2.1224	4	mg/L	N	0	N	N	Decrease			0.14	N			N				N	FALSE
CCR-LF-2	2/18	89%	1-25	27.52	20	112	33.6	232.4	43.12	12.528	4	mg/L	Y	8	NA	NA	NA		Non-parametric	2.50	N		1.00	Y				N	FALSE
CCR-LF-3	16/18	11%	0.1-0.25	1.768	1.64	2.72	2.72	0.042896	0.58584	2.6496	4	mg/L	N	0	N	N	Stable			0.18	Y			N				N	FALSE
CCR-LF-4	7/18	61%	1-2.5	8.08	8	20	4.08	4.2704	5.8448	5.7936	4	mg/L	N	0	N	N	Stable			0.34	Y			N				N	FALSE
CCR-LF-5	14/18	22%	0.5-1	2.488	1.84	5.8	3.04	0.34696	1.6656	5.3536	4	mg/L	N	0	Y	N	Increase			0.20	Y			N				N	FALSE
CCR-LF-6	18/18	0%	-	2.568	2.56	3.904	4.08	0.074088	0.76984	2.3976	4	mg/L	N	0	N	N	Stable			0.25	Y			N				N	FALSE

TABLE I
SUMMARY OF ASSESSMENT MONITORING STATISTICAL EVALUATION - MAY 2022
A.B. BROWN GENERATING STATION - LANDFILL
PREPARED: JULY 20, 2022

														MCL Comparison		Entire Data					Inter-well Analysis					Intra-well Analysis		GWPS		
Location Id	Frequency of Detection	Percent Non-Detects	Range of Non-Detect	Mean	50th Percentile (Median)	95th Percentile	Maximum Detect	Variance	Standard Deviation	Coefficient of Variance	CCR MCL/RSL	Report Result Unit	Detection Exceedances (Y/N)	Number of Detection Exceedances	Outlier Detected	Outlier Removed	Trend	Distribution Group*	Distribution Well*	May 2022 Concentration	Detect?	Upper Tolerance Limit	Lower Confidence Limit (LCL)	SSI (Exceedance above Background at Individual Well)	Upper Prediction Limit	Exceedance above Background at Individual Well	Groundwater Protection Standard (Higher of MCL/RSL or Upper Tolerance Limit)	Exceedance above GWPS at Individual Well	SSL
CCR Appendix-IV: Lead, Total (mg/L)																														
CCR-BK-1	16/18	11%	0.001-0.001	0.00105	0.00078	0.00205	0.0022	2.736E-07	0.0007398	1.4084	0.015	mg/L	N	0	N	N	Stable	Non-parametric				0.011					0.015		
CCR-BK-2	7/18	61%	0.001-0.001	0.00338	0.002	0.0097	0.022	0.000011484	0.004792	2.84	0.015	mg/L	N	0	Y	N	Stable													
CCR-LF-1	9/17	47%	0.001-0.001	0.00163	0.002	0.00276	0.0038	0.000000375	0.000866	1.0628	0.015	mg/L	N	0	Y	N	Stable			0.00100	N			N				N	FALSE
CCR-LF-2	10/17	41%	0.001-0.025	0.00956	0.00192	0.0305	0.0028	0.00008986	0.013406	2.804	0.015	mg/L	N	0	Y	N	Stable			0.00053	Y			N				N	FALSE
CCR-LF-3	2/17	88%	0.00047-0.001	0.001718	0.002	0.002	0.000148	2.044E-07	0.0006392	0.7442	0.015	mg/L	N	0	NA	NA	NA			0.00100	N			N				N	FALSE
CCR-LF-4	9/17	47%	0.001-0.01	0.0138	0.002	0.0683	0.158	0.0006956	0.0373	5.406	0.015	mg/L	Y	2	Y	N	Stable			0.00058	Y			N				N	FALSE
CCR-LF-5	8/17	53%	0.0004-0.01	0.00246	0.002	0.00856	0.0024	0.000010216	0.00452	3.668	0.015	mg/L	N	0	Y	N	Stable			0.00100	N			N				N	FALSE
CCR-LF-6	4/17	76%	0.00024-0.001	0.00186	0.002	0.00354	0.0064	9.282E-07	0.0013624	1.4654	0.015	mg/L	N	0	Y	N	NA			0.00100	N			N				N	FALSE
CCR Appendix-IV: Lithium, Total (mg/L)																														
CCR-BK-1	4/18	78%	0.005-0.05	0.0251	0.00755	0.05	0.0086	0.0005284	0.02299	0.9175	0.04	mg/L	N	0	N	N	NA	Non-parametric				0.050					0.050		
CCR-BK-2	3/18	83%	0.005-0.05	0.03	0.05	0.05	0.0043	0.0005314	0.02305	0.7686	0.04	mg/L	N	0	N	N	NA													
CCR-LF-1	10/18	44%	0.0059-0.05	0.0231	0.0088	0.05	0.01	0.0004907	0.02215	0.9592	0.04	mg/L	N	0	N	N	Decrease	Non-parametric		0.0038	Y			N	0.050	N		N	FALSE
CCR-LF-2	13/18	28%	0.005-0.25	0.0446	0.0265	0.148	0.041	0.003356	0.05793	1.3	0.04	mg/L	Y	1	Y	N	Stable	Non-parametric		0.0160	Y			N	0.250	N		N	FALSE
CCR-LF-3	3/18	83%	0.005-0.05	0.0261	0.0139	0.05	0.018	0.0004942	0.02223	0.8525	0.04	mg/L	N	0	N	N	NA	Non-parametric		0.0050	N			N	0.050	N		N	FALSE
CCR-LF-4	18/18	0%	-	0.0842	0.087	0.1115	0.12	0.0003589	0.01894	0.2251	0.04	mg/L	Y	17	N	N	Decrease	Normal		0.0790	Y			Y	0.154	N		Y	FALSE [1]
CCR-LF-5	17/18	6%	0.05-0.05	0.0248	0.0235	0.03385	0.031	0.00005285	0.00727	0.2928	0.04	mg/L	N	0	Y	N	Stable	Non-parametric		0.0190	Y			N	0.050	N		N	FALSE
CCR-LF-6	18/18	0%	-	0.0189	0.019	0.023	0.023	0.000007232	0.002689	0.142	0.04	mg/L	N	0	N	N	Stable	Normal		0.0150	Y			N	0.029	N		N	FALSE
CCR Appendix-IV: Mercury, Total (mg/L)																														
CCR-BK-1	0/17	100%	0.0002-0.0002	0.0004	0.0004	0.0004		1.2834E-22	1.6022E-11	8.01E-08	0.002	mg/L	N	0	NA	NA	NA	Non-parametric				0.0002					0.002		
CCR-BK-2	2/17	88%	0.0002-0.0002	0.000388	0.0004	0.0004	0.0004	1.1408E-09	0.00004776	0.246	0.002	mg/L	N	0	NA	NA	NA													
CCR-LF-1	1/17	94%	0.0002-0.0002	0.000392	0.0004	0.0004	0.00026	5.59E-10	0.00003344	0.1707	0.002	mg/L	N	0	NA	NA	NA			0.0001	Y			N				N	FALSE
CCR-LF-2	0/17	100%	0.0002-0.0002	0.0004	0.0004	0.0004		1.2834E-22	1.6022E-11	8.01E-08	0.002	mg/L	N	0	NA	NA	NA			0.0002	N			N				N	FALSE
CCR-LF-3	0/17	100%	0.0002-0.0002	0.0004	0.0004	0.0004		1.2834E-22	1.6022E-11	8.01E-08	0.002	mg/L	N	0	NA	NA	NA			0.0002	N			N				N	FALSE
CCR-LF-4	0/17	100%	0.0002-0.0002	0.0004	0.0004	0.0004		1.2834E-22	1.6022E-11	8.01E-08	0.002	mg/L	N	0	NA	NA	NA			0.0002	N			N				N	FALSE
CCR-LF-5	11/17	35%	0.0002-0.0002	0.000284	0.0003	0.0004	0.00034	5.462E-09	0.0001045	0.735	0.002	mg/L	N	0	N	N	Stable			0.0002	Y			N				N	FALSE
CCR-LF-6	0/17	100%	0.0002-0.0002	0.0004	0.0004	0.0004		1.2834E-22	1.6022E-11	8.01E-08	0.002	mg/L	N	0	NA	NA	NA			0.0002	N			N				N	FALSE
CCR Appendix-IV: Molybdenum, Total (mg/L)																														
CCR-BK-1	16/18	11%	0.005-0.005	0.00181	0.00135	0.005	0.0034	0.000001884	0.001372	0.758	0.1	mg/L	N	0	N	N	Decrease	Non-parametric				0.005					0.100		
CCR-BK-2	9/18	50%	0.005-0.005	0.00305	0.00375	0.005	0.0025	0.000004254	0.002062	0.6771	0.1	mg/L	N	0	N	N	Stable													
CCR-LF-1	16/18	11%	0.005-0.005	0.00155	0.00115	0.005	0.0016	0.000001654	0.001286	0.8295	0.1	mg/L	N	0	Y	N	Decrease			0.0007	Y			N				N	FALSE
CCR-LF-2	12/18	33%	0.05-0.13	0.0229	0.00315	0.062	0.0048	0.001179	0.03434	1.498	0.1	mg/L	N	0	Y	N	Stable			0.0022	Y			N				N	FALSE
CCR-LF-3	17/18	6%	0.005-0.005	0.00193	0.0014	0.00509	0.0056	0.000001913	0.001383	0.7172	0.1	mg/L	N	0	Y	N	Increase			0.0009	Y			N				N	FALSE
CCR-LF-4	17/18	6%	0.005-0.005	0.0208	0.022	0.0273	0.029	0.00003026	0.005501	0.2641	0.1	mg/L	N	0	Y	N	Stable			0.0290	Y			Y				N	FALSE
CCR-LF-5	11/18	39%	0.005-0.05	0.00498	0.000935	0.01175	0.0023	0.0001302	0.01141	2.291	0.1	mg/L	N	0	Y	N	Stable			0.0006	Y			N				N	FALSE
CCR-LF-6	14/18	22%	0.005-0.005	0.00227	0.0012	0.00524	0.0066	0.000004067	0.002017	0.8895	0.1	mg/L	N	0	N	N	Stable			0.0007	Y			N				N	FALSE
CCR Appendix-IV: Radium-226 & 228 (pCi/L)																														
CCR-BK-1	11/17	35%	0.121-0.336	2.088	1.766	4.844	9.84	1.028	2.028	3.862	5	pCi/L	N	0	Y	N	Stable	Non-parametric				3.1					5.00		
CCR-BK-2	4/17	76%	-0.0961-2.74	2.624	1.06	14.392	12.52	7.512	5.484	6.108	5	pCi/L	N	0	N	N	Stable													
CCR-LF-1	17/17	0%	-	4.76	2.984	12.48	32.28	11.856	6.888	5.768	5	pCi/L	Y	2	Y	N	Stable		Normal	1.3	Y		1.87	N				N	FALSE
CCR-LF-2	17/17	0%	-	8.52	8.64	12.66	15.48	1.5224	2.468	1.134	5	pCi/L	N	0	Y	N	Increase			2.9	Y			N				N	FALSE
CCR-LF-3	9/17	47%	0.188-1.68	2.224	1.852	4.98	4.4	0.4796	1.3848	2.486	5	pCi/L	N	0	Y	N	Stable			0.6	Y			N				N	FALSE
CCR-LF-4	17/17	0%	-	18.64	18.48	27.88	32.56	8.208	5.732	1.228	5	pCi/L	Y	12	N	N	Stable			4.8	Y			Y				N	FALSE
CCR-LF-5	5/17	71%	-0.0225-0.494	1.8	1.176	13.34	11.12	6.016	4.904	6.98	5	pCi/L	N	0	NA	NA	NA			5.0	N			Y				N	FALSE
CCR-LF-6	6/17	65%	0.101-0.48	2.868	1.224	21.532	26.12	12.308	7.016	7.344	5	pCi/L	Y	2	NA	NA	NA		Non-parametric	5.0	N		0.24	Y				N	FALSE
CCR Appendix-IV: Selenium, Total (mg/L)																														
CCR-BK-1	3/18	83%	0.005-0.005	0.0085	0.01	0.01	0.00134	0.000005748	0.00339	0.7972	0.05	mg/L	N	0	NA	NA	NA	Non-parametric				0.005					0.050		
CCR-BK-2	2/18	89%	0.005-0.005	0.00904	0.01	0.01	0.00196	0.000003728	0.00273	0.6034	0.05	mg/L	N	0	NA	NA	NA													
CCR-LF-1	4/17	76%	0.005-0.005	0.00816	0.01	0.01	0.0026	0.00000573	0.003386	0.8306	0.05	mg/L	N	0	NA	NA	NA			0.0050	N			N				N	FALSE
CCR-LF-2	11/17	35%	0.05-0.13	0.0484	0.0068	0.156	0.0112	0.00237	0.06886	2.846	0.05	mg/L	N	0	Y	N	Increase			0.0019	Y			N				N	FALSE
CCR-LF-3	10/17	41%	0.005-0.005	0.0063	0.0044	0.01	0.0048	0.000005128	0.003202	1.0176	0.05	mg/L	N	0	N	N	Stable			0.0050	N			N				N	FALSE
CCR-LF-4	3/17	82%	0.005-0.05	0.0296	0.01	0.1	0.0014	0.0007902	0.03976	2.684	0.05	mg/L	N	0	NA	NA	NA			0.0050	N			N				N	FALSE
CCR-LF-5	1/17	94%	0.005-0.05	0.01476	0.01	0.0415	0.00108	0.0002362	0.02174	2.942	0.05	mg/L	N	0	NA	NA	NA			0.0050	N			N				N	FALSE
CCR-LF-6	3/17	82%	0.005-0.005	0.00882	0.01	0.01	0.0046	0.000003466	0.002634	0.5966	0.05	mg/L	N	0	NA	NA	NA			0.0050	N			N				N	FALSE
CCR Appendix-IV: Thallium, Total (mg/L)																														
CCR-BK-1	2/17	88%	0.001-0.001	0.0018	0.002	0.002	0.00054	1.5636E-07	0.0005592	0.621	0.002	mg/L	N	0	NA	NA	NA	Non-parametric				0.001					0.002		
CCR-BK-2	3/17	82%	0.001-0.001	0.001698	0.002	0.002	0.00038	2.212E-07	0.0006652	0.7838	0.002	mg/L	N	0	NA	NA	NA													
CCR-LF-1	1/16	94%	0.001-0.001	0.001882	0.002	0.002	0.00011	1.0802E-07	0.0004648	0.494	0.002	mg/L	N	0	NA	NA	NA			0.0010	N			N				N	FALSE
CCR-LF-2	9/16	44%	0.001-0.025	0.009	0.00148	0.0335	0.0015	0.00009116	0.013502	3.002	0.002	mg/L	N	0	N	N	Increase			0.0007	Y			N				N	FALSE
CCR-LF-3	6/16	62%	0.001-0.001	0.00138	0.002	0.002	0.0008	3.444E-07	0.00083	1.2034	0.002	mg/L	N	0	N	N	Stable			0.0010	N			N				N	FALSE
CCR-LF-4	4/16	75%	0.001-0.01	0.00606	0.002	0.02	0.0004	0.00003372	0.008214	2.712	0.002	mg/L	N	0	N	N	Stable			0.0010	N			N				N	FALSE
CCR-LF-5	3/16	81%	0.001-0.01	0.0028	0.002	0.0101	0.0006	0.00001042	0.004566	3.262	0.002	mg/L	N	0	NA	NA	NA			0.0010	N			N				N	FALSE
CCR-LF-6	3/16	81%	0.001-0.001	0.001674	0.002	0.002	0.00034	2.382E-07	0.0006902	0.8246	0.002	mg/L	N	0	NA	NA	NA			0.0010	N			N				N	FALSE

Notes:

1 - Constituent concentration compared using intra-well analysis and did not exceede the upper prediction limit and therefore was not detected at a statistically significant level.
** - Determined using the Shapiro-Wilks statistical test at a 5% significance level and a residual probability plot.*
CCR = Coal combustion residual
GWPS = Groundwater Protection Standards
mg/L = milligrams per liter
MCL = Maximum containment level
N/A = Not available
NT = Not tested
pCi/L = Pico curies per liter of air
RSL = Regional screening level
SSI = Statistically significant increase
SSL = Statistically significant level

APPENDIX B
Field Forms

Low-Flow Test Report:

Test Date / Time: 5/19/2022 10:39:10 AM
Project: AB BROWN (24)
Operator Name: Jon Hill

Location Name: FD-PZ-1 **Well Diameter: 1 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 10 ft** **Total Depth: 20 ft** **Initial Depth to Water: 7.17 ft**	**Pump Type: Peristaltic** **Tubing Type: LDPE** **Pump Intake From TOC: 19 ft** **Estimated Total Volume Pumped: 0 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 707269**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/19/2022 10:39 AM	00:00	7.59 pH	21.33 °C	7,463.7 µS/cm	2.78 mg/L	1,314.4 NTU	93.6 mV	218.54 cm	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/19/2022 11:07:27 AM
Project: AB BROWN (25)
Operator Name: Jon Hill

Location Name: FD-PZ-2 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 10 ft** **Total Depth: 20 ft** **Initial Depth to Water: 2.8 ft**	**Pump Type: Peristaltic** **Tubing Type: LDPE** **Pump Intake From TOC: 19 ft** **Estimated Total Volume Pumped: 0 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 707269**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/19/2022 11:07 AM	00:00	7.07 pH	21.18 °C	943.50 µS/cm	1.66 mg/L	104.16 NTU	117.5 mV	85.34 cm	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/19/2022 9:58:26 AM
Project: AB BROWN (23)
Operator Name: Jon Hill

Location Name: MH-1 **Initial Depth to Water: 9.18 ft**	**Pump Type: Peristaltic** **Tubing Type: LDPE** **Pump Intake From TOC: 10 ft** **Estimated Total Volume Pumped: 0 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 707269**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/19/2022 9:58 AM	00:00	8.77 pH	18.01 °C	7,801.7 µS/cm	0.24 mg/L	0.71 NTU	33.3 mV	279.81 cm	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/19/2022 9:28:42 AM
Project: AB BROWN (22)
Operator Name: Jon Hill

Location Name: MH-2 **Initial Depth to Water: 9.97 ft**	**Pump Type: Sample Pro** **Tubing Type: LDPE** **Pump Intake From TOC: 11 ft** **Estimated Total Volume Pumped: 0 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 707269**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/19/2022 9:28 AM	00:00	12.57 pH	21.32 °C	23,849 µS/cm	8.18 mg/L	692.81 NTU	-110.3 mV	303.89 cm	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/17/2022 8:52:26 AM
Project: AB BROWN
Operator Name: Jon Hill

Location Name: CCR-AP-1R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 27 ft** **Total Depth: 37 ft** **Initial Depth to Water: 16.08 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 32 ft** **Estimated Total Volume Pumped: 3600 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.24 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 745383**

Test Notes:
1.0 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/17/2022 8:52 AM	00:00	6.88 pH	15.22 °C	1,300.8 µS/cm	0.94 mg/L	3.52 NTU	217.5 mV	16.08 ft	200.00 ml/min
5/17/2022 8:55 AM	03:00	6.84 pH	14.84 °C	1,260.3 µS/cm	0.25 mg/L	0.65 NTU	215.4 mV	16.12 ft	200.00 ml/min
5/17/2022 8:58 AM	06:00	6.81 pH	14.95 °C	1,256.4 µS/cm	0.17 mg/L	1.03 NTU	215.0 mV	16.17 ft	200.00 ml/min
5/17/2022 9:01 AM	09:00	6.79 pH	14.90 °C	1,260.1 µS/cm	0.15 mg/L	0.57 NTU	215.0 mV	16.22 ft	200.00 ml/min
5/17/2022 9:04 AM	12:00	6.77 pH	15.00 °C	1,261.9 µS/cm	0.15 mg/L	0.62 NTU	214.8 mV	16.27 ft	200.00 ml/min
5/17/2022 9:07 AM	15:00	6.76 pH	15.01 °C	1,265.8 µS/cm	0.15 mg/L	0.40 NTU	214.6 mV	16.30 ft	200.00 ml/min
5/17/2022 9:10 AM	18:00	6.75 pH	15.33 °C	1,256.7 µS/cm	0.32 mg/L	1.83 NTU	214.1 mV	16.32 ft	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/18/2022 8:55:51 AM
Project: AB BROWN (12)
Operator Name: Jon Hill

Location Name: CCR-AP-2R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 43.3 ft** **Total Depth: 53.3 ft** **Initial Depth to Water: 42.47 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 48 ft** **Estimated Total Volume Pumped: 9600 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.18 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 745383**

Test Notes:
2.5 gal.ons purgec

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/18/2022 8:55 AM	00:00	6.40 pH	17.56 °C	2,560.3 µS/cm	0.63 mg/L		144.3 mV	42.47 ft	200.00 ml/min
5/18/2022 8:58 AM	03:00	6.44 pH	17.57 °C	2,334.5 µS/cm	0.35 mg/L		133.5 mV	42.50 ft	200.00 ml/min
5/18/2022 9:01 AM	06:00	6.45 pH	17.58 °C	2,306.2 µS/cm	0.28 mg/L		131.2 mV	42.50 ft	200.00 ml/min
5/18/2022 9:04 AM	09:00	6.46 pH	17.53 °C	2,296.1 µS/cm	0.24 mg/L		129.8 mV	42.51 ft	200.00 ml/min
5/18/2022 9:07 AM	12:00	6.48 pH	17.49 °C	2,291.4 µS/cm	0.23 mg/L		129.4 mV	42.52 ft	200.00 ml/min
5/18/2022 9:10 AM	15:00	6.49 pH	17.46 °C	2,302.3 µS/cm	0.21 mg/L		129.8 mV	42.52 ft	200.00 ml/min
5/18/2022 9:13 AM	18:00	6.48 pH	17.46 °C	2,822.1 µS/cm	0.20 mg/L		148.4 mV	42.53 ft	200.00 ml/min
5/18/2022 9:16 AM	21:00	6.51 pH	17.45 °C	3,624.7 µS/cm	0.19 mg/L		164.8 mV	42.51 ft	200.00 ml/min
5/18/2022 9:19 AM	24:00	6.53 pH	17.44 °C	4,240.3 µS/cm	0.18 mg/L		171.0 mV	42.50 ft	200.00 ml/min
5/18/2022 9:22 AM	27:00	6.54 pH	17.44 °C	4,532.5 µS/cm	0.18 mg/L		174.4 mV	42.54 ft	200.00 ml/min
5/18/2022 9:25 AM	30:00	6.55 pH	17.44 °C	4,786.7 µS/cm	0.19 mg/L		176.5 mV	42.55 ft	200.00 ml/min
5/18/2022 9:28 AM	33:00	6.56 pH	17.45 °C	4,956.0 µS/cm	0.20 mg/L		178.0 mV	42.57 ft	200.00 ml/min
5/18/2022 9:31 AM	36:00	6.57 pH	17.43 °C	5,134.9 µS/cm	0.22 mg/L		179.3 mV	42.60 ft	200.00 ml/min
5/18/2022 9:34 AM	39:00	6.58 pH	17.43 °C	5,242.5 µS/cm	0.24 mg/L		180.4 mV	42.61 ft	200.00 ml/min
5/18/2022 9:37 AM	42:00	6.59 pH	17.42 °C	5,350.1 µS/cm	0.27 mg/L		181.2 mV	42.61 ft	200.00 ml/min

5/18/2022 9:40 AM	45:00	6.60 pH	17.44 °C	5,438.5 µS/cm	0.30 mg/L		182.0 mV	42.64 ft	200.00 ml/min
5/18/2022 9:43 AM	48:00	6.61 pH	17.44 °C	5,530.9 µS/cm	0.32 mg/L		182.7 mV	42.65 ft	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/18/2022 10:05:20 AM
Project: AB BROWN (13)
Operator Name: Jon Hill

Location Name: CCR-AP-2I **Well Diameter: 2 cm** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 83 ft** **Total Depth: 93 ft** **Initial Depth to Water: 31.22 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 91 ft** **Estimated Total Volume Pumped: 4800 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.29 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 745383**

Test Notes:
0.75 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/18/2022 10:05 AM	00:00	7.46 pH	17.12 °C	1,254.1 µS/cm	1.53 mg/L		140.9 mV	31.22 ft	200.00 ml/min
5/18/2022 10:08 AM	03:00	7.52 pH	17.13 °C	1,231.9 µS/cm	0.95 mg/L		134.0 mV	31.27 ft	200.00 ml/min
5/18/2022 10:11 AM	06:00	7.47 pH	17.15 °C	1,221.6 µS/cm	0.73 mg/L		123.6 mV	31.34 ft	200.00 ml/min
5/18/2022 10:14 AM	09:00	7.45 pH	17.12 °C	1,220.8 µS/cm	0.60 mg/L		115.1 mV	31.37 ft	200.00 ml/min
5/18/2022 10:17 AM	12:00	7.43 pH	17.12 °C	1,218.4 µS/cm	0.51 mg/L		107.3 mV	31.40 ft	200.00 ml/min
5/18/2022 10:20 AM	15:00	7.41 pH	17.13 °C	1,220.1 µS/cm	0.47 mg/L		100.8 mV	31.43 ft	200.00 ml/min
5/18/2022 10:23 AM	18:00	7.39 pH	17.12 °C	1,220.5 µS/cm	0.42 mg/L		94.8 mV	31.46 ft	200.00 ml/min
5/18/2022 10:26 AM	21:00	7.37 pH	17.12 °C	1,220.9 µS/cm	0.42 mg/L		89.5 mV	31.49 ft	200.00 ml/min
5/18/2022 10:29 AM	24:00	7.36 pH	17.14 °C	1,220.8 µS/cm	0.41 mg/L		84.5 mV	31.51 ft	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/17/2022 1:35:57 PM
Project: AB BROWN (6)
Operator Name: Jon Hill

Location Name: CCR-AP-3R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 37 ft** **Total Depth: 47 ft** **Initial Depth to Water: 25 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 38 ft** **Estimated Total Volume Pumped: 4200 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.03 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 745383**

Test Notes:
1.5 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/17/2022 1:35 PM	00:00	6.74 pH	18.95 °C	8,343.9 µS/cm	0.72 mg/L	111.14 NTU	145.4 mV	25.00 ft	200.00 ml/min
5/17/2022 1:38 PM	03:00	6.85 pH	18.38 °C	8,442.3 µS/cm	0.50 mg/L	67.50 NTU	142.6 mV	25.01 ft	200.00 ml/min
5/17/2022 1:41 PM	06:00	6.90 pH	18.24 °C	8,410.3 µS/cm	0.43 mg/L	88.32 NTU	140.6 mV	25.04 ft	200.00 ml/min
5/17/2022 1:44 PM	09:00	6.93 pH	18.31 °C	8,407.5 µS/cm	0.41 mg/L	104.55 NTU	139.5 mV	25.05 ft	200.00 ml/min
5/17/2022 1:47 PM	12:00	6.95 pH	18.25 °C	8,392.3 µS/cm	0.39 mg/L	131.46 NTU	138.8 mV	25.05 ft	200.00 ml/min
5/17/2022 1:50 PM	15:00	6.96 pH	18.13 °C	8,395.8 µS/cm	0.39 mg/L	145.65 NTU	138.5 mV	25.05 ft	200.00 ml/min
5/17/2022 1:53 PM	18:00	6.97 pH	18.17 °C	8,395.0 µS/cm	0.36 mg/L	181.24 NTU	138.3 mV	25.04 ft	200.00 ml/min
5/17/2022 1:56 PM	21:00	6.98 pH	18.16 °C	8,396.8 µS/cm	0.36 mg/L	196.75 NTU	138.3 mV	25.03 ft	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/18/2022 8:18:24 AM
Project: AB BROWN (11)
Operator Name: Jon Hill

Location Name: CCR-AP-3I **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 67.5 ft** **Total Depth: 77.5 ft** **Initial Depth to Water: 30.3 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 73 ft** **Estimated Total Volume Pumped: 1200 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 4.5 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 745383**

Test Notes:
Pumped well dry on 5.17. Sampled well on 5.18

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/18/2022 8:18 AM	00:00	7.63 pH	16.35 °C	1,203.5 µS/cm	2.19 mg/L		165.2 mV	30.30 ft	200.00 ml/min
5/18/2022 8:21 AM	03:00	7.67 pH	16.42 °C	1,360.9 µS/cm	0.21 mg/L		158.4 mV	32.77 ft	200.00 ml/min
5/18/2022 8:24 AM	06:00	7.64 pH	16.62 °C	1,362.3 µS/cm	0.14 mg/L		149.3 mV	34.80 ft	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/17/2022 9:34:50 AM
Project: AB BROWN (2)
Operator Name: Jon Hill

Location Name: CCR-AP-4R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 38 ft** **Total Depth: 48 ft** **Initial Depth to Water: 33.03 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 43 ft** **Estimated Total Volume Pumped: 6000 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.19 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 745383**

Test Notes:
2.0 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/17/2022 9:34 AM	00:00	6.67 pH	14.63 °C	1,401.5 µS/cm	7.21 mg/L	128.94 NTU	190.1 mV	33.03 ft	200.00 ml/min
5/17/2022 9:37 AM	03:00	6.65 pH	14.31 °C	1,443.4 µS/cm	6.72 mg/L	192.96 NTU	186.2 mV	33.07 ft	200.00 ml/min
5/17/2022 9:40 AM	06:00	6.67 pH	14.32 °C	1,470.2 µS/cm	6.72 mg/L	127.41 NTU	183.7 mV	33.10 ft	200.00 ml/min
5/17/2022 9:43 AM	09:00	6.69 pH	14.31 °C	1,376.6 µS/cm	6.75 mg/L	103.58 NTU	182.0 mV	33.14 ft	200.00 ml/min
5/17/2022 9:46 AM	12:00	6.70 pH	14.37 °C	1,360.0 µS/cm	6.78 mg/L	53.21 NTU	180.6 mV	33.16 ft	200.00 ml/min
5/17/2022 9:49 AM	15:00	6.71 pH	14.32 °C	1,358.2 µS/cm	6.82 mg/L	46.45 NTU	179.7 mV	33.18 ft	200.00 ml/min
5/17/2022 9:52 AM	18:00	6.72 pH	14.41 °C	1,322.6 µS/cm	6.85 mg/L	34.83 NTU	179.0 mV	33.20 ft	200.00 ml/min
5/17/2022 9:55 AM	21:00	6.72 pH	14.36 °C	1,339.3 µS/cm	6.91 mg/L	29.03 NTU	178.5 mV	33.20 ft	200.00 ml/min
5/17/2022 9:58 AM	24:00	6.73 pH	14.42 °C	1,298.2 µS/cm	6.92 mg/L	19.06 NTU	178.2 mV	33.21 ft	200.00 ml/min
5/17/2022 10:01 AM	27:00	6.73 pH	14.41 °C	1,310.0 µS/cm	6.96 mg/L	13.08 NTU	178.0 mV	33.22 ft	200.00 ml/min
5/17/2022 10:04 AM	30:00	6.73 pH	14.42 °C	1,311.3 µS/cm	6.92 mg/L	14.53 NTU	178.1 mV	33.22 ft	200.00 ml/min

Samples

Sample ID: DUP-1, FB-1	**Description:**

Low-Flow Test Report:

Test Date / Time: 5/18/2022 7:35:02 AM
Project: AB BROWN (10)
Operator Name: Jon Hill

Location Name: CCR-AP-5R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 35 ft** **Total Depth: 45 ft** **Initial Depth to Water: 35.8 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 40 ft** **Estimated Total Volume Pumped: 3600 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.15 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 745383**

Test Notes:
1.0 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/18/2022 7:35 AM	00:00	6.67 pH	16.62 °C	7,359.1 µS/cm	1.34 mg/L		197.3 mV	35.80 ft	200.00 ml/min
5/18/2022 7:38 AM	03:00	6.75 pH	16.56 °C	7,371.1 µS/cm	0.65 mg/L		196.8 mV	35.82 ft	200.00 ml/min
5/18/2022 7:41 AM	06:00	6.77 pH	16.51 °C	7,367.3 µS/cm	0.47 mg/L		196.7 mV	35.85 ft	200.00 ml/min
5/18/2022 7:44 AM	09:00	6.78 pH	16.54 °C	7,356.5 µS/cm	0.39 mg/L		195.1 mV	35.89 ft	200.00 ml/min
5/18/2022 7:47 AM	12:00	6.78 pH	16.53 °C	7,359.7 µS/cm	0.34 mg/L		192.9 mV	35.92 ft	200.00 ml/min
5/18/2022 7:50 AM	15:00	6.79 pH	16.52 °C	7,352.4 µS/cm	0.31 mg/L		192.0 mV	35.94 ft	200.00 ml/min
5/18/2022 7:53 AM	18:00	6.79 pH	16.53 °C	7,356.7 µS/cm	0.31 mg/L		192.0 mV	35.95 ft	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/17/2022 3:33:08 PM
Project: AB BROWN (8)
Operator Name: Jon Hill

Location Name: CCR-AP-6 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 29 ft** **Total Depth: 39 ft** **Initial Depth to Water: 17.71 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 34 ft** **Estimated Total Volume Pumped: 3600 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.28 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 745383**

Test Notes:
1.5 gallons purged. Faulty turbidity sensor

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/17/2022 3:33 PM	00:00	6.69 pH	14.64 °C	3,478.9 µS/cm	0.34 mg/L	174.79 NTU	121.3 mV	17.71 ft	200.00 ml/min
5/17/2022 3:36 PM	03:00	6.69 pH	14.22 °C	3,433.3 µS/cm	0.48 mg/L	136.70 NTU	121.2 mV	17.75 ft	200.00 ml/min
5/17/2022 3:39 PM	06:00	6.77 pH	14.15 °C	3,340.5 µS/cm	2.72 mg/L	152.47 NTU	120.5 mV	17.78 ft	200.00 ml/min
5/17/2022 3:42 PM	09:00	6.76 pH	14.15 °C	3,343.2 µS/cm	2.72 mg/L	163.58 NTU	120.0 mV	17.83 ft	200.00 ml/min
5/17/2022 3:45 PM	12:00	6.76 pH	14.24 °C	3,339.1 µS/cm	2.71 mg/L	207.13 NTU	119.1 mV	17.86 ft	200.00 ml/min
5/17/2022 3:48 PM	15:00	6.74 pH	14.13 °C	3,344.4 µS/cm	2.53 mg/L	274.70 NTU	117.8 mV	17.90 ft	200.00 ml/min
5/17/2022 3:51 PM	18:00	6.74 pH	14.24 °C	3,338.5 µS/cm	2.42 mg/L	334.69 NTU	116.2 mV	17.99 ft	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/17/2022 2:46:35 PM
Project: AB BROWN (7)
Operator Name: Jon Hill

