

ANNUAL GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT
WEST ASH POND
F.B. CULLEY GENERATING STATION
WARRICK COUNTY, INDIANA

by
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for
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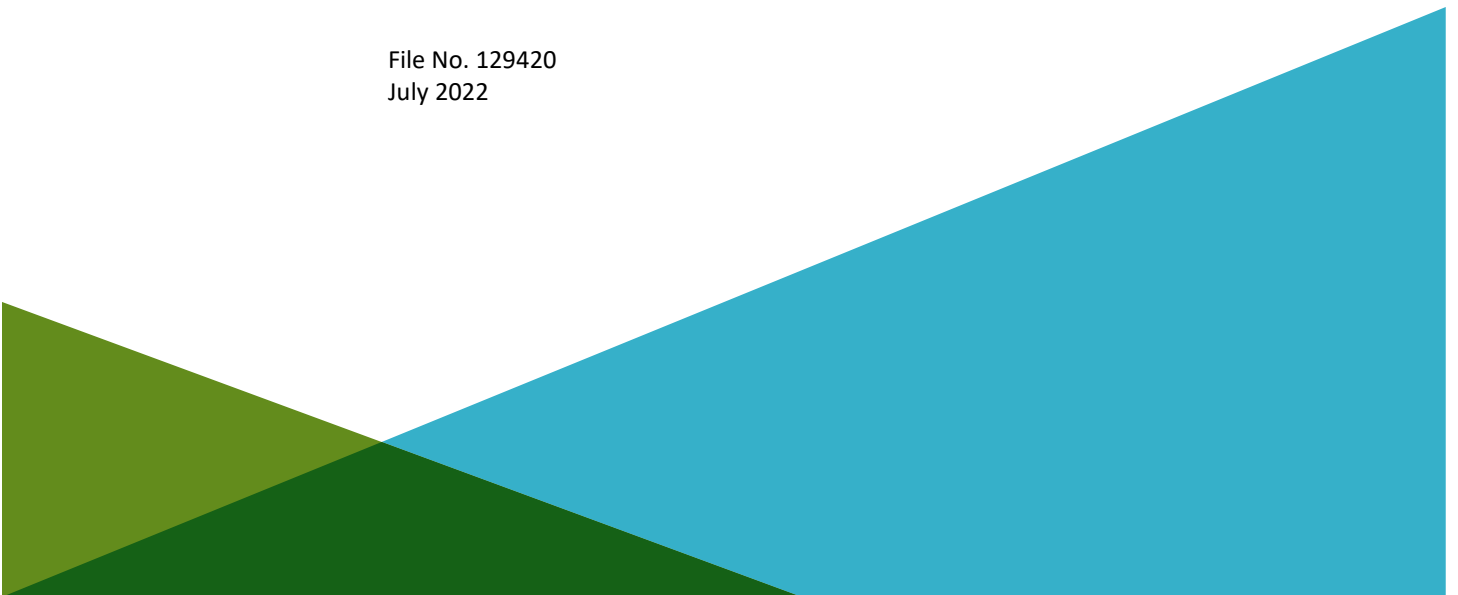


Table of Contents

Page

List of Tables	iii
List of Figures	iii
1. Annual Groundwater Monitoring Report Summary	1
1.1 40 CFR § 257.90(E)(6) SUMMARY	1
1.1.1 40 CFR § 257.90(e)(6)(i) – Status of Monitoring Program at Start of Reporting Period	1
1.1.2 40 CFR § 257.90(e)(6)(ii) – Status of Monitoring Program at End of Reporting Period	1
1.1.3 40 CFR § 257.90(e)(6)(iii) – Statistically Significant Increases	1
1.1.4 40 CFR § 257.90(e)(6)(iv) – Statistically Significant Levels	2
1.1.5 40 CFR § 257.90(e)(6)(v) – Selection of Remedy	3
1.1.6 40 CFR § 257.90(e)(6)(vi) – Remedial Activities	3
1.2 40 CFR § 257.90(A)	3
1.3 40 CFR § 257.90(E) – SUMMARY	4
1.3.1 Status of the Groundwater Monitoring Program	4
1.3.2 Key Actions Completed	5
1.3.3 Problems Encountered	5
1.3.4 Actions to Resolve Problems	5
1.3.5 Project Key Activities for Upcoming Year	6
1.4 40 CFR § 257.90(E) – INFORMATION	6
1.4.1 40 CFR § 257.90(e)(1)	6
1.4.2 40 CFR § 257.90(e)(2)	6
1.4.3 40 CFR § 257.90(e)(3)	7
1.4.4 40 CFR § 257.90(e)(4)	7
1.4.5 40 CFR § 257.90(e)(5)	7

Tables

Figures

Appendix A – Summary of Statistical Analysis

Appendix B – Laboratory Reports

List of Tables

Table No.	Title
I	Groundwater Monitoring Well Location and Construction Details
II	Summary of Groundwater Quality Data from the Original CCR Monitoring Network
III	Summary of Groundwater Quality Data for Monitoring Wells Installed to Assess the Nature and Extent of Appendix IV SSIs
IV	Summary of Groundwater Quality Data for Monitoring Wells Installed to Comply with IDEM Approval of Closure/Post-Closure Plan

List of Figures

Figure No.	Title
1	Groundwater Monitoring Well Network
2	Water Table Configuration Map – 1 November 2021
3	Water Table Configuration Map – 3 May 2022

1. Annual Groundwater Monitoring Report Summary

1.1 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, the West Ash Pond (WAP) was operating under an assessment monitoring program in compliance with Code of Federal Regulations Title 40 (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, the WAP 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 WAP is operating under an assessment monitoring program; therefore, no statistical evaluations were conducted on Appendix III constituents in 2021/2022.