Location Name: CCR-AP-7R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 43.5 ft** **Total Depth: 53.5 ft** **Initial Depth to Water: 35.25 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 49 ft** **Estimated Total Volume Pumped: 3600 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.05 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 745383**

Test Notes:
1.0 gallons purged. Faulty turbidity sensor. Sample clear

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/17/2022 2:46 PM	00:00	6.43 pH	15.02 °C	6,354.0 µS/cm	7.84 mg/L	57.52 NTU	123.7 mV	35.25 ft	200.00 ml/min
5/17/2022 2:49 PM	03:00	6.35 pH	14.31 °C	6,376.7 µS/cm	7.28 mg/L	152.10 NTU	123.3 mV	35.26 ft	200.00 ml/min
5/17/2022 2:52 PM	06:00	6.34 pH	14.41 °C	6,313.7 µS/cm	7.03 mg/L	324.88 NTU	124.3 mV	35.28 ft	200.00 ml/min
5/17/2022 2:55 PM	09:00	6.33 pH	14.21 °C	6,333.6 µS/cm	7.56 mg/L	579.69 NTU	125.5 mV	35.30 ft	200.00 ml/min
5/17/2022 2:58 PM	12:00	6.31 pH	14.29 °C	6,335.0 µS/cm	7.44 mg/L	923.64 NTU	126.8 mV	35.30 ft	200.00 ml/min
5/17/2022 3:01 PM	15:00	6.30 pH	14.24 °C	6,244.6 µS/cm	7.54 mg/L	1,290.1 NTU	128.0 mV	35.28 ft	200.00 ml/min
5/17/2022 3:04 PM	18:00	6.28 pH	14.27 °C	6,292.4 µS/cm	7.41 mg/L	1,427.8 NTU	129.1 mV	35.30 ft	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/18/2022 6:51:35 AM
Project: AB BROWN (9)
Operator Name: Jon Hill

Location Name: CCR-AP-8 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 6.2 ft** **Total Depth: 16.2 ft** **Initial Depth to Water: 3.8 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 11 ft** **Estimated Total Volume Pumped: 3600 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.26 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 745383**

Test Notes:
0.5 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/18/2022 6:51 AM	00:00	6.67 pH	18.12 °C	2,788.7 µS/cm	3.65 mg/L		159.3 mV	3.80 ft	200.00 ml/min
5/18/2022 6:54 AM	03:00	6.63 pH	18.20 °C	2,836.4 µS/cm	3.11 mg/L		159.2 mV	3.85 ft	200.00 ml/min
5/18/2022 6:57 AM	06:00	6.62 pH	18.31 °C	2,861.8 µS/cm	2.83 mg/L		158.9 mV	3.89 ft	200.00 ml/min
5/18/2022 7:00 AM	09:00	6.60 pH	18.31 °C	2,883.4 µS/cm	2.64 mg/L		158.7 mV	3.94 ft	200.00 ml/min
5/18/2022 7:03 AM	12:00	6.59 pH	18.38 °C	2,886.9 µS/cm	2.54 mg/L		158.5 mV	3.97 ft	200.00 ml/min
5/18/2022 7:06 AM	15:00	6.59 pH	18.45 °C	2,889.1 µS/cm	2.44 mg/L		158.1 mV	4.01 ft	200.00 ml/min
5/18/2022 7:09 AM	18:00	6.58 pH	18.53 °C	2,889.4 µS/cm	2.37 mg/L		158.0 mV	4.06 ft	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/18/2022 11:19:41 AM
Project: AB BROWN (15)
Operator Name: Jon Hill

Location Name: CCR-AP-9 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 25.2 ft** **Total Depth: 35.2 ft** **Initial Depth to Water: 8.55 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 30 ft** **Estimated Total Volume Pumped: 4200 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.65 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 707269**

Test Notes:
0.5 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/18/2022 11:19 AM	00:00	6.78 pH	17.18 °C	7,773.3 µS/cm	0.50 mg/L	101.70 NTU	-58.5 mV	8.55 ft	200.00 ml/min
5/18/2022 11:22 AM	03:00	6.80 pH	17.26 °C	7,821.1 µS/cm	0.37 mg/L	93.15 NTU	-64.6 mV	9.03 ft	200.00 ml/min
5/18/2022 11:25 AM	06:00	6.81 pH	17.29 °C	7,906.1 µS/cm	0.33 mg/L	75.88 NTU	-68.1 mV	9.07 ft	200.00 ml/min
5/18/2022 11:28 AM	09:00	6.82 pH	17.32 °C	7,979.1 µS/cm	0.29 mg/L	64.94 NTU	-70.9 mV	9.13 ft	200.00 ml/min
5/18/2022 11:31 AM	12:00	6.83 pH	17.39 °C	8,045.5 µS/cm	0.30 mg/L	54.65 NTU	-72.8 mV	9.14 ft	200.00 ml/min
5/18/2022 11:34 AM	15:00	6.84 pH	17.38 °C	8,120.4 µS/cm	0.30 mg/L	55.65 NTU	-74.2 mV	9.17 ft	200.00 ml/min
5/18/2022 11:37 AM	18:00	6.85 pH	17.34 °C	8,221.9 µS/cm	0.29 mg/L	41.01 NTU	-75.2 mV	9.19 ft	200.00 ml/min
5/18/2022 11:40 AM	21:00	6.86 pH	17.25 °C	8,342.6 µS/cm	0.29 mg/L	55.20 NTU	-76.4 mV	9.20 ft	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/17/2022 10:38:51 AM
Project: AB BROWN (3)
Operator Name: Jon Hill

Location Name: CCR-AP-10 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 33.2 ft** **Total Depth: 43.2 ft** **Initial Depth to Water: 35.3 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 38 ft** **Estimated Total Volume Pumped: 7200 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.23 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 745383**

Test Notes:
2.5 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/17/2022 10:38 AM	00:00	6.99 pH	14.54 °C	3,995.4 µS/cm	3.80 mg/L	346.45 NTU	225.8 mV	35.30 ft	200.00 ml/min
5/17/2022 10:41 AM	03:00	6.90 pH	14.56 °C	3,579.4 µS/cm	1.42 mg/L	299.48 NTU	224.0 mV	35.34 ft	200.00 ml/min
5/17/2022 10:44 AM	06:00	6.88 pH	14.53 °C	3,496.6 µS/cm	0.94 mg/L	305.93 NTU	223.4 mV	35.37 ft	200.00 ml/min
5/17/2022 10:47 AM	09:00	6.87 pH	14.55 °C	3,462.9 µS/cm	0.88 mg/L	225.07 NTU	223.3 mV	35.38 ft	200.00 ml/min
5/17/2022 10:50 AM	12:00	6.86 pH	14.56 °C	3,437.4 µS/cm	0.87 mg/L	92.03 NTU	223.3 mV	35.40 ft	200.00 ml/min
5/17/2022 10:53 AM	15:00	6.86 pH	14.55 °C	3,441.1 µS/cm	0.89 mg/L	180.12 NTU	223.4 mV	35.42 ft	200.00 ml/min
5/17/2022 10:56 AM	18:00	6.86 pH	14.52 °C	3,424.9 µS/cm	0.86 mg/L	117.57 NTU	223.4 mV	35.42 ft	200.00 ml/min
5/17/2022 10:59 AM	21:00	6.85 pH	14.52 °C	3,416.6 µS/cm	0.86 mg/L	118.35 NTU	223.5 mV	35.44 ft	200.00 ml/min
5/17/2022 11:02 AM	24:00	6.85 pH	14.54 °C	3,391.6 µS/cm	0.87 mg/L	83.73 NTU	223.5 mV	35.46 ft	200.00 ml/min
5/17/2022 11:05 AM	27:00	6.85 pH	14.49 °C	3,404.8 µS/cm	0.86 mg/L	79.42 NTU	223.6 mV	35.45 ft	200.00 ml/min
5/17/2022 11:08 AM	30:00	6.84 pH	14.55 °C	3,329.4 µS/cm	0.83 mg/L	66.44 NTU	223.6 mV	35.46 ft	200.00 ml/min
5/17/2022 11:11 AM	33:00	6.84 pH	14.44 °C	3,357.1 µS/cm	0.82 mg/L	46.63 NTU	223.6 mV	35.50 ft	200.00 ml/min
5/17/2022 11:14 AM	36:00	6.84 pH	14.57 °C	3,347.1 µS/cm	0.86 mg/L	47.72 NTU	223.5 mV	35.53 ft	200.00 ml/min

Samples

Sample ID: MS/MSD 1	Description:

Low-Flow Test Report:

Test Date / Time: 5/18/2022 12:53:32 PM
Project: AB BROWN (16)
Operator Name: Jon Hill

Location Name: CCR-AP-11 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 16 ft** **Total Depth: 26 ft** **Initial Depth to Water: 11.02 ft**	**Pump Type: Sample Pro** **Tubing Type: LDPE** **Pump Intake From TOC: 21 ft** **Estimated Total Volume Pumped: 18586.666 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.20 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 707269**

Test Notes:
6 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/18/2022 12:53 PM	00:00		17.31 °C	0.06 µS/cm	10.18 mg/L	34.80 NTU	95.9 mV	11.05 ft	200.00 ml/min
5/18/2022 12:56 PM	03:00	6.89 pH	13.88 °C	1,357.4 µS/cm	6.40 mg/L	11,116 NTU	138.0 mV	11.10 ft	200.00 ml/min
5/18/2022 12:59 PM	06:00	6.88 pH	13.80 °C	1,343.0 µS/cm	7.12 mg/L	8,562.9 NTU	152.3 mV	11.13 ft	200.00 ml/min
5/18/2022 1:02 PM	09:00	6.89 pH	13.93 °C	1,357.0 µS/cm	7.56 mg/L	9,948.0 NTU	160.2 mV		200.00 ml/min
5/18/2022 1:05 PM	12:09	6.92 pH	13.75 °C	1,355.0 µS/cm	8.09 mg/L	6,983.0 NTU	164.9 mV		200.00 ml/min
5/18/2022 1:08 PM	15:09	6.91 pH	13.69 °C	1,353.6 µS/cm	8.27 mg/L	5,578.8 NTU	169.5 mV		200.00 ml/min
5/18/2022 1:11 PM	18:09	6.92 pH	13.70 °C	1,344.6 µS/cm	8.66 mg/L	4,337.0 NTU	172.4 mV		200.00 ml/min
5/18/2022 1:14 PM	21:09	6.95 pH	13.77 °C	1,346.8 µS/cm	8.94 mg/L	3,516.4 NTU	173.8 mV		200.00 ml/min
5/18/2022 1:17 PM	24:09	6.96 pH	13.82 °C	1,344.5 µS/cm	8.97 mg/L	3,553.1 NTU	175.4 mV		200.00 ml/min
5/18/2022 1:20 PM	27:09	6.98 pH	13.73 °C	1,340.3 µS/cm	9.18 mg/L	2,448.6 NTU	176.5 mV		200.00 ml/min
5/18/2022 1:23 PM	30:09	6.99 pH	13.56 °C	1,338.0 µS/cm	9.42 mg/L	1,988.4 NTU	177.7 mV		200.00 ml/min
5/18/2022 1:26 PM	33:09	7.00 pH	13.63 °C	1,335.7 µS/cm	9.47 mg/L	1,578.4 NTU	178.7 mV		200.00 ml/min
5/18/2022 1:29 PM	36:09	6.96 pH	13.91 °C	1,307.7 µS/cm	8.57 mg/L	1,171.1 NTU	180.2 mV		200.00 ml/min
5/18/2022 1:32 PM	39:09	6.90 pH	13.94 °C	1,311.5 µS/cm	6.64 mg/L	1,001.6 NTU	181.7 mV		200.00 ml/min
5/18/2022 1:35 PM	42:09	6.91 pH	13.74 °C	1,315.9 µS/cm	6.66 mg/L	770.06 NTU	181.9 mV		200.00 ml/min

5/18/2022 1:38 PM	45:09	6.91 pH	13.90 °C	1,321.3 µS/cm	6.54 mg/L	705.93 NTU	182.1 mV		200.00 ml/min
5/18/2022 1:41 PM	48:09	6.92 pH	13.78 °C	1,186.6 µS/cm	6.39 mg/L	561.79 NTU	182.2 mV		200.00 ml/min
5/18/2022 1:44 PM	51:09	6.93 pH	13.86 °C	1,258.1 µS/cm	6.33 mg/L	521.78 NTU	182.4 mV		200.00 ml/min
5/18/2022 1:46 PM	52:40	7.00 pH	13.90 °C	1,320.1 µS/cm	7.72 mg/L	546.98 NTU	181.8 mV		200.00 ml/min
5/18/2022 1:49 PM	55:40	6.94 pH	13.77 °C	1,317.4 µS/cm	6.60 mg/L	315.00 NTU	182.3 mV		200.00 ml/min
5/18/2022 1:52 PM	58:40	6.95 pH	13.74 °C	1,284.5 µS/cm	6.68 mg/L	422.44 NTU	182.8 mV		200.00 ml/min
5/18/2022 1:55 PM	01:01:40	6.95 pH	13.66 °C	1,210.3 µS/cm	6.62 mg/L	329.29 NTU	183.5 mV		200.00 ml/min
5/18/2022 1:58 PM	01:04:40	6.96 pH	13.66 °C	1,318.1 µS/cm	6.72 mg/L	526.27 NTU	183.8 mV		200.00 ml/min
5/18/2022 2:01 PM	01:07:40	6.96 pH	13.65 °C	1,320.7 µS/cm	6.97 mg/L	305.49 NTU	184.6 mV		200.00 ml/min
5/18/2022 2:02 PM	01:08:56	7.03 pH	13.63 °C	1,120.0 µS/cm	7.92 mg/L	322.63 NTU	183.8 mV		200.00 ml/min
5/18/2022 2:05 PM	01:11:56	6.96 pH	13.53 °C	1,316.3 µS/cm	6.74 mg/L	335.42 NTU	184.7 mV		200.00 ml/min
5/18/2022 2:08 PM	01:14:56	6.95 pH	13.62 °C	1,104.9 µS/cm	6.77 mg/L	239.10 NTU	185.6 mV		200.00 ml/min
5/18/2022 2:11 PM	01:17:56	6.95 pH	13.74 °C	1,146.8 µS/cm	6.99 mg/L	293.81 NTU	186.1 mV		200.00 ml/min
5/18/2022 2:14 PM	01:20:56	6.95 pH	13.72 °C	1,169.3 µS/cm	6.82 mg/L	170.83 NTU	186.5 mV		200.00 ml/min
5/18/2022 2:17 PM	01:23:56	6.95 pH	13.63 °C	1,311.3 µS/cm	6.76 mg/L	307.57 NTU	187.0 mV	11.22 ft	200.00 ml/min
5/18/2022 2:20 PM	01:26:56	6.95 pH	13.64 °C	249.42 µS/cm	6.91 mg/L	192.34 NTU	187.5 mV	11.23 ft	200.00 ml/min
5/18/2022 2:23 PM	01:29:56	6.95 pH	13.85 °C	216.99 µS/cm	6.85 mg/L	875.93 NTU	187.6 mV	11.22 ft	200.00 ml/min
5/18/2022 2:26 PM	01:32:56	6.95 pH	13.99 °C	1,038.3 µS/cm	6.82 mg/L	203.54 NTU	187.7 mV	11.25 ft	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/17/2022 3:01:10 PM
Project: A.B. Brown (3)
Operator Name: Hayley Torres

Location Name: CCR-LF-1 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 9 ft** **Total Depth: 19 ft** **Initial Depth to Water: 8.24 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 14 ft** **Estimated Total Volume Pumped: 2.5 gal** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 651925**

Test Notes:
Turbidity never stabilized and rose throughout the entirety of the purge time. Water was visibly perfectly clear so the decision was made to sample despite the high number. Possible error with probe. Will be thoroughly cleaned before next sampling.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/17/2022 3:01 PM	00:00	6.70 pH	17.60 °C	2,025.2 µS/cm	2.69 mg/L	81.73 NTU	94.7 mV	8.24 ft	100.00 ml/min
5/17/2022 3:04 PM	03:00	6.68 pH	18.45 °C	2,039.7 µS/cm	2.53 mg/L	68.65 NTU	98.4 mV		100.00 ml/min
5/17/2022 3:07 PM	06:00	6.70 pH	18.41 °C	2,034.0 µS/cm	2.49 mg/L	71.40 NTU	99.5 mV		100.00 ml/min
5/17/2022 3:10 PM	09:00	6.70 pH	18.32 °C	2,035.1 µS/cm	2.47 mg/L	90.48 NTU	101.1 mV		100.00 ml/min
5/17/2022 3:13 PM	12:00	6.67 pH	18.22 °C	2,040.5 µS/cm	2.47 mg/L	104.74 NTU	103.2 mV		100.00 ml/min
5/17/2022 3:16 PM	15:00	6.64 pH	18.08 °C	2,036.2 µS/cm	2.44 mg/L	138.59 NTU	105.4 mV		100.00 ml/min
5/17/2022 3:19 PM	18:00	6.60 pH	18.46 °C	2,041.4 µS/cm	2.45 mg/L	177.40 NTU	107.5 mV		100.00 ml/min
5/17/2022 3:22 PM	21:00	6.57 pH	18.48 °C	2,036.6 µS/cm	2.43 mg/L	197.77 NTU	109.4 mV		100.00 ml/min
5/17/2022 3:25 PM	24:00	6.56 pH	17.17 °C	2,004.3 µS/cm	2.38 mg/L	200.72 NTU	111.4 mV		100.00 ml/min
5/17/2022 3:28 PM	27:00	6.54 pH	17.15 °C	1,997.9 µS/cm	2.44 mg/L	210.48 NTU	113.3 mV		100.00 ml/min
5/17/2022 3:31 PM	30:00	6.52 pH	17.18 °C	1,961.5 µS/cm	2.62 mg/L	176.19 NTU	114.9 mV		100.00 ml/min
5/17/2022 3:34 PM	33:00	6.51 pH	17.18 °C	1,952.4 µS/cm	2.75 mg/L	211.35 NTU	116.0 mV		100.00 ml/min
5/17/2022 3:37 PM	36:00	6.51 pH	16.95 °C	1,946.5 µS/cm	2.81 mg/L	188.40 NTU	116.7 mV		100.00 ml/min
5/17/2022 3:40 PM	39:00	6.51 pH	16.82 °C	1,949.2 µS/cm	2.81 mg/L	235.04 NTU	117.3 mV		100.00 ml/min
5/17/2022 3:43 PM	42:00	6.51 pH	17.03 °C	1,962.7 µS/cm	2.74 mg/L	144.76 NTU	117.6 mV		100.00 ml/min

5/17/2022 3:46 PM	45:00	6.51 pH	17.15 °C	1,969.9 µS/cm	2.71 mg/L	165.91 NTU	117.7 mV		100.00 ml/min
5/17/2022 3:49 PM	48:00	6.51 pH	16.96 °C	1,970.4 µS/cm	2.70 mg/L	252.88 NTU	118.0 mV		100.00 ml/min
5/17/2022 3:52 PM	51:00	6.50 pH	18.01 °C	1,993.7 µS/cm	2.74 mg/L	266.52 NTU	117.5 mV		100.00 ml/min
5/17/2022 3:55 PM	54:00	6.48 pH	19.63 °C	2,004.3 µS/cm	2.78 mg/L	301.27 NTU	115.8 mV		100.00 ml/min
5/17/2022 3:58 PM	57:00	6.48 pH	19.96 °C	2,001.5 µS/cm	2.83 mg/L	325.14 NTU	114.1 mV		100.00 ml/min
5/17/2022 4:01 PM	01:00:00	6.48 pH	19.87 °C	2,003.8 µS/cm	2.90 mg/L	387.08 NTU	113.3 mV		100.00 ml/min
5/17/2022 4:04 PM	01:03:00	6.48 pH	20.01 °C	2,004.0 µS/cm	2.92 mg/L	426.59 NTU	112.3 mV		100.00 ml/min
5/17/2022 4:07 PM	01:06:00	6.50 pH	20.05 °C	2,007.8 µS/cm	3.01 mg/L	469.62 NTU	111.1 mV		100.00 ml/min
5/17/2022 4:10 PM	01:09:00	6.51 pH	19.86 °C	2,005.8 µS/cm	3.09 mg/L	505.92 NTU	109.9 mV		100.00 ml/min
5/17/2022 4:13 PM	01:12:00	6.54 pH	19.96 °C	2,007.7 µS/cm	3.13 mg/L	559.93 NTU	108.0 mV		100.00 ml/min
5/17/2022 4:16 PM	01:15:00	6.56 pH	20.52 °C	2,008.8 µS/cm	3.14 mg/L	608.05 NTU	106.2 mV		100.00 ml/min
5/17/2022 4:19 PM	01:18:00	6.59 pH	20.15 °C	2,007.4 µS/cm	3.24 mg/L	737.74 NTU	104.3 mV		100.00 ml/min
5/17/2022 4:22 PM	01:21:00	6.61 pH	20.44 °C	2,013.6 µS/cm	3.35 mg/L	985.90 NTU	102.8 mV		100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/18/2022 10:34:14 AM
Project: A.B. Brown (5)
Operator Name: Hayley Torres

Location Name: CCR-LF-2 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 35 ft** **Total Depth: 45 ft** **Initial Depth to Water: 27.26 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 40 ft** **Estimated Total Volume Pumped: 2 gal** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 651925**

Test Notes:
Faulty conductivity meter.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/18/2022 10:34 AM	00:00	6.69 pH	16.65 °C	23,817 µS/cm	5.83 mg/L		127.3 mV	27.26 ft	100.00 ml/min
5/18/2022 10:37 AM	03:00	6.60 pH	16.73 °C	19,859 µS/cm	3.04 mg/L		119.8 mV		100.00 ml/min
5/18/2022 10:40 AM	06:00	6.59 pH	16.54 °C	21,907 µS/cm	2.52 mg/L		119.6 mV		100.00 ml/min
5/18/2022 10:43 AM	09:00	6.57 pH	16.70 °C	23,067 µS/cm	2.37 mg/L		120.3 mV		100.00 ml/min
5/18/2022 10:46 AM	12:00	6.56 pH	16.78 °C	11,003 µS/cm	2.28 mg/L		120.9 mV		100.00 ml/min
5/18/2022 10:49 AM	15:00	6.56 pH	16.89 °C	21,705 µS/cm	2.26 mg/L		121.3 mV		100.00 ml/min
5/18/2022 10:52 AM	18:00	6.56 pH	16.68 °C	17,449 µS/cm	2.34 mg/L		121.8 mV		100.00 ml/min
5/18/2022 10:55 AM	21:00	6.55 pH	16.87 °C	22,773 µS/cm	2.27 mg/L		122.8 mV		100.00 ml/min
5/18/2022 10:58 AM	24:00	6.55 pH	16.84 °C	20,300 µS/cm	2.50 mg/L		123.8 mV		100.00 ml/min
5/18/2022 11:01 AM	27:00	6.55 pH	16.95 °C	21,009 µS/cm	2.57 mg/L		124.8 mV		100.00 ml/min
5/18/2022 11:04 AM	30:00	6.54 pH	17.03 °C	21,211 µS/cm	2.44 mg/L		125.8 mV		100.00 ml/min
5/18/2022 11:07 AM	33:00	6.53 pH	17.04 °C	19,829 µS/cm	2.40 mg/L		126.9 mV		100.00 ml/min
5/18/2022 11:10 AM	36:00	6.54 pH	17.07 °C	4,692.3 µS/cm	2.68 mg/L		127.7 mV		100.00 ml/min
5/18/2022 11:13 AM	39:00	6.53 pH	17.17 °C	4,490.4 µS/cm	2.57 mg/L		128.4 mV		100.00 ml/min
5/18/2022 11:16 AM	42:00	6.53 pH	17.10 °C	21,322 µS/cm	2.46 mg/L		128.6 mV		100.00 ml/min

5/18/2022 11:19 AM	45:00	6.52 pH	17.11 °C	1,312.4 µS/cm	3.03 mg/L		129.5 mV		100.00 ml/min
5/18/2022 11:22 AM	48:00	6.51 pH	17.19 °C	20,171 µS/cm	2.62 mg/L		130.6 mV		100.00 ml/min
5/18/2022 11:25 AM	51:00	6.51 pH	17.28 °C	22,699 µS/cm	2.75 mg/L		131.6 mV		100.00 ml/min
5/18/2022 11:28 AM	54:00	6.51 pH	17.36 °C	22,205 µS/cm	2.95 mg/L		132.5 mV		100.00 ml/min
5/18/2022 11:31 AM	57:00	6.51 pH	17.43 °C	19,616 µS/cm	2.53 mg/L		133.6 mV		100.00 ml/min
5/18/2022 11:34 AM	01:00:00	6.51 pH	17.45 °C	22,845 µS/cm	2.45 mg/L		134.3 mV		100.00 ml/min

Samples

Sample ID: DUP 3, Field Blank	Description:

Low-Flow Test Report:

Test Date / Time: 5/18/2022 8:41:54 AM
Project: A.B. Brown (4)
Operator Name: Hayley Torres

Location Name: CCR-LF-3 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 25 ft** **Total Depth: 35 ft** **Initial Depth to Water: 30.12 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 30 ft** **Estimated Total Volume Pumped: 1.25 gal** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 651925**

Test Notes:
Faulty turbidity. Water clean

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/18/2022 8:41 AM	00:00	7.05 pH	17.32 °C	2,356.2 µS/cm	7.62 mg/L	304.92 NTU	221.1 mV	30.12 ft	100.00 ml/min
5/18/2022 8:44 AM	03:00	6.93 pH	17.17 °C	2,330.7 µS/cm	6.91 mg/L	341.79 NTU	212.7 mV		100.00 ml/min
5/18/2022 8:47 AM	06:00	6.91 pH	16.96 °C	2,324.3 µS/cm	6.78 mg/L	354.02 NTU	203.9 mV		100.00 ml/min
5/18/2022 8:50 AM	09:00	6.90 pH	16.85 °C	2,321.0 µS/cm	6.68 mg/L	368.09 NTU	196.7 mV		100.00 ml/min
5/18/2022 8:53 AM	12:00	6.89 pH	16.88 °C	2,317.8 µS/cm	6.62 mg/L	394.98 NTU	190.8 mV		100.00 ml/min
5/18/2022 8:56 AM	15:00	6.89 pH	16.72 °C	2,319.9 µS/cm	6.58 mg/L	378.04 NTU	185.9 mV		100.00 ml/min
5/18/2022 8:59 AM	18:00	6.88 pH	16.53 °C	2,328.8 µS/cm	6.61 mg/L	423.45 NTU	181.6 mV		100.00 ml/min
5/18/2022 9:02 AM	21:00	6.87 pH	16.61 °C	2,325.0 µS/cm	6.56 mg/L	535.32 NTU	177.8 mV		100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/17/2022 9:48:22 AM
Project: A.B. Brown
Operator Name: Hayley Torres

Location Name: CCR-LF-4 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 45 ft** **Total Depth: 55 ft** **Initial Depth to Water: 47.78 ft**	**Pump Type: Peristaltic** **Tubing Type: LDPE** **Pump Intake From TOC: 25 ft** **Estimated Total Volume Pumped: 1.5 gal** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 651925**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/17/2022 9:48 AM	00:00	6.60 pH	16.24 °C	13,315 µS/cm	3.96 mg/L	59.22 NTU	-23.2 mV	47.78 ft	100.00 ml/min
5/17/2022 9:51 AM	03:00	6.62 pH	15.97 °C	13,951 µS/cm	1.60 mg/L	38.65 NTU	-55.0 mV		100.00 ml/min
5/17/2022 9:54 AM	06:00	6.62 pH	16.09 °C	13,965 µS/cm	1.25 mg/L	21.16 NTU	-60.5 mV		100.00 ml/min
5/17/2022 9:57 AM	09:00	6.62 pH	16.16 °C	13,930 µS/cm	1.12 mg/L	11.69 NTU	-62.4 mV		100.00 ml/min
5/17/2022 10:00 AM	12:00	6.62 pH	16.16 °C	13,927 µS/cm	1.07 mg/L	7.59 NTU	-63.1 mV		100.00 ml/min
5/17/2022 10:03 AM	15:00	6.62 pH	16.24 °C	13,886 µS/cm	1.04 mg/L	6.30 NTU	-63.2 mV		100.00 ml/min
5/17/2022 10:06 AM	18:00	6.62 pH	16.20 °C	13,872 µS/cm	1.00 mg/L	6.03 NTU	-63.0 mV		100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/17/2022 10:50:38 AM
Project: A.B. Brown (2)
Operator Name: Hayley Torres

Location Name: CCR-LF-5 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 20 ft** **Total Depth: 30 ft** **Initial Depth to Water: 21.32 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 25 ft** **Estimated Total Volume Pumped: 2.5 gal** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 651925**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/17/2022 10:50 AM	00:00	6.81 pH	16.83 °C	4,509.1 µS/cm	1.34 mg/L	24.78 NTU	1.8 mV	21.32 ft	100.00 ml/min
5/17/2022 10:53 AM	03:00	6.80 pH	16.68 °C	4,189.0 µS/cm	1.12 mg/L	81.03 NTU	8.2 mV		100.00 ml/min
5/17/2022 10:56 AM	06:00	6.82 pH	16.43 °C	4,142.8 µS/cm	1.02 mg/L	33.75 NTU	11.9 mV		100.00 ml/min
5/17/2022 10:59 AM	09:00	6.82 pH	16.61 °C	4,239.8 µS/cm	0.84 mg/L	60.91 NTU	16.1 mV		100.00 ml/min
5/17/2022 11:02 AM	12:00	6.82 pH	16.53 °C	4,406.3 µS/cm	0.81 mg/L	29.68 NTU	19.3 mV		100.00 ml/min
5/17/2022 11:05 AM	15:00	6.82 pH	16.56 °C	4,638.3 µS/cm	0.82 mg/L	80.06 NTU	22.3 mV		100.00 ml/min
5/17/2022 11:08 AM	18:00	6.81 pH	16.56 °C	4,767.1 µS/cm	0.79 mg/L	37.32 NTU	23.2 mV		100.00 ml/min
5/17/2022 11:11 AM	21:00	6.81 pH	16.59 °C	4,814.1 µS/cm	0.43 mg/L	29.83 NTU	12.4 mV		100.00 ml/min
5/17/2022 11:14 AM	24:00	6.81 pH	16.60 °C	4,891.6 µS/cm	0.19 mg/L	24.08 NTU	14.3 mV		100.00 ml/min
5/17/2022 11:17 AM	27:00	6.81 pH	16.59 °C	4,892.7 µS/cm	0.16 mg/L	27.14 NTU	17.6 mV		100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/17/2022 1:31:03 PM
Project: A.B. Brown (3)
Operator Name: Hayley Torres

Location Name: CCR-LF-6 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 5 ft** **Top of Screen: 4.66 ft** **Total Depth: 9.66 ft** **Initial Depth to Water: 8.39 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 6.5 ft** **Estimated Total Volume Pumped: 0.75 gal** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 651925**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/17/2022 1:31 PM	00:00	6.88 pH	23.19 °C	1,550.9 µS/cm	3.74 mg/L		119.5 mV	8.39 ft	100.00 ml/min
5/17/2022 1:34 PM	03:00	6.81 pH	22.70 °C	1,494.8 µS/cm	1.34 mg/L		119.5 mV		100.00 ml/min
5/17/2022 1:37 PM	06:00	6.83 pH	21.63 °C	1,557.9 µS/cm	1.54 mg/L		116.7 mV		100.00 ml/min
5/17/2022 1:40 PM	09:00	6.84 pH	21.40 °C	1,579.9 µS/cm	1.46 mg/L		113.2 mV		100.00 ml/min
5/17/2022 1:43 PM	12:00	6.84 pH	20.85 °C	1,567.8 µS/cm	1.48 mg/L		111.3 mV		100.00 ml/min
5/17/2022 1:46 PM	15:00	6.82 pH	20.73 °C	1,568.8 µS/cm	1.48 mg/L		110.6 mV		100.00 ml/min
5/17/2022 1:49 PM	18:00	6.77 pH	20.44 °C	1,562.9 µS/cm	1.45 mg/L		111.1 mV		100.00 ml/min
5/17/2022 1:52 PM	21:00	6.74 pH	20.58 °C	1,569.4 µS/cm	1.57 mg/L		111.1 mV		100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/19/2022 6:47:38 AM
Project: AB BROWN (19)
Operator Name: Jon Hill

Location Name: CCR-SP-1 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 10 ft** **Total Depth: 20 ft** **Initial Depth to Water: 11.5 ft**	**Pump Type: Sample Pro** **Tubing Type: LDPE** **Pump Intake From TOC: 15 ft** **Estimated Total Volume Pumped: 3600 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.26 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 707269**

Test Notes:
1.0 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/19/2022 6:47 AM	00:00	6.78 pH	13.40 °C	2,480.3 µS/cm	7.60 mg/L	22.18 NTU	-5.4 mV	11.50 ft	200.00 ml/min
5/19/2022 6:50 AM	03:00	6.59 pH	13.38 °C	2,442.1 µS/cm	0.11 mg/L	8.68 NTU	-10.8 mV	11.57 ft	200.00 ml/min
5/19/2022 6:53 AM	06:00	6.61 pH	13.24 °C	2,416.8 µS/cm	0.07 mg/L	1.79 NTU	-16.4 mV	11.62 ft	200.00 ml/min
5/19/2022 6:56 AM	09:00	6.60 pH	13.30 °C	2,413.0 µS/cm	0.04 mg/L	1.08 NTU	-18.0 mV	11.66 ft	200.00 ml/min
5/19/2022 6:59 AM	12:00	6.60 pH	13.24 °C	2,406.0 µS/cm	0.03 mg/L	0.00 NTU	-20.3 mV	11.70 ft	200.00 ml/min
5/19/2022 7:02 AM	15:00	6.59 pH	13.28 °C	2,397.6 µS/cm	0.02 mg/L	0.00 NTU	-23.8 mV	11.72 ft	200.00 ml/min
5/19/2022 7:05 AM	18:00	6.60 pH	13.25 °C	2,398.7 µS/cm	0.02 mg/L	0.00 NTU	-26.7 mV	11.76 ft	200.00 ml/min

Samples

Sample ID: FB-2, MS/MSD-2	Description:

Low-Flow Test Report:

Test Date / Time: 5/19/2022 7:35:07 AM
Project: AB BROWN (20)
Operator Name: Jon Hill

Location Name: CCR-SP-2 **Well Diameter: 2 cm** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 10 ft** **Total Depth: 20 ft** **Initial Depth to Water: 13.79 ft**	**Pump Type: Sample Pro** **Tubing Type: LDPE** **Pump Intake From TOC: 15 ft** **Estimated Total Volume Pumped: 3600 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.23 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 707269**

Test Notes:
1.0 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/19/2022 7:35 AM	00:00	6.83 pH	14.54 °C	1,434.1 µS/cm	0.79 mg/L	22.73 NTU	-50.3 mV	13.79 ft	200.00 ml/min
5/19/2022 7:38 AM	03:00	6.84 pH	14.35 °C	1,406.5 µS/cm	0.03 mg/L	6.23 NTU	-66.9 mV	13.82 ft	200.00 ml/min
5/19/2022 7:41 AM	06:00	6.85 pH	14.33 °C	1,431.6 µS/cm	0.01 mg/L	7.53 NTU	-75.0 mV	13.87 ft	200.00 ml/min
5/19/2022 7:44 AM	09:00	6.87 pH	14.31 °C	1,452.5 µS/cm	0.01 mg/L	7.69 NTU	-79.8 mV	13.92 ft	200.00 ml/min
5/19/2022 7:47 AM	12:00	6.88 pH	14.34 °C	1,469.1 µS/cm	0.00 mg/L	15.08 NTU	-83.4 mV	13.95 ft	200.00 ml/min
5/19/2022 7:50 AM	15:00	6.90 pH	14.35 °C	1,478.6 µS/cm	0.00 mg/L	27.46 NTU	-85.9 mV	13.99 ft	200.00 ml/min
5/19/2022 7:53 AM	18:00	6.91 pH	14.41 °C	1,502.8 µS/cm	0.01 mg/L	20.64 NTU	-86.6 mV	14.02 ft	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/19/2022 8:21:15 AM
Project: AB BROWN (21)
Operator Name: Jon Hill

Location Name: CCR-SP-3 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 10 ft** **Total Depth: 20 ft** **Initial Depth to Water: 7.17 ft**	**Pump Type: Sample Pro** **Tubing Type: LDPE** **Pump Intake From TOC: 15 ft** **Estimated Total Volume Pumped: 3600 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.25 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 707269**

Test Notes:
1.0 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/19/2022 8:21 AM	00:00	7.15 pH	13.96 °C	753.37 µS/cm	0.39 mg/L	217.45 NTU	-23.8 mV	7.17 ft	200.00 ml/min
5/19/2022 8:24 AM	03:00	7.11 pH	13.79 °C	749.01 µS/cm	0.04 mg/L	89.01 NTU	-24.9 mV	7.22 ft	200.00 ml/min
5/19/2022 8:27 AM	06:00	7.11 pH	13.57 °C	749.07 µS/cm	0.00 mg/L	57.86 NTU	-26.4 mV	7.25 ft	200.00 ml/min
5/19/2022 8:30 AM	09:00	7.09 pH	13.45 °C	748.08 µS/cm	0.00 mg/L	45.28 NTU	-25.9 mV	7.29 ft	200.00 ml/min
5/19/2022 8:33 AM	12:00	7.09 pH	13.50 °C	751.52 µS/cm	0.01 mg/L	28.30 NTU	-22.0 mV	7.33 ft	200.00 ml/min
5/19/2022 8:36 AM	15:00	7.10 pH	13.46 °C	763.13 µS/cm	0.08 mg/L	14.00 NTU	-19.6 mV	7.37 ft	200.00 ml/min
5/19/2022 8:39 AM	18:00	7.11 pH	13.51 °C	771.21 µS/cm	0.11 mg/L	7.41 NTU	-19.7 mV	7.42 ft	200.00 ml/min

Samples

Sample ID: DUP-2	Description:

Low-Flow Test Report:

Test Date / Time: 5/18/2022 3:29:35 PM
Project: AB BROWN (18)
Operator Name: Jon Hill

Location Name: CCR-BK-1 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 54 ft** **Total Depth: 64 ft**	**Pump Type: Sample Pro** **Tubing Type: LDPE** **Pump Intake From TOC: 59 ft** **Estimated Total Volume Pumped: 3600 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min**	**Instrument Used: Aqua TROLL 600** **Serial Number: 707269**

Test Notes:
DTW - dry to top of pump. 0.5 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/18/2022 3:29 PM	00:00	7.07 pH	15.68 °C	556.25 µS/cm	6.12 mg/L	0.00 NTU	160.9 mV		200.00 ml/min
5/18/2022 3:32 PM	03:00	6.82 pH	15.36 °C	505.95 µS/cm	7.31 mg/L	0.00 NTU	176.2 mV		200.00 ml/min
5/18/2022 3:35 PM	06:00	6.84 pH	15.56 °C	500.85 µS/cm	7.01 mg/L	0.00 NTU	179.6 mV		200.00 ml/min
5/18/2022 3:38 PM	09:00	6.82 pH	15.42 °C	500.38 µS/cm	6.77 mg/L	0.00 NTU	183.5 mV		200.00 ml/min
5/18/2022 3:41 PM	12:00	6.85 pH	15.49 °C	499.78 µS/cm	6.59 mg/L	0.00 NTU	184.5 mV		200.00 ml/min
5/18/2022 3:44 PM	15:00	6.83 pH	15.62 °C	495.47 µS/cm	6.42 mg/L	0.00 NTU	186.7 mV		200.00 ml/min
5/18/2022 3:47 PM	18:00	6.85 pH	15.59 °C	496.55 µS/cm	6.26 mg/L	0.00 NTU	187.3 mV		200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/18/2022 2:46:35 PM
Project: AB BROWN (17)
Operator Name: Jon Hill

Location Name: CCR-BK-2 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 15.5 ft** **Total Depth: 25.5 ft** **Initial Depth to Water: 16.08 ft**	**Pump Type: Sample Pro** **Tubing Type: LDPE** **Pump Intake From TOC: 21 ft** **Estimated Total Volume Pumped: 3600 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 707269**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
5/18/2022 2:46 PM	00:00	6.98 pH	15.10 °C	573.14 µS/cm	1.36 mg/L	28.62 NTU	170.0 mV	16.08 ft	200.00 ml/min
5/18/2022 2:49 PM	03:00	6.93 pH	15.05 °C	562.88 µS/cm	0.99 mg/L	23.92 NTU	171.3 mV	16.10 ft	200.00 ml/min
5/18/2022 2:52 PM	06:00	6.94 pH	15.04 °C	558.45 µS/cm	0.89 mg/L	8.77 NTU	170.7 mV	16.10 ft	200.00 ml/min
5/18/2022 2:55 PM	09:00	6.92 pH	14.74 °C	554.00 µS/cm	0.81 mg/L	4.39 NTU	171.7 mV	16.10 ft	200.00 ml/min
5/18/2022 2:58 PM	12:00	6.93 pH	14.72 °C	546.02 µS/cm	0.69 mg/L	5.87 NTU	172.0 mV	16.10 ft	200.00 ml/min
5/18/2022 3:01 PM	15:00	6.89 pH	14.70 °C	533.88 µS/cm	0.60 mg/L	3.85 NTU	174.2 mV	16.10 ft	200.00 ml/min
5/18/2022 3:04 PM	18:00	6.90 pH	14.78 °C	527.26 µS/cm	0.56 mg/L	0.32 NTU	174.0 mV	16.10 ft	200.00 ml/min

Samples

Sample ID: MS/MSD-3	Description:

Low-Flow Test Report:

Test Date / Time: 11/2/2022 1:17:17 PM
Project: AB BROWN
Operator Name: Jon Hill

Location Name: CCR-AP-1R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 27 ft** **Total Depth: 37 ft** **Initial Depth to Water: 19.87 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 32 ft** **Estimated Total Volume Pumped: 3843.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 745345**

Test Notes:
1.0 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/2/2022 1:17 PM	00:00	7.11 pH	15.30 °C	3,183.2 µS/cm	0.00 mg/L	3.05 NTU	44.8 mV	605.64 cm	200.00 ml/min
11/2/2022 1:20 PM	03:00	7.14 pH	15.23 °C	3,063.6 µS/cm	0.00 mg/L	3.68 NTU	33.2 mV	605.64 cm	200.00 ml/min
11/2/2022 1:23 PM	06:00	7.36 pH	15.27 °C	2,924.8 µS/cm	0.00 mg/L	5.54 NTU	22.7 mV	605.64 cm	200.00 ml/min
11/2/2022 1:26 PM	09:00	7.36 pH	15.21 °C	2,778.6 µS/cm	0.00 mg/L	11.08 NTU	18.2 mV	605.64 cm	200.00 ml/min
11/2/2022 1:29 PM	12:00	7.41 pH	15.29 °C	2,714.0 µS/cm	0.00 mg/L	19.86 NTU	12.9 mV	605.64 cm	200.00 ml/min
11/2/2022 1:32 PM	15:00	7.40 pH	15.18 °C	2,700.5 µS/cm	0.00 mg/L	34.37 NTU	10.8 mV	605.64 cm	200.00 ml/min
11/2/2022 1:33 PM	16:13	7.36 pH	15.31 °C	2,720.1 µS/cm	0.24 mg/L	0.00 NTU	12.5 mV	605.64 cm	200.00 ml/min
11/2/2022 1:36 PM	19:13	7.43 pH	15.26 °C	2,650.8 µS/cm	0.01 mg/L	0.00 NTU	6.1 mV	605.64 cm	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/8/2022 4:33:15 PM
Project: AB Brown (13)
Operator Name: Hayley Torres

Location Name: CCR-AP-2I **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 83 ft** **Total Depth: 93 ft** **Initial Depth to Water: 35.69 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 88 ft** **Estimated Total Volume Pumped: 2100 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 4.42 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 625772**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/8/2022 4:33 PM	00:00	7.49 pH	19.07 °C	870.50 µS/cm	3.79 mg/L	0.00 NTU	76.2 mV	1,087.8 cm	100.00 ml/min
11/8/2022 4:36 PM	03:00	7.48 pH	18.83 °C	868.44 µS/cm	1.75 mg/L	0.00 NTU	-26.4 mV	1,087.8 cm	100.00 ml/min
11/8/2022 4:39 PM	06:00	7.60 pH	18.62 °C	905.68 µS/cm	1.67 mg/L	0.00 NTU	-45.6 mV	1,087.8 cm	100.00 ml/min
11/8/2022 4:42 PM	09:00	7.63 pH	18.65 °C	890.10 µS/cm	1.65 mg/L	0.44 NTU	-59.9 mV	1,087.8 cm	100.00 ml/min
11/8/2022 4:45 PM	12:00	7.58 pH	18.58 °C	875.76 µS/cm	1.65 mg/L	1.65 NTU	-75.5 mV	1,087.8 cm	100.00 ml/min
11/8/2022 4:48 PM	15:00	7.56 pH	18.73 °C	871.09 µS/cm	1.56 mg/L	4.07 NTU	-82.7 mV	1,087.8 cm	100.00 ml/min
11/8/2022 4:51 PM	18:00	7.54 pH	18.68 °C	864.91 µS/cm	1.47 mg/L	6.65 NTU	-87.1 mV	1,087.8 cm	100.00 ml/min
11/8/2022 4:54 PM	21:00	7.54 pH	18.92 °C	863.49 µS/cm	1.42 mg/L	8.23 NTU	-88.1 mV	1,087.8 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/8/2022 2:21:18 PM
Project: AB Brown (12)
Operator Name: Hayley Torres

Location Name: CCR-AP-2R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 43.3 ft** **Total Depth: 53.3 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 48.3 ft** **Estimated Total Volume Pumped: 9900 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.11 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 625772**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/8/2022 2:21 PM	00:00	6.76 pH	19.16 °C	2,740.3 µS/cm	2.56 mg/L	334.76 NTU	91.1 mV		100.00 ml/min
11/8/2022 2:24 PM	03:00	6.74 pH	18.70 °C	1,903.5 µS/cm	1.21 mg/L	2,136.5 NTU	81.8 mV		100.00 ml/min
11/8/2022 2:27 PM	06:00	6.73 pH	18.45 °C	1,779.5 µS/cm	0.63 mg/L	2,475.6 NTU	79.4 mV		100.00 ml/min
11/8/2022 2:30 PM	09:00	6.73 pH	18.45 °C	1,730.7 µS/cm	0.46 mg/L	6,335.5 NTU	78.0 mV		100.00 ml/min
11/8/2022 2:33 PM	12:00	6.74 pH	18.36 °C	1,726.7 µS/cm	1.11 mg/L	30.94 NTU	78.5 mV		100.00 ml/min
11/8/2022 2:36 PM	15:00	6.71 pH	18.23 °C	1,718.8 µS/cm	0.41 mg/L	95.84 NTU	78.4 mV		100.00 ml/min
11/8/2022 2:39 PM	18:00	6.71 pH	18.24 °C	1,716.4 µS/cm	0.34 mg/L	128.34 NTU	78.0 mV		100.00 ml/min
11/8/2022 2:42 PM	21:00	6.71 pH	18.16 °C	1,714.9 µS/cm	0.31 mg/L	134.50 NTU	77.8 mV		100.00 ml/min
11/8/2022 2:45 PM	24:00	6.71 pH	18.21 °C	1,713.6 µS/cm	0.32 mg/L	152.02 NTU	77.7 mV		100.00 ml/min
11/8/2022 2:48 PM	27:00	6.71 pH	18.20 °C	1,714.7 µS/cm	0.34 mg/L	171.83 NTU	77.5 mV		100.00 ml/min
11/8/2022 2:51 PM	30:00	6.69 pH	18.22 °C	1,761.2 µS/cm	0.34 mg/L	169.16 NTU	79.7 mV		100.00 ml/min
11/8/2022 2:54 PM	33:00	6.69 pH	18.22 °C	2,081.0 µS/cm	0.33 mg/L	158.15 NTU	88.3 mV		100.00 ml/min
11/8/2022 2:57 PM	36:00	6.69 pH	18.26 °C	2,468.0 µS/cm	0.37 mg/L	156.94 NTU	95.1 mV		100.00 ml/min
11/8/2022 3:00 PM	39:00	6.72 pH	18.26 °C	2,861.5 µS/cm	0.84 mg/L	159.67 NTU	98.7 mV		100.00 ml/min
11/8/2022 3:03 PM	42:00	6.71 pH	18.24 °C	3,089.9 µS/cm	0.58 mg/L	505.92 NTU	102.9 mV		100.00 ml/min

11/8/2022 3:06 PM	45:00	6.72 pH	18.22 °C	3,279.0 µS/cm	0.53 mg/L	527.25 NTU	105.2 mV		100.00 ml/min
11/8/2022 3:09 PM	48:00	6.73 pH	18.22 °C	3,424.8 µS/cm	1.54 mg/L	310.95 NTU	106.6 mV		100.00 ml/min
11/8/2022 3:12 PM	51:00	6.73 pH	18.15 °C	3,529.2 µS/cm	0.60 mg/L	980.32 NTU	108.1 mV		100.00 ml/min
11/8/2022 3:15 PM	54:00	6.74 pH	18.11 °C	3,643.5 µS/cm	0.60 mg/L	954.52 NTU	109.5 mV		100.00 ml/min
11/8/2022 3:18 PM	57:00	6.74 pH	18.14 °C	3,720.5 µS/cm	0.61 mg/L	945.75 NTU	110.3 mV		100.00 ml/min
11/8/2022 3:21 PM	01:00:00	6.74 pH	18.11 °C	3,810.7 µS/cm	0.61 mg/L	948.80 NTU	111.3 mV		100.00 ml/min
11/8/2022 3:24 PM	01:03:00	6.75 pH	18.14 °C	3,873.8 µS/cm	0.62 mg/L	933.65 NTU	111.9 mV		100.00 ml/min
11/8/2022 3:27 PM	01:06:00	6.75 pH	18.09 °C	3,946.1 µS/cm	0.61 mg/L	933.74 NTU	112.7 mV		100.00 ml/min
11/8/2022 3:30 PM	01:09:00	6.75 pH	18.11 °C	3,993.7 µS/cm	0.63 mg/L	940.19 NTU	113.2 mV		100.00 ml/min
11/8/2022 3:33 PM	01:12:00	6.76 pH	18.09 °C	4,052.6 µS/cm	0.63 mg/L	904.40 NTU	113.7 mV		100.00 ml/min
11/8/2022 3:36 PM	01:15:00	6.76 pH	18.14 °C	4,096.3 µS/cm	0.63 mg/L	974.01 NTU	114.1 mV		100.00 ml/min
11/8/2022 3:39 PM	01:18:00	6.76 pH	18.14 °C	4,137.9 µS/cm	0.64 mg/L	865.28 NTU	114.5 mV		100.00 ml/min
11/8/2022 3:42 PM	01:21:00	6.76 pH	18.16 °C	4,185.0 µS/cm	0.62 mg/L	865.67 NTU	114.8 mV		100.00 ml/min
11/8/2022 3:45 PM	01:24:00	6.77 pH	18.16 °C	4,222.2 µS/cm	0.62 mg/L	849.54 NTU	115.2 mV		100.00 ml/min
11/8/2022 3:48 PM	01:27:00	6.77 pH	18.17 °C	4,250.7 µS/cm	0.62 mg/L	841.88 NTU	115.5 mV		100.00 ml/min
11/8/2022 3:51 PM	01:30:00	6.79 pH	18.18 °C	4,283.7 µS/cm	0.99 mg/L	0.12 NTU	114.5 mV		100.00 ml/min
11/8/2022 3:54 PM	01:33:00	6.78 pH	18.15 °C	4,312.2 µS/cm	0.64 mg/L	0.02 NTU	115.5 mV		100.00 ml/min
11/8/2022 3:57 PM	01:36:00	6.78 pH	18.13 °C	4,335.3 µS/cm	0.64 mg/L	0.00 NTU	115.8 mV		100.00 ml/min
11/8/2022 4:00 PM	01:39:00	6.78 pH	18.13 °C	4,361.5 µS/cm	0.65 mg/L	0.28 NTU	116.1 mV		100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/9/2022 10:21:14 AM
Project: AB Brown (14)
Operator Name: Hayley Torres

Location Name: CCR-AP-3R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 37 ft** **Total Depth: 47 ft** **Initial Depth to Water: 38.21 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 42 ft** **Estimated Total Volume Pumped: 3000 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.01 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 625772**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/9/2022 10:21 AM	00:00	6.94 pH	19.02 °C	5,213.4 µS/cm	2.80 mg/L	0.25 NTU	106.2 mV	1,164.6 cm	100.00 ml/min
11/9/2022 10:24 AM	03:00	6.90 pH	19.38 °C	6,137.4 µS/cm	1.26 mg/L	0.01 NTU	99.8 mV	1,164.6 cm	100.00 ml/min
11/9/2022 10:27 AM	06:00	6.88 pH	19.50 °C	6,272.9 µS/cm	0.81 mg/L	0.00 NTU	95.4 mV	1,164.6 cm	100.00 ml/min
11/9/2022 10:30 AM	09:00	6.87 pH	20.07 °C	6,283.8 µS/cm	0.92 mg/L	0.00 NTU	92.0 mV	1,164.6 cm	100.00 ml/min
11/9/2022 10:33 AM	12:00	6.86 pH	20.26 °C	6,292.9 µS/cm	0.92 mg/L	0.09 NTU	89.7 mV	1,164.6 cm	100.00 ml/min
11/9/2022 10:36 AM	15:00	6.86 pH	20.48 °C	6,294.9 µS/cm	0.88 mg/L	0.19 NTU	88.4 mV	1,164.6 cm	100.00 ml/min
11/9/2022 10:39 AM	18:00	6.86 pH	20.47 °C	6,286.3 µS/cm	0.82 mg/L	0.21 NTU	87.4 mV	1,164.6 cm	100.00 ml/min
11/9/2022 10:42 AM	21:00	6.86 pH	20.81 °C	6,290.1 µS/cm	0.75 mg/L	0.29 NTU	86.5 mV	1,164.6 cm	100.00 ml/min
11/9/2022 10:45 AM	24:00	6.86 pH	20.61 °C	6,278.5 µS/cm	0.72 mg/L	0.36 NTU	85.8 mV	1,164.6 cm	100.00 ml/min
11/9/2022 10:48 AM	27:00	6.86 pH	21.01 °C	6,289.3 µS/cm	0.66 mg/L	0.47 NTU	85.1 mV	1,164.6 cm	100.00 ml/min
11/9/2022 10:51 AM	30:00	6.86 pH	20.87 °C	6,276.6 µS/cm	0.65 mg/L	0.52 NTU	84.6 mV	1,164.6 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/2/2022 2:03:13 PM
Project: AB BROWN (2)
Operator Name: Jon Hill

Location Name: CCR-AP-4R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 38 ft** **Total Depth: 48 ft** **Initial Depth to Water: 35.2 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 43 ft** **Estimated Total Volume Pumped: 6000 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 745345**

Test Notes:
1.5 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/2/2022 2:03 PM	00:00	7.49 pH	14.70 °C	988.14 µS/cm	7.40 mg/L	126.58 NTU	-16.0 mV	1,072.9 cm	200.00 ml/min
11/2/2022 2:06 PM	03:00	7.50 pH	14.06 °C	987.87 µS/cm	7.23 mg/L	123.55 NTU	-7.5 mV	1,072.9 cm	200.00 ml/min
11/2/2022 2:09 PM	06:00	7.51 pH	14.09 °C	991.89 µS/cm	7.00 mg/L	76.74 NTU	-1.2 mV	1,072.9 cm	200.00 ml/min
11/2/2022 2:12 PM	09:00	7.63 pH	14.03 °C	978.74 µS/cm	6.92 mg/L	121.53 NTU	-2.3 mV	1,072.9 cm	200.00 ml/min
11/2/2022 2:15 PM	12:00	7.67 pH	14.13 °C	972.94 µS/cm	6.79 mg/L	122.65 NTU	0.1 mV	1,072.9 cm	200.00 ml/min
11/2/2022 2:18 PM	15:00	7.71 pH	14.02 °C	985.96 µS/cm	7.01 mg/L	40.70 NTU	2.0 mV	1,072.9 cm	200.00 ml/min
11/2/2022 2:21 PM	18:00	7.72 pH	14.15 °C	981.81 µS/cm	6.78 mg/L	31.88 NTU	4.4 mV	1,072.9 cm	200.00 ml/min
11/2/2022 2:24 PM	21:00	7.72 pH	14.02 °C	988.20 µS/cm	6.67 mg/L	32.20 NTU	6.7 mV	1,072.9 cm	200.00 ml/min
11/2/2022 2:27 PM	24:00	7.72 pH	14.08 °C	989.04 µS/cm	6.65 mg/L	53.23 NTU	9.3 mV	1,072.9 cm	200.00 ml/min
11/2/2022 2:30 PM	27:00	7.72 pH	14.08 °C	994.28 µS/cm	6.62 mg/L	53.04 NTU	11.1 mV	1,072.9 cm	200.00 ml/min
11/2/2022 2:33 PM	30:00	7.57 pH	14.09 °C	1,011.2 µS/cm	6.93 mg/L	13.04 NTU	13.5 mV	1,072.9 cm	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/3/2022 2:52:46 PM
Project: AB BROWN (8)
Operator Name: Jon Hill

Location Name: CCR-AP5R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 35 ft** **Total Depth: 45 ft** **Initial Depth to Water: 36.1 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 40 ft** **Estimated Total Volume Pumped: 3600 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 745345**

Test Notes:
1.0 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/3/2022 2:52 PM	00:00	7.35 pH	16.89 °C	7,527.8 µS/cm	1.00 mg/L	6.11 NTU	51.2 mV	1,100.3 cm	200.00 ml/min
11/3/2022 2:55 PM	03:00	7.34 pH	16.81 °C	7,559.1 µS/cm	0.35 mg/L	7.89 NTU	51.9 mV	1,100.3 cm	200.00 ml/min
11/3/2022 2:58 PM	06:00	7.28 pH	16.72 °C	7,565.1 µS/cm	0.26 mg/L	7.78 NTU	49.1 mV	1,100.3 cm	200.00 ml/min
11/3/2022 3:01 PM	09:00	7.29 pH	16.80 °C	7,393.2 µS/cm	0.21 mg/L	10.28 NTU	44.0 mV	1,100.3 cm	200.00 ml/min
11/3/2022 3:04 PM	12:00	7.26 pH	16.77 °C	7,285.1 µS/cm	0.19 mg/L	12.09 NTU	37.5 mV	1,100.3 cm	200.00 ml/min
11/3/2022 3:07 PM	15:00	7.28 pH	16.82 °C	7,187.7 µS/cm	0.18 mg/L	9.77 NTU	35.4 mV	1,100.3 cm	200.00 ml/min
11/3/2022 3:10 PM	18:00	7.26 pH	16.74 °C	7,119.1 µS/cm	0.17 mg/L	9.62 NTU	36.8 mV	1,100.3 cm	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/3/2022 2:00:13 PM
Project: AB BROWN (7)
Operator Name: Jon Hill

Location Name: CCR-AP-7R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 43.5 ft** **Total Depth: 53.5 ft** **Initial Depth to Water: 35.95 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 49 ft** **Estimated Total Volume Pumped: 4800 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 745345**

Test Notes:
1.25 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/3/2022 2:00 PM	00:00	6.64 pH	14.37 °C	5,739.8 µS/cm	7.49 mg/L	126.51 NTU	25.1 mV	1,095.8 cm	200.00 ml/min
11/3/2022 2:03 PM	03:00	6.60 pH	14.39 °C	5,740.9 µS/cm	7.39 mg/L	327.69 NTU	32.7 mV	1,095.8 cm	200.00 ml/min
11/3/2022 2:06 PM	06:00	6.60 pH	14.28 °C	5,734.7 µS/cm	7.58 mg/L	308.06 NTU	36.9 mV	1,095.8 cm	200.00 ml/min
11/3/2022 2:09 PM	09:00	6.60 pH	14.34 °C	5,738.8 µS/cm	7.70 mg/L	89.24 NTU	40.7 mV	1,095.8 cm	200.00 ml/min
11/3/2022 2:12 PM	12:00	6.61 pH	14.28 °C	5,773.3 µS/cm	7.64 mg/L	212.96 NTU	43.3 mV	1,095.8 cm	200.00 ml/min
11/3/2022 2:15 PM	15:00	6.60 pH	14.36 °C	5,750.5 µS/cm	7.51 mg/L	108.12 NTU	46.1 mV	1,095.8 cm	200.00 ml/min
11/3/2022 2:18 PM	18:00	6.62 pH	14.33 °C	5,751.5 µS/cm	7.79 mg/L	28.91 NTU	47.7 mV	1,095.8 cm	200.00 ml/min
11/3/2022 2:21 PM	21:00	6.76 pH	14.37 °C	5,724.0 µS/cm	7.74 mg/L	63.79 NTU	50.5 mV	1,095.8 cm	200.00 ml/min
11/3/2022 2:24 PM	24:00	6.74 pH	14.44 °C	5,758.1 µS/cm	8.43 mg/L	24.74 NTU	49.8 mV	1,095.8 cm	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/3/2022 10:36:40 AM
Project: AB BROWN (5)
Operator Name: Jon Hill

Location Name: CCR-AP-9 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 25.2 ft** **Total Depth: 35.2 ft** **Initial Depth to Water: 8.88 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 31 ft** **Estimated Total Volume Pumped: 4200 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 745345**

Test Notes:
1.0 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/3/2022 10:36 AM	00:00	7.27 pH	18.58 °C	9,521.5 µS/cm	0.71 mg/L	49.31 NTU	-7.0 mV	270.66 cm	200.00 ml/min
11/3/2022 10:39 AM	03:00	7.38 pH	18.67 °C	9,364.8 µS/cm	0.14 mg/L	18.98 NTU	-54.4 mV	270.66 cm	200.00 ml/min
11/3/2022 10:42 AM	06:00	7.37 pH	18.77 °C	9,397.3 µS/cm	0.02 mg/L	14.79 NTU	-78.5 mV	270.66 cm	200.00 ml/min
11/3/2022 10:45 AM	09:00	7.33 pH	18.81 °C	9,475.6 µS/cm	0.00 mg/L	8.87 NTU	-89.9 mV	270.66 cm	200.00 ml/min
11/3/2022 10:48 AM	12:00	7.35 pH	18.87 °C	9,590.4 µS/cm	0.00 mg/L	9.14 NTU	-100.4 mV	270.66 cm	200.00 ml/min
11/3/2022 10:51 AM	15:00	7.30 pH	18.86 °C	9,687.8 µS/cm	0.00 mg/L	7.14 NTU	-103.9 mV	270.66 cm	200.00 ml/min
11/3/2022 10:54 AM	18:00	7.33 pH	18.83 °C	9,843.4 µS/cm	0.00 mg/L	7.37 NTU	-111.1 mV	270.66 cm	200.00 ml/min
11/3/2022 10:57 AM	21:00	7.29 pH	18.78 °C	9,921.7 µS/cm	0.00 mg/L	7.98 NTU	-113.5 mV	270.66 cm	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/2/2022 2:55:53 PM
Project: AB BROWN (3)
Operator Name: Jon Hill

Location Name: CCR-AP-10 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 33.2 ft** **Total Depth: 43.2 ft** **Initial Depth to Water: 37.2 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 38 ft** **Estimated Total Volume Pumped: 8793.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 745345**

Test Notes:
2.5 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/2/2022 2:55 PM	00:00	7.65 pH	15.43 °C	4,038.7 µS/cm	1.43 mg/L	138.21 NTU	81.2 mV	1,133.9 cm	200.00 ml/min
11/2/2022 2:58 PM	03:00	7.64 pH	15.47 °C	3,787.9 µS/cm	1.00 mg/L	343.09 NTU	69.0 mV	1,133.9 cm	200.00 ml/min
11/2/2022 3:01 PM	06:00	7.67 pH	14.00 °C	3,678.6 µS/cm	1.53 mg/L	363.25 NTU	62.5 mV	1,133.9 cm	200.00 ml/min
11/2/2022 3:04 PM	09:00	7.54 pH	14.04 °C	3,540.6 µS/cm	1.31 mg/L	824.16 NTU	53.9 mV	1,133.9 cm	200.00 ml/min
11/2/2022 3:07 PM	12:00	7.57 pH	14.24 °C	3,651.5 µS/cm	0.89 mg/L	1,596.7 NTU	50.3 mV	1,133.9 cm	200.00 ml/min
11/2/2022 3:10 PM	15:00	7.58 pH	14.12 °C	3,605.3 µS/cm	0.66 mg/L	298.27 NTU	46.9 mV	1,133.9 cm	200.00 ml/min
11/2/2022 3:13 PM	18:00	7.59 pH	14.13 °C	3,596.3 µS/cm	0.76 mg/L	372.12 NTU	43.9 mV	1,133.9 cm	200.00 ml/min
11/2/2022 3:15 PM	19:58	7.59 pH	14.07 °C	3,200.1 µS/cm	0.78 mg/L	230.36 NTU	43.1 mV	1,133.9 cm	200.00 ml/min
11/2/2022 3:18 PM	22:58	7.60 pH	14.10 °C	3,600.0 µS/cm	0.76 mg/L	258.09 NTU	41.4 mV	1,133.9 cm	200.00 ml/min
11/2/2022 3:21 PM	25:58	7.58 pH	14.04 °C	3,599.9 µS/cm	0.65 mg/L	208.53 NTU	40.5 mV	1,133.9 cm	200.00 ml/min
11/2/2022 3:24 PM	28:58	7.59 pH	14.14 °C	3,591.4 µS/cm	0.66 mg/L	162.14 NTU	39.2 mV	1,133.9 cm	200.00 ml/min
11/2/2022 3:27 PM	31:58	7.57 pH	14.08 °C	3,591.0 µS/cm	0.71 mg/L	111.16 NTU	39.0 mV	1,133.9 cm	200.00 ml/min
11/2/2022 3:30 PM	34:58	7.58 pH	14.16 °C	3,588.5 µS/cm	0.66 mg/L	86.72 NTU	37.7 mV	1,133.9 cm	200.00 ml/min
11/2/2022 3:33 PM	37:58	7.57 pH	14.09 °C	3,583.5 µS/cm	0.63 mg/L	99.45 NTU	37.7 mV	1,133.9 cm	200.00 ml/min
11/2/2022 3:36 PM	40:58	7.58 pH	14.17 °C	3,581.5 µS/cm	0.61 mg/L	114.47 NTU	36.2 mV	1,133.9 cm	200.00 ml/min

11/2/2022 3:39 PM	43:58	7.57 pH	14.17 °C	3,588.6 µS/cm	0.63 mg/L	91.45 NTU	36.1 mV	1,133.9 cm	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/3/2022 8:56:17 AM
Project: AB BROWN (4)
Operator Name: Jon Hill

Location Name: CCR-AP-11 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 16 ft** **Total Depth: 26 ft** **Initial Depth to Water: 15.03 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 21 ft** **Estimated Total Volume Pumped: 13800 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 745345**

Test Notes:
3.0 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/3/2022 8:56 AM	00:00	7.36 pH	15.98 °C	952.27 µS/cm	1.23 mg/L	1,106.4 NTU	51.7 mV	458.11 cm	200.00 ml/min
11/3/2022 8:59 AM	03:00	7.31 pH	16.41 °C	946.15 µS/cm	1.27 mg/L	592.68 NTU	46.8 mV	458.11 cm	200.00 ml/min
11/3/2022 9:02 AM	06:00	7.32 pH	16.55 °C	946.35 µS/cm	1.25 mg/L	534.24 NTU	42.2 mV	458.11 cm	200.00 ml/min
11/3/2022 9:05 AM	09:00	7.28 pH	16.71 °C	941.12 µS/cm	1.98 mg/L	491.98 NTU	38.6 mV	458.11 cm	200.00 ml/min
11/3/2022 9:08 AM	12:00	7.29 pH	16.69 °C	943.72 µS/cm	1.53 mg/L	615.41 NTU	37.5 mV	458.11 cm	200.00 ml/min
11/3/2022 9:11 AM	15:00	7.25 pH	16.82 °C	943.77 µS/cm	1.22 mg/L	697.71 NTU	38.7 mV	458.11 cm	200.00 ml/min
11/3/2022 9:14 AM	18:00	7.26 pH	16.81 °C	943.89 µS/cm	1.53 mg/L	951.99 NTU	36.9 mV	458.11 cm	200.00 ml/min
11/3/2022 9:17 AM	21:00	7.24 pH	16.84 °C	942.82 µS/cm	1.31 mg/L	1,165.3 NTU	37.0 mV	458.11 cm	200.00 ml/min
11/3/2022 9:20 AM	24:00	7.15 pH	16.81 °C	945.35 µS/cm	1.26 mg/L	1,468.9 NTU	42.2 mV	458.11 cm	200.00 ml/min
11/3/2022 9:23 AM	27:00	7.24 pH	16.82 °C	944.02 µS/cm	1.37 mg/L	1,422.8 NTU	36.3 mV	458.11 cm	200.00 ml/min
11/3/2022 9:26 AM	30:00	7.16 pH	16.80 °C	944.75 µS/cm	1.52 mg/L	1,775.2 NTU	40.7 mV	458.11 cm	200.00 ml/min
11/3/2022 9:29 AM	33:00	7.24 pH	16.84 °C	942.61 µS/cm	1.58 mg/L	1,568.2 NTU	35.3 mV	458.11 cm	200.00 ml/min
11/3/2022 9:32 AM	36:00	7.22 pH	16.77 °C	927.64 µS/cm	2.19 mg/L	2,015.7 NTU	37.4 mV	458.11 cm	200.00 ml/min
11/3/2022 9:35 AM	39:00	7.27 pH	16.81 °C	901.05 µS/cm	1.99 mg/L	1,726.1 NTU	33.5 mV	458.11 cm	200.00 ml/min
11/3/2022 9:38 AM	42:00	7.23 pH	16.84 °C	916.89 µS/cm	2.02 mg/L	1,357.6 NTU	35.7 mV	458.11 cm	200.00 ml/min