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 7 February 2020 for the WAP to meet the requirements of 40 CFR § 257.95. The WAP remained in assessment monitoring during 2021/2022.

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 analysis of the May 2021 sampling event was completed in June 2021 as described in 40 CFR § 257.93(h)(2), and statistically significant levels (SSLs) of lithium and/or molybdenum were each identified downgradient of the WAP at monitoring well WAP-3S (lithium and molybdenum) and WAP-4S (molybdenum only).

Statistical analysis of the November 2021 sampling event was completed in January 2022 as described in 40 CFR § 257.93(h)(2), and statistically significant levels (SSLs) of lithium and/or molybdenum were each identified downgradient of the WAP at monitoring well WAP-3S (lithium and molybdenum) and WAP-4S (molybdenum only). A false positive SSL for Antimony was also identified at monitoring well WAP-4S due to the presence of an elevated reporting limit above the groundwater protection standards (GWPS). Antimony has not been detected in samples collected from WAP-4S in the 15 prior sampling rounds or the subsequent May 2022 event; therefore, it is not considered an SSL above the GWPS.

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;

Assessment of corrective measures was initiated on 30 October 2020.

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

The public meeting has not been held for the assessment of corrective measures for the WAP. Evaluation of site-specific aspects that are necessary to prepare for the public meeting and inform the selection of remedy, such as the off-site evaluation of the nature and extent of the release, are in progress.

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.

The assessment of corrective measures was completed on 26 February 2021 and placed into the facility's Operating Record, then subsequently posted to the publicly available website, and the notification sent to the state agency.

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

The selection of remedy required under 40 CFR § 257.97 is ongoing during 2021/2022 for lithium and molybdenum at the WAP.

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.

No remedial activities have been initiated during 2021/2022; therefore, no demonstration or certification is applicable for this unit.

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 WAP at the F.B. Culley Generating Station (FBC) is subject to the groundwater monitoring and corrective action requirements described under 40 CFR § 257.90 through § 257.98 (Rule). The WAP located at FBC was previously classified as an inactive surface impoundment as defined by 40 CFR § 257.53. The Southern Indiana Gas and Electric Company (SIGECO) filed a Notice of Intent (NOI) to initiate closure of the WAP and placed the NOI in the facility's Operating Record on 17 December 2015.

However, on 5 August 2016, the United States Environmental Protection Agency (USEPA) issued a "Direct Final Rule," effective on 4 October 2016, constituting a vacatur of 40 CFR § 257.100. The Direct Final Rule applies the requirements of existing surface impoundments that had been previously declared inactive. As a result, the WAP had to comply with the groundwater monitoring requirements for existing CCR surface impoundments. The CCR Rule changes extended the deadlines to comply with the groundwater monitoring and corrective action requirements with the initial annual groundwater monitoring and corrective action report being placed in the facility's Operating Record by 1 August 2019, and annually thereafter.

SIGECO continued to pursue closure of the WAP while complying with the requirements described in 40 CFR § 257.90 through § 257.98. The Indiana Department of Environmental Management (IDEM) issued their approval of the Closure/Post-Closure Plan in December 2019, and closure activities were completed in December 2020. As part of IDEM's approval, IDEM requested that additional wells be installed for post-closure monitoring. The groundwater monitoring network for the WAP is shown on Figure 1.

This document addresses the requirement for the Owner/Operator to prepare an Annual Groundwater Monitoring and Corrective Action Report (Annual Report) per 40 CFR § 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).

As required by 40 CFR §257.100(e)(5)(ii), this Annual Report will be completed no later than 1 August 2019 due to the partial vacatur ordered by the District of Columbia Circuit Court on 14 June 2016 and the subsequent Direct Final Rule effective 4 October 2016, and within one year of the previous annual report being placed into the facility's Operating Record. As required, this Annual Report documents the status of the groundwater monitoring and corrective action program for the WAP at FBC and summarizes key actions completed through the current reporting period.

1.3.1 Status of the Groundwater Monitoring Program

As provided in the notification on 12 July 2019, statistically significant increases (SSIs) of Appendix III constituents were identified downgradient of the WAP. An evaluation of alternate sources was conducted; however, a successful alternate source demonstration (ASD) was not achieved at that time. As a result, an Assessment Monitoring Program was initiated as required by 40 CFR § 257.94(e)(2). Annual and semiannual groundwater samples were collected as outlined in 40 CFR § 257.95(b) and § 257.95(d)(1), and GWPS were established as required by 40 CFR § 257.95(d)(2). Statistical analysis was completed on 2 July 2020 as described in 40 CFR § 257.93(h)(2), and statistically significant levels (SSLs) of Appendix IV constituents above GWPS (lithium and molybdenum) were identified downgradient of the WAP. As a result, an assessment of corrective measures was initiated as required by 40 CFR § 257.96. A 60-day extension to complete the assessment of corrective measures was required and certified by a professional engineer as required by 40 CFR § 257.96(a). Semiannual assessment monitoring is ongoing. Baseline sampling has been completed at the well locations required by IDEM.