11/3/2022 9:41 AM	45:00	7.27 pH	16.82 °C	873.35 µS/cm	2.11 mg/L	871.07 NTU	33.3 mV	458.11 cm	200.00 ml/min
11/3/2022 9:44 AM	48:00	7.23 pH	16.80 °C	887.73 µS/cm	2.17 mg/L	506.41 NTU	36.4 mV	458.11 cm	200.00 ml/min
11/3/2022 9:47 AM	51:00	7.29 pH	16.78 °C	882.21 µS/cm	2.29 mg/L	377.60 NTU	32.9 mV	458.11 cm	200.00 ml/min
11/3/2022 9:50 AM	54:00	7.24 pH	16.79 °C	891.50 µS/cm	2.43 mg/L	311.30 NTU	36.3 mV	458.11 cm	200.00 ml/min
11/3/2022 9:53 AM	57:00	7.28 pH	16.74 °C	834.80 µS/cm	2.24 mg/L	180.25 NTU	33.6 mV	458.11 cm	200.00 ml/min
11/3/2022 9:56 AM	01:00:00	7.27 pH	16.78 °C	932.31 µS/cm	2.40 mg/L	131.26 NTU	35.0 mV	458.11 cm	200.00 ml/min
11/3/2022 9:59 AM	01:03:00	7.31 pH	16.74 °C	928.00 µS/cm	2.39 mg/L	111.93 NTU	32.7 mV	458.11 cm	200.00 ml/min
11/3/2022 10:02 AM	01:06:00	7.25 pH	16.77 °C	940.15 µS/cm	2.41 mg/L	93.52 NTU	36.2 mV	458.11 cm	200.00 ml/min
11/3/2022 10:05 AM	01:09:00	7.31 pH	16.75 °C	918.81 µS/cm	2.51 mg/L	96.97 NTU	33.0 mV	458.11 cm	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/2/2022 2:07:42 PM
Project: AB Brown
Operator Name: Hayley Torres

Location Name: CCR-LF-1 **Well Diameter: 2 in** **Casing Type: Pvc** **Screen Length: 10 ft** **Top of Screen: 9 ft** **Total Depth: 19 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 14 ft** **Estimated Total Volume Pumped: 2200 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 1.2 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 625772**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/2/2022 2:07 PM	00:00	6.31 pH	19.51 °C	1,601.0 µS/cm	2.17 mg/L	25.73 NTU	-0.9 mV		100.00 ml/min
11/2/2022 2:11 PM	03:29	6.32 pH	19.73 °C	1,597.2 µS/cm	1.73 mg/L	8.57 NTU	6.6 mV		100.00 ml/min
11/2/2022 2:14 PM	06:51	6.31 pH	19.98 °C	1,588.0 µS/cm	1.63 mg/L	4.20 NTU	8.7 mV		100.00 ml/min
11/2/2022 2:15 PM	07:46	6.31 pH	19.82 °C	1,593.9 µS/cm	1.62 mg/L	3.54 NTU	10.4 mV		100.00 ml/min
11/2/2022 2:16 PM	08:29	6.31 pH	20.00 °C	1,595.8 µS/cm	1.59 mg/L	3.55 NTU	11.6 mV		100.00 ml/min
11/2/2022 2:19 PM	11:29	6.31 pH	19.87 °C	1,596.2 µS/cm	1.57 mg/L	2.53 NTU	16.2 mV		100.00 ml/min
11/2/2022 2:22 PM	14:29	6.31 pH	19.98 °C	1,594.5 µS/cm	1.52 mg/L	1.28 NTU	18.3 mV		100.00 ml/min
11/2/2022 2:25 PM	17:29	6.31 pH	19.80 °C	1,594.6 µS/cm	1.54 mg/L	0.72 NTU	24.4 mV		100.00 ml/min
11/2/2022 2:28 PM	20:29	6.31 pH	19.94 °C	1,588.2 µS/cm	1.52 mg/L	0.88 NTU	25.7 mV		100.00 ml/min
11/2/2022 2:31 PM	23:29	6.31 pH	19.92 °C	1,593.8 µS/cm	1.52 mg/L	1.03 NTU	30.6 mV		100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/2/2022 3:06:47 PM
Project: AB Brown (2)
Operator Name: Hayley Torres

Location Name: CCR-LF-2 **Well Diameter: 2 in** **Casing Type: Pvc** **Screen Length: 10 ft** **Top of Screen: 35 ft** **Total Depth: 45 ft** **Initial Depth to Water: 28.46 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 40 ft** **Estimated Total Volume Pumped: 7200 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.1 in**	**Instrument Used: Aqua TROLL 500** **Serial Number: 625772**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/2/2022 3:06 PM	00:00	6.56 pH	19.58 °C	16,525 µS/cm	5.25 mg/L	1.78 NTU	83.2 mV	867.46 cm	100.00 ml/min
11/2/2022 3:09 PM	03:00	6.35 pH	18.48 °C	18,153 µS/cm	2.00 mg/L	35.19 NTU	78.2 mV	867.46 cm	100.00 ml/min
11/2/2022 3:12 PM	06:00	6.33 pH	18.43 °C	17,342 µS/cm	1.05 mg/L	99.43 NTU	78.3 mV	867.46 cm	100.00 ml/min
11/2/2022 3:15 PM	09:00	6.32 pH	18.11 °C	16,676 µS/cm	0.79 mg/L	120.10 NTU	81.5 mV	867.46 cm	100.00 ml/min
11/2/2022 3:18 PM	12:00	6.32 pH	18.13 °C	16,244 µS/cm	0.61 mg/L	156.07 NTU	83.6 mV	867.46 cm	100.00 ml/min
11/2/2022 3:21 PM	15:00	6.32 pH	18.06 °C	16,184 µS/cm	0.50 mg/L	193.56 NTU	85.3 mV	867.46 cm	100.00 ml/min
11/2/2022 3:24 PM	18:00	6.31 pH	18.75 °C	16,146 µS/cm	0.43 mg/L	230.79 NTU	89.1 mV	867.46 cm	100.00 ml/min
11/2/2022 3:27 PM	21:00	6.31 pH	19.12 °C	16,172 µS/cm	0.43 mg/L	276.91 NTU	95.8 mV	867.46 cm	100.00 ml/min
11/2/2022 3:30 PM	24:00	6.30 pH	18.93 °C	16,204 µS/cm	0.44 mg/L	386.13 NTU	100.7 mV	867.46 cm	100.00 ml/min
11/2/2022 3:33 PM	27:00	6.31 pH	18.69 °C	16,423 µS/cm	0.45 mg/L	353.96 NTU	103.7 mV	867.46 cm	100.00 ml/min
11/2/2022 3:36 PM	30:00	6.31 pH	18.54 °C	16,337 µS/cm	0.43 mg/L	429.94 NTU	106.0 mV	867.46 cm	100.00 ml/min
11/2/2022 3:39 PM	33:00	6.31 pH	18.53 °C	16,544 µS/cm	0.42 mg/L	550.86 NTU	108.6 mV	867.46 cm	100.00 ml/min
11/2/2022 3:42 PM	36:00	6.30 pH	19.10 °C	16,320 µS/cm	0.41 mg/L	605.34 NTU	113.6 mV	867.46 cm	100.00 ml/min
11/2/2022 3:45 PM	39:00	6.30 pH	20.15 °C	16,321 µS/cm	0.42 mg/L	631.20 NTU	116.9 mV	867.46 cm	100.00 ml/min
11/2/2022 3:48 PM	42:00	6.29 pH	20.82 °C	16,312 µS/cm	0.44 mg/L	836.69 NTU	119.8 mV	867.46 cm	100.00 ml/min

11/2/2022 3:51 PM	45:00	6.28 pH	21.16 °C	16,408 µS/cm	0.50 mg/L	900.56 NTU	122.6 mV	867.46 cm	100.00 ml/min
11/2/2022 3:54 PM	48:00	6.28 pH	21.52 °C	16,368 µS/cm	0.58 mg/L	929.26 NTU	124.9 mV	867.46 cm	100.00 ml/min
11/2/2022 3:57 PM	51:00	6.28 pH	20.73 °C	16,329 µS/cm	0.89 mg/L	518.22 NTU	126.3 mV	867.46 cm	100.00 ml/min
11/2/2022 4:00 PM	54:00	6.29 pH	18.38 °C	17,020 µS/cm	0.67 mg/L	861.54 NTU	129.0 mV	867.46 cm	100.00 ml/min
11/2/2022 4:03 PM	57:00	6.30 pH	17.88 °C	16,777 µS/cm	0.40 mg/L	144.20 NTU	128.0 mV	867.46 cm	100.00 ml/min
11/2/2022 4:06 PM	01:00:00	6.30 pH	17.64 °C	16,479 µS/cm	0.33 mg/L	239.45 NTU	128.0 mV	867.46 cm	100.00 ml/min
11/2/2022 4:09 PM	01:03:00	6.30 pH	17.51 °C	16,439 µS/cm	0.29 mg/L	226.62 NTU	128.2 mV	867.46 cm	100.00 ml/min
11/2/2022 4:12 PM	01:06:00	6.30 pH	17.51 °C	16,288 µS/cm	0.26 mg/L	58.64 NTU	128.3 mV	867.46 cm	100.00 ml/min
11/2/2022 4:15 PM	01:09:00	6.30 pH	17.43 °C	16,248 µS/cm	0.25 mg/L	144.51 NTU	129.5 mV	867.46 cm	100.00 ml/min
11/2/2022 4:18 PM	01:12:00	6.30 pH	17.47 °C	16,075 µS/cm	0.24 mg/L	171.58 NTU	131.3 mV	867.46 cm	100.00 ml/min
11/2/2022 4:21 PM	01:15:00	6.30 pH	17.33 °C	16,038 µS/cm	0.22 mg/L	111.80 NTU	131.5 mV	867.46 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/3/2022 11:27:09 AM
Project: AB Brown (4)
Operator Name: Hayley Torres

Location Name: CCR-LF-3 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 25 ft** **Total Depth: 35 ft** **Initial Depth to Water: 31.06 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 30 ft** **Estimated Total Volume Pumped: 1800 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 625772**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/3/2022 11:27 AM	00:00	6.94 pH	18.72 °C	1,830.2 µS/cm	8.89 mg/L	0.60 NTU	10.6 mV	946.71 cm	100.00 ml/min
11/3/2022 11:30 AM	03:00	6.60 pH	18.10 °C	1,700.7 µS/cm	7.02 mg/L	2.04 NTU	12.9 mV	946.71 cm	100.00 ml/min
11/3/2022 11:33 AM	06:00	6.55 pH	17.74 °C	1,704.6 µS/cm	6.80 mg/L	6.19 NTU	22.0 mV	946.71 cm	100.00 ml/min
11/3/2022 11:36 AM	09:00	6.54 pH	17.61 °C	1,683.9 µS/cm	6.68 mg/L	5.12 NTU	26.2 mV	946.71 cm	100.00 ml/min
11/3/2022 11:39 AM	12:00	6.54 pH	17.58 °C	1,685.4 µS/cm	6.65 mg/L	1.65 NTU	32.4 mV	946.71 cm	100.00 ml/min
11/3/2022 11:42 AM	15:00	6.53 pH	17.39 °C	1,681.1 µS/cm	6.66 mg/L	1.27 NTU	35.8 mV	946.71 cm	100.00 ml/min
11/3/2022 11:45 AM	18:00	6.54 pH	17.71 °C	1,676.2 µS/cm	6.71 mg/L	0.44 NTU	41.4 mV	946.71 cm	100.00 ml/min
11/3/2022 12:12 PM	45:41	7.09 pH	31.72 °C	0.51 µS/cm	7.53 mg/L	2.62 NTU	67.9 mV	946.71 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/3/2022 9:52:07 AM
Project: AB Brown (3)
Operator Name: Hayley Torres

Location Name: CCR-LF-4 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 45 ft** **Total Depth: 55 ft** **Initial Depth to Water: 48.16 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 50 ft** **Estimated Total Volume Pumped: 3200 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.77 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 625772**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/3/2022 9:52 AM	00:00	6.49 pH	14.99 °C	9,916.0 µS/cm	5.13 mg/L	22.60 NTU	44.3 mV	1,467.9 cm	100.00 ml/min
11/3/2022 9:55 AM	03:00	6.41 pH	14.93 °C	10,361 µS/cm	2.71 mg/L	8.91 NTU	43.8 mV	1,467.9 cm	100.00 ml/min
11/3/2022 9:58 AM	06:00	6.39 pH	15.03 °C	10,477 µS/cm	1.45 mg/L	5.70 NTU	38.3 mV	1,467.9 cm	100.00 ml/min
11/3/2022 10:01 AM	09:00	6.38 pH	15.08 °C	10,492 µS/cm	0.94 mg/L	3.15 NTU	33.1 mV	1,467.9 cm	100.00 ml/min
11/3/2022 10:04 AM	12:00	6.37 pH	15.19 °C	10,480 µS/cm	0.70 mg/L	5.42 NTU	29.3 mV	1,467.9 cm	100.00 ml/min
11/3/2022 10:07 AM	15:00	6.37 pH	15.31 °C	10,455 µS/cm	0.59 mg/L	4.49 NTU	26.2 mV	1,467.9 cm	100.00 ml/min
11/3/2022 10:10 AM	18:00	6.37 pH	15.38 °C	10,433 µS/cm	0.54 mg/L	4.63 NTU	23.9 mV	1,467.9 cm	100.00 ml/min
11/3/2022 10:13 AM	21:00	6.36 pH	15.43 °C	10,414 µS/cm	0.49 mg/L	8.17 NTU	21.9 mV	1,467.9 cm	100.00 ml/min
11/3/2022 10:16 AM	24:00	6.36 pH	15.51 °C	10,411 µS/cm	0.45 mg/L	13.63 NTU	20.3 mV	1,467.9 cm	100.00 ml/min
11/3/2022 10:19 AM	27:00	6.36 pH	15.50 °C	10,395 µS/cm	0.42 mg/L	17.83 NTU	18.9 mV	1,467.9 cm	100.00 ml/min
11/3/2022 10:22 AM	30:00	6.36 pH	15.60 °C	10,385 µS/cm	0.39 mg/L	22.03 NTU	17.7 mV	1,467.9 cm	100.00 ml/min
11/3/2022 10:25 AM	33:00	6.36 pH	15.57 °C	10,382 µS/cm	0.37 mg/L	22.65 NTU	16.6 mV	1,467.9 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/3/2022 1:01:13 PM
Project: AB Brown (5)
Operator Name: Hayley Torres

Location Name: CCR-LF-5 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 20 ft** **Total Depth: 30 ft** **Initial Depth to Water: 22.26 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 25 ft** **Estimated Total Volume Pumped: 8400 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.17 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 625772**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/3/2022 1:01 PM	00:00	6.82 pH	19.43 °C	3,421.1 µS/cm	5.43 mg/L	12.95 NTU	45.3 mV	678.48 cm	100.00 ml/min
11/3/2022 1:04 PM	03:00	6.73 pH	17.86 °C	3,111.7 µS/cm	2.07 mg/L	10.04 NTU	43.3 mV	678.48 cm	100.00 ml/min
11/3/2022 1:07 PM	06:00	6.72 pH	17.31 °C	2,996.9 µS/cm	1.21 mg/L	10.63 NTU	43.6 mV	678.48 cm	100.00 ml/min
11/3/2022 1:10 PM	09:00	6.71 pH	17.34 °C	2,945.9 µS/cm	0.85 mg/L	14.62 NTU	44.4 mV	678.48 cm	100.00 ml/min
11/3/2022 1:13 PM	12:00	6.70 pH	17.25 °C	2,921.3 µS/cm	0.63 mg/L	16.40 NTU	45.5 mV	678.48 cm	100.00 ml/min
11/3/2022 1:16 PM	15:00	6.70 pH	17.28 °C	2,922.2 µS/cm	0.49 mg/L	18.70 NTU	46.9 mV	678.48 cm	100.00 ml/min
11/3/2022 1:19 PM	18:00	6.69 pH	17.17 °C	2,938.7 µS/cm	0.39 mg/L	18.42 NTU	48.2 mV	678.48 cm	100.00 ml/min
11/3/2022 1:22 PM	21:00	6.69 pH	17.23 °C	2,947.5 µS/cm	0.33 mg/L	17.19 NTU	49.3 mV	678.48 cm	100.00 ml/min
11/3/2022 1:25 PM	24:00	6.69 pH	17.09 °C	2,967.6 µS/cm	0.29 mg/L	18.13 NTU	50.3 mV	678.48 cm	100.00 ml/min
11/3/2022 1:28 PM	27:00	6.69 pH	17.01 °C	2,982.7 µS/cm	0.26 mg/L	22.17 NTU	51.3 mV	678.48 cm	100.00 ml/min
11/3/2022 1:31 PM	30:00	6.68 pH	17.22 °C	3,028.8 µS/cm	0.24 mg/L	21.19 NTU	52.5 mV	678.48 cm	100.00 ml/min
11/3/2022 1:34 PM	33:00	6.68 pH	17.01 °C	3,089.1 µS/cm	0.24 mg/L	27.17 NTU	53.8 mV	678.48 cm	100.00 ml/min
11/3/2022 1:37 PM	36:00	6.68 pH	17.13 °C	3,133.5 µS/cm	0.23 mg/L	45.89 NTU	55.2 mV	678.48 cm	100.00 ml/min
11/3/2022 1:40 PM	39:00	6.68 pH	17.14 °C	3,206.6 µS/cm	0.21 mg/L	58.37 NTU	56.2 mV	678.48 cm	100.00 ml/min
11/3/2022 1:43 PM	42:00	6.69 pH	17.24 °C	3,256.0 µS/cm	0.20 mg/L	66.09 NTU	57.4 mV	678.48 cm	100.00 ml/min

11/3/2022 1:46 PM	45:00	6.68 pH	17.12 °C	3,316.7 µS/cm	0.19 mg/L	106.96 NTU	58.0 mV	678.48 cm	100.00 ml/min
11/3/2022 1:49 PM	48:00	6.68 pH	17.27 °C	3,342.2 µS/cm	0.18 mg/L	117.36 NTU	58.2 mV	678.48 cm	100.00 ml/min
11/3/2022 1:52 PM	51:00	6.67 pH	17.31 °C	3,370.9 µS/cm	0.17 mg/L	177.63 NTU	57.0 mV	678.48 cm	100.00 ml/min
11/3/2022 1:55 PM	54:00	6.67 pH	17.45 °C	3,409.0 µS/cm	0.16 mg/L	197.95 NTU	55.3 mV	678.48 cm	100.00 ml/min
11/3/2022 1:58 PM	57:00	6.67 pH	17.42 °C	3,447.1 µS/cm	0.16 mg/L	212.41 NTU	52.6 mV	678.48 cm	100.00 ml/min
11/3/2022 2:01 PM	01:00:00	6.66 pH	17.68 °C	3,485.3 µS/cm	0.16 mg/L	232.45 NTU	49.6 mV	678.48 cm	100.00 ml/min
11/3/2022 2:04 PM	01:03:00	6.67 pH	17.48 °C	3,504.3 µS/cm	1.37 mg/L	6.68 NTU	51.7 mV	678.48 cm	100.00 ml/min
11/3/2022 2:07 PM	01:06:00	6.66 pH	17.29 °C	3,505.7 µS/cm	0.49 mg/L	6.96 NTU	52.8 mV	678.48 cm	100.00 ml/min
11/3/2022 2:10 PM	01:09:00	6.65 pH	17.22 °C	3,548.3 µS/cm	0.21 mg/L	7.90 NTU	54.3 mV	678.48 cm	100.00 ml/min
11/3/2022 2:13 PM	01:12:00	6.65 pH	17.03 °C	3,573.8 µS/cm	0.16 mg/L	7.72 NTU	55.7 mV	678.48 cm	100.00 ml/min
11/3/2022 2:16 PM	01:15:00	6.64 pH	17.14 °C	3,598.7 µS/cm	0.14 mg/L	8.69 NTU	57.0 mV	678.48 cm	100.00 ml/min
11/3/2022 2:19 PM	01:18:00	6.64 pH	17.15 °C	3,620.7 µS/cm	0.13 mg/L	14.85 NTU	58.1 mV	678.48 cm	100.00 ml/min
11/3/2022 2:22 PM	01:21:00	6.64 pH	17.31 °C	3,640.2 µS/cm	0.12 mg/L	19.49 NTU	59.2 mV	678.48 cm	100.00 ml/min
11/3/2022 2:25 PM	01:24:00	6.63 pH	17.16 °C	3,670.4 µS/cm	0.12 mg/L	19.06 NTU	60.2 mV	678.48 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/3/2022 4:50:57 PM
Project: AB Brown (6)
Operator Name: Hayley Torres

Location Name: CCR-LF-6 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 5 ft** **Top of Screen: 4.66 ft** **Total Depth: 9.66 ft** **Initial Depth to Water: 8.45 ft**	**Pump Type: Dedicated Tubing Type: LDPE** **Pump Intake From TOC:** **Estimated Total Volume Pumped: 3300 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.01 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 625772**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/3/2022 4:50 PM	00:00	7.19 pH	21.44 °C	1,206.6 µS/cm	6.87 mg/L	15.59 NTU	34.9 mV	257.56 cm	100.00 ml/min
11/3/2022 4:53 PM	03:00	6.91 pH	19.76 °C	880.99 µS/cm	2.87 mg/L	54.32 NTU	21.5 mV	257.56 cm	100.00 ml/min
11/3/2022 4:56 PM	06:00	6.84 pH	19.44 °C	828.83 µS/cm	1.79 mg/L	64.16 NTU	23.2 mV	257.56 cm	100.00 ml/min
11/3/2022 4:59 PM	09:00	6.80 pH	19.17 °C	810.63 µS/cm	1.39 mg/L	71.06 NTU	25.5 mV	257.56 cm	100.00 ml/min
11/3/2022 5:02 PM	12:00	6.77 pH	19.29 °C	805.92 µS/cm	1.16 mg/L	74.19 NTU	27.3 mV	257.56 cm	100.00 ml/min
11/3/2022 5:05 PM	15:00	6.74 pH	19.20 °C	808.95 µS/cm	1.03 mg/L	44.49 NTU	29.7 mV	257.56 cm	100.00 ml/min
11/3/2022 5:08 PM	18:00	6.73 pH	19.31 °C	809.79 µS/cm	0.94 mg/L	53.48 NTU	32.3 mV	257.56 cm	100.00 ml/min
11/3/2022 5:11 PM	21:00	6.71 pH	19.09 °C	811.51 µS/cm	0.85 mg/L	31.74 NTU	34.1 mV	257.56 cm	100.00 ml/min
11/3/2022 5:14 PM	24:00	6.70 pH	19.35 °C	817.01 µS/cm	0.78 mg/L	30.95 NTU	35.4 mV	257.56 cm	100.00 ml/min
11/3/2022 5:17 PM	27:00	6.70 pH	19.13 °C	820.43 µS/cm	0.75 mg/L	18.12 NTU	37.2 mV	257.56 cm	100.00 ml/min
11/3/2022 5:20 PM	30:00	6.69 pH	19.25 °C	818.15 µS/cm	0.73 mg/L	23.24 NTU	38.3 mV	257.56 cm	100.00 ml/min
11/3/2022 5:23 PM	33:00	6.69 pH	19.01 °C	829.88 µS/cm	0.72 mg/L	17.21 NTU	40.0 mV	257.56 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/4/2022 11:15:18 AM
Project: AB Brown (7)
Operator Name: Hayley Torres

Location Name: CCR-SP-1 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 10 ft** **Total Depth: 20 ft** **Initial Depth to Water: 14.42 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 15 ft** **Estimated Total Volume Pumped: 4700 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.11 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 625772**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/4/2022 11:15 AM	00:00	6.37 pH	17.91 °C	1,661.2 µS/cm	1.78 mg/L	393.20 NTU	-172.8 mV	439.52 cm	100.00 ml/min
11/4/2022 11:18 AM	03:00	6.31 pH	17.91 °C	1,663.3 µS/cm	1.22 mg/L	443.30 NTU	-176.8 mV	439.52 cm	100.00 ml/min
11/4/2022 11:21 AM	06:00	6.29 pH	17.93 °C	1,661.7 µS/cm	0.82 mg/L	455.89 NTU	-180.9 mV	439.52 cm	100.00 ml/min
11/4/2022 11:24 AM	09:00	6.27 pH	17.99 °C	1,661.4 µS/cm	0.92 mg/L	442.33 NTU	-185.3 mV	439.52 cm	100.00 ml/min
11/4/2022 11:27 AM	12:00	6.26 pH	17.95 °C	1,660.0 µS/cm	0.76 mg/L	671.08 NTU	-188.5 mV	439.52 cm	100.00 ml/min
11/4/2022 11:30 AM	15:00	6.26 pH	18.03 °C	1,660.1 µS/cm	0.43 mg/L	705.61 NTU	-190.8 mV	439.52 cm	100.00 ml/min
11/4/2022 11:33 AM	18:00	6.26 pH	18.08 °C	1,660.5 µS/cm	0.31 mg/L	715.21 NTU	-192.5 mV	439.52 cm	100.00 ml/min
11/4/2022 11:36 AM	21:00	6.25 pH	18.06 °C	1,657.6 µS/cm	0.25 mg/L	732.98 NTU	-193.9 mV	439.52 cm	100.00 ml/min
11/4/2022 11:39 AM	24:00	6.25 pH	18.04 °C	1,660.5 µS/cm	0.22 mg/L	749.43 NTU	-194.0 mV	439.52 cm	100.00 ml/min
11/4/2022 11:42 AM	27:00	6.25 pH	18.04 °C	1,660.2 µS/cm	0.20 mg/L	772.72 NTU	-195.3 mV	439.52 cm	100.00 ml/min
11/4/2022 11:45 AM	30:18	6.33 pH	18.37 °C	1,913.5 µS/cm	5.19 mg/L	0.00 NTU	-189.2 mV	439.52 cm	100.00 ml/min
11/4/2022 11:46 AM	31:19	6.27 pH	18.30 °C	1,579.5 µS/cm	0.85 mg/L	0.05 NTU	-192.2 mV	439.52 cm	100.00 ml/min
11/4/2022 11:47 AM	32:21	6.26 pH	18.34 °C	1,541.7 µS/cm	0.32 mg/L	0.00 NTU	-193.5 mV	439.52 cm	100.00 ml/min
11/4/2022 11:50 AM	35:21	6.25 pH	18.37 °C	1,538.1 µS/cm	0.19 mg/L	0.00 NTU	-194.1 mV	439.52 cm	100.00 ml/min
11/4/2022 11:52 AM	37:40	6.25 pH	18.49 °C	1,537.8 µS/cm	0.18 mg/L	0.00 NTU	-194.6 mV	439.52 cm	100.00 ml/min

11/4/2022 11:55 AM	40:40	6.25 pH	18.59 °C	1,387.2 µS/cm	0.19 mg/L	0.00 NTU	-194.1 mV	439.52 cm	100.00 ml/min
11/4/2022 11:58 AM	43:40	6.25 pH	18.56 °C	1,375.6 µS/cm	0.17 mg/L	0.00 NTU	-194.2 mV	439.52 cm	100.00 ml/min
11/4/2022 12:01 PM	46:40	6.25 pH	18.71 °C	1,363.8 µS/cm	0.18 mg/L	0.00 NTU	-194.2 mV	439.52 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/7/2022 10:22:31 AM
Project: AB Brown (8)
Operator Name: Hayley Torres

Location Name: CCR-SP-2 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 10 ft** **Total Depth: 20 ft** **Initial Depth to Water: 15.96 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 15 ft** **Estimated Total Volume Pumped: 2400 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 1.1 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 625772**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/7/2022 10:22 AM	00:00	6.74 pH	17.34 °C	1,113.8 µS/cm	0.81 mg/L	3.41 NTU	-67.0 mV	486.46 cm	100.00 ml/min
11/7/2022 10:25 AM	03:00	6.72 pH	17.22 °C	1,130.8 µS/cm	0.36 mg/L	4.21 NTU	-83.8 mV	486.46 cm	100.00 ml/min
11/7/2022 10:28 AM	06:00	6.69 pH	17.27 °C	1,138.4 µS/cm	0.21 mg/L	1.91 NTU	-89.8 mV	486.46 cm	100.00 ml/min
11/7/2022 10:31 AM	09:00	6.68 pH	17.27 °C	1,143.7 µS/cm	0.15 mg/L	0.63 NTU	-91.7 mV	486.46 cm	100.00 ml/min
11/7/2022 10:34 AM	12:00	6.67 pH	17.26 °C	1,146.8 µS/cm	0.13 mg/L	0.29 NTU	-94.6 mV	486.46 cm	100.00 ml/min
11/7/2022 10:37 AM	15:00	6.66 pH	17.23 °C	1,148.1 µS/cm	0.11 mg/L	0.43 NTU	-95.1 mV	486.46 cm	100.00 ml/min
11/7/2022 10:40 AM	18:00	6.66 pH	17.23 °C	1,149.4 µS/cm	0.11 mg/L	0.53 NTU	-95.9 mV	486.46 cm	100.00 ml/min
11/7/2022 10:43 AM	21:00	6.66 pH	17.19 °C	1,149.6 µS/cm	0.10 mg/L	0.00 NTU	-96.6 mV	486.46 cm	100.00 ml/min
11/7/2022 10:46 AM	24:00	6.66 pH	17.24 °C	1,150.5 µS/cm	0.10 mg/L	0.00 NTU	-97.0 mV	486.46 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/7/2022 11:43:27 AM
Project: AB Brown (9)
Operator Name: Hayley Torres

Location Name: CCR-SP-3 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 10 ft** **Total Depth: 20 ft** **Initial Depth to Water: 11.04 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 15 ft** **Estimated Total Volume Pumped: 2100 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.77 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 625772**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/7/2022 11:43 AM	00:00	6.88 pH	18.22 °C	518.10 µS/cm	2.63 mg/L	83.18 NTU	-25.3 mV	336.50 cm	100.00 ml/min
11/7/2022 11:46 AM	03:00	6.83 pH	18.34 °C	496.69 µS/cm	0.72 mg/L	167.03 NTU	-37.2 mV	336.50 cm	100.00 ml/min
11/7/2022 11:49 AM	06:00	6.80 pH	18.40 °C	494.34 µS/cm	0.45 mg/L	106.83 NTU	-39.8 mV	336.50 cm	100.00 ml/min
11/7/2022 11:52 AM	09:00	6.79 pH	18.44 °C	491.86 µS/cm	0.33 mg/L	66.29 NTU	-42.3 mV	336.50 cm	100.00 ml/min
11/7/2022 11:55 AM	12:00	6.78 pH	18.49 °C	489.63 µS/cm	0.27 mg/L	102.39 NTU	-43.2 mV	336.50 cm	100.00 ml/min
11/7/2022 11:58 AM	15:00	6.78 pH	18.58 °C	488.44 µS/cm	0.23 mg/L	133.70 NTU	-43.4 mV	336.50 cm	100.00 ml/min
11/7/2022 12:01 PM	18:00	6.76 pH	18.58 °C	477.67 µS/cm	0.21 mg/L	142.80 NTU	-42.4 mV	336.50 cm	100.00 ml/min
11/7/2022 12:04 PM	21:00	6.76 pH	18.98 °C	476.55 µS/cm	0.23 mg/L	139.52 NTU	-41.0 mV	336.50 cm	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/8/2022 10:30:20 AM
Project: AB Brown (10)
Operator Name: Hayley Torres

Location Name: CCR-BK-1 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 54 ft** **Total Depth: 64 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 59 ft** **Estimated Total Volume Pumped: 3600 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min**	**Instrument Used: Aqua TROLL 500** **Serial Number: 625772**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/8/2022 10:30 AM	00:00	6.97 pH	15.32 °C	336.48 µS/cm	6.66 mg/L	193.71 NTU	67.4 mV		100.00 ml/min
11/8/2022 10:33 AM	03:00	6.85 pH	15.31 °C	325.89 µS/cm	6.64 mg/L	168.08 NTU	75.1 mV		100.00 ml/min
11/8/2022 10:36 AM	06:00	6.75 pH	15.35 °C	324.18 µS/cm	6.42 mg/L	167.39 NTU	80.0 mV		100.00 ml/min
11/8/2022 10:39 AM	09:00	6.70 pH	15.31 °C	324.14 µS/cm	6.19 mg/L	168.41 NTU	83.6 mV		100.00 ml/min
11/8/2022 10:42 AM	12:00	6.66 pH	15.33 °C	325.16 µS/cm	6.03 mg/L	180.38 NTU	86.2 mV		100.00 ml/min
11/8/2022 10:45 AM	15:00	6.64 pH	15.48 °C	326.97 µS/cm	5.88 mg/L	186.00 NTU	88.1 mV		100.00 ml/min
11/8/2022 10:48 AM	18:00	6.62 pH	15.58 °C	328.38 µS/cm	5.75 mg/L	194.39 NTU	89.5 mV		100.00 ml/min
11/8/2022 10:51 AM	21:00	6.62 pH	15.70 °C	329.81 µS/cm	6.37 mg/L	690.20 NTU	87.3 mV		100.00 ml/min
11/8/2022 10:54 AM	24:00	6.61 pH	15.62 °C	330.95 µS/cm	5.83 mg/L	1,061.3 NTU	90.3 mV		100.00 ml/min
11/8/2022 10:57 AM	27:00	6.61 pH	15.68 °C	332.55 µS/cm	5.73 mg/L	1.30 NTU	89.3 mV		100.00 ml/min
11/8/2022 11:00 AM	30:00	6.60 pH	15.83 °C	333.02 µS/cm	5.21 mg/L	2.64 NTU	90.8 mV		100.00 ml/min
11/8/2022 11:03 AM	33:00	6.58 pH	15.83 °C	332.92 µS/cm	5.08 mg/L	3.25 NTU	92.0 mV		100.00 ml/min
11/8/2022 11:06 AM	36:00	6.59 pH	15.59 °C	332.66 µS/cm	5.04 mg/L	6.60 NTU	92.8 mV		100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/8/2022 12:30:36 PM
Project: AB Brown (11)
Operator Name: Hayley Torres

Location Name: CCR-BK-2 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 15.5 ft** **Total Depth: 25.5 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 20.5 ft** **Estimated Total Volume Pumped: 2700 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min**	**Instrument Used: Aqua TROLL 500** **Serial Number: 625772**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
11/8/2022 12:30 PM	00:00	6.45 pH	18.60 °C	281.68 µS/cm	3.17 mg/L	199.25 NTU	78.9 mV		100.00 ml/min
11/8/2022 12:33 PM	03:00	6.44 pH	19.40 °C	284.31 µS/cm	3.05 mg/L	101.43 NTU	83.3 mV		100.00 ml/min
11/8/2022 12:36 PM	06:00	6.44 pH	19.84 °C	284.65 µS/cm	3.13 mg/L	123.70 NTU	81.8 mV		100.00 ml/min
11/8/2022 12:39 PM	09:00	6.44 pH	20.21 °C	284.77 µS/cm	3.21 mg/L	119.79 NTU	80.7 mV		100.00 ml/min
11/8/2022 12:42 PM	12:00	6.44 pH	20.54 °C	284.95 µS/cm	3.27 mg/L	117.44 NTU	79.9 mV		100.00 ml/min
11/8/2022 12:45 PM	15:00	6.45 pH	20.85 °C	285.25 µS/cm	3.31 mg/L	112.61 NTU	79.1 mV		100.00 ml/min
11/8/2022 12:48 PM	18:00	6.45 pH	21.14 °C	285.52 µS/cm	3.32 mg/L	110.77 NTU	78.5 mV		100.00 ml/min
11/8/2022 12:51 PM	21:00	6.45 pH	21.41 °C	285.77 µS/cm	3.28 mg/L	106.97 NTU	78.0 mV		100.00 ml/min
11/8/2022 12:54 PM	24:00	6.46 pH	21.67 °C	286.04 µS/cm	3.25 mg/L	111.83 NTU	77.5 mV		100.00 ml/min
11/8/2022 12:57 PM	27:00	6.46 pH	21.90 °C	286.13 µS/cm	3.28 mg/L	110.29 NTU	77.0 mV		100.00 ml/min

Samples

Sample ID:	Description:

VECTREN - AB BROWN STATION
CCR Groundwater Sampling Event
Gauging Date: May 16, 2022
ATC Project No. 170LF01280

WELL ID	DATE	TIME	DTW FROM TOC (feet)
French Drain Area Locations			
HA-PP-1	5/16/2022	11:40	2.75
HA-PP-2	5/16/2022	11:40	2.49
FD PZ-1	5/16/2022	14:25	7.21
FD PZ-2	5/16/2022	14:32	2.85
FD PZ-3S	5/16/2022	13:53	9.30
FD PZ-3D	5/16/2022	13:57	13.05
FD PZ-4	5/16/2022	13:45	9.72
CCR-SG-3	5/16/2022	11:39	1.08
MH-1	5/16/2022	14:10	9.75
MH-2	5/16/2022	14:28	9.10
Ash Pond Wells			
CCR-AP-1R	5/16/2022	13:15	15.95
CCR-AP-2R	5/16/2022	13:38	42.46
CCR-AP-2I	5/16/2022	13:39	31.20
CCR-AP-3R	5/16/2022	13:25	25.30
CCR-AP-3I	5/16/2022	13:26	24.85
CCR-AP-4R	5/16/2022	13:07	32.92
CCR-AP-5R	5/16/2022	13:30	35.70
CCR-AP-6	5/16/2022	11:49	17.32
CCR-AP-7R	5/16/2022	11:52	34.98
CCR-AP-8	5/16/2022	11:45	4.16
CCR-AP-9	5/16/2022	11:35	8.07
CCR-AP-10	5/16/2022	12:55	35.11
CCR-AP-11	5/16/2022	11:20	11.07
Landfill Wells			
CCR-LF-1	5/16/2022	12:42	8.11
CCR-LF-2	5/16/2022	12:27	27.25
CCR-LF-3	5/16/2022	12:35	30.25
CCR-LF-4	5/16/2022	11:57	47.78
CCR-LF-5	5/16/2022	12:00	21.25
CCR-LF-6	5/16/2022	12:02	8.32
Sedimentation Pond Wells			
CCR-SP-1	5/16/2022	12:10	11.26
CCR-SP-2	5/16/2022	12:15	13.75
CCR-SP-3	5/16/2022	12:20	6.69
Background Wells			
CCR-BK-1R	5/16/2022	10:55	dry to pump
CCR-BK-2	5/16/2022	10:50	15.81

DTW= Depth to Water
TOC= Top of Casing

VECTREN - AB BROWN GENERATING STATION
CCR Groundwater Sampling Event
Gauging Date: November 1, 2022
ATC Project No. 170LF01280

WELL ID	DATE	TIME	DTW FROM TOC (feet)
French Drain Area Locations			
HA-PP-1	11/1/2022	12:48	2.80
HA-PP-2	11/1/2022	12:50	4.10
FD PZ-1	11/1/2022	14:17	7.55
FD PZ-2	11/1/2022	14:25	2.78
FD PZ-3S	11/1/2022	14:30	9.62
FD PZ-3D	11/1/2022	14:33	12.61
FD PZ-4	11/1/2022	14:20	9.99
CCR-SG-3	11/1/2022	12:55	0.95
MH-1	11/1/2022	14:40	9.60
MH-2	11/1/2022	14:51	9.05
Ash Pond Wells			
CCR-AP-1R	11/1/2022	13:45	19.71
CCR-AP-2R	11/1/2022	14:21	45.50
CCR-AP-2I	11/1/2022	14:15	35.60
CCR-AP-3R	11/1/2022	14:00	36.21
CCR-AP-3I	11/1/2022	14:05	28.72
CCR-AP-4R	11/1/2022	13:40	35.05
CCR-AP-5R	11/1/2022	14:10	36.15
CCR-AP-6	11/1/2022	12:02	19.80
CCR-AP-7R	11/1/2022	12:12	35.88
CCR-AP-8	11/1/2022	15:00	6.35
CCR-AP-9	11/1/2022	13:00	8.67
CCR-AP-10	11/1/2022	13:34	37.42
CCR-AP-11	11/1/2022	13:18	15.10
Landfill Wells			
CCR-LF-1	11/1/2022	13:35	11.07
CCR-LF-2	11/1/2022	13:45	28.47
CCR-LF-3	11/1/2022	13:53	31.04
CCR-LF-4	11/1/2022	14:40	48.24
CCR-LF-5	11/1/2022	14:06	21.27
CCR-LF-6	11/1/2022	14:09	8.39
Sedimentation Pond Wells			
CCR-SP-1	11/1/2022	14:30	13.08
CCR-SP-2	11/1/2022	14:24	16.02
CCR-SP-3	11/1/2022	14:20	11.68
Background Wells			
CCR-BK-1R	11/1/2022	15:10	dry to pump
CCR-BK-2	11/1/2022	15:22	15.81

DTW= Depth to Water
TOC= Top of Casing

APPENDIX C
Laboratory Analytical Reports

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-138324-1
Client Project/Site: CCR Groundwater Monitoring AB Brown

For:
Haley & Aldrich, Inc.
465 Medford St
Suite 2200
Boston, Massachusetts 02129-0414

Attn: Mark Miesfeldt

Authorized for release by:
6/16/2022 1:11:01 PM

Ken Hayes, Project Manager II
(615)301-5035
Ken.Hayes@et.eurofinsus.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

Table of Contents

Job ID: 180-138324-1

Laboratory: Eurofins Pittsburgh

Narrative

Job Narrative
180-138324-1

Comments
No additional comments.

Receipt
The samples were received on 5/19/2022 9:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.2º C.

RAD
Methods 903.0, 9315: Radium-226 batch 566869
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.CCR-LF-1 (180-138324-1), CCR-LF-2 (180-138324-2), CCR-LF-3 (180-138324-3), CCR-LF-4 (180-138324-4), CCR-LF-5 (180-138324-5), CCR-LF-6 (180-138324-6), BLIND DUPLICATE 3 (180-138324-7), FIELD BLANK 3 (180-138324-8), (LCS 160-566869/1-A), (LCSD 160-566869/2-A) and (MB 160-566869/12-A)

Method 9320: Radium-228 batch 566871
The detection goal was not met for the following samples. Sample was prepped at a reduced volume due to the presence of matrix interferences: CCR-LF-1 (180-138324-1). Analytical results are reported with the detection limit achieved.

Methods 904.0, 9320: Radium-228 batch 566871
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date: CCR-LF-1 (180-138324-1), CCR-LF-2 (180-138324-2), CCR-LF-3 (180-138324-3), CCR-LF-4 (180-138324-4), CCR-LF-5 (180-138324-5), CCR-LF-6 (180-138324-6), BLIND DUPLICATE 3 (180-138324-7), FIELD BLANK 3 (180-138324-8), (LCS 160-566871/1-A), (LCSD 160-566871/2-A) and (MB 160-566871/12-A)

Method PrecSep_0: Radium-228 Prep Batch 160-566871
The following samples were prepared at a reduced aliquot due to Matrix: CCR-LF-1 (180-138324-1), CCR-LF-2 (180-138324-2), CCR-LF-4 (180-138324-4), CCR-LF-5 (180-138324-5), CCR-LF-6 (180-138324-6) and BLIND DUPLICATE 3 (180-138324-7). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-566869
The following samples were prepared at a reduced aliquot due to Matrix: CCR-LF-1 (180-138324-1), CCR-LF-2 (180-138324-2), CCR-LF-4 (180-138324-4), CCR-LF-5 (180-138324-5), CCR-LF-6 (180-138324-6) and BLIND DUPLICATE 3 (180-138324-7). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 6020A: The following samples were diluted due to the nature of the sample matrix: CCR-LF-2 (180-138324-2) and BLIND DUPLICATE 3 (180-138324-7). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 180-138324-1
Project/Site: CCR Groundwater Monitoring AB Brown

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 180-138324-1
Project/Site: CCR Groundwater Monitoring AB Brown

Laboratory: Eurofins Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-22
California	State	2891	04-30-22 *
Connecticut	State	PH-0688	09-30-22
Florida	NELAP	E871008	06-30-22
Georgia	State	PA 02-00416	04-30-23
Illinois	NELAP	004375	06-30-22
Kansas	NELAP	E-10350	03-31-23
Kentucky (UST)	State	162013	04-30-22 *
Kentucky (WW)	State	KY98043	12-31-22
Louisiana	NELAP	04041	06-30-22
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-22
Nevada	State	PA00164	08-31-22
New Hampshire	NELAP	2030	04-04-23
New Jersey	NELAP	PA005	06-30-23
New York	NELAP	11182	04-01-23
North Carolina (WW/SW)	State	434	12-31-22
North Dakota	State	R-227	04-30-22 *
Oregon	NELAP	PA-2151	02-07-23
Pennsylvania	NELAP	02-00416	04-30-23
Rhode Island	State	LAO00362	12-31-21 *
South Carolina	State	89014	06-30-22
Texas	NELAP	T104704528	03-31-23
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-22 *
Virginia	NELAP	10043	09-14-22
West Virginia DEP	State	142	01-31-23
Wisconsin	State	998027800	08-31-22

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	07-01-22
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-22
HI - RadChem Recognition	State	n/a	06-30-22
Illinois	NELAP	200023	11-30-22
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-22
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 180-138324-1
Project/Site: CCR Groundwater Monitoring AB Brown

Laboratory: Eurofins St. Louis (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-22
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-22
MI - RadChem Recognition	State	9005	06-30-22
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-22
New Jersey	NELAP	MO002	06-30-22
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-22
Texas	NELAP	T104704193	07-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	08-01-22
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 180-138324-1
Project/Site: CCR Groundwater Monitoring AB Brown

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-138324-1	CCR-LF-1	Water	05/17/22 15:35	05/19/22 09:00
180-138324-2	CCR-LF-2	Water	05/18/22 10:50	05/19/22 09:00
180-138324-3	CCR-LF-3	Water	05/18/22 08:13	05/19/22 09:00
180-138324-4	CCR-LF-4	Water	05/17/22 09:16	05/19/22 09:00
180-138324-5	CCR-LF-5	Water	05/17/22 10:28	05/19/22 09:00
180-138324-6	CCR-LF-6	Water	05/17/22 13:12	05/19/22 09:00
180-138324-7	BLIND DUPLICATE 3	Water	05/18/22 00:00	05/19/22 09:00
180-138324-8	FIELD BLANK 3	Water	05/18/22 10:00	05/19/22 09:00

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 180-138324-1
Project/Site: CCR Groundwater Monitoring AB Brown

Method	Method Description	Protocol	Laboratory
EPA 9056A	Anions, Ion Chromatography	SW846	TAL PIT
EPA 6020A	Metals (ICP/MS)	SW846	TAL PIT
EPA 7470A	Mercury (CVAA)	SW846	TAL PIT
EPA 9040C	pH	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
7470A	Preparation, Mercury	SW846	TAL PIT
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 180-138324-1
Project/Site: CCR Groundwater Monitoring AB Brown

Client Sample ID: CCR-LF-1
Date Collected: 05/17/22 15:35
Date Received: 05/19/22 09:00

Lab Sample ID: 180-138324-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			400332	05/30/22 20:44	LWM	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		1			400775	06/03/22 13:41	LWM	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Analysis	EPA 9056A		10			400775	06/03/22 13:56	LWM	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			25 mL	25 mL	400162	05/27/22 11:15	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			400471	05/28/22 19:49	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			25 mL	25 mL	400162	05/27/22 11:15	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			400593	06/01/22 14:42	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Prep	7470A			50 mL	50 mL	400198	05/27/22 13:14	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			400275	05/28/22 09:43	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			399828	05/24/22 13:24	HEK	TAL PIT
	Instrument ID: PHTITRATOR									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	399423	05/19/22 18:34	JCR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			743.80 mL	1.0 g	566869	05/23/22 09:53	MS	TAL SL
Total/NA	Analysis	9315		1			569964	06/14/22 18:45	FLC	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			743.80 mL	1.0 g	566871	05/23/22 10:12	MS	TAL SL
Total/NA	Analysis	9320		1			569964	06/14/22 13:43	FLC	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			570160	06/15/22 15:59	CLP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-2
Date Collected: 05/18/22 10:50
Date Received: 05/19/22 09:00

Lab Sample ID: 180-138324-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		25			400332	05/30/22 21:55	LWM	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		25			400775	06/03/22 14:40	LWM	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			25 mL	25 mL	400162	05/27/22 11:15	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			400471	05/28/22 19:52	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			25 mL	25 mL	400162	05/27/22 11:15	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		2			400593	06/01/22 14:44	RSK	TAL PIT
	Instrument ID: NEMO									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 180-138324-1
Project/Site: CCR Groundwater Monitoring AB Brown

Client Sample ID: CCR-LF-2
Lab Sample ID: 180-138324-2
Date Collected: 05/18/22 10:50
Matrix: Water
Date Received: 05/19/22 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			50 mL	50 mL	400198	05/27/22 13:14	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			400275	05/28/22 09:44	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			399828	05/24/22 13:30	HEK	TAL PIT
	Instrument ID: PHTITRATOR									
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	399833	05/24/22 17:09	JCR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			755.10 mL	1.0 g	566869	05/23/22 09:53	MS	TAL SL
Total/NA	Analysis	9315		1			569973	06/14/22 18:45	FLC	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			755.10 mL	1.0 g	566871	05/23/22 10:12	MS	TAL SL
Total/NA	Analysis	9320		1			569964	06/14/22 13:43	FLC	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			570160	06/15/22 15:59	CLP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-3
Lab Sample ID: 180-138324-3
Date Collected: 05/18/22 08:13
Matrix: Water
Date Received: 05/19/22 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5			400332	05/30/22 22:23	LWM	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		2.5			400775	06/03/22 15:10	LWM	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			25 mL	25 mL	400162	05/27/22 11:15	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			400471	05/28/22 20:06	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			25 mL	25 mL	400162	05/27/22 11:15	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			400593	06/01/22 14:52	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Prep	7470A			50 mL	50 mL	400198	05/27/22 13:14	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			400275	05/28/22 09:45	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			399828	05/24/22 13:35	HEK	TAL PIT
	Instrument ID: PHTITRATOR									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	399423	05/19/22 18:34	JCR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			998.02 mL	1.0 g	566869	05/23/22 09:53	MS	TAL SL
Total/NA	Analysis	9315		1			569971	06/14/22 19:46	FLC	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			998.02 mL	1.0 g	566871	05/23/22 10:12	MS	TAL SL
Total/NA	Analysis	9320		1			569973	06/14/22 13:45	FLC	TAL SL
	Instrument ID: GFPCPURPLE									

Lab Chronicle

Client: Haley & Aldrich, Inc. Job ID: 180-138324-1
Project/Site: CCR Groundwater Monitoring AB Brown

Client Sample ID: CCR-LF-3 — Lab Sample ID: 180-138324-3

Date Collected: 05/18/22 08:13 **Matrix: Water**
Date Received: 05/19/22 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Ra226_Ra228		1			570160	06/15/22 15:59	CLP	TAL SL

Client Sample ID: CCR-LF-4 — Lab Sample ID: 180-138324-4

Date Collected: 05/17/22 09:16 **Matrix: Water**
Date Received: 05/19/22 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		10			400332	05/30/22 22:50	LWM	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		10			400775	06/03/22 15:40	LWM	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Analysis	EPA 9056A		100			400775	06/03/22 15:55	LWM	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			25 mL	25 mL	400162	05/27/22 11:15	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			400471	05/28/22 20:10	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			25 mL	25 mL	400162	05/27/22 11:15	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			400593	06/01/22 14:55	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Prep	7470A			50 mL	50 mL	400198	05/27/22 13:14	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			400275	05/28/22 09:46	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			400077	05/26/22 13:06	HEK	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	399706	05/23/22 16:48	JCR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			744.87 mL	1.0 g	566869	05/23/22 09:53	MS	TAL SL
Total/NA	Analysis	9315		1			569971	06/14/22 19:46	FLC	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			744.87 mL	1.0 g	566871	05/23/22 10:12	MS	TAL SL
Total/NA	Analysis	9320		1			569973	06/14/22 13:45	FLC	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			570160	06/15/22 15:59	CLP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-5 — Lab Sample ID: 180-138324-5

Date Collected: 05/17/22 10:28 **Matrix: Water**
Date Received: 05/19/22 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		5			400332	05/30/22 23:18	LWM	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		5			400775	06/03/22 16:09	LWM	TAL PIT
	Instrument ID: CHICS2100B									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 180-138324-1
Project/Site: CCR Groundwater Monitoring AB Brown

Client Sample ID: CCR-LF-5
Date Collected: 05/17/22 10:28
Date Received: 05/19/22 09:00

Lab Sample ID: 180-138324-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			25 mL	25 mL	400162	05/27/22 11:15	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			400471	05/28/22 20:24	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			25 mL	25 mL	400162	05/27/22 11:15	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			400593	06/01/22 15:00	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Prep	7470A			50 mL	50 mL	400198	05/27/22 13:14	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			400275	05/28/22 09:47	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			400077	05/26/22 13:08	HEK	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	399423	05/19/22 18:34	JCR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			753.57 mL	1.0 g	566869	05/23/22 09:53	MS	TAL SL
Total/NA	Analysis	9315		1			569971	06/14/22 19:47	FLC	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			753.57 mL	1.0 g	566871	05/23/22 10:12	MS	TAL SL
Total/NA	Analysis	9320		1			569973	06/14/22 13:45	FLC	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			570160	06/15/22 15:59	CLP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-6
Date Collected: 05/17/22 13:12
Date Received: 05/19/22 09:00

Lab Sample ID: 180-138324-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			400332	05/31/22 01:24	LWM	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		1			400775	06/03/22 16:39	LWM	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Analysis	EPA 9056A		10			400775	06/03/22 16:54	LWM	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			25 mL	25 mL	400162	05/27/22 11:15	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			400471	05/28/22 20:27	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			25 mL	25 mL	400162	05/27/22 11:15	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			400593	06/01/22 15:03	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Prep	7470A			50 mL	50 mL	400198	05/27/22 13:14	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			400275	05/28/22 09:48	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			400077	05/26/22 13:11	HEK	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-6 — Lab Sample ID: 180-138324-6

Date Collected: 05/17/22 13:12 — **Matrix: Water**
Date Received: 05/19/22 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	399423	05/19/22 18:34	JCR	TAL PIT
Total/NA	Prep	PrecSep-21			746.24 mL	1.0 g	566869	05/23/22 09:53	MS	TAL SL
Total/NA	Analysis	9315		1			569971	06/14/22 19:47	FLC	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			746.24 mL	1.0 g	566871	05/23/22 10:12	MS	TAL SL
Total/NA	Analysis	9320		1			569973	06/14/22 13:45	FLC	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			570160	06/15/22 15:59	CLP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: BLIND DUPLICATE 3 — Lab Sample ID: 180-138324-7

Date Collected: 05/18/22 00:00 — **Matrix: Water**
Date Received: 05/19/22 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		10			400332	05/31/22 01:52	LWM	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		10			400775	06/03/22 17:39	LWM	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Analysis	EPA 9056A		100			400775	06/03/22 17:54	LWM	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			25 mL	25 mL	400162	05/27/22 11:15	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			400471	05/28/22 20:31	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			25 mL	25 mL	400162	05/27/22 11:15	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		5			400593	06/01/22 15:10	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Prep	7470A			50 mL	50 mL	400198	05/27/22 13:14	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			400275	05/28/22 09:52	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			400077	05/26/22 13:13	HEK	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	399833	05/24/22 17:09	JCR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			747.96 mL	1.0 g	566869	05/23/22 09:53	MS	TAL SL
Total/NA	Analysis	9315		1			569971	06/14/22 19:47	FLC	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			747.96 mL	1.0 g	566871	05/23/22 10:12	MS	TAL SL
Total/NA	Analysis	9320		1			569973	06/14/22 13:46	FLC	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			570160	06/15/22 15:59	CLP	TAL SL
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 180-138324-1
Project/Site: CCR Groundwater Monitoring AB Brown

Client Sample ID: FIELD BLANK 3
Lab Sample ID: 180-138324-8
Date Collected: 05/18/22 10:00
Matrix: Water
Date Received: 05/19/22 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			400332	05/30/22 21:13	LWM	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		1			400775	06/03/22 18:08	LWM	TAL PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			25 mL	25 mL	400162	05/27/22 11:15	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			400471	05/28/22 20:52	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			25 mL	25 mL	400162	05/27/22 11:15	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			400593	06/01/22 15:16	RSK	TAL PIT
	Instrument ID: NEMO									
Total/NA	Prep	7470A			50 mL	50 mL	400198	05/27/22 13:14	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			400275	05/28/22 09:53	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			400077	05/26/22 13:15	HEK	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	399423	05/19/22 18:34	JCR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.87 mL	1.0 g	566869	05/23/22 09:53	MS	TAL SL
Total/NA	Analysis	9315		1			569971	06/14/22 19:47	FLC	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.87 mL	1.0 g	566871	05/23/22 10:12	MS	TAL SL
Total/NA	Analysis	9320		1			569973	06/14/22 13:46	FLC	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			570160	06/15/22 15:59	CLP	TAL SL
	Instrument ID: NOEQUIP									

Laboratory References:

TAL PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
TAL SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: TAL PIT
- Batch Type: Prep
  - EMR = Elizabeth Rarick
  - RJR = Ron Rosenbaum
- Batch Type: Analysis
  - HEK = Hope Kiesling
  - JCR = Jessica Rodgers
  - LWM = Larry Matko
  - RJR = Ron Rosenbaum
  - RSK = Robert Kurtz

Lab: TAL SL
- Batch Type: Prep
  - MS = Matthew Swaringam
- Batch Type: Analysis
  - CLP = Cassandra Park
  - FLC = Fernando Cruz

Client Sample ID: CCR-LF-1
Lab Sample ID: 180-138324-1

Date Collected: 05/17/22 15:35
Matrix: Water

Date Received: 05/19/22 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**20**		1.0	0.71	mg/L			06/03/22 13:41	1
Fluoride	**0.14**		0.10	0.026	mg/L			05/30/22 20:44	1
Sulfate	**970**		1.0	0.76	mg/L			06/03/22 13:41	1
Sulfate	**1200**		10	7.6	mg/L			06/03/22 13:56	10

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00051	mg/L		05/27/22 11:15	05/28/22 19:49	1
Arsenic	**0.00041**	**J**	0.0010	0.00028	mg/L		05/27/22 11:15	05/28/22 19:49	1
Barium	**0.029**		0.010	0.0031	mg/L		05/27/22 11:15	05/28/22 19:49	1
Beryllium	ND		0.0010	0.00027	mg/L		05/27/22 11:15	05/28/22 19:49	1
Boron	**0.075**	**J**	0.080	0.060	mg/L		05/27/22 11:15	06/01/22 14:42	1
Cadmium	ND		0.0010	0.00022	mg/L		05/27/22 11:15	05/28/22 19:49	1
Calcium	**300**		0.50	0.13	mg/L		05/27/22 11:15	05/28/22 19:49	1
Chromium	ND		0.0020	0.0015	mg/L		05/27/22 11:15	05/28/22 19:49	1
Cobalt	ND		0.00050	0.00026	mg/L		05/27/22 11:15	05/28/22 19:49	1
Lead	ND		0.0010	0.00017	mg/L		05/27/22 11:15	05/28/22 19:49	1
Lithium	**0.0038**	**J**	0.0050	0.00083	mg/L		05/27/22 11:15	05/28/22 19:49	1
Molybdenum	**0.00069**	**J**	0.0050	0.00061	mg/L		05/27/22 11:15	05/28/22 19:49	1
Selenium	ND		0.0050	0.00074	mg/L		05/27/22 11:15	05/28/22 19:49	1
Thallium	ND		0.0010	0.00047	mg/L		05/27/22 11:15	05/28/22 19:49	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00013**	**J**	0.00020	0.00013	mg/L		05/27/22 13:14	05/28/22 09:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**2000**		10	10	mg/L			05/19/22 18:34	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.4**	**HF**	0.1	0.1	SU			05/24/22 13:24	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.585**		0.387	0.390	1.00	0.515	pCi/L	05/23/22 09:53	06/14/22 18:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*68.1*		*40 - 110*	*05/23/22 09:53*	*06/14/22 18:45*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.683	U G	0.672	0.675	1.00	1.08	pCi/L	05/23/22 10:12	06/14/22 13:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*68.1*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:43*	*1*
Y Carrier	*86.0*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:43*	*1*

Client Sample ID: CCR-LF-1 — Lab Sample ID: 180-138324-1

Date Collected: 05/17/22 15:35 — **Matrix: Water**
Date Received: 05/19/22 09:00

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.27**		0.775	0.780	5.00	1.08	pCi/L		06/15/22 15:59	1

Client Sample ID: CCR-LF-2 — Lab Sample ID: 180-138324-2

Date Collected: 05/18/22 10:50 — **Matrix: Water**
Date Received: 05/19/22 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**370**		25	18	mg/L			06/03/22 14:40	25
Fluoride	ND		2.5	0.65	mg/L			05/30/22 21:55	25
Sulfate	**13000**		25	19	mg/L			06/03/22 14:40	25

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00051	mg/L		05/27/22 11:15	05/28/22 19:52	1
Arsenic	**0.0014**		0.0010	0.00028	mg/L		05/27/22 11:15	05/28/22 19:52	1
Barium	**0.012**		0.010	0.0031	mg/L		05/27/22 11:15	05/28/22 19:52	1
Beryllium	ND		0.0010	0.00027	mg/L		05/27/22 11:15	05/28/22 19:52	1
Boron	**4.5**		0.16	0.12	mg/L		05/27/22 11:15	06/01/22 14:44	2
Cadmium	**0.0077**		0.0010	0.00022	mg/L		05/27/22 11:15	05/28/22 19:52	1
Calcium	**390**		0.50	0.13	mg/L		05/27/22 11:15	05/28/22 19:52	1
Chromium	ND		0.0020	0.0015	mg/L		05/27/22 11:15	05/28/22 19:52	1
Cobalt	**0.012**		0.00050	0.00026	mg/L		05/27/22 11:15	05/28/22 19:52	1
Lead	**0.00053**	**J**	0.0010	0.00017	mg/L		05/27/22 11:15	05/28/22 19:52	1
Lithium	**0.016**		0.0050	0.00083	mg/L		05/27/22 11:15	05/28/22 19:52	1
Molybdenum	**0.0022**	**J**	0.0050	0.00061	mg/L		05/27/22 11:15	05/28/22 19:52	1
Selenium	**0.0019**	**J**	0.0050	0.00074	mg/L		05/27/22 11:15	05/28/22 19:52	1
Thallium	**0.00072**	**J**	0.0010	0.00047	mg/L		05/27/22 11:15	05/28/22 19:52	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		05/27/22 13:14	05/28/22 09:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**22000**		200	200	mg/L			05/24/22 17:09	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.2**	**HF**	0.1	0.1	SU			05/24/22 13:30	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.583**		0.372	0.375	1.00	0.522	pCi/L	05/23/22 09:53	06/14/22 18:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.3*		*40 - 110*	*05/23/22 09:53*	*06/14/22 18:45*	*1*

Client Sample ID: CCR-LF-2
Lab Sample ID: 180-138324-2
Date Collected: 05/18/22 10:50
Matrix: Water
Date Received: 05/19/22 09:00

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.34		0.645	0.680	1.00	0.706	pCi/L	05/23/22 10:12	06/14/22 13:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.3*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:43*	*1*
Y Carrier	*81.9*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:43*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.93		0.745	0.777	5.00	0.706	pCi/L		06/15/22 15:59	1

Client Sample ID: CCR-LF-3
Lab Sample ID: 180-138324-3
Date Collected: 05/18/22 08:13
Matrix: Water
Date Received: 05/19/22 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32		2.5	1.8	mg/L			06/03/22 15:10	2.5
Fluoride	0.18	J	0.25	0.065	mg/L			05/30/22 22:23	2.5
Sulfate	1300		2.5	1.9	mg/L			06/03/22 15:10	2.5

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00051	mg/L		05/27/22 11:15	05/28/22 20:06	1
Arsenic	ND		0.0010	0.00028	mg/L		05/27/22 11:15	05/28/22 20:06	1
Barium	0.016		0.010	0.0031	mg/L		05/27/22 11:15	05/28/22 20:06	1
Beryllium	ND		0.0010	0.00027	mg/L		05/27/22 11:15	05/28/22 20:06	1
Boron	0.19		0.080	0.060	mg/L		05/27/22 11:15	06/01/22 14:52	1
Cadmium	ND		0.0010	0.00022	mg/L		05/27/22 11:15	05/28/22 20:06	1
Calcium	320		0.50	0.13	mg/L		05/27/22 11:15	05/28/22 20:06	1
Chromium	0.0017	J	0.0020	0.0015	mg/L		05/27/22 11:15	05/28/22 20:06	1
Cobalt	0.00030	J	0.00050	0.00026	mg/L		05/27/22 11:15	05/28/22 20:06	1
Lead	ND		0.0010	0.00017	mg/L		05/27/22 11:15	05/28/22 20:06	1
Lithium	ND		0.0050	0.00083	mg/L		05/27/22 11:15	05/28/22 20:06	1
Molybdenum	0.00094	J	0.0050	0.00061	mg/L		05/27/22 11:15	05/28/22 20:06	1
Selenium	ND		0.0050	0.00074	mg/L		05/27/22 11:15	05/28/22 20:06	1
Thallium	ND		0.0010	0.00047	mg/L		05/27/22 11:15	05/28/22 20:06	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		05/27/22 13:14	05/28/22 09:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2300		20	20	mg/L			05/19/22 18:34	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1	0.1	SU			05/24/22 13:35	1

Client Sample ID: CCR-LF-3 — Lab Sample ID: 180-138324-3

Date Collected: 05/18/22 08:13 — **Matrix: Water**
Date Received: 05/19/22 09:00

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.157	U	0.175	0.176	1.00	0.281	pCi/L	05/23/22 09:53	06/14/22 19:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.8*		*40 - 110*	*05/23/22 09:53*	*06/14/22 19:46*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.416	U	0.334	0.336	1.00	0.522	pCi/L	05/23/22 10:12	06/14/22 13:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.8*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:45*	*1*
Y Carrier	*85.2*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:45*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.574**		0.377	0.379	5.00	0.522	pCi/L		06/15/22 15:59	1

Client Sample ID: CCR-LF-4 — Lab Sample ID: 180-138324-4

Date Collected: 05/17/22 09:16 — **Matrix: Water**
Date Received: 05/19/22 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**140**		10	7.1	mg/L			06/03/22 15:40	10
Fluoride	**0.34**	**J**	1.0	0.26	mg/L			05/30/22 22:50	10
Sulfate	**8000**		100	76	mg/L			06/03/22 15:55	100

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00051	mg/L		05/27/22 11:15	05/28/22 20:10	1
Arsenic	**0.035**		0.0010	0.00028	mg/L		05/27/22 11:15	05/28/22 20:10	1
Barium	**0.011**		0.010	0.0031	mg/L		05/27/22 11:15	05/28/22 20:10	1
Beryllium	ND		0.0010	0.00027	mg/L		05/27/22 11:15	05/28/22 20:10	1
Boron	**0.38**		0.080	0.060	mg/L		05/27/22 11:15	06/01/22 14:55	1
Cadmium	ND		0.0010	0.00022	mg/L		05/27/22 11:15	05/28/22 20:10	1
Calcium	**420**		0.50	0.13	mg/L		05/27/22 11:15	05/28/22 20:10	1
Chromium	ND		0.0020	0.0015	mg/L		05/27/22 11:15	05/28/22 20:10	1
Cobalt	**0.00084**		0.00050	0.00026	mg/L		05/27/22 11:15	05/28/22 20:10	1
Lead	**0.00058**	**J**	0.0010	0.00017	mg/L		05/27/22 11:15	05/28/22 20:10	1
Lithium	**0.079**		0.0050	0.00083	mg/L		05/27/22 11:15	05/28/22 20:10	1
Molybdenum	**0.029**		0.0050	0.00061	mg/L		05/27/22 11:15	05/28/22 20:10	1
Selenium	ND		0.0050	0.00074	mg/L		05/27/22 11:15	05/28/22 20:10	1
Thallium	ND		0.0010	0.00047	mg/L		05/27/22 11:15	05/28/22 20:10	1