1.3.2 Key Actions Completed

The following key actions were completed during 2021/2022:

- Statistical analysis of assessment monitoring results on 19 July 2021 (May 2021 event) to evaluate potential for SSLs of Appendix IV constituents in groundwater downgradient of the WAP. A summary of the statistical analysis is provided in Appendix A.
- Statistical analysis of assessment monitoring results on 12 January 2022 (November 2021 event) to evaluate potential for SSLs of Appendix IV constituents in groundwater downgradient of the WAP. A summary of the statistical analysis is provided in Appendix A.
- Preparation of the 2020/2021 Annual Report which included the following activities:
 - The 2020/2021 Annual Report was placed in the facility's Operating Record pursuant to 40 CFR § 257.105(h)(1).
 - Pursuant to 40 CFR § 257.106(h)(1), the notification was sent to the relevant State Director and/or Tribal authority within 30 days of the 2020/2021 Annual Report being placed in the facility's Operating Record [§ 257.106(d)].
 - Pursuant to 40 CFR § 257.107(h)(1), the 2020/2021 Annual Report was posted to the CCR Website within 30 days of the 2020/2021 Annual Report being placed in the facility's Operating Record [§ 257.107(d)] and 257.107(h)(1)].
- Assessment monitoring groundwater samples were collected and analyzed in accordance with 40 CFR § 257.95(b) and § 257.95(d)(1). In accordance with 40 CFR § 257.93(c), groundwater elevations were measured during each sampling event. Groundwater configuration maps showing the direction of groundwater flow and the groundwater flow rates are provided as Figures 2 and 3.
- Initiated (or continued) evaluation of the nature and extent of Appendix IV SSLs as required by 40 CFR § 257.95(g)(1);
- Installed an additional well cluster at the facilities boundary in the direction of contaminant migration as required by 40 CFR § 257.95(g)(1)(iii).
- Completed collection of eight rounds of baseline samples at two new well clusters (WAP-6 and WAP-7) to supplement the initial monitoring network.

1.3.3 Problems Encountered

No problems were encountered during the 2021/2022 reporting period.

1.3.4 Actions to Resolve Problems

No actions were taken as there were no problems encountered during the 2021/2022 reporting period.

1.3.5 Project Key Activities for Upcoming Year

Key activities to be completed in 2022/2023 include the following:

- Further define the nature and extent of lithium and molybdenum in groundwater downgradient of the WAP.
- Continue semiannual groundwater monitoring in accordance with 40 CFR § 257.95.
- Complete statistical analysis of the semiannual groundwater sampling results as required by 40 CFR § 257.93(h)(2).
- Continue to characterize the nature and extent of the contaminant plume downgradient of the WAP.
- Hold a public meeting with interested and affected parties in accordance with 40 CFR § 257.96(e) to discuss the results of the corrective measures assessment at least 30 days prior to the selection of remedy.
- Prepare semiannual progress reports, as necessary, describing the progress in selecting and designing the remedy as outlined in 40 CFR § 257.97(a).
- As soon as feasible following the public meeting, select a remedy that, at a minimum, meets the standards outlined in 40 CFR § 257.97(b).
 - As part of the selected remedy, SIGECO will develop a schedule for implementing and completing remedial activities as defined in 40 CFR § 257.97(d) and develop a Corrective Action Groundwater Monitoring Program per 40 CFR § 257.98(a)(1).

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 40 CFR § 257.90(e)(1), a map showing the location of the WAP, associated upgradient and downgradient wells installed to comply with the Federal CCR Rule, wells installed to assess the nature and extent of Appendix IV SSLs, and monitoring wells required by IDEM are presented as Figure 1.

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;

No wells were installed or decommissioned during the preceding year.

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 40 CFR § 257.95(b) and § 257.95(d)(1), two independent samples from each background and downgradient monitoring well were collected and analyzed for the original monitoring well network (WAP-1, CCR-AP-7, WAP-2RR, WAP-3S, WAP-4S, and WAP-5S) under the assessment monitoring program. In addition, eight rounds of baseline sampling, as required by IDEM's Approval of Closure/Post Closure Plan and to comply with 257.91(c) of the Rule for the new Closed-in-Place (CiP) unit, was completed in November 2021 for well clusters WAP-6, WAP-7, and WAP-8.

Five rounds of sampling were conducted during the 2021/2022 reporting period at these locations. Summary tables including the sample names, dates of sample collection, reason for sample collection (detection, assessment, or baseline), and monitoring data obtained for the groundwater monitoring program for the WAP are presented in Tables II, III, and IV of this report. Table II summarizes the assessment monitoring results for the original CCR monitoring network. Monitoring wells WAP-6S and WAP-7S have been added to Table II as these wells monitor the boundary of the former operating unit. Table III provides the results obtained to characterize the nature and extent of Appendix IV SSLs, and Table IV includes the state-required baseline and detection sampling results at monitoring locations required by IDEM. Laboratory analytical data reports and field sampling forms are provided in Appendix B 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

Statistical analysis was completed in January 2022 (November 2021 sampling event) and June 2022 (May 2022 sampling event) as described in 40 CFR § 257.93(h)(2), and the SSLs of lithium and molybdenum continue to be observed downgradient of the WAP, consistent with previous results. As a result, the monitoring program did not change and the WAP remained in assessment monitoring.