Client Sample ID: CCR-LF-4 — Lab Sample ID: 180-138324-4

Date Collected: 05/17/22 09:16 — **Matrix: Water**
Date Received: 05/19/22 09:00

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		05/27/22 13:14	05/28/22 09:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**13000**		100	100	mg/L			05/23/22 16:48	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.8**	**HF**	0.1	0.1	SU			05/26/22 13:06	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**4.21**		0.869	0.948	1.00	0.726	pCi/L	05/23/22 09:53	06/14/22 19:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*70.8*		*40 - 110*	*05/23/22 09:53*	*06/14/22 19:46*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.592	U	0.601	0.604	1.00	0.972	pCi/L	05/23/22 10:12	06/14/22 13:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*70.8*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:45*	*1*
Y Carrier	*84.5*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:45*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**4.80**		1.06	1.12	5.00	0.972	pCi/L		06/15/22 15:59	1

Client Sample ID: CCR-LF-5 — Lab Sample ID: 180-138324-5

Date Collected: 05/17/22 10:28 — **Matrix: Water**
Date Received: 05/19/22 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**320**		5.0	3.6	mg/L			06/03/22 16:09	5
Fluoride	**0.20**	**J**	0.50	0.13	mg/L			05/30/22 23:18	5
Sulfate	**2200**		5.0	3.8	mg/L			06/03/22 16:09	5

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00051	mg/L		05/27/22 11:15	05/28/22 20:24	1
Arsenic	ND		0.0010	0.00028	mg/L		05/27/22 11:15	05/28/22 20:24	1
Barium	**0.022**		0.010	0.0031	mg/L		05/27/22 11:15	05/28/22 20:24	1
Beryllium	ND		0.0010	0.00027	mg/L		05/27/22 11:15	05/28/22 20:24	1
Boron	**1.0**		0.080	0.060	mg/L		05/27/22 11:15	06/01/22 15:00	1
Cadmium	ND		0.0010	0.00022	mg/L		05/27/22 11:15	05/28/22 20:24	1

Client Sample ID: CCR-LF-5 — Lab Sample ID: 180-138324-5

Date Collected: 05/17/22 10:28 — **Matrix: Water**
Date Received: 05/19/22 09:00

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**450**		0.50	0.13	mg/L		05/27/22 11:15	05/28/22 20:24	1
Chromium	ND		0.0020	0.0015	mg/L		05/27/22 11:15	05/28/22 20:24	1
Cobalt	ND		0.00050	0.00026	mg/L		05/27/22 11:15	05/28/22 20:24	1
Lead	ND		0.0010	0.00017	mg/L		05/27/22 11:15	05/28/22 20:24	1
Lithium	**0.019**		0.0050	0.00083	mg/L		05/27/22 11:15	05/28/22 20:24	1
Molybdenum	**0.00064**	**J**	0.0050	0.00061	mg/L		05/27/22 11:15	05/28/22 20:24	1
Selenium	ND		0.0050	0.00074	mg/L		05/27/22 11:15	05/28/22 20:24	1
Thallium	ND		0.0010	0.00047	mg/L		05/27/22 11:15	05/28/22 20:24	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00017**	**J**	0.00020	0.00013	mg/L		05/27/22 13:14	05/28/22 09:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**4400**		40	40	mg/L			05/19/22 18:34	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.1**	**HF**	0.1	0.1	SU			05/26/22 13:08	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.192	U	0.209	0.209	1.00	0.330	pCi/L	05/23/22 09:53	06/14/22 19:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*05/23/22 09:53*	*06/14/22 19:47*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0486	U	0.309	0.310	1.00	0.569	pCi/L	05/23/22 10:12	06/14/22 13:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:45*	*1*
Y Carrier	*88.2*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:45*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.240	U	0.373	0.374	5.00	0.569	pCi/L		06/15/22 15:59	1

Client Sample ID: CCR-LF-6 — Lab Sample ID: 180-138324-6

Date Collected: 05/17/22 13:12 — **Matrix: Water**
Date Received: 05/19/22 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**35**		1.0	0.71	mg/L			06/03/22 16:39	1

Client Sample ID: CCR-LF-6
Date Collected: 05/17/22 13:12
Date Received: 05/19/22 09:00

Lab Sample ID: 180-138324-6
Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.25**		0.10	0.026	mg/L			05/31/22 01:24	1
Sulfate	**810**		10	7.6	mg/L			06/03/22 16:54	10

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00051	mg/L		05/27/22 11:15	05/28/22 20:27	1
Arsenic	ND		0.0010	0.00028	mg/L		05/27/22 11:15	05/28/22 20:27	1
Barium	**0.018**		0.010	0.0031	mg/L		05/27/22 11:15	05/28/22 20:27	1
Beryllium	ND		0.0010	0.00027	mg/L		05/27/22 11:15	05/28/22 20:27	1
Boron	**0.59**		0.080	0.060	mg/L		05/27/22 11:15	06/01/22 15:03	1
Cadmium	**0.00030**	**J**	0.0010	0.00022	mg/L		05/27/22 11:15	05/28/22 20:27	1
Calcium	**240**		0.50	0.13	mg/L		05/27/22 11:15	05/28/22 20:27	1
Chromium	ND		0.0020	0.0015	mg/L		05/27/22 11:15	05/28/22 20:27	1
Cobalt	**0.00051**		0.00050	0.00026	mg/L		05/27/22 11:15	05/28/22 20:27	1
Lead	ND		0.0010	0.00017	mg/L		05/27/22 11:15	05/28/22 20:27	1
Lithium	**0.015**		0.0050	0.00083	mg/L		05/27/22 11:15	05/28/22 20:27	1
Molybdenum	**0.00067**	**J**	0.0050	0.00061	mg/L		05/27/22 11:15	05/28/22 20:27	1
Selenium	ND		0.0050	0.00074	mg/L		05/27/22 11:15	05/28/22 20:27	1
Thallium	ND		0.0010	0.00047	mg/L		05/27/22 11:15	05/28/22 20:27	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		05/27/22 13:14	05/28/22 09:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1500**		10	10	mg/L			05/19/22 18:34	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.1**	**HF**	0.1	0.1	SU			05/26/22 13:11	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.236	U	0.230	0.231	1.00	0.351	pCi/L	05/23/22 09:53	06/14/22 19:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.5*		*40 - 110*	*05/23/22 09:53*	*06/14/22 19:47*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0543	U	0.318	0.318	1.00	0.620	pCi/L	05/23/22 10:12	06/14/22 13:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.5*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:45*	*1*
Y Carrier	*86.4*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:45*	*1*

Client Sample ID: CCR-LF-6 — Lab Sample ID: 180-138324-6

Date Collected: 05/17/22 13:12 — **Matrix: Water**
Date Received: 05/19/22 09:00

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.181	U	0.392	0.393	5.00	0.620	pCi/L		06/15/22 15:59	1

Client Sample ID: BLIND DUPLICATE 3 — Lab Sample ID: 180-138324-7

Date Collected: 05/18/22 00:00 — **Matrix: Water**
Date Received: 05/19/22 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**320**		10	7.1	mg/L			06/03/22 17:39	10
Fluoride	**0.29**	**J**	1.0	0.26	mg/L			05/31/22 01:52	10
Sulfate	**14000**		100	76	mg/L			06/03/22 17:54	100

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00051	mg/L		05/27/22 11:15	05/28/22 20:31	1
Arsenic	**0.0014**		0.0010	0.00028	mg/L		05/27/22 11:15	05/28/22 20:31	1
Barium	**0.012**		0.010	0.0031	mg/L		05/27/22 11:15	05/28/22 20:31	1
Beryllium	ND		0.0010	0.00027	mg/L		05/27/22 11:15	05/28/22 20:31	1
Boron	**4.9**		0.40	0.30	mg/L		05/27/22 11:15	06/01/22 15:10	5
Cadmium	**0.0083**		0.0010	0.00022	mg/L		05/27/22 11:15	05/28/22 20:31	1
Calcium	**390**		0.50	0.13	mg/L		05/27/22 11:15	05/28/22 20:31	1
Chromium	ND		0.0020	0.0015	mg/L		05/27/22 11:15	05/28/22 20:31	1
Cobalt	**0.013**		0.00050	0.00026	mg/L		05/27/22 11:15	05/28/22 20:31	1
Lead	**0.00063**	**J**	0.0010	0.00017	mg/L		05/27/22 11:15	05/28/22 20:31	1
Lithium	**0.017**		0.0050	0.00083	mg/L		05/27/22 11:15	05/28/22 20:31	1
Molybdenum	**0.0023**	**J**	0.0050	0.00061	mg/L		05/27/22 11:15	05/28/22 20:31	1
Selenium	**0.0020**	**J**	0.0050	0.00074	mg/L		05/27/22 11:15	05/28/22 20:31	1
Thallium	**0.00084**	**J**	0.0010	0.00047	mg/L		05/27/22 11:15	05/28/22 20:31	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		05/27/22 13:14	05/28/22 09:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**22000**		200	200	mg/L			05/24/22 17:09	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.7**	**HF**	0.1	0.1	SU			05/26/22 13:13	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.658**		0.400	0.405	1.00	0.510	pCi/L	05/23/22 09:53	06/14/22 19:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*64.6*		*40 - 110*	*05/23/22 09:53*	*06/14/22 19:47*	*1*

Client Sample ID: BLIND DUPLICATE 3 — Lab Sample ID: 180-138324-7

Date Collected: 05/18/22 00:00 — **Matrix: Water**
Date Received: 05/19/22 09:00

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.60		0.727	0.742	1.00	0.976	pCi/L	05/23/22 10:12	06/14/22 13:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*64.6*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:46*	*1*
Y Carrier	*85.2*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:46*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.26		0.830	0.845	5.00	0.976	pCi/L		06/15/22 15:59	1

Client Sample ID: FIELD BLANK 3 — Lab Sample ID: 180-138324-8

Date Collected: 05/18/22 10:00 — **Matrix: Water**
Date Received: 05/19/22 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			06/03/22 18:08	1
Fluoride	0.054	J	0.10	0.026	mg/L			05/30/22 21:13	1
Sulfate	ND		1.0	0.76	mg/L			06/03/22 18:08	1

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00051	mg/L		05/27/22 11:15	05/28/22 20:52	1
Arsenic	ND		0.0010	0.00028	mg/L		05/27/22 11:15	05/28/22 20:52	1
Barium	ND		0.010	0.0031	mg/L		05/27/22 11:15	05/28/22 20:52	1
Beryllium	ND		0.0010	0.00027	mg/L		05/27/22 11:15	05/28/22 20:52	1
Boron	ND		0.080	0.060	mg/L		05/27/22 11:15	06/01/22 15:16	1
Cadmium	ND		0.0010	0.00022	mg/L		05/27/22 11:15	05/28/22 20:52	1
Calcium	ND		0.50	0.13	mg/L		05/27/22 11:15	05/28/22 20:52	1
Chromium	ND		0.0020	0.0015	mg/L		05/27/22 11:15	05/28/22 20:52	1
Cobalt	ND		0.00050	0.00026	mg/L		05/27/22 11:15	05/28/22 20:52	1
Lead	ND		0.0010	0.00017	mg/L		05/27/22 11:15	05/28/22 20:52	1
Lithium	ND		0.0050	0.00083	mg/L		05/27/22 11:15	05/28/22 20:52	1
Molybdenum	ND		0.0050	0.00061	mg/L		05/27/22 11:15	05/28/22 20:52	1
Selenium	ND		0.0050	0.00074	mg/L		05/27/22 11:15	05/28/22 20:52	1
Thallium	ND		0.0010	0.00047	mg/L		05/27/22 11:15	05/28/22 20:52	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		05/27/22 13:14	05/28/22 09:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			05/19/22 18:34	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.6	HF	0.1	0.1	SU			05/26/22 13:15	1

Client Sample ID: FIELD BLANK 3
Lab Sample ID: 180-138324-8

Date Collected: 05/18/22 10:00
Matrix: Water
Date Received: 05/19/22 09:00

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0287	U	0.154	0.154	1.00	0.303	pCi/L	05/23/22 09:53	06/14/22 19:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.0*		*40 - 110*	*05/23/22 09:53*	*06/14/22 19:47*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.643**		0.343	0.348	1.00	0.482	pCi/L	05/23/22 10:12	06/14/22 13:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.0*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:46*	*1*
Y Carrier	*84.1*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:46*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.672**		0.376	0.381	5.00	0.482	pCi/L		06/15/22 15:59	1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-400332/53
Matrix: Water
Analysis Batch: 400332

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			05/31/22 00:28	1
Fluoride	ND		0.10	0.026	mg/L			05/31/22 00:28	1
Sulfate	ND		1.0	0.76	mg/L			05/31/22 00:28	1

Lab Sample ID: MB 180-400332/7
Matrix: Water
Analysis Batch: 400332

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			05/30/22 12:34	1
Fluoride	ND		0.10	0.026	mg/L			05/30/22 12:34	1
Sulfate	ND		1.0	0.76	mg/L			05/30/22 12:34	1

Lab Sample ID: LCS 180-400332/5
Matrix: Water
Analysis Batch: 400332

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	51.8		mg/L		104	80 - 120
Fluoride	2.50	2.46		mg/L		98	80 - 120
Sulfate	50.0	51.8		mg/L		104	80 - 120

Lab Sample ID: LCS 180-400332/52
Matrix: Water
Analysis Batch: 400332

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	52.0		mg/L		104	80 - 120
Fluoride	2.50	2.49		mg/L		100	80 - 120
Sulfate	50.0	52.5		mg/L		105	80 - 120

Lab Sample ID: MB 180-400512/7
Matrix: Water
Analysis Batch: 400512

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			06/01/22 17:10	1
Fluoride	ND		0.10	0.026	mg/L			06/01/22 17:10	1
Sulfate	ND		1.0	0.76	mg/L			06/01/22 17:10	1

Lab Sample ID: LCS 180-400512/6
Matrix: Water
Analysis Batch: 400512

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.9		mg/L		100	80 - 120
Fluoride	2.50	2.48		mg/L		99	80 - 120
Sulfate	50.0	49.7		mg/L		99	80 - 120

Method: EPA 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 180-400775/7
Matrix: Water
Analysis Batch: 400775

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			06/03/22 09:30	1
Fluoride	ND		0.10	0.026	mg/L			06/03/22 09:30	1
Sulfate	ND		1.0	0.76	mg/L			06/03/22 09:30	1

Lab Sample ID: LCS 180-400775/6
Matrix: Water
Analysis Batch: 400775

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	47.7		mg/L		95	80 - 120
Fluoride	2.50	2.54		mg/L		102	80 - 120
Sulfate	50.0	48.8		mg/L		98	80 - 120

Method: EPA 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-400162/1-A
Matrix: Water
Analysis Batch: 400471

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 400162

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00051	mg/L		05/27/22 11:15	05/28/22 18:25	1
Arsenic	ND		0.0010	0.00028	mg/L		05/27/22 11:15	05/28/22 18:25	1
Barium	ND		0.010	0.0031	mg/L		05/27/22 11:15	05/28/22 18:25	1
Beryllium	ND		0.0010	0.00027	mg/L		05/27/22 11:15	05/28/22 18:25	1
Cadmium	ND		0.0010	0.00022	mg/L		05/27/22 11:15	05/28/22 18:25	1
Calcium	ND		0.50	0.13	mg/L		05/27/22 11:15	05/28/22 18:25	1
Chromium	ND		0.0020	0.0015	mg/L		05/27/22 11:15	05/28/22 18:25	1
Cobalt	ND		0.00050	0.00026	mg/L		05/27/22 11:15	05/28/22 18:25	1
Lead	ND		0.0010	0.00017	mg/L		05/27/22 11:15	05/28/22 18:25	1
Lithium	ND		0.0050	0.00083	mg/L		05/27/22 11:15	05/28/22 18:25	1
Molybdenum	ND		0.0050	0.00061	mg/L		05/27/22 11:15	05/28/22 18:25	1
Selenium	ND		0.0050	0.00074	mg/L		05/27/22 11:15	05/28/22 18:25	1
Thallium	ND		0.0010	0.00047	mg/L		05/27/22 11:15	05/28/22 18:25	1

Lab Sample ID: MB 180-400162/1-A
Matrix: Water
Analysis Batch: 400593

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 400162

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.080	0.060	mg/L		05/27/22 11:15	06/01/22 14:35	1

Lab Sample ID: LCS 180-400162/2-A
Matrix: Water
Analysis Batch: 400471

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 400162

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.250	0.265		mg/L		106	80 - 120
Arsenic	1.00	1.03		mg/L		103	80 - 120
Barium	1.00	1.02		mg/L		102	80 - 120
Beryllium	0.500	0.540		mg/L		108	80 - 120

Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-400162/2-A
Matrix: Water
Analysis Batch: 400471

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 400162

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	0.500	0.510		mg/L		102	80 - 120
Calcium	25.0	29.0		mg/L		116	80 - 120
Chromium	0.500	0.529		mg/L		106	80 - 120
Cobalt	0.500	0.520		mg/L		104	80 - 120
Lead	0.500	0.519		mg/L		104	80 - 120
Lithium	0.500	0.506		mg/L		101	80 - 120
Molybdenum	0.500	0.523		mg/L		105	80 - 120
Selenium	1.00	1.01		mg/L		101	80 - 120
Thallium	1.00	1.04		mg/L		104	80 - 120

Lab Sample ID: LCS 180-400162/2-A
Matrix: Water
Analysis Batch: 400593

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 400162

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1.25	1.31		mg/L		105	80 - 120

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-400198/1-A
Matrix: Water
Analysis Batch: 400275

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 400198

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		05/27/22 13:14	05/28/22 09:25	1

Lab Sample ID: LCS 180-400198/2-A
Matrix: Water
Analysis Batch: 400275

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 400198

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00250	0.00244		mg/L		98	80 - 120

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-399828/3
Matrix: Water
Analysis Batch: 399828

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 180-400077/1
Matrix: Water
Analysis Batch: 400077

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100	99 - 101

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 180-399423/2
Matrix: Water
Analysis Batch: 399423

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			05/19/22 18:34	1

Lab Sample ID: LCS 180-399423/1
Matrix: Water
Analysis Batch: 399423

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	251	238		mg/L		95	85 - 115

Lab Sample ID: MB 180-399706/2
Matrix: Water
Analysis Batch: 399706

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			05/23/22 16:48	1

Lab Sample ID: LCS 180-399706/1
Matrix: Water
Analysis Batch: 399706

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	251	238		mg/L		95	85 - 115

Lab Sample ID: MB 180-399833/2
Matrix: Water
Analysis Batch: 399833

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			05/24/22 17:09	1

Lab Sample ID: LCS 180-399833/1
Matrix: Water
Analysis Batch: 399833

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	251	256		mg/L		102	85 - 115

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-566869/12-A
Matrix: Water
Analysis Batch: 569971

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566869

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.02110	U	0.147	0.147	1.00	0.315	pCi/L	05/23/22 09:53	06/14/22 19:47	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.0*		*40 - 110*	*05/23/22 09:53*	*06/14/22 19:47*	*1*

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-566869/1-A
Matrix: Water
Analysis Batch: 569971

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566869

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.41		1.37	1.00	0.279	pCi/L	92	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.3*		*40 - 110*

Lab Sample ID: LCSD 160-566869/2-A
Matrix: Water
Analysis Batch: 569964

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 566869

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	9.466		1.25	1.00	0.320	pCi/L	83	75 - 125	0.36	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*99.0*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-566871/12-A
Matrix: Water
Analysis Batch: 569973

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 566871

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2710	U	0.316	0.317	1.00	0.520	pCi/L	05/23/22 10:12	06/14/22 13:46	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.0*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:46*	*1*
Y Carrier	*87.9*		*40 - 110*	*05/23/22 10:12*	*06/14/22 13:46*	*1*

Lab Sample ID: LCS 160-566871/1-A
Matrix: Water
Analysis Batch: 569964

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 566871

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.53	8.543		1.20	1.00	0.512	pCi/L	100	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.3*		*40 - 110*
Y Carrier	*85.2*		*40 - 110*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-566871/2-A
Matrix: Water
Analysis Batch: 569964

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 566871

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.53	7.922		1.11	1.00	0.447	pCi/L	93	75 - 125	0.27	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*99.0*		*40 - 110*
Y Carrier	*85.2*		*40 - 110*

HPLC/IC

Analysis Batch: 400332

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-138324-1	CCR-LF-1	Total/NA	Water	EPA 9056A	
180-138324-2	CCR-LF-2	Total/NA	Water	EPA 9056A	
180-138324-3	CCR-LF-3	Total/NA	Water	EPA 9056A	
180-138324-4	CCR-LF-4	Total/NA	Water	EPA 9056A	
180-138324-5	CCR-LF-5	Total/NA	Water	EPA 9056A	
180-138324-6	CCR-LF-6	Total/NA	Water	EPA 9056A	
180-138324-7	BLIND DUPLICATE 3	Total/NA	Water	EPA 9056A	
180-138324-8	FIELD BLANK 3	Total/NA	Water	EPA 9056A	
MB 180-400332/53	Method Blank	Total/NA	Water	EPA 9056A	
MB 180-400332/7	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-400332/5	Lab Control Sample	Total/NA	Water	EPA 9056A	
LCS 180-400332/52	Lab Control Sample	Total/NA	Water	EPA 9056A	

Analysis Batch: 400512

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-400512/7	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-400512/6	Lab Control Sample	Total/NA	Water	EPA 9056A	

Analysis Batch: 400775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-138324-1	CCR-LF-1	Total/NA	Water	EPA 9056A	
180-138324-1	CCR-LF-1	Total/NA	Water	EPA 9056A	
180-138324-2	CCR-LF-2	Total/NA	Water	EPA 9056A	
180-138324-3	CCR-LF-3	Total/NA	Water	EPA 9056A	
180-138324-4	CCR-LF-4	Total/NA	Water	EPA 9056A	
180-138324-4	CCR-LF-4	Total/NA	Water	EPA 9056A	
180-138324-5	CCR-LF-5	Total/NA	Water	EPA 9056A	
180-138324-6	CCR-LF-6	Total/NA	Water	EPA 9056A	
180-138324-6	CCR-LF-6	Total/NA	Water	EPA 9056A	
180-138324-7	BLIND DUPLICATE 3	Total/NA	Water	EPA 9056A	
180-138324-7	BLIND DUPLICATE 3	Total/NA	Water	EPA 9056A	
180-138324-8	FIELD BLANK 3	Total/NA	Water	EPA 9056A	
MB 180-400775/7	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-400775/6	Lab Control Sample	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 400162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-138324-1	CCR-LF-1	Total Recoverable	Water	3005A	
180-138324-2	CCR-LF-2	Total Recoverable	Water	3005A	
180-138324-3	CCR-LF-3	Total Recoverable	Water	3005A	
180-138324-4	CCR-LF-4	Total Recoverable	Water	3005A	
180-138324-5	CCR-LF-5	Total Recoverable	Water	3005A	
180-138324-6	CCR-LF-6	Total Recoverable	Water	3005A	
180-138324-7	BLIND DUPLICATE 3	Total Recoverable	Water	3005A	
180-138324-8	FIELD BLANK 3	Total Recoverable	Water	3005A	
MB 180-400162/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-400162/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Metals

Prep Batch: 400198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-138324-1	CCR-LF-1	Total/NA	Water	7470A	
180-138324-2	CCR-LF-2	Total/NA	Water	7470A	
180-138324-3	CCR-LF-3	Total/NA	Water	7470A	
180-138324-4	CCR-LF-4	Total/NA	Water	7470A	
180-138324-5	CCR-LF-5	Total/NA	Water	7470A	
180-138324-6	CCR-LF-6	Total/NA	Water	7470A	
180-138324-7	BLIND DUPLICATE 3	Total/NA	Water	7470A	
180-138324-8	FIELD BLANK 3	Total/NA	Water	7470A	
MB 180-400198/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-400198/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 400275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-138324-1	CCR-LF-1	Total/NA	Water	EPA 7470A	400198
180-138324-2	CCR-LF-2	Total/NA	Water	EPA 7470A	400198
180-138324-3	CCR-LF-3	Total/NA	Water	EPA 7470A	400198
180-138324-4	CCR-LF-4	Total/NA	Water	EPA 7470A	400198
180-138324-5	CCR-LF-5	Total/NA	Water	EPA 7470A	400198
180-138324-6	CCR-LF-6	Total/NA	Water	EPA 7470A	400198
180-138324-7	BLIND DUPLICATE 3	Total/NA	Water	EPA 7470A	400198
180-138324-8	FIELD BLANK 3	Total/NA	Water	EPA 7470A	400198
MB 180-400198/1-A	Method Blank	Total/NA	Water	EPA 7470A	400198
LCS 180-400198/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	400198

Analysis Batch: 400471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-138324-1	CCR-LF-1	Total Recoverable	Water	EPA 6020A	400162
180-138324-2	CCR-LF-2	Total Recoverable	Water	EPA 6020A	400162
180-138324-3	CCR-LF-3	Total Recoverable	Water	EPA 6020A	400162
180-138324-4	CCR-LF-4	Total Recoverable	Water	EPA 6020A	400162
180-138324-5	CCR-LF-5	Total Recoverable	Water	EPA 6020A	400162
180-138324-6	CCR-LF-6	Total Recoverable	Water	EPA 6020A	400162
180-138324-7	BLIND DUPLICATE 3	Total Recoverable	Water	EPA 6020A	400162
180-138324-8	FIELD BLANK 3	Total Recoverable	Water	EPA 6020A	400162
MB 180-400162/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	400162
LCS 180-400162/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	400162

Analysis Batch: 400593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-138324-1	CCR-LF-1	Total Recoverable	Water	EPA 6020A	400162
180-138324-2	CCR-LF-2	Total Recoverable	Water	EPA 6020A	400162
180-138324-3	CCR-LF-3	Total Recoverable	Water	EPA 6020A	400162
180-138324-4	CCR-LF-4	Total Recoverable	Water	EPA 6020A	400162
180-138324-5	CCR-LF-5	Total Recoverable	Water	EPA 6020A	400162
180-138324-6	CCR-LF-6	Total Recoverable	Water	EPA 6020A	400162
180-138324-7	BLIND DUPLICATE 3	Total Recoverable	Water	EPA 6020A	400162
180-138324-8	FIELD BLANK 3	Total Recoverable	Water	EPA 6020A	400162
MB 180-400162/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	400162
LCS 180-400162/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	400162

General Chemistry

Analysis Batch: 399423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-138324-1	CCR-LF-1	Total/NA	Water	SM 2540C	
180-138324-3	CCR-LF-3	Total/NA	Water	SM 2540C	
180-138324-5	CCR-LF-5	Total/NA	Water	SM 2540C	
180-138324-6	CCR-LF-6	Total/NA	Water	SM 2540C	
180-138324-8	FIELD BLANK 3	Total/NA	Water	SM 2540C	
MB 180-399423/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-399423/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 399706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-138324-4	CCR-LF-4	Total/NA	Water	SM 2540C	
MB 180-399706/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-399706/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 399828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-138324-1	CCR-LF-1	Total/NA	Water	EPA 9040C	
180-138324-2	CCR-LF-2	Total/NA	Water	EPA 9040C	
180-138324-3	CCR-LF-3	Total/NA	Water	EPA 9040C	
LCS 180-399828/3	Lab Control Sample	Total/NA	Water	EPA 9040C	

Analysis Batch: 399833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-138324-2	CCR-LF-2	Total/NA	Water	SM 2540C	
180-138324-7	BLIND DUPLICATE 3	Total/NA	Water	SM 2540C	
MB 180-399833/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-399833/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 400077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-138324-4	CCR-LF-4	Total/NA	Water	EPA 9040C	
180-138324-5	CCR-LF-5	Total/NA	Water	EPA 9040C	
180-138324-6	CCR-LF-6	Total/NA	Water	EPA 9040C	
180-138324-7	BLIND DUPLICATE 3	Total/NA	Water	EPA 9040C	
180-138324-8	FIELD BLANK 3	Total/NA	Water	EPA 9040C	
LCS 180-400077/1	Lab Control Sample	Total/NA	Water	EPA 9040C	

Rad

Prep Batch: 566869

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-138324-1	CCR-LF-1	Total/NA	Water	PrecSep-21	
180-138324-2	CCR-LF-2	Total/NA	Water	PrecSep-21	
180-138324-3	CCR-LF-3	Total/NA	Water	PrecSep-21	
180-138324-4	CCR-LF-4	Total/NA	Water	PrecSep-21	
180-138324-5	CCR-LF-5	Total/NA	Water	PrecSep-21	
180-138324-6	CCR-LF-6	Total/NA	Water	PrecSep-21	
180-138324-7	BLIND DUPLICATE 3	Total/NA	Water	PrecSep-21	
180-138324-8	FIELD BLANK 3	Total/NA	Water	PrecSep-21	
MB 160-566869/12-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-566869/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 566869 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 160-566869/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 566871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-138324-1	CCR-LF-1	Total/NA	Water	PrecSep_0	
180-138324-2	CCR-LF-2	Total/NA	Water	PrecSep_0	
180-138324-3	CCR-LF-3	Total/NA	Water	PrecSep_0	
180-138324-4	CCR-LF-4	Total/NA	Water	PrecSep_0	
180-138324-5	CCR-LF-5	Total/NA	Water	PrecSep_0	
180-138324-6	CCR-LF-6	Total/NA	Water	PrecSep_0	
180-138324-7	BLIND DUPLICATE 3	Total/NA	Water	PrecSep_0	
180-138324-8	FIELD BLANK 3	Total/NA	Water	PrecSep_0	
MB 160-566871/12-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-566871/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-566871/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Hayley Tolles	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-52202-8058.1
Client Contact: Angela Casbon Scheller	Phone: 812-455-0888	E-Mail: veronica.bortot@testamericainc.com		Page: Page 1 of 1
Company: Vectren Corporation				Job #:
Address: PO BOX 209	Due Date Requested:			
City: Evansville	TAT Requested (days):			
State, Zip: IN, 47702				
Phone: 864-214-8750(Tel)	PO #: Purchase Order Requested			
Email:	WO #:			
Project Name: CCR Groundwater MonitoringAB Brown	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9316_Ra226, 9320_Ra228	9040C, 9056A_ORGFM_28D	6010C, 6020A, 7470A	2540C_Calcd - Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D	N		
CCR-LF-1	5-17-22	15:35	G	Water			✓	✓	✓	✓		
CCR-LF-2	5-18-22	10:50	G	Water			✓	✓	✓	✓		
CCR-LF-3	5-18-22	8:13	G	Water			✓	✓	✓	✓		
CCR-LF-4	5-17-22	9:16	G	Water			✓	✓	✓	✓		
CCR-LF-5	5-17-22	10:28	G	Water			✓	✓	✓	✓		
CCR-LF-6	5-17-22	13:12	G	Water			✓	✓	✓	✓		
Blind Duplicate 3	5-18-22		G	Water			✓	✓	✓	✓		
Field Blank 3	5-18-22	10:00	G	Water			✓	✓	✓	✓		
				Water								
				Water								

180-138324 Chain of Custody

#202

Virginia Beach

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

	Date/Time	Company		Date/Time	Company
Relinquished by: Hayley Tolles	5-18-22 / 2:00pm	ATLAS	Received by: Fedex	5-18-22 / 2:00pm	
Relinquished by:	Date/Time:	Company	Received by:	5/19/22 900	EEAP, IN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Hayley Tolles	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-52202-8058.1
Client Contact: Angela Casbon Scheller	Phone: 812-455-0888	E-Mail: veronica.bortot@testamericainc.com		Page: Page 1 of 1
Company: Vectren Corporation				Job #:
Address: PO BOX 209	Due Date Requested:			
City: Evansville	TAT Requested (days):			
State, Zip: IN, 47702				
Phone: 864-214-8750(Tel)	PO #: Purchase Order Requested			
Email:	WO #:			
Project Name: CCR Groundwater MonitoringAB Brown	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9316_Ra226, 9320_Ra228	9040C, 9056A_ORGFM_28D	6010C, 6020A, 7470A	2540C_Calcd - Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D	N		
CCR-LF-1	5-17-22	15:35	G	Water			✓	✓	✓	✓		
CCR-LF-2	5-18-22	10:50	G	Water			✓	✓	✓	✓		
CCR-LF-3	5-18-22	8:13	G	Water			✓	✓	✓	✓		
CCR-LF-4	5-17-22	9:16	G	Water			✓	✓	✓	✓		
CCR-LF-5	5-17-22	10:28	G	Water			✓	✓	✓	✓		
CCR-LF-6	5-17-22	13:12	G	Water			✓	✓	✓	✓		
Blind Duplicate 3	5-18-22		G	Water			✓	✓	✓	✓		
Field Blank 3	5-18-22	10:00	G	Water			✓	✓	✓	✓		
				Water								
				Water								

180-138324 Chain of Custody

#202

Virginia Beach

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Hayley Tolles	5-18-22 / 2:00pm	ATLAS	Fedex	5-18-22 / 2:00pm	
2					5/19/22 900	EETAP, IN
3						

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-138324-1

Login Number: 138324
List Number: 1
Creator: Abernathy, Eric L

List Source: Eurofins Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-138324-1

Login Number: 138324
List Number: 2
Creator: Bohlmann, Jessica M

List Source: Eurofins St. Louis
List Creation: 05/20/22 12:39 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13

ANALYTICAL REPORT

PREPARED FOR

Attn: Mark Miesfeldt
Haley & Aldrich, Inc.
400 Augusta Street
Suite 100
Greenville, South Carolina 29601

Generated 12/9/2022 5:14:35 PM

JOB DESCRIPTION

CCR Groundwater Monitoring
SDG NUMBER AB Brown

JOB NUMBER

180-147566-1

Eurofins Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh PA 15238

See page two for job notes and contact information.

myEOL

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing Northeast, LLC Pittsburgh and its client. All questions regarding this report should be directed to the Eurofins Environment Testing Northeast, LLC Pittsburgh Project Manager or designee who has signed this report.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

Authorization

Generated
12/9/2022 5:14:35 PM

Authorized for release by
Ken Hayes, Project Manager II
Ken.Hayes@et.eurofinsus.com
(615)301-5035

Table of Contents

Job ID: 180-147566-1

Laboratory: Eurofins Pittsburgh

Narrative

Job Narrative
180-147566-1

Comments
No additional comments.

Receipt
The samples were received on 11/8/2022 9:47 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.7º C.

RAD
Method 9315: Radium-226 batch 589917
The detection goal was not met for the following samples due to insufficient sample available for analysis: BLIND DUP 3 (180-147566-7) and FIELD BLANK 3 (180-147566-8). Analytical results are reported with the detection limit achieved.

Methods 903.0, 9315: Radium-226 batch 589917
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.
Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. CCR-LF-1 (180-147566-1), CCR-LF-2 (180-147566-2), CCR-LF-3 (180-147566-3), CCR-LF-4 (180-147566-4), CCR-LF-5 (180-147566-5), CCR-LF-6 (180-147566-6), CCR-LF-6 (180-147566-6[DU]), BLIND DUP 3 (180-147566-7), FIELD BLANK 3 (180-147566-8), (LCS 160-589917/2-A), (MB 160-589917/1-A), (280-168873-A-4-A), (280-168873-A-4-B MS) and (280-168873-A-4-C MSD)

Method 9320: Radium-228 batch 589918
The detection goal was not met for the following samples. Samples were prepped at a reduced volume due to the presence of matrix interferences: BLIND DUP 3 (180-147566-7) and FIELD BLANK 3 (180-147566-8). Analytical results are reported with the detection limit achieved.

Methods 904.0, 9320: Radium-228 batch 589918
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. CCR-LF-1 (180-147566-1), CCR-LF-2 (180-147566-2), CCR-LF-3 (180-147566-3), CCR-LF-4 (180-147566-4), CCR-LF-5 (180-147566-5), CCR-LF-6 (180-147566-6), CCR-LF-6 (180-147566-6[DU]), BLIND DUP 3 (180-147566-7), FIELD BLANK 3 (180-147566-8), (LCS 160-589918/2-A), (MB 160-589918/1-A), (280-168873-A-4-D), (280-168873-A-4-E MS) and (280-168873-A-4-F MSD)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Narrative

Job Narrative
180-147566-2

Comments
No additional comments.

Receipt
The samples were received on 11/8/2022 9:47 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.7º C.

GC Semi VOA
Method 9056A: The continuing calibration blank (CCB) for analytical batch 180-417809 contained Sulfate above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 9056A: Due to the high concentration of Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 180-417809

Job ID: 180-147566-1 (Continued)

Laboratory: Eurofins Pittsburgh (Continued)

could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 9056A: The following samples were diluted due to the nature of the sample matrix: CCR-LF-1 (180-147566-1), CCR-LF-2 (180-147566-2), CCR-LF-3 (180-147566-3), CCR-LF-5 (180-147566-5) and BLIND DUP 3 (180-147566-7). Elevated reporting limits (RLs) are provided.

Method 9056A: The following sample was diluted due to the nature of the sample matrix: CCR-LF-4 (180-147566-4). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-147566-1
SDG: AB Brown

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
^2	Calibration Blank (ICB and/or CCB) is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-147566-1
SDG: AB Brown

Laboratory: Eurofins Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-22 *
California	State	2891	04-30-23
Connecticut	State	PH-0688	09-30-22 *
Florida	NELAP	E871008	11-15-22
Georgia	State	PA 02-00416	11-15-22
Illinois	NELAP	004375	11-15-22
Kansas	NELAP	E-10350	11-15-22
Kentucky (UST)	State	162013	04-30-23
Kentucky (WW)	State	KY98043	12-31-22
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	11-15-22
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	11-15-22
New Hampshire	NELAP	2030	11-15-22
New Jersey	NELAP	PA005	11-15-22
New York	NELAP	11182	11-15-22
North Carolina (WW/SW)	State	434	12-31-22
North Dakota	State	R-227	11-15-22
Oregon	NELAP	PA-2151	11-15-22
Pennsylvania	NELAP	02-00416	11-15-22
Rhode Island	State	LAO00362	12-31-22
South Carolina	State	89014	04-20-23
Texas	NELAP	T104704528	11-15-22
USDA	US Federal Programs	P330-16-00211	06-21-24
Utah	NELAP	PA001462019-8	11-15-22
Virginia	NELAP	10043	11-15-22
West Virginia DEP	State	142	11-15-22
Wisconsin	State	998027800	08-31-23

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-147566-1
SDG: AB Brown

Laboratory: Eurofins Canton (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Virginia	NELAP	460175	09-14-23
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	12-07-22
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-22 *
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	12-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-147566-1
SDG: AB Brown

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-147566-1	CCR-LF-1	Water	11/02/22 13:35	11/08/22 09:47
180-147566-2	CCR-LF-2	Water	11/02/22 15:30	11/08/22 09:47
180-147566-3	CCR-LF-3	Water	11/03/22 10:55	11/08/22 09:47
180-147566-4	CCR-LF-4	Water	11/03/22 09:35	11/08/22 09:47
180-147566-5	CCR-LF-5	Water	11/03/22 13:35	11/08/22 09:47
180-147566-6	CCR-LF-6	Water	11/03/22 16:35	11/08/22 09:47
180-147566-7	BLIND DUP 3	Water	11/03/22 00:01	11/08/22 09:47
180-147566-8	FIELD BLANK 3	Water	11/03/22 13:35	11/08/22 09:47

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-147566-1
SDG: AB Brown

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-147566-1
SDG: AB Brown

Client Sample ID: CCR-LF-1

Date Collected: 11/02/22 13:35
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5			417809	11/10/22 23:15	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			552338	11/16/22 16:00	AJC	EET CAN
	Instrument ID: I14									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			554384	12/02/22 12:06	DSH	EET CAN
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	551843	11/14/22 12:00	SHB	EET CAN
Total/NA	Analysis	7470A		1			552200	11/15/22 15:12	DSH	EET CAN
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			417825	11/09/22 17:37	MAM	EET PIT
	Instrument ID: PHTITRATOR									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	417736	11/09/22 15:19	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			751.66 mL	1.0 g	589917	11/14/22 09:43	DJP	EET SL
Total/NA	Analysis	9315		1			592516	12/06/22 09:12	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			751.66 mL	1.0 g	589918	11/14/22 10:14	DJP	EET SL
Total/NA	Analysis	9320		1			592190	12/05/22 11:50	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			592597	12/06/22 13:57	MLK	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-2

Date Collected: 11/02/22 15:30
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5			417809	11/10/22 23:30	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		25			417809	11/10/22 23:44	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			552338	11/16/22 16:03	AJC	EET CAN
	Instrument ID: I14									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		20			552628	11/17/22 12:12	RKT	EET CAN
	Instrument ID: I14									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			554384	12/02/22 12:04	DSH	EET CAN
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	551843	11/14/22 12:00	SHB	EET CAN
Total/NA	Analysis	7470A		1			552200	11/15/22 15:15	DSH	EET CAN
	Instrument ID: H2									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-147566-1
SDG: AB Brown

Client Sample ID: CCR-LF-2

Date Collected: 11/02/22 15:30
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9040C		1			417825	11/09/22 17:43	MAM	EET PIT
Total/NA	Analysis	SM 2540C		1	8 mL	100 mL	417736	11/09/22 15:19	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			758.54 mL	1.0 g	589917	11/14/22 09:43	DJP	EET SL
Total/NA	Analysis	9315		1			592516	12/06/22 09:12	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			758.54 mL	1.0 g	589918	11/14/22 10:14	DJP	EET SL
Total/NA	Analysis	9320		1			592190	12/05/22 11:50	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			592597	12/06/22 13:57	MLK	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-3

Date Collected: 11/03/22 10:55
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5			417809	11/10/22 23:59	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			552338	11/16/22 16:05	AJC	EET CAN
	Instrument ID: I14									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			552628	11/17/22 12:15	RKT	EET CAN
	Instrument ID: I14									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			554384	12/02/22 12:21	DSH	EET CAN
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	551843	11/14/22 12:00	SHB	EET CAN
Total/NA	Analysis	7470A		1			552200	11/15/22 15:17	DSH	EET CAN
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			417825	11/09/22 15:54	MAM	EET PIT
	Instrument ID: PHTITRATOR									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	417747	11/09/22 17:32	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			753.62 mL	1.0 g	589917	11/14/22 09:43	DJP	EET SL
Total/NA	Analysis	9315		1			592516	12/06/22 09:13	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			753.62 mL	1.0 g	589918	11/14/22 10:14	DJP	EET SL
Total/NA	Analysis	9320		1			592190	12/05/22 11:50	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			592597	12/06/22 13:57	MLK	EET SL
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-147566-1
SDG: AB Brown

Client Sample ID: CCR-LF-4

Date Collected: 11/03/22 09:35
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		25			418219	11/15/22 21:35	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		2.5	1 mL	1 mL	418095	11/15/22 00:44	SNL	EET PIT
	Instrument ID: CHICS2100B									
Total/NA	Analysis	EPA 9056A		25	1 mL	1 mL	418095	11/15/22 00:59	SNL	EET PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			552338	11/16/22 16:12	AJC	EET CAN
	Instrument ID: I14									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			554384	12/02/22 12:28	DSH	EET CAN
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	551843	11/14/22 12:00	SHB	EET CAN
Total/NA	Analysis	7470A		1			552200	11/15/22 15:19	DSH	EET CAN
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			417887	11/10/22 16:17	MAM	EET PIT
	Instrument ID: PHTITRATOR									
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	417747	11/09/22 17:32	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			753.78 mL	1.0 g	589917	11/14/22 09:43	DJP	EET SL
Total/NA	Analysis	9315		1			592516	12/06/22 09:13	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			753.78 mL	1.0 g	589918	11/14/22 10:14	DJP	EET SL
Total/NA	Analysis	9320		1			592190	12/05/22 11:50	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			592597	12/06/22 13:57	MLK	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-5

Date Collected: 11/03/22 13:35
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			417809	11/11/22 00:58	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		5			417809	11/11/22 01:13	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			552338	11/16/22 16:15	AJC	EET CAN
	Instrument ID: I14									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		5			552628	11/17/22 12:20	RKT	EET CAN
	Instrument ID: I14									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-147566-1
SDG: AB Brown

Client Sample ID: CCR-LF-5

Date Collected: 11/03/22 13:35
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			554384	12/02/22 12:31	DSH	EET CAN
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	551843	11/14/22 12:00	SHB	EET CAN
Total/NA	Analysis	7470A		1			552200	11/15/22 15:21	DSH	EET CAN
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			417825	11/09/22 16:05	MAM	EET PIT
	Instrument ID: PHTITRATOR									
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	417736	11/09/22 15:19	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			757.24 mL	1.0 g	589917	11/14/22 09:43	DJP	EET SL
Total/NA	Analysis	9315		1			592516	12/06/22 09:13	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			757.24 mL	1.0 g	589918	11/14/22 10:14	DJP	EET SL
Total/NA	Analysis	9320		1			592190	12/05/22 11:50	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			592597	12/06/22 13:57	MLK	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-6

Date Collected: 11/03/22 16:35
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			417809	11/11/22 00:14	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			552338	11/16/22 15:48	AJC	EET CAN
	Instrument ID: I14									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			554384	12/02/22 12:09	DSH	EET CAN
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	551843	11/14/22 12:00	SHB	EET CAN
Total/NA	Analysis	7470A		1			552200	11/15/22 15:00	DSH	EET CAN
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			417825	11/09/22 16:11	MAM	EET PIT
	Instrument ID: PHTITRATOR									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	417736	11/09/22 15:19	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			751.38 mL	1.0 g	589917	11/14/22 09:43	DJP	EET SL
Total/NA	Analysis	9315		1			592516	12/06/22 09:14	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			751.38 mL	1.0 g	589918	11/14/22 10:14	DJP	EET SL
Total/NA	Analysis	9320		1			592191	12/05/22 11:52	FLC	EET SL
	Instrument ID: GFPCRED									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-147566-1
SDG: AB Brown

Client Sample ID: CCR-LF-6

Date Collected: 11/03/22 16:35
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Ra226_Ra228		1			592597	12/06/22 13:57	MLK	EET SL

Client Sample ID: BLIND DUP 3

Date Collected: 11/03/22 00:01
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			417809	11/11/22 01:56	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		5			417809	11/11/22 02:09	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			552338	11/16/22 16:18	AJC	EET CAN
	Instrument ID: I14									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		5			552628	11/17/22 12:22	RKT	EET CAN
	Instrument ID: I14									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			554384	12/02/22 12:33	DSH	EET CAN
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	551843	11/14/22 12:00	SHB	EET CAN
Total/NA	Analysis	7470A		1			552200	11/15/22 15:23	DSH	EET CAN
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			417887	11/10/22 16:29	MAM	EET PIT
	Instrument ID: PHTITRATOR									
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	417736	11/09/22 15:19	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			262.23 mL	1.0 g	589917	11/14/22 09:43	DJP	EET SL
Total/NA	Analysis	9315		1			592516	12/06/22 09:14	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			262.23 mL	1.0 g	589918	11/14/22 10:14	DJP	EET SL
Total/NA	Analysis	9320		1			592191	12/05/22 11:52	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Analysis	Ra226_Ra228		1			592597	12/06/22 13:57	MLK	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: FIELD BLANK 3

Date Collected: 11/03/22 13:35
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			417809	11/11/22 02:23	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		1			417923	11/11/22 18:01	SNL	EET PIT
	Instrument ID: CHICS2100B									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-147566-1
SDG: AB Brown

Client Sample ID: FIELD BLANK 3

Date Collected: 11/03/22 13:35
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			552338	11/16/22 16:20	AJC	EET CAN
	Instrument ID: I14									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			552628	11/17/22 12:25	RKT	EET CAN
	Instrument ID: I14									
Total Recoverable	Prep	3005A			50 mL	50 mL	551842	11/14/22 12:00	SHB	EET CAN
Total Recoverable	Analysis	6020A		1			554384	12/02/22 12:36	DSH	EET CAN
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	551843	11/14/22 12:00	SHB	EET CAN
Total/NA	Analysis	7470A		1			552200	11/15/22 15:25	DSH	EET CAN
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			417887	11/10/22 16:33	MAM	EET PIT
	Instrument ID: PHTITRATOR									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	417736	11/09/22 15:19	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			253.91 mL	1.0 g	589917	11/14/22 09:43	DJP	EET SL
Total/NA	Analysis	9315		1			592516	12/06/22 09:14	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			253.91 mL	1.0 g	589918	11/14/22 10:14	DJP	EET SL
Total/NA	Analysis	9320		1			592191	12/05/22 11:52	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Analysis	Ra226_Ra228		1			592597	12/06/22 13:57	MLK	EET SL
	Instrument ID: NOEQUIP									

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: EET CAN
- Batch Type: Prep
  - SHB = Samuel Banks
- Batch Type: Analysis
  - AJC = Alexander Colosi
  - DSH = David Heakin
  - RKT = Roger Toth

Lab: EET PIT
- Batch Type: Analysis
  - LWM = Leslie McIntire
  - MAM = Matthew Martin
  - SNL = Sean Lordo

Lab: EET SL
- Batch Type: Prep
  - DJP = Dalton Pieper
- Batch Type: Analysis
  - FLC = Fernando Cruz
  - MLK = Micha Korrinhizer

Client Sample ID: CCR-LF-1

Date Collected: 11/02/22 13:35
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-1

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**22**		2.5	1.8	mg/L			11/10/22 23:15	2.5
Fluoride	**0.22**	**J**	0.25	0.065	mg/L			11/10/22 23:15	2.5
Sulfate	**1000**	**^2**	2.5	1.9	mg/L			11/10/22 23:15	2.5

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00062**	**J**	0.0020	0.00057	mg/L		11/14/22 12:00	11/16/22 16:00	1
Arsenic	ND		0.0050	0.00075	mg/L		11/14/22 12:00	11/16/22 16:00	1
Barium	**0.035**		0.0050	0.0022	mg/L		11/14/22 12:00	11/16/22 16:00	1
Beryllium	ND		0.0010	0.00062	mg/L		11/14/22 12:00	12/02/22 12:06	1
Boron	**0.056**		0.020	0.016	mg/L		11/14/22 12:00	11/16/22 16:00	1
Cadmium	ND		0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 16:00	1
Calcium	**270**		1.0	0.58	mg/L		11/14/22 12:00	11/16/22 16:00	1
Chromium	ND		0.0050	0.0025	mg/L		11/14/22 12:00	11/16/22 16:00	1
Cobalt	ND		0.0010	0.00019	mg/L		11/14/22 12:00	11/16/22 16:00	1
Lead	ND		0.0010	0.00045	mg/L		11/14/22 12:00	11/16/22 16:00	1
Lithium	**0.0065**	**J**	0.0080	0.0017	mg/L		11/14/22 12:00	11/16/22 16:00	1
Molybdenum	**0.0013**	**J**	0.0050	0.0011	mg/L		11/14/22 12:00	11/16/22 16:00	1
Selenium	ND		0.0050	0.00089	mg/L		11/14/22 12:00	11/16/22 16:00	1
Thallium	**0.00056**	**J**	0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 16:00	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		11/14/22 12:00	11/15/22 15:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1900**		20	20	mg/L			11/09/22 15:19	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**7.3**	**HF**	0.1	0.1	SU			11/09/22 17:37	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.395**		0.259	0.261	1.00	0.350	pCi/L	11/14/22 09:43	12/06/22 09:12	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.0*		*40 - 110*	*11/14/22 09:43*	*12/06/22 09:12*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.841**		0.527	0.533	1.00	0.782	pCi/L	11/14/22 10:14	12/05/22 11:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.0*		*40 - 110*	*11/14/22 10:14*	*12/05/22 11:50*	*1*
Y Carrier	*84.9*		*40 - 110*	*11/14/22 10:14*	*12/05/22 11:50*	*1*

Client Sample ID: CCR-LF-1

Lab Sample ID: 180-147566-1
Date Collected: 11/02/22 13:35
Matrix: Water
Date Received: 11/08/22 09:47

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.24		0.587	0.593	5.00	0.782	pCi/L		12/06/22 13:57	1

Client Sample ID: CCR-LF-2

Lab Sample ID: 180-147566-2
Date Collected: 11/02/22 15:30
Matrix: Water
Date Received: 11/08/22 09:47

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	360		2.5	1.8	mg/L			11/10/22 23:30	2.5
Fluoride	0.52		0.25	0.065	mg/L			11/10/22 23:30	2.5
Sulfate	13000	^2	25	19	mg/L			11/10/22 23:44	25

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		11/14/22 12:00	11/16/22 16:03	1
Arsenic	0.0017	J	0.0050	0.00075	mg/L		11/14/22 12:00	11/16/22 16:03	1
Barium	0.015		0.0050	0.0022	mg/L		11/14/22 12:00	11/16/22 16:03	1
Beryllium	ND		0.0010	0.00062	mg/L		11/14/22 12:00	12/02/22 12:04	1
Boron	4.5		0.40	0.32	mg/L		11/14/22 12:00	11/17/22 12:12	20
Cadmium	0.0099		0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 16:03	1
Calcium	330		1.0	0.58	mg/L		11/14/22 12:00	11/16/22 16:03	1
Chromium	ND		0.0050	0.0025	mg/L		11/14/22 12:00	11/16/22 16:03	1
Cobalt	0.011		0.0010	0.00019	mg/L		11/14/22 12:00	11/16/22 16:03	1
Lead	0.0014		0.0010	0.00045	mg/L		11/14/22 12:00	11/16/22 16:03	1
Lithium	0.017		0.0080	0.0017	mg/L		11/14/22 12:00	11/16/22 16:03	1
Molybdenum	0.0024	J	0.0050	0.0011	mg/L		11/14/22 12:00	11/16/22 16:03	1
Selenium	0.0022	J	0.0050	0.00089	mg/L		11/14/22 12:00	11/16/22 16:03	1
Thallium	0.00096	J	0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 16:03	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00014	J	0.00020	0.00013	mg/L		11/14/22 12:00	11/15/22 15:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	21000		130	130	mg/L			11/09/22 15:19	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.2	HF	0.1	0.1	SU			11/09/22 17:43	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.673		0.321	0.327	1.00	0.381	pCi/L	11/14/22 09:43	12/06/22 09:12	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.2*		*40 - 110*	*11/14/22 09:43*	*12/06/22 09:12*	*1*

Client Sample ID: CCR-LF-2

Date Collected: 11/02/22 15:30
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-2

Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.10		0.701	0.727	1.00	0.865	pCi/L	11/14/22 10:14	12/05/22 11:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.2*		*40 - 110*	*11/14/22 10:14*	*12/05/22 11:50*	*1*
Y Carrier	*82.2*		*40 - 110*	*11/14/22 10:14*	*12/05/22 11:50*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.78		0.771	0.797	5.00	0.865	pCi/L		12/06/22 13:57	1

Client Sample ID: CCR-LF-3

Date Collected: 11/03/22 10:55
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-3

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29		2.5	1.8	mg/L			11/10/22 23:59	2.5
Fluoride	0.23	J	0.25	0.065	mg/L			11/10/22 23:59	2.5
Sulfate	1200	^2	2.5	1.9	mg/L			11/10/22 23:59	2.5

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		11/14/22 12:00	11/16/22 16:05	1
Arsenic	ND		0.0050	0.00075	mg/L		11/14/22 12:00	11/16/22 16:05	1
Barium	0.017		0.0050	0.0022	mg/L		11/14/22 12:00	11/16/22 16:05	1
Beryllium	ND		0.0010	0.00062	mg/L		11/14/22 12:00	12/02/22 12:21	1
Boron	0.20		0.020	0.016	mg/L		11/14/22 12:00	11/17/22 12:15	1
Cadmium	ND		0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 16:05	1
Calcium	270		1.0	0.58	mg/L		11/14/22 12:00	11/16/22 16:05	1
Chromium	ND		0.0050	0.0025	mg/L		11/14/22 12:00	11/16/22 16:05	1
Cobalt	ND		0.0010	0.00019	mg/L		11/14/22 12:00	11/16/22 16:05	1
Lead	ND		0.0010	0.00045	mg/L		11/14/22 12:00	11/16/22 16:05	1
Lithium	0.0028	J	0.0080	0.0017	mg/L		11/14/22 12:00	11/16/22 16:05	1
Molybdenum	ND		0.0050	0.0011	mg/L		11/14/22 12:00	11/16/22 16:05	1
Selenium	ND		0.0050	0.00089	mg/L		11/14/22 12:00	11/16/22 16:05	1
Thallium	ND		0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 16:05	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		11/14/22 12:00	11/15/22 15:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	2100		20	20	mg/L			11/09/22 17:32	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.5	HF	0.1	0.1	SU			11/09/22 15:54	1

Client Sample ID: CCR-LF-3

Date Collected: 11/03/22 10:55
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-3

Matrix: Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.401		0.232	0.235	1.00	0.273	pCi/L	11/14/22 09:43	12/06/22 09:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.8*		*40 - 110*	*11/14/22 09:43*	*12/06/22 09:13*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.963		0.443	0.451	1.00	0.560	pCi/L	11/14/22 10:14	12/05/22 11:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.8*		*40 - 110*	*11/14/22 10:14*	*12/05/22 11:50*	*1*
Y Carrier	*85.6*		*40 - 110*	*11/14/22 10:14*	*12/05/22 11:50*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.36		0.500	0.509	5.00	0.560	pCi/L		12/06/22 13:57	1

Client Sample ID: CCR-LF-4

Date Collected: 11/03/22 09:35
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-4

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	160		25	18	mg/L			11/15/22 21:35	25
Fluoride	0.26		0.25	0.065	mg/L			11/15/22 00:44	2.5
Sulfate	9400		25	19	mg/L			11/15/22 00:59	25

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		11/14/22 12:00	11/16/22 16:12	1
Arsenic	0.024		0.0050	0.00075	mg/L		11/14/22 12:00	11/16/22 16:12	1
Barium	0.011		0.0050	0.0022	mg/L		11/14/22 12:00	11/16/22 16:12	1
Beryllium	ND		0.0010	0.00062	mg/L		11/14/22 12:00	12/02/22 12:28	1
Boron	0.33		0.020	0.016	mg/L		11/14/22 12:00	11/16/22 16:12	1
Cadmium	ND		0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 16:12	1
Calcium	380		1.0	0.58	mg/L		11/14/22 12:00	11/16/22 16:12	1
Chromium	ND		0.0050	0.0025	mg/L		11/14/22 12:00	11/16/22 16:12	1
Cobalt	0.00072	J	0.0010	0.00019	mg/L		11/14/22 12:00	11/16/22 16:12	1
Lead	ND		0.0010	0.00045	mg/L		11/14/22 12:00	11/16/22 16:12	1
Lithium	0.082		0.0080	0.0017	mg/L		11/14/22 12:00	11/16/22 16:12	1
Molybdenum	0.027		0.0050	0.0011	mg/L		11/14/22 12:00	11/16/22 16:12	1
Selenium	ND		0.0050	0.00089	mg/L		11/14/22 12:00	11/16/22 16:12	1
Thallium	ND		0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 16:12	1

Client Sample ID: CCR-LF-4

Lab Sample ID: 180-147566-4

Date Collected: 11/03/22 09:35
Matrix: Water
Date Received: 11/08/22 09:47

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		11/14/22 12:00	11/15/22 15:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	14000		100	100	mg/L			11/09/22 17:32	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.1	HF	0.1	0.1	SU			11/10/22 16:17	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	4.11		0.635	0.735	1.00	0.295	pCi/L	11/14/22 09:43	12/06/22 09:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.1*		*40 - 110*	*11/14/22 09:43*	*12/06/22 09:13*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.68		0.682	0.726	1.00	0.767	pCi/L	11/14/22 10:14	12/05/22 11:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.1*		*40 - 110*	*11/14/22 10:14*	*12/05/22 11:50*	*1*
Y Carrier	*88.6*		*40 - 110*	*11/14/22 10:14*	*12/05/22 11:50*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	6.79		0.932	1.03	5.00	0.767	pCi/L		12/06/22 13:57	1

Client Sample ID: CCR-LF-5

Lab Sample ID: 180-147566-5

Date Collected: 11/03/22 13:35
Matrix: Water
Date Received: 11/08/22 09:47

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	310		1.0	0.71	mg/L			11/11/22 00:58	1
Fluoride	0.17		0.10	0.026	mg/L			11/11/22 00:58	1
Sulfate	2300	^2	5.0	3.8	mg/L			11/11/22 01:13	5

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		11/14/22 12:00	11/16/22 16:15	1
Arsenic	ND		0.0050	0.00075	mg/L		11/14/22 12:00	11/16/22 16:15	1
Barium	0.024		0.0050	0.0022	mg/L		11/14/22 12:00	11/16/22 16:15	1
Beryllium	ND		0.0010	0.00062	mg/L		11/14/22 12:00	12/02/22 12:31	1
Boron	1.1		0.10	0.080	mg/L		11/14/22 12:00	11/17/22 12:20	5
Cadmium	0.00020	J	0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 16:15	1

Client Sample ID: CCR-LF-5

Date Collected: 11/03/22 13:35
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-5

Matrix: Water

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**420**		1.0	0.58	mg/L		11/14/22 12:00	11/16/22 16:15	1
Chromium	ND		0.0050	0.0025	mg/L		11/14/22 12:00	11/16/22 16:15	1
Cobalt	ND		0.0010	0.00019	mg/L		11/14/22 12:00	11/16/22 16:15	1
Lead	ND		0.0010	0.00045	mg/L		11/14/22 12:00	11/16/22 16:15	1
Lithium	**0.022**		0.0080	0.0017	mg/L		11/14/22 12:00	11/16/22 16:15	1
Molybdenum	ND		0.0050	0.0011	mg/L		11/14/22 12:00	11/16/22 16:15	1
Selenium	ND		0.0050	0.00089	mg/L		11/14/22 12:00	11/16/22 16:15	1
Thallium	ND		0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 16:15	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00032**		0.00020	0.00013	mg/L		11/14/22 12:00	11/15/22 15:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**4700**		40	40	mg/L			11/09/22 15:19	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**7.4**	**HF**	0.1	0.1	SU			11/09/22 16:05	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0867	U	0.166	0.167	1.00	0.302	pCi/L	11/14/22 09:43	12/06/22 09:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.9*		*40 - 110*	*11/14/22 09:43*	*12/06/22 09:13*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.30**		0.568	0.581	1.00	0.741	pCi/L	11/14/22 10:14	12/05/22 11:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.9*		*40 - 110*	*11/14/22 10:14*	*12/05/22 11:50*	*1*
Y Carrier	*82.2*		*40 - 110*	*11/14/22 10:14*	*12/05/22 11:50*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.39**		0.592	0.605	5.00	0.741	pCi/L		12/06/22 13:57	1

Client Sample ID: CCR-LF-6

Date Collected: 11/03/22 16:35
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-6

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**18**		1.0	0.71	mg/L			11/11/22 00:14	1

Client Sample ID: CCR-LF-6

Date Collected: 11/03/22 16:35
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-6

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.33**		0.10	0.026	mg/L			11/11/22 00:14	1
Sulfate	**430**	**^2**	1.0	0.76	mg/L			11/11/22 00:14	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		11/14/22 12:00	11/16/22 15:48	1
Arsenic	ND		0.0050	0.00075	mg/L		11/14/22 12:00	11/16/22 15:48	1
Barium	**0.021**		0.0050	0.0022	mg/L		11/14/22 12:00	11/16/22 15:48	1
Beryllium	ND		0.0010	0.00062	mg/L		11/14/22 12:00	12/02/22 12:09	1
Boron	**0.36**		0.020	0.016	mg/L		11/14/22 12:00	11/16/22 15:48	1
Cadmium	ND		0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 15:48	1
Calcium	**160**		1.0	0.58	mg/L		11/14/22 12:00	11/16/22 15:48	1
Chromium	ND		0.0050	0.0025	mg/L		11/14/22 12:00	11/16/22 15:48	1
Cobalt	**0.00026**	**J**	0.0010	0.00019	mg/L		11/14/22 12:00	11/16/22 15:48	1
Lead	ND		0.0010	0.00045	mg/L		11/14/22 12:00	11/16/22 15:48	1
Lithium	**0.013**		0.0080	0.0017	mg/L		11/14/22 12:00	11/16/22 15:48	1
Molybdenum	**0.0014**	**J**	0.0050	0.0011	mg/L		11/14/22 12:00	11/16/22 15:48	1
Selenium	**0.0012**	**J**	0.0050	0.00089	mg/L		11/14/22 12:00	11/16/22 15:48	1
Thallium	**0.00032**	**J**	0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 15:48	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	F1	0.00020	0.00013	mg/L		11/14/22 12:00	11/15/22 15:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**960**		10	10	mg/L			11/09/22 15:19	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**7.6**	**HF**	0.1	0.1	SU			11/09/22 16:11	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0126	U	0.149	0.149	1.00	0.313	pCi/L	11/14/22 09:43	12/06/22 09:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.1*		*40 - 110*	*11/14/22 09:43*	*12/06/22 09:14*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.983**		0.538	0.545	1.00	0.759	pCi/L	11/14/22 10:14	12/05/22 11:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.1*		*40 - 110*	*11/14/22 10:14*	*12/05/22 11:52*	*1*
Y Carrier	*83.0*		*40 - 110*	*11/14/22 10:14*	*12/05/22 11:52*	*1*

Client Sample ID: CCR-LF-6

Lab Sample ID: 180-147566-6

Date Collected: 11/03/22 16:35
Matrix: Water
Date Received: 11/08/22 09:47

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.996		0.558	0.565	5.00	0.759	pCi/L		12/06/22 13:57	1

Client Sample ID: BLIND DUP 3

Lab Sample ID: 180-147566-7

Date Collected: 11/03/22 00:01
Matrix: Water
Date Received: 11/08/22 09:47

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	330		1.0	0.71	mg/L			11/11/22 01:56	1
Fluoride	0.17		0.10	0.026	mg/L			11/11/22 01:56	1
Sulfate	2700	^2	5.0	3.8	mg/L			11/11/22 02:09	5

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		11/14/22 12:00	11/16/22 16:18	1
Arsenic	ND		0.0050	0.00075	mg/L		11/14/22 12:00	11/16/22 16:18	1
Barium	0.021		0.0050	0.0022	mg/L		11/14/22 12:00	11/16/22 16:18	1
Beryllium	ND		0.0010	0.00062	mg/L		11/14/22 12:00	12/02/22 12:33	1
Boron	1.1		0.10	0.080	mg/L		11/14/22 12:00	11/17/22 12:22	5
Cadmium	ND		0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 16:18	1
Calcium	410		1.0	0.58	mg/L		11/14/22 12:00	11/16/22 16:18	1
Chromium	ND		0.0050	0.0025	mg/L		11/14/22 12:00	11/16/22 16:18	1
Cobalt	ND		0.0010	0.00019	mg/L		11/14/22 12:00	11/16/22 16:18	1
Lead	ND		0.0010	0.00045	mg/L		11/14/22 12:00	11/16/22 16:18	1
Lithium	0.021		0.0080	0.0017	mg/L		11/14/22 12:00	11/16/22 16:18	1
Molybdenum	ND		0.0050	0.0011	mg/L		11/14/22 12:00	11/16/22 16:18	1
Selenium	ND		0.0050	0.00089	mg/L		11/14/22 12:00	11/16/22 16:18	1
Thallium	ND		0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 16:18	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00027		0.00020	0.00013	mg/L		11/14/22 12:00	11/15/22 15:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	4800		40	40	mg/L			11/09/22 15:19	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.5	HF	0.1	0.1	SU			11/10/22 16:29	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.196	U G	0.543	0.543	1.00	1.03	pCi/L	11/14/22 09:43	12/06/22 09:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.0*		*40 - 110*	*11/14/22 09:43*	*12/06/22 09:14*	*1*

Client Sample ID: BLIND DUP 3

Lab Sample ID: 180-147566-7
Matrix: Water
Date Collected: 11/03/22 00:01
Date Received: 11/08/22 09:47

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.83	G	1.41	1.44	1.00	1.87	pCi/L	11/14/22 10:14	12/05/22 11:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.0*		*40 - 110*	*11/14/22 10:14*	*12/05/22 11:52*	*1*
Y Carrier	*84.1*		*40 - 110*	*11/14/22 10:14*	*12/05/22 11:52*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	3.03		1.51	1.54	5.00	1.87	pCi/L		12/06/22 13:57	1

Client Sample ID: FIELD BLANK 3

Lab Sample ID: 180-147566-8
Matrix: Water
Date Collected: 11/03/22 13:35
Date Received: 11/08/22 09:47