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 the development of groundwater protection standards, recording groundwater monitoring results in the Operating Record, and an evaluation of alternate sources was included in previous annual reports.

TABLES

TABLE 1
GROUNDWATER MONITORING WELL LOCATION AND CONSTRUCTION DETAILS
 F.B. CULLEY GENERATING STATION - WEST ASH POND
 NEWBURGH, INDIANA

	Eastings	Northing	Top of Pad Elevation (ft msl)	Top of Casing Elevation (ft msl)	Surface Grout (ft bgs)	Bentonite (ft bgs)	Sand Pack (ft bgs)	Screen Zone (ft bgs)	Screen Length (ft)	Well Radius (in)
Upgradient Wells										
WAP-1	2882824.18	971214.17	403.77	403.39	0 - 22	22 - 24	24 - 36	26 - 36	10	2
CCR-AP-7	2883090.34	970774.64	429.50	434.11	0 - 16	16 - 18	18 - 30	20 - 30	10	2
Downgradient Wells										
(CCR Monitoring Network)										
WAP-2RR	2881499.20	971367.50	391.70	391.74	0 - 42	42 - 44	44 - 56	46 - 56	10	2
WAP-3S	2881252.80	970978.10	388.20	388.47	0 - 55	55 - 57	57 - 70	60 - 70	10	2
WAP-4S	2881333.40	970405.60	384.60	384.61	0 - 31	31 - 33	33 - 45	35 - 45	10	2
WAP-5S	2881521.50	970236.00	384.60	384.68	0 - 26	26 - 28	28 - 40	30 - 40	10	2
(Assessment of Nature & Extent)										
WAP-3D	2881253.20	970975.00	388.20	388.41	0 - 65.5	65.5 - 68	68 - 82.5	72.5 - 82.5	10	2
WAP-4I	2881329.10	970409.20	384.50	384.58	0 - 61	61 - 63	63 - 75	65 - 75	10	2
WAP-4D	2881325.40	970412.50	384.50	384.48	0 - 102	102 - 104	104 - 116	106 - 116	10	2
WAP-5I	2881525.00	970232.80	384.70	384.71	0 - 61	61 - 63	63 - 75	65 - 75	10	2
WAP-5D	2881528.80	970229.90	384.60	384.71	0 - 99	99 - 101	101 - 113	103 - 113	10	2
WAP-9S	2881063.86	970693.11	393.00	392.69	0 - 51	51 - 53	53 - 65	55 - 65	10	2
WAP-9I	2881066.94	970697.89	393.20	392.88	0 - 76	76 - 78	78 - 90	80 - 90	10	2
WAP-9D	2881069.75	970701.94	393.10	392.74	0 - 112.5	112.5 - 114.5	114.5 - 126.5	116.5 - 126.5	10	2
(IDEM Approval of Closure/Post-Closure Plan)										
WAP-6S	2881090.90	970688.30	385.90	385.95	0 - 36	36 - 38	38 - 50	40 - 50	10	2
WAP-6I	2881088.20	970683.30	386.10	386.11	0 - 65.5	65.5 - 67.5	67.5 - 80	70 - 80	10	2
WAP-6D	2881092.60	970693.10	386.00	386.06	0 - 101	101 - 103	103 - 115.5	105.5 - 115.5	10	2
WAP-7S	2881363.50	971158.10	389.40	389.55	0 - 45	45 - 47	47 - 60	50 - 60	10	2
WAP-7D	2881365.20	971161.50	389.20	389.25	0 - 64	64 - 66	66 - 78.5	68.5 - 78.5	10	2
WAP-8S	2881317.80	970630.00	384.80	384.90	0 - 35	35 - 37.5	37.5 - 50	40 - 50	10	2
WAP-8I	2881313.40	970633.60	384.70	384.78	0 - 65.5	65.5 - 67.5	67.5 - 80	70 - 80	10	2
WAP-8D	2881309.50	970636.70	384.70	384.72	0 - 92.5	92.5 - 94.5	94.5 - 107	97 - 107	10	2

NOTES:

bgs = below ground surface

ft = feet

in = inches

msl = mean sea level

TABLE 2
SUMMARY OF GROUNDWATER QUALITY DATA FROM THE ORIGINAL CCR
MONITORING NETWORK
 F.B. CULLEY GENERATING STATION
 NEWBURGH, INDIANA