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			11/11/22 02:23	1
Fluoride	ND		0.10	0.026	mg/L			11/11/22 02:23	1
Sulfate	9.8		1.0	0.76	mg/L			11/11/22 18:01	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		11/14/22 12:00	11/16/22 16:20	1
Arsenic	ND		0.0050	0.00075	mg/L		11/14/22 12:00	11/16/22 16:20	1
Barium	ND		0.0050	0.0022	mg/L		11/14/22 12:00	11/16/22 16:20	1
Beryllium	ND		0.0010	0.00062	mg/L		11/14/22 12:00	12/02/22 12:36	1
Boron	ND		0.020	0.016	mg/L		11/14/22 12:00	11/17/22 12:25	1
Cadmium	ND		0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 16:20	1
Calcium	ND		1.0	0.58	mg/L		11/14/22 12:00	11/16/22 16:20	1
Chromium	ND		0.0050	0.0025	mg/L		11/14/22 12:00	11/16/22 16:20	1
Cobalt	ND		0.0010	0.00019	mg/L		11/14/22 12:00	11/16/22 16:20	1
Lead	ND		0.0010	0.00045	mg/L		11/14/22 12:00	11/16/22 16:20	1
Lithium	0.0019	J	0.0080	0.0017	mg/L		11/14/22 12:00	11/16/22 16:20	1
Molybdenum	ND		0.0050	0.0011	mg/L		11/14/22 12:00	11/16/22 16:20	1
Selenium	ND		0.0050	0.00089	mg/L		11/14/22 12:00	11/16/22 16:20	1
Thallium	ND		0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 16:20	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		11/14/22 12:00	11/15/22 15:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	31		10	10	mg/L			11/09/22 15:19	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	9.4	HF	0.1	0.1	SU			11/10/22 16:33	1

Client Sample ID: FIELD BLANK 3

Date Collected: 11/03/22 13:35
Date Received: 11/08/22 09:47

Lab Sample ID: 180-147566-8

Matrix: Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.13	U G	0.821	0.828	1.00	1.17	pCi/L	11/14/22 09:43	12/06/22 09:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.1*		*40 - 110*	*11/14/22 09:43*	*12/06/22 09:14*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.79	U G	1.40	1.41	1.00	2.13	pCi/L	11/14/22 10:14	12/05/22 11:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.1*		*40 - 110*	*11/14/22 10:14*	*12/05/22 11:52*	*1*
Y Carrier	*79.3*		*40 - 110*	*11/14/22 10:14*	*12/05/22 11:52*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**2.92**		1.62	1.64	5.00	2.13	pCi/L		12/06/22 13:57	1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-417809/22
Matrix: Water
Analysis Batch: 417809

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			11/10/22 20:03	1
Fluoride	ND		0.10	0.026	mg/L			11/10/22 20:03	1
Sulfate	ND		1.0	0.76	mg/L			11/10/22 20:03	1

Lab Sample ID: LCS 180-417809/23
Matrix: Water
Analysis Batch: 417809

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	50.8		mg/L		102	80 - 120
Fluoride	2.50	2.47		mg/L		99	80 - 120
Sulfate	50.0	48.0		mg/L		96	80 - 120

Lab Sample ID: 180-147566-6 MS
Matrix: Water
Analysis Batch: 417809

Client Sample ID: CCR-LF-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	18		50.0	68.3		mg/L		101	80 - 120
Fluoride	0.33		2.50	2.88		mg/L		102	80 - 120
Sulfate	430	^2	50.0	445	4	mg/L		41	80 - 120

Lab Sample ID: 180-147566-6 MSD
Matrix: Water
Analysis Batch: 417809

Client Sample ID: CCR-LF-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	18		50.0	68.3		mg/L		101	80 - 120	0	15
Fluoride	0.33		2.50	2.85		mg/L		101	80 - 120	1	15
Sulfate	430	^2	50.0	462	4	mg/L		73	80 - 120	4	15

Lab Sample ID: MB 180-417923/6
Matrix: Water
Analysis Batch: 417923

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			11/11/22 15:20	1
Fluoride	ND		0.10	0.026	mg/L			11/11/22 15:20	1
Sulfate	ND		1.0	0.76	mg/L			11/11/22 15:20	1

Lab Sample ID: LCS 180-417923/7
Matrix: Water
Analysis Batch: 417923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	54.7		mg/L		109	80 - 120
Fluoride	2.50	2.64		mg/L		105	80 - 120
Sulfate	50.0	52.5		mg/L		105	80 - 120

Method: EPA 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 180-418095/6
Matrix: Water
Analysis Batch: 418095

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			11/14/22 15:41	1
Fluoride	ND		0.10	0.026	mg/L			11/14/22 15:41	1
Sulfate	ND		1.0	0.76	mg/L			11/14/22 15:41	1

Lab Sample ID: LCS 180-418095/7
Matrix: Water
Analysis Batch: 418095

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	52.3		mg/L		105	80 - 120
Fluoride	2.50	2.58		mg/L		103	80 - 120
Sulfate	50.0	50.2		mg/L		100	80 - 120

Lab Sample ID: MB 180-418219/6
Matrix: Water
Analysis Batch: 418219

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			11/15/22 16:23	1
Fluoride	ND		0.10	0.026	mg/L			11/15/22 16:23	1
Sulfate	ND		1.0	0.76	mg/L			11/15/22 16:23	1

Lab Sample ID: LCS 180-418219/7
Matrix: Water
Analysis Batch: 418219

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	54.4		mg/L		109	80 - 120
Fluoride	2.50	2.65		mg/L		106	80 - 120
Sulfate	50.0	51.5		mg/L		103	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-551842/1-A
Matrix: Water
Analysis Batch: 552338

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 551842

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		11/14/22 12:00	11/16/22 15:43	1
Arsenic	ND		0.0050	0.00075	mg/L		11/14/22 12:00	11/16/22 15:43	1
Barium	ND		0.0050	0.0022	mg/L		11/14/22 12:00	11/16/22 15:43	1
Boron	ND		0.020	0.016	mg/L		11/14/22 12:00	11/16/22 15:43	1
Cadmium	ND		0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 15:43	1
Calcium	ND		1.0	0.58	mg/L		11/14/22 12:00	11/16/22 15:43	1
Chromium	ND		0.0050	0.0025	mg/L		11/14/22 12:00	11/16/22 15:43	1
Cobalt	ND		0.0010	0.00019	mg/L		11/14/22 12:00	11/16/22 15:43	1
Lead	ND		0.0010	0.00045	mg/L		11/14/22 12:00	11/16/22 15:43	1
Lithium	ND		0.0080	0.0017	mg/L		11/14/22 12:00	11/16/22 15:43	1
Molybdenum	ND		0.0050	0.0011	mg/L		11/14/22 12:00	11/16/22 15:43	1
Selenium	ND		0.0050	0.00089	mg/L		11/14/22 12:00	11/16/22 15:43	1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 240-551842/1-A
Matrix: Water
Analysis Batch: 552338

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 551842

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		0.0010	0.00020	mg/L		11/14/22 12:00	11/16/22 15:43	1

Lab Sample ID: MB 240-551842/1-A
Matrix: Water
Analysis Batch: 554384

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 551842

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	0.00062	mg/L		11/14/22 12:00	12/02/22 11:59	1

Lab Sample ID: LCS 240-551842/2-A
Matrix: Water
Analysis Batch: 552338

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 551842

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.100	0.101		mg/L		101	80 - 120
Arsenic	1.00	0.972		mg/L		97	80 - 120
Barium	1.00	1.04		mg/L		104	80 - 120
Boron	0.100	0.0802		mg/L		80	80 - 120
Cadmium	0.500	0.484		mg/L		97	80 - 120
Calcium	25.0	24.1		mg/L		97	80 - 120
Chromium	0.500	0.490		mg/L		98	80 - 120
Cobalt	0.500	0.447		mg/L		89	80 - 120
Lead	0.500	0.494		mg/L		99	80 - 120
Molybdenum	0.500	0.461		mg/L		92	80 - 120
Selenium	1.00	0.877		mg/L		88	80 - 120
Thallium	1.00	0.944		mg/L		94	80 - 120

Lab Sample ID: LCS 240-551842/2-A
Matrix: Water
Analysis Batch: 554384

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 551842

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	0.500	0.487		mg/L		97	80 - 120

Lab Sample ID: 180-147566-6 MS
Matrix: Water
Analysis Batch: 552338

Client Sample ID: CCR-LF-6
Prep Type: Total Recoverable
Prep Batch: 551842

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		0.100	0.105		mg/L		105	75 - 125
Arsenic	ND		1.00	1.00		mg/L		100	75 - 125
Barium	0.021		1.00	0.975		mg/L		95	75 - 125
Boron	0.36		0.100	0.441		mg/L		82	75 - 125
Cadmium	ND		0.500	0.494		mg/L		99	75 - 125
Calcium	160		25.0	179	4	mg/L		77	75 - 125
Chromium	ND		0.500	0.500		mg/L		100	75 - 125
Cobalt	0.00026	J	0.500	0.456		mg/L		91	75 - 125
Lead	ND		0.500	0.499		mg/L		100	75 - 125
Molybdenum	0.0014	J	0.500	0.487		mg/L		97	75 - 125
Selenium	0.0012	J	1.00	0.888		mg/L		89	75 - 125

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-147566-6 MS
Matrix: Water
Analysis Batch: 552338

Client Sample ID: CCR-LF-6
Prep Type: Total Recoverable
Prep Batch: 551842

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	0.00032	J	1.00	0.965		mg/L		96	75 - 125

Lab Sample ID: 180-147566-6 MS
Matrix: Water
Analysis Batch: 554384

Client Sample ID: CCR-LF-6
Prep Type: Total Recoverable
Prep Batch: 551842

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	ND		0.500	0.475		mg/L		95	75 - 125

Lab Sample ID: 180-147566-6 MSD
Matrix: Water
Analysis Batch: 552338

Client Sample ID: CCR-LF-6
Prep Type: Total Recoverable
Prep Batch: 551842

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		0.100	0.106		mg/L		106	75 - 125	1	20
Arsenic	ND		1.00	1.00		mg/L		100	75 - 125	0	20
Barium	0.021		1.00	0.961		mg/L		94	75 - 125	1	20
Boron	0.36		0.100	0.441		mg/L		82	75 - 125	0	20
Cadmium	ND		0.500	0.492		mg/L		98	75 - 125	0	20
Calcium	160		25.0	180	4	mg/L		81	75 - 125	1	20
Chromium	ND		0.500	0.493		mg/L		99	75 - 125	2	20
Cobalt	0.00026	J	0.500	0.452		mg/L		90	75 - 125	1	20
Lead	ND		0.500	0.497		mg/L		99	75 - 125	0	20
Molybdenum	0.0014	J	0.500	0.492		mg/L		98	75 - 125	1	20
Selenium	0.0012	J	1.00	0.882		mg/L		88	75 - 125	1	20
Thallium	0.00032	J	1.00	0.970		mg/L		97	75 - 125	0	20

Lab Sample ID: 180-147566-6 MSD
Matrix: Water
Analysis Batch: 554384

Client Sample ID: CCR-LF-6
Prep Type: Total Recoverable
Prep Batch: 551842

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Beryllium	ND		0.500	0.472		mg/L		94	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-551843/1-A
Matrix: Water
Analysis Batch: 552200

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 551843

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		11/14/22 12:00	11/15/22 14:56	1

Lab Sample ID: LCS 240-551843/2-A
Matrix: Water
Analysis Batch: 552200

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 551843

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00546		mg/L		109	80 - 120

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 180-147566-6 MS
Matrix: Water
Analysis Batch: 552200

Client Sample ID: CCR-LF-6
Prep Type: Total/NA
Prep Batch: 551843

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	ND	F1	0.00100	0.00121	F1	mg/L		121	80 - 120		

Lab Sample ID: 180-147566-6 MSD
Matrix: Water
Analysis Batch: 552200

Client Sample ID: CCR-LF-6
Prep Type: Total/NA
Prep Batch: 551843

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND	F1	0.00100	0.00112		mg/L		112	80 - 120	8	20

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-417825/5
Matrix: Water
Analysis Batch: 417825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
pH			7.00	7.0		SU		101	99 - 101		

Lab Sample ID: 180-147566-3 DU
Matrix: Water
Analysis Batch: 417825

Client Sample ID: CCR-LF-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.5	HF		7.5		SU				0.1	2

Lab Sample ID: LCS 180-417887/4
Matrix: Water
Analysis Batch: 417887

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
pH			7.00	7.1		SU		101	99 - 101		

Lab Sample ID: 180-147566-4 DU
Matrix: Water
Analysis Batch: 417887

Client Sample ID: CCR-LF-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.1	HF		7.2		SU				0.1	2

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 180-417736/1
Matrix: Water
Analysis Batch: 417736

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			11/09/22 15:19	1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 180-417736/2
Matrix: Water
Analysis Batch: 417736

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			388	356		mg/L		92	85 - 115		

Lab Sample ID: 180-147566-2 DU
Matrix: Water
Analysis Batch: 417736

Client Sample ID: CCR-LF-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	21000			21400		mg/L				0.6	10

Lab Sample ID: 180-147566-5 DU
Matrix: Water
Analysis Batch: 417736

Client Sample ID: CCR-LF-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	4700			4680		mg/L				1	10

Lab Sample ID: MB 180-417747/1
Matrix: Water
Analysis Batch: 417747

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			11/09/22 17:32	1

Lab Sample ID: LCS 180-417747/2
Matrix: Water
Analysis Batch: 417747

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			388	374		mg/L		96	85 - 115		

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-589917/1-A
Matrix: Water
Analysis Batch: 592516

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 589917

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1107	U	0.138	0.138	1.00	0.227	pCi/L	11/14/22 09:43	12/06/22 09:10	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.8*		*40 - 110*	*11/14/22 09:43*	*12/06/22 09:10*	*1*

Lab Sample ID: LCS 160-589917/2-A
Matrix: Water
Analysis Batch: 592516

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 589917

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.48		1.28	1.00	0.226	pCi/L	92	75 - 125		

Method: 9315 - Radium-226 (GFPC) (Continued)

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	89.1		40 - 110

Lab Sample ID: 180-147566-6 DU
Matrix: Water
Analysis Batch: 592518

Client Sample ID: CCR-LF-6
Prep Type: Total/NA
Prep Batch: 589917

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.0126	U		0.4128		0.260	1.00	0.334	pCi/L			0.98	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	83.6		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-589918/1-A
Matrix: Water
Analysis Batch: 592376

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 589918

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.5266		0.328	0.331	1.00	0.476	pCi/L	11/14/22 10:14	12/05/22 11:47	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	91.8		40 - 110	11/14/22 10:14	12/05/22 11:47	1
Y Carrier	82.6		40 - 110	11/14/22 10:14	12/05/22 11:47	1

Lab Sample ID: LCS 160-589918/2-A
Matrix: Water
Analysis Batch: 592376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 589918

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.39	9.838		1.32	1.00	0.482	pCi/L	117	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	89.1		40 - 110
Y Carrier	87.1		40 - 110

Lab Sample ID: 180-147566-6 DU
Matrix: Water
Analysis Batch: 592191

Client Sample ID: CCR-LF-6
Prep Type: Total/NA
Prep Batch: 589918

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.983			0.9713		0.560	1.00	0.793	pCi/L			0.01	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	83.6		40 - 110
Y Carrier	81.5		40 - 110

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-147566-1
SDG: AB Brown

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 180-147566-6 DU
Matrix: Water
Analysis Batch: 592597

Client Sample ID: CCR-LF-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Combined Radium 226 + 228	0.996			1.384		0.617	5.00	0.793	pCi/L			0.33	

HPLC/IC

Analysis Batch: 417809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-1	CCR-LF-1	Total/NA	Water	EPA 9056A	
180-147566-2	CCR-LF-2	Total/NA	Water	EPA 9056A	
180-147566-2	CCR-LF-2	Total/NA	Water	EPA 9056A	
180-147566-3	CCR-LF-3	Total/NA	Water	EPA 9056A	
180-147566-5	CCR-LF-5	Total/NA	Water	EPA 9056A	
180-147566-5	CCR-LF-5	Total/NA	Water	EPA 9056A	
180-147566-6	CCR-LF-6	Total/NA	Water	EPA 9056A	
180-147566-7	BLIND DUP 3	Total/NA	Water	EPA 9056A	
180-147566-7	BLIND DUP 3	Total/NA	Water	EPA 9056A	
180-147566-8	FIELD BLANK 3	Total/NA	Water	EPA 9056A	
MB 180-417809/22	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-417809/23	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-147566-6 MS	CCR-LF-6	Total/NA	Water	EPA 9056A	
180-147566-6 MSD	CCR-LF-6	Total/NA	Water	EPA 9056A	

Analysis Batch: 417923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-8	FIELD BLANK 3	Total/NA	Water	EPA 9056A	
MB 180-417923/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-417923/7	Lab Control Sample	Total/NA	Water	EPA 9056A	

Analysis Batch: 418095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-4	CCR-LF-4	Total/NA	Water	EPA 9056A	
180-147566-4	CCR-LF-4	Total/NA	Water	EPA 9056A	
MB 180-418095/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-418095/7	Lab Control Sample	Total/NA	Water	EPA 9056A	

Analysis Batch: 418219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-4	CCR-LF-4	Total/NA	Water	EPA 9056A	
MB 180-418219/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-418219/7	Lab Control Sample	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 551842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-1	CCR-LF-1	Total Recoverable	Water	3005A	
180-147566-2	CCR-LF-2	Total Recoverable	Water	3005A	
180-147566-3	CCR-LF-3	Total Recoverable	Water	3005A	
180-147566-4	CCR-LF-4	Total Recoverable	Water	3005A	
180-147566-5	CCR-LF-5	Total Recoverable	Water	3005A	
180-147566-6	CCR-LF-6	Total Recoverable	Water	3005A	
180-147566-7	BLIND DUP 3	Total Recoverable	Water	3005A	
180-147566-8	FIELD BLANK 3	Total Recoverable	Water	3005A	
MB 240-551842/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-551842/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-147566-6 MS	CCR-LF-6	Total Recoverable	Water	3005A	
180-147566-6 MSD	CCR-LF-6	Total Recoverable	Water	3005A	

Metals

Prep Batch: 551843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-1	CCR-LF-1	Total/NA	Water	7470A	
180-147566-2	CCR-LF-2	Total/NA	Water	7470A	
180-147566-3	CCR-LF-3	Total/NA	Water	7470A	
180-147566-4	CCR-LF-4	Total/NA	Water	7470A	
180-147566-5	CCR-LF-5	Total/NA	Water	7470A	
180-147566-6	CCR-LF-6	Total/NA	Water	7470A	
180-147566-7	BLIND DUP 3	Total/NA	Water	7470A	
180-147566-8	FIELD BLANK 3	Total/NA	Water	7470A	
MB 240-551843/1-A	Method Blank	Total/NA	Water	7470A	
LCS 240-551843/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-147566-6 MS	CCR-LF-6	Total/NA	Water	7470A	
180-147566-6 MSD	CCR-LF-6	Total/NA	Water	7470A	

Analysis Batch: 552200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-1	CCR-LF-1	Total/NA	Water	7470A	551843
180-147566-2	CCR-LF-2	Total/NA	Water	7470A	551843
180-147566-3	CCR-LF-3	Total/NA	Water	7470A	551843
180-147566-4	CCR-LF-4	Total/NA	Water	7470A	551843
180-147566-5	CCR-LF-5	Total/NA	Water	7470A	551843
180-147566-6	CCR-LF-6	Total/NA	Water	7470A	551843
180-147566-7	BLIND DUP 3	Total/NA	Water	7470A	551843
180-147566-8	FIELD BLANK 3	Total/NA	Water	7470A	551843
MB 240-551843/1-A	Method Blank	Total/NA	Water	7470A	551843
LCS 240-551843/2-A	Lab Control Sample	Total/NA	Water	7470A	551843
180-147566-6 MS	CCR-LF-6	Total/NA	Water	7470A	551843
180-147566-6 MSD	CCR-LF-6	Total/NA	Water	7470A	551843

Analysis Batch: 552338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-1	CCR-LF-1	Total Recoverable	Water	6020A	551842
180-147566-2	CCR-LF-2	Total Recoverable	Water	6020A	551842
180-147566-3	CCR-LF-3	Total Recoverable	Water	6020A	551842
180-147566-4	CCR-LF-4	Total Recoverable	Water	6020A	551842
180-147566-5	CCR-LF-5	Total Recoverable	Water	6020A	551842
180-147566-6	CCR-LF-6	Total Recoverable	Water	6020A	551842
180-147566-7	BLIND DUP 3	Total Recoverable	Water	6020A	551842
180-147566-8	FIELD BLANK 3	Total Recoverable	Water	6020A	551842
MB 240-551842/1-A	Method Blank	Total Recoverable	Water	6020A	551842
LCS 240-551842/2-A	Lab Control Sample	Total Recoverable	Water	6020A	551842
180-147566-6 MS	CCR-LF-6	Total Recoverable	Water	6020A	551842
180-147566-6 MSD	CCR-LF-6	Total Recoverable	Water	6020A	551842

Analysis Batch: 552628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-2	CCR-LF-2	Total Recoverable	Water	6020A	551842
180-147566-3	CCR-LF-3	Total Recoverable	Water	6020A	551842
180-147566-5	CCR-LF-5	Total Recoverable	Water	6020A	551842
180-147566-7	BLIND DUP 3	Total Recoverable	Water	6020A	551842
180-147566-8	FIELD BLANK 3	Total Recoverable	Water	6020A	551842

Metals

Analysis Batch: 554384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-1	CCR-LF-1	Total Recoverable	Water	6020A	551842
180-147566-2	CCR-LF-2	Total Recoverable	Water	6020A	551842
180-147566-3	CCR-LF-3	Total Recoverable	Water	6020A	551842
180-147566-4	CCR-LF-4	Total Recoverable	Water	6020A	551842
180-147566-5	CCR-LF-5	Total Recoverable	Water	6020A	551842
180-147566-6	CCR-LF-6	Total Recoverable	Water	6020A	551842
180-147566-7	BLIND DUP 3	Total Recoverable	Water	6020A	551842
180-147566-8	FIELD BLANK 3	Total Recoverable	Water	6020A	551842
MB 240-551842/1-A	Method Blank	Total Recoverable	Water	6020A	551842
LCS 240-551842/2-A	Lab Control Sample	Total Recoverable	Water	6020A	551842
180-147566-6 MS	CCR-LF-6	Total Recoverable	Water	6020A	551842
180-147566-6 MSD	CCR-LF-6	Total Recoverable	Water	6020A	551842

General Chemistry

Analysis Batch: 417736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-1	CCR-LF-1	Total/NA	Water	SM 2540C	
180-147566-2	CCR-LF-2	Total/NA	Water	SM 2540C	
180-147566-5	CCR-LF-5	Total/NA	Water	SM 2540C	
180-147566-6	CCR-LF-6	Total/NA	Water	SM 2540C	
180-147566-7	BLIND DUP 3	Total/NA	Water	SM 2540C	
180-147566-8	FIELD BLANK 3	Total/NA	Water	SM 2540C	
MB 180-417736/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-417736/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-147566-2 DU	CCR-LF-2	Total/NA	Water	SM 2540C	
180-147566-5 DU	CCR-LF-5	Total/NA	Water	SM 2540C	

Analysis Batch: 417747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-3	CCR-LF-3	Total/NA	Water	SM 2540C	
180-147566-4	CCR-LF-4	Total/NA	Water	SM 2540C	
MB 180-417747/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-417747/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 417825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-1	CCR-LF-1	Total/NA	Water	EPA 9040C	
180-147566-2	CCR-LF-2	Total/NA	Water	EPA 9040C	
180-147566-3	CCR-LF-3	Total/NA	Water	EPA 9040C	
180-147566-5	CCR-LF-5	Total/NA	Water	EPA 9040C	
180-147566-6	CCR-LF-6	Total/NA	Water	EPA 9040C	
LCS 180-417825/5	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-147566-3 DU	CCR-LF-3	Total/NA	Water	EPA 9040C	

Analysis Batch: 417887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-4	CCR-LF-4	Total/NA	Water	EPA 9040C	
180-147566-7	BLIND DUP 3	Total/NA	Water	EPA 9040C	
180-147566-8	FIELD BLANK 3	Total/NA	Water	EPA 9040C	
LCS 180-417887/4	Lab Control Sample	Total/NA	Water	EPA 9040C	

General Chemistry (Continued)

Analysis Batch: 417887 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-4 DU	CCR-LF-4	Total/NA	Water	EPA 9040C	

Rad

Prep Batch: 589917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-1	CCR-LF-1	Total/NA	Water	PrecSep-21	
180-147566-2	CCR-LF-2	Total/NA	Water	PrecSep-21	
180-147566-3	CCR-LF-3	Total/NA	Water	PrecSep-21	
180-147566-4	CCR-LF-4	Total/NA	Water	PrecSep-21	
180-147566-5	CCR-LF-5	Total/NA	Water	PrecSep-21	
180-147566-6	CCR-LF-6	Total/NA	Water	PrecSep-21	
180-147566-7	BLIND DUP 3	Total/NA	Water	PrecSep-21	
180-147566-8	FIELD BLANK 3	Total/NA	Water	PrecSep-21	
MB 160-589917/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-589917/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
180-147566-6 DU	CCR-LF-6	Total/NA	Water	PrecSep-21	

Prep Batch: 589918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-147566-1	CCR-LF-1	Total/NA	Water	PrecSep_0	
180-147566-2	CCR-LF-2	Total/NA	Water	PrecSep_0	
180-147566-3	CCR-LF-3	Total/NA	Water	PrecSep_0	
180-147566-4	CCR-LF-4	Total/NA	Water	PrecSep_0	
180-147566-5	CCR-LF-5	Total/NA	Water	PrecSep_0	
180-147566-6	CCR-LF-6	Total/NA	Water	PrecSep_0	
180-147566-7	BLIND DUP 3	Total/NA	Water	PrecSep_0	
180-147566-8	FIELD BLANK 3	Total/NA	Water	PrecSep_0	
MB 160-589918/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-589918/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
180-147566-6 DU	CCR-LF-6	Total/NA	Water	PrecSep_0	

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

eurofins Environment Testing TestAmerica

12/9/2022

Client Information	Sampler: Hayley Toles	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-52202-8058 1
Client Contact: Angela Casbon Scheller	Phone: 812-455-0888	E-Mail: veronica.bortot@testamericainc.com		Page: Page 1 of 1
Company: Vectren Corporation				Job #:
Address: PO BOX 209	Due Date Requested:			
City: Evansville	TAT Requested (days):			
State, Zip: IN, 47702				
Phone: 864-214-8750(Tel)	PO #: Purchase Order Requested			
Email:	WO #:			
Project Name: CCR Groundwater MonitoringAB Brown	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228	9040C, 9056A_ORGFM_28D	6010C, 6020A, 7470A	2540C_Calcd - Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D	N		
CCR-LF-1	11-2-22	13:35	G	Water			✓	✓	✓	✓		2-500mL preserved, NO 1-L
CCR-LF-2	11-2-22	15:30	G	Water			✓	✓	✓	✓		
CCR-LF-3	11-3-22	10:55	G	Water			✓	✓	✓	✓		
CCR-LF-4	11-3-22	9:35	G	Water			✓	✓	✓	✓		
CCR-LF-5	11-3-22	13:35	G	Water			✓	✓	✓	✓		
CCR-LF-6	11-3-22	16:35	G	Water			✓	✓	✓	✓		
Blind Dup 3	11-3-22		G	Water			✓	✓	✓	✓		
Field Blank 3	11-3-22	13:35	G	Water			✓	✓	✓	✓		
MS 3	11-3-22	16:35	G	Water			✓	✓	✓	✓		
MSD 3	11-3-22	16:35	G	Water			✓	✓	✓	✓		

180-147566 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Hayley Toles	11-7-22/15:00	ATLAS	FedEx	11-7-22/15:00	
2					11-8-22 9:47	eurofins
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver 01 16 2019

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-473768.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin: Indiana	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-147566-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/13/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR Groundwater Monitoring	Project #: 18016014			
Site:	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
CCR-LF-1 (180-147566-1)	11/2/22	13:35 Eastern		Water			X	X	X	2	
CCR-LF-2 (180-147566-2)	11/2/22	15:30 Eastern		Water			X	X	X	2	
CCR-LF-3 (180-147566-3)	11/3/22	10:55 Eastern		Water			X	X	X	2	
CCR-LF-4 (180-147566-4)	11/3/22	09:35 Eastern		Water			X	X	X	2	
CCR-LF-5 (180-147566-5)	11/3/22	13:35 Eastern		Water			X	X	X	2	
CCR-LF-6 (180-147566-6)	11/3/22	16:35 Eastern		Water			X	X	X	2	
BLIND DUP 3 (180-147566-7)	11/3/22	00:01 Eastern		Water			X	X	X	2	
FIELD BLANK 3 (180-147566-8)	11/3/22	13:35 Eastern		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Pittsburgh.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: FED EX	Date/Time: 11-4-22 1800	Company:	Received by: FED EX	Date/Time:	Company
Relinquished by: FED EX	Date/Time:	Company	Received by:	Date/Time: NOV 10 2022 0850	Company EDST
Relinquished by:	Date/Time:	Company	Received by: Autumn R. Johnson	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-473768.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin: Indiana	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-147566-1
Address: 13715 Rider Trail North,	Due Date Requested: 12/13/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR Groundwater Monitoring	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
CCR-LF-1 (180-147566-1)	11/2/22	13:35 Eastern		Water			X	X	X	2	
CCR-LF-2 (180-147566-2)	11/2/22	15:30 Eastern		Water			X	X	X	2	
CCR-LF-3 (180-147566-3)	11/3/22	10:55 Eastern		Water			X	X	X	2	
CCR-LF-4 (180-147566-4)	11/3/22	09:35 Eastern		Water			X	X	X	2	
CCR-LF-5 (180-147566-5)	11/3/22	13:35 Eastern		Water			X	X	X	2	
CCR-LF-6 (180-147566-6)	11/3/22	16:35 Eastern		Water			X	X	X	2	
BLIND DUP 3 (180-147566-7)	11/3/22	00:01 Eastern		Water			X	X	X	2	
FIELD BLANK 3 (180-147566-8)	11/3/22	13:35 Eastern		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Pittsburgh.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
	FED EX	11-9-22 1800		FED EX		
	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
					NOV 10 2022 0850	EAS
	Relinquished by	Date/Time	Company	Received by Autumn R. Johnson	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

12/9/2022

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

17.2/12.5 (no ice)

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-473827.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin: Indiana	Page: Page 1 of 2
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note):		Job #: 180-147566-1
Address: 180 S. Van Buren Avenue,	Due Date Requested: 12/13/2022			
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR Groundwater Monitoring	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

M21
Special Instructions/Note:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A (MOD) Custom Sublist	7470A/7470A_Prep Mercury	Total Number of containers
			Preservation Code:						
CCR-LF-1 (180-147566-1)	11/2/22	13:35 Eastern		Water			X	X	1
CCR-LF-2 (180-147566-2)	11/2/22	15:30 Eastern		Water			X	X	1
CCR-LF-3 (180-147566-3)	11/3/22	10:55 Eastern		Water			X	X	1
CCR-LF-4 (180-147566-4)	11/3/22	09:35 Eastern		Water			X	X	1
CCR-LF-5 (180-147566-5)	11/3/22	13:35 Eastern		Water			X	X	1
CCR-LF-6 (180-147566-6)	11/3/22	16:35 Eastern		Water			X	X	1
CCR-LF-6 (180-147566-6MS)	11/3/22	16:35 Eastern	MS	Water			X	X	1
CCR-LF-6 (180-147566-6MSD)	11/3/22	16:35 Eastern	MSD	Water			X	X	1
BLIND DUP 3 (180-147566-7)	11/3/22	00:01 Eastern		Water			X	X	1

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Pittsburgh.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	11-10-22 1800	CETPT		11-11-22 1025	ETNC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-473827 2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin: Indiana	Page: Page 2 of 2
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note):		Job #: 180-147566-1
Address: 180 S. Van Buren Avenue,	Due Date Requested: 12/13/2022			
City: Barberton	TAT Requested (days):			
State, Zip: OH, 44203				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR Groundwater Monitoring	Project #: 18016014			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A (MOD) Custom Sublist	7470A/7470A_Prep Mercury	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
FIELD BLANK 3 (180-147566-8)	11/3/22	13:35 Eastern		Water			X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Pittsburgh.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	11-10-22 1800	[illegible]	[signature]	11-11-22 1025	ET
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins - Canton Sample Receipt Form/Narrative Login # :_____
Barberton Facility

Client ETA Site Name_____ Cooler unpacked by:

Cooler Received on 11-11-22 Opened on 11-11-22

FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time **Storage Location**

Eurofins Cooler # ETA Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water (None)

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-13 (CF +0.7 °C) Observed Cooler Temp. 12.2 °C Corrected Cooler Temp. 12.9 °C
   IR GUN #IR-15 (CF 0.0°C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 (Yes) No
   -Were the seals on the outside of the cooler(s) signed & dated? (Yes) No NA
   -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes (No)
   -Were tamper/custody seals intact and uncompromised? (Yes) No NA
3. Shippers' packing slip attached to the cooler(s)? (Yes) No
4. Did custody papers accompany the sample(s)? (Yes) No
5. Were the custody papers relinquished & signed in the appropriate place? (Yes) No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes (No)
7. Did all bottles arrive in good condition (Unbroken)? (Yes) No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? (Yes) No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? (Yes) No
10. Were correct bottle(s) used for the test(s) indicated? (Yes) No
11. Sufficient quantity received to perform indicated analyses? (Yes) No
12. Are these work share samples and all listed on the COC? (Yes) No
    If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC286797
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this. Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____ Yes No
17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

_____
_____
_____
_____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s):_____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

eurofins | Environment Testing TestAmerica

Part # 159469-434 MTW EXP 0823

ORIGIN ID:AGCA (412) 963-7058
EUROFINS TESTAMERICA PITTSBURGH
EUROFINS TESTAMERICA PITTSBURGH
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH, PA 152382907
UNITED STATES US

SHIP DATE: 10NOV22
ACTWGT: 5.00 LB MAN
CAD: 741733/CAFE3616

BILL SENDER

TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING NORTH
180 S. VAN BUREN AVENUE

BARBERTON OH 44203
(330) 497-9396 REF: 6180-86360
PO: YES DEPT: SAMPLE RECEIVING

FedEx Express

TRK# 0201 5859 4701 2477

FRI - 11 NOV 10:30A
PRIORITY OVERNIGHT

64 CAKA

44203
OH-US CLE

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-147566-1
SDG Number: AB Brown

Login Number: 147566
List Number: 1
Creator: Abernathy, Eric L

List Source: Eurofins Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-147566-1
SDG Number: AB Brown

Login Number: 147566
List Number: 2
Creator: Booker, Autumn R

List Source: Eurofins St. Louis
List Creation: 11/10/22 07:36 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	