Location Group Location Name Sample Name Sample Date Lab Sample ID	Action Level GWPS	Up-Gradient		West Ash Pond												
		CCR-AP-7 CCR-AP-7-20211104 11/04/2021 180-129641-3	CCR-AP-7 CCR-AP-7-20220503 05/03/2022 180-137587-10	WAP-1 WAP-1-20211104 11/04/2021 180-129641-1	WAP-1 WAP-1-20220506 05/06/2022 180-137837-1	WAP-2RR WAP-2RR-20211104 11/04/2021 180-129641-2	WAP-2RR WAP-2RR-20220504 05/04/2022 180-137625-1	WAP-3S WAP-3S-20211103 11/03/2021 180-129535-19	WAP-3S WAP-3S-20220504 05/04/2022 180-137625-2	WAP-4S WAP-4S-20211102 11/02/2021 180-129535-1	WAP-4S WAP-4S-20220503 05/03/2022 180-137587-1	WAP-5S WAP-5S-20211101 11/01/2021 180-129535-4	WAP-5S DUP-1-20211101 11/01/2021 180-129535-17	WAP-5S WAP-5S-20220503 05/03/2022 180-137587-4	WAP-5S DUP-1-20220503 05/03/2022 180-137587-11	WAP-6S WAP-6S-20210929 09/29/2021 180-127878-5
Detection Monitoring - EPA Appendix III Constituents (mg/L)																
Boron, Total	4	0.13 J	0.066 J	0.081 UJ	0.08 U	8.3 J-	8	4.7 J-	2.8	13 J-	12	4.8 J-	4.6 J-	4.9	5	2.3
Calcium, Total	NA	110	94	180	160	170	160	94	100	290	280	240	250	230	230	85
Chloride	NA	32 J	22	37	34	92	100	34	43	160	150	150 J	140	120	140	31
Fluoride	4	0.42 J	0.72	0.45	1	0.36	0.4	0.67	0.6	0.28	0.16	0.091 J	0.086 J	0.03 J	0.048 J	0.47
Sulfate	NA	75 J	86	330	220	350	340	120	140	520	450	420 J	420	400	460	96
pH (lab) (pH units)	NA	7.4 J	7.6 J	7.1 J	7.4 J	7.1 J	7.4 J	7.6 J	7.7 J	7.5 J	7.6 J	7 J	6.9 J	7.3 J	7.3 J	7.7 HF
Total Dissolved Solids (TDS)	NA	530	510	930	770	870	870	410	440	1300	1300	1200	1200	1200	1200	460
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)																
Antimony, Total	0.006	0.002 U	0.002 U	0.002 U	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.02 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic, Total	0.025	0.0055	0.00066 J	0.0041	0.0088	0.0013	0.001	0.00065 J	0.00031 J	0.0046	0.0061	0.0007 J	0.00037 J	0.00039 J	0.00066 J	0.00057 J
Barium, Total	2	0.12	0.076	0.41	0.49	0.057	0.025	0.027	0.03	0.043	0.057	0.046	0.048	0.048	0.045	0.042
Beryllium, Total	0.004	0.001 U	0.001 U	0.001 U	0.00028 J	0.001 U	0.001 U	0.001 U	0.001 U	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	0.00042 J	0.00046 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chromium, Total	0.1	0.002 U	0.002 U	0.0033	0.01	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt, Total	0.019	0.00054	0.0005 U	0.0017	0.0037	0.0028	0.0022	0.0011	0.00069	0.0023 J	0.0017	0.0076	0.0076	0.006	0.0059	0.00079
Fluoride	4	0.42 J	0.72	0.45	1	0.36	0.4	0.67	0.6	0.28	0.16	0.091 J	0.086 J	0.03 J	0.048 J	0.47
Lead, Total	0.035	0.00013 J	0.001 U	0.0023	0.011	0.00059 J	0.001 U	0.00037 J	0.001 U	0.00013 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.00016 J
Lithium, Total	0.04	0.0096	0.0072	0.0061	0.01 J+	0.026	0.026	0.077	0.079	0.005 U	0.0014 J	0.005 U	0.005 U	0.0014 J	0.0015 J	0.005 U
Mercury, Total	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum, Total	0.1	0.0015 J	0.0014 J	0.0007 J	0.0012 J	0.1	0.082	0.95	0.75	0.46	0.51	0.0011 J	0.00069 J	0.005 U	0.00097 J	0.16
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0024 J	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	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	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Radiological (pCi/L)																
Radium-226	NA	0.354 ± 0.166	1 U ± 0.276	0.706 ± 0.351	1 U ± 0.505	1 ± 0.537	1 U ± 0.207	1 U ± 0.262	1 U ± 0.195	1 U ± 0.14	1 U ± 0.251	1 U ± 0.125	1 U ± 0.17	1 U ± 0.301	1 U ± 0.154	1 U ± 0.156
Radium-228	NA	1 U ± 0.408	1 U ± 0.286	1 U ± 0.84	1 U ± 0.742	1 U ± 1.26	1 U ± 0.269	1 U ± 0.31	0.442 ± 0.303	1 U ± 0.362	1 U ± 0.343	0.572 ± 0.323	1 U ± 0.258	1 U ± 0.369	1 U ± 0.279	1 U ± 0.324
Radium-226 & 228	NA	5 UJ ± 0.44	5 UJ ± 0.397	5 UJ ± 0.91	1.24 ± 0.898	2.15 J ± 1.37	5 UJ ± 0.339	5 UJ ± 0.406	0.639 J ± 0.36	5 UJ ± 0.388	0.547 ± 0.425	0.677 J ± 0.346	5 UJ ± 0.309	0.789 ± 0.476	5 UJ ± 0.319	5 UJ ± 0.36
Field Parameters																
Temperature (Deg C)	NA	16.96	117.96	-	16.95	16.26	16.54	16.8	16.59	15.44	18.04	16.17	16.17	18.17	18.17	15.8
Dissolved Oxygen, Field (mg/L)	NA	0.26	0.31	-	3.6	0.05	0.04	0.15	0.2	0.27	0.08	0.12	0.12	0.1	0.1	0.07
Conductivity, Field (mS/cm)	NA	0.91409	0.79971	-	1.026	1.227	1.3453	0.62639	0.76286	1.6709	1.8095	1.6499	1.6499	1.8006	1.8006	0.66814
Oxidation Reduction Potential (ORP), Field (mv)	NA	-120.3	-53.7	-	-88.8	82.3	44.9	-14.1	58.5	21.6	25	47.4	47.4	5.9	5.9	14.4
Turbidity, Field (NTU)	NA	0.52	48.91	-	175.55	8.54	0.52	10.23	4.89	5.7	16.78	0	0	0.9	0.9	14.55
pH, Field (pH units)	NA	7.19	7.03	-	7.17	6.83	6.37	7.65	7.21	7.27	6.95	6.63	6.63	6.39	6.39	7.48

ABBREVIATIONS AND NOTES:

- CCR: Coal Combustion Residuals.
- mg/L: milligram per liter.
- mS/cm: millSiemen per centimeter.
- mv: millivolts.
- NTU: Nephelometric Turbidity Units.
- pCi/L: picoCurie per liter.
- GWPS: Groundwater Protection Standard.
- MCL: Maximum Contaminant Level.
- RSL: Regional Screening Level.
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- Results in **bold** are detected.
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- GWPS is the maximum of the MCL or RSL where no MCL is available or the Upper Tolerance Limit.

TABLE 2
SUMMARY OF GROUNDWATER QUALITY DATA FROM THE ORIGINAL CCR
MONITORING NETWORK
 F.B. CULLEY GENERATING STATION
 NEWBURGH, INDIANA

Location Group Location Name Sample Name Sample Date Lab Sample ID	Action Level GWPS	West Ash Pond				
		WAP-6S WAP-6S-20211102 11/02/2021 180-129535-7	WAP-6S WAP-6S-20220503 05/03/2022 180-137587-7	WAP-7S WAP-7S-20210930 09/30/2021 180-127924-2	WAP-7S WAP-7S-20211103 11/03/2021 180-129538-1	WAP-7S WAP-7S-20220504 05/04/2022 180-137625-4
Detection Monitoring - EPA Appendix III Constituents (mg/L)						
Boron, Total	4	2.2 J-	2.4	9.8	16 J-	13
Calcium, Total	NA	89	110	140	150	180
Chloride	NA	32	39	58	63	73
Fluoride	4	0.39	0.37	0.42	0.13	0.11
Sulfate	NA	95	130	270 F1	310	350
pH (lab) (pH units)	NA	7.6 J	7.6 J	8.4 HF	9.9 J	9.8 J
Total Dissolved Solids (TDS)	NA	430	570	630	720	850
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)						
Antimony, Total	0.006	0.002 U	0.002 U	0.00074 J	0.0014 J	0.0013 J
Arsenic, Total	0.025	0.001	0.0024	0.005	0.0083	0.0071
Barium, Total	2	0.042	0.074	0.036	0.032	0.046
Beryllium, Total	0.004	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	0.001 U
Chromium, Total	0.1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt, Total	0.019	0.00092	0.0014	0.00019 J	0.00016 J	0.0005 U
Fluoride	4	0.39	0.37	0.42	0.13	0.11
Lead, Total	0.035	0.00018 J	0.00044 J	0.001 U	0.00022 J	0.001 U
Lithium, Total	0.04	0.005 U	0.0031 J	0.12	0.13	0.16
Mercury, Total	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum, Total	0.1	0.16	0.11	0.22	0.17	0.23
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U	0.005 U	0.00074 J
Thallium, Total	0.002	0.00023 J	0.001 U	0.001 U	0.00038 J	0.001 U
Radiological (pCi/L)						
Radium-226	NA	1 U ± 0.17	1 U ± 0.211	1 U ± 0.157	1 U ± 0.0806	1 U ± 0.2
Radium-228	NA	0.872 ± 0.468	1 U ± 0.321	1 U ± 0.388	0.494 J ± 0.248	1 U ± 0.33
Radium-226 & 228	NA	0.985 J ± 0.498	5 U ± 0.384	5 U ± 0.419	0.549 J ± 0.261	0.559 ± 0.386
Field Parameters						
Temperature (Deg C)	NA	15.68	20.49	17.39	16.47	16.85
Dissolved Oxygen, Field (mg/L)	NA	0.19	0.65	0.13	0.23	0.09
Conductivity, Field (mS/cm)	NA	0.66963	0.88095	0.88299	0.94708	1.2015
Oxidation Reduction Potential (ORP), Field (mv)	NA	-67.5	41.3	35.6	-121.9	37.7
Turbidity, Field (NTU)	NA	8.59	3.56	0	0	2.45
pH, Field (pH units)	NA	7.23	6.9	9.13	10.29	9.83

ABBREVIATIONS AND NOTES:

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- MCL: Maximum Contaminant Level.
- RSL: Regional Screening Level.
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- GWPS is the maximum of the MCL or RSL where no MCL is available or the Upper Tolerance Limit.

TABLE 3
SUMMARY OF GROUNDWATER QUALITY DATA FOR MONITORING WELLS
INSTALLED TO ASSESS THE NATURE AND EXTENT OF APPENDIX IV SSIs
 F.B. CULLEY GENERATING STATION
 NEWBURGH, INDIANA

Location Group Location Name Sample Name Sample Date Lab Sample ID	Action Level GWPS	West Ash Pond															
		WAP-3D WAP-3D-20211103 11/03/2021 180-129535-20	WAP-3D WAP-3D-20220504 05/04/2022 180-137625-3	WAP-4I WAP-4I-20210928 09/28/2021 180-127878-3	WAP-4I WAP-4I-20211102 11/02/2021 180-129535-2	WAP-4I WAP-4I-20220503 05/03/2022 180-137587-2	DUP-2-20220503 WAP-4I 05/03/2022 180-137587-12	WAP-4D WAP-4D-20210928 09/28/2021 180-127878-4	WAP-4D DUP-1-20210928 09/28/2021 180-127878-11	WAP-4D WAP-4D-20211102 11/02/2021 180-129535-3	WAP-4D WAP-4D-20220503 05/03/2022 180-137587-3	WAP-5I WAP-5I-20210928 09/28/2021 180-127878-1	WAP-5I WAP-5I-20211101 11/01/2021 180-129535-5	WAP-5I WAP-5I-20220503 05/03/2022 180-137587-5	WAP-5D WAP-5D-20210928 09/28/2021 180-127878-2	WAP-5D WAP-5D-20211101 11/01/2021 180-129535-6	WAP-5D WAP-5D-20220503 05/03/2022 180-137587-6
Detection Monitoring - EPA Appendix III Constituents (mg/L)																	
Boron, Total	4	4.3 J-	3.4	0.07 J	0.18 J	0.099	0.085	0.11	0.039 J	0.08 UJ	0.08 U	0.06 J	0.14 J	0.08 U	0.041 J	0.082 UJ	0.12
Calcium, Total	NA	100	110	38	47	36	35	46	48	50	48	39	45	38	46	47	47
Chloride	NA	36	45	21	29	24	26	20	19	21	24	22	28	23	19	1 U	21
Fluoride	4	0.44	0.36	0.15	0.12	0.059 J	0.079 J	0.14	0.14	0.13	0.1 J	0.16	0.12	0.22	0.15	0.047 J	0.14
Sulfate	NA	1 U	180	37	46	38	43	28	26	26	31	43	47	41	41	0.87 J	42
pH (lab) (pH units)	NA	7.7 J	7.7 J	7.8 HF	7.7 J	7.9 J	7.8 J	7.9 HF	8 HF	7.8 J	7.9 J	7.8 HF	7.6 J	7.7 J	7.7 HF	7.6 J	7.8 J
Total Dissolved Solids (TDS)	NA	480	530	230	240	200	190	230	240	250	240	220	240	200	230	220	230
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	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic, Total	0.025	0.001 U	0.001 U	0.0045	0.013	0.012 J	0.0068 J	0.0093	0.0092	0.0097	0.0098	0.012	0.01	0.0043	0.0099	0.01	0.011
Barium, Total	2	0.012	0.012	0.17	0.21	0.15	0.14	0.28	0.28	0.28	0.28	0.12	0.13	0.1	0.2	0.19	0.21
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	0.001 U	0.001 U	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	0.00022 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	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	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt, Total	0.019	0.00075	0.00069	0.00047 J	0.0011	0.00042 J	0.00037 J	0.00023 J	0.0005 U	0.00023 J	0.0005 U	0.00042 J	0.00048 J	0.0003 J	0.0005 U	0.0005 U	0.0005 U
Fluoride	4	0.44	0.36	0.15	0.12	0.059 J	0.079 J	0.14	0.14	0.13	0.1 J	0.16	0.12	0.22	0.15	0.047 J	0.14
Lead, Total	0.035	0.001 U	0.001 U	0.001 U	0.00015 J	0.00025 J	0.001 U	0.00015 J	0.001 U	0.001 U	0.001 U	0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lithium, Total	0.04	0.073	0.079	0.0042 J	0.0044 J	0.003 J	0.0032 J	0.005 U	0.005 U	0.005 U	0.002 J	0.0039 J	0.0038 J	0.0031 J	0.005 U	0.005 U	0.0016 J
Mercury, Total	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum, Total	0.1	0.44	0.43	0.002 J	0.0032 J	0.0017 J	0.0019 J	0.0052	0.0051	0.005	0.0055	0.0016 J	0.0019 J	0.0017 J	0.0038 J	0.0039 J	0.0045 J
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Thallium, Total	0.002	0.001 U	0.001 U	0.001 UF2	0.001 U	0.001 U	0.001 U	0.00024 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Radiological (pCi/L)																	
Radium-226	NA	1 U ± 0.249	1 U ± 0.17	0.244 ± 0.158	1 U ± 0.241	1 U ± 0.373	1 U ± 0.206	0.607 ± 0.21	0.378 ± 0.183	1 U ± 0.158	1 U ± 0.345	0.224 ± 0.153	1 U ± 0.181	1 U ± 0.202	0.36 ± 0.215	1 U ± 0.161	0.47 ± 0.261
Radium-228	NA	1 U ± 0.247	1 U ± 0.252	1 U ± 0.268	0.797 ± 0.437	0.716 ± 0.447	1 U ± 0.307	1 U ± 0.247	1 U ± 0.226	1.12 ± 0.484	1 U ± 0.383	0.447 ± 0.269	0.928 ± 0.394	1 U ± 0.307	1 U ± 0.352	1 U ± 0.266	1 U ± 0.321
Radium-226 & 228	NA	5 UJ ± 0.351	5 U ± 0.304	0.495 ± 0.311	5 U ± 0.499	1.2 J ± 0.582	5 U ± 0.37	0.834 ± 0.324	0.535 ± 0.291	1.46 J+ ± 0.509	1.01 ± 0.515	0.671 ± 0.309	1.34 J+ ± 0.434	5 U ± 0.367	0.75 ± 0.412	0.652 J+ ± 0.311	0.836 J ± 0.414
Field Parameters																	
Temperature (Deg C)	NA	16.54	16.73	17.95	17.56	17.25	17.25	17.32	17.32	17.29	16.62	16.87	17.9	16.36	18.65	17.38	17.89
Dissolved Oxygen, Field (mg/L)	NA	0.21	0.14	0.15	0.24	0.19	0.19	0.13	0.13	0.17	0.11	0.07	0.17	0.07	0.18	0.19	0.19
Conductivity, Field (mS/cm)	NA	0.72904	0.88726	0.637768	0.39791	0.34073	0.39362	0.39362	0.39362	0.0142	0.42454	0.3843	0.39355	0.353	0.38915	371.91	0.41863
Oxidation Reduction Potential (ORP), Field (mv)	NA	-6.3	73.6	41.7	-3.5	15.6	15.6	-81.5	-81.5	-126.3	-41.6	84.9	11.1	31.3	-31.2	-77.9	-3.4
Turbidity, Field (NTU)	NA	0	0	0	2.15	4.3	4.3	0	0	0	1.66	0.71	0.99	0.38	0	0	0.85
pH, Field (pH units)	NA	7.68	7.31	7.02	7.39	7.28	7.28	7.4	7.4	7.66	7.25	6.91	7.28	6.97	7.23	7.39	6.98

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TABLE 3
SUMMARY OF GROUNDWATER QUALITY DATA FOR MONITORING WELLS
INSTALLED TO ASSESS THE NATURE AND EXTENT OF APPENDIX IV SSI
 F.B. CULLEY GENERATING STATION
 NEWBURGH, INDIANA

Location Group Location Name Sample Name Sample Date Lab Sample ID	Action Level GWPS	West Ash Pond													
		WAP-9S WAP-9S-20210804 08/04/2021 180-125560-1	WAP-9S WAP-9S-20210909 09/09/2021 180-126888-3	WAP-9S BLIND DUPLICATE-20210909 09/09/2021 180-126888-4	WAP-9S WAP-9S-20211102 11/02/2021 180-129535-13	WAP-9S WAP-9S-20220504 05/04/2022 180-137625-9	WAP-9I WAP-9I-20210804 08/04/2021 180-125560-2	WAP-9I WAP-9I-20210909 09/09/2021 180-126888-2	WAP-9I WAP-9I-20211103 11/03/2021 180-129535-14	WAP-9I WAP-9I-20220504 05/04/2022 180-137625-10	WAP-9D WAP-9D-20210804 08/04/2021 180-125560-3	WAP-9D WAP-9D-20210909 09/09/2021 180-126888-1	WAP-9D WAP-9D-20211103 11/03/2021 180-129535-15	WAP-9D WAP-9D-20220504 05/04/2022 180-137625-11	
Detection Monitoring - EPA Appendix III Constituents (mg/L)															
Boron, Total	4	2.7	1.2	1.3	1.6 J	0.86	0.096	0.1	0.22 J	0.35	0.066 J	0.052	0.15 J	0.072 J	
Calcium, Total	NA	99	74	75	82	66	40	46	47	48	40	42	37	44	
Chloride	NA	33	26	23	27	26	22	22	24	20	21	20	17	24	
Fluoride	4	0.86	0.94	0.87	0.84	0.98	0.15	0.17	0.21	0.14	0.12	0.14	0.31	0.12	
Sulfate	NA	99	42	40	55	61	36	31	32	40	41	39	36	40	
pH (lab) (pH units)	NA	7.5 J	7.9 J	8 J	7.8 J	8 J	7.7 J	8 J	7.6 J	8 J	7.6 J	7.9 J	7.6 J	7.9 J	
Total Dissolved Solids (TDS)	NA	540	340	340	370	310	230	230	230	240	230	210	200	210	
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)															
Antimony, Total	0.006	0.00097 J	0.002	0.002	0.002 U	0.002 U	0.002 U	0.002	0.00057 J	0.002 U	0.00082 J	0.002	0.0012 J	0.002 U	
Arsenic, Total	0.025	0.0076	0.0008	0.00094	0.0034	0.00079 J	0.0039	0.0047	0.0049	0.0053	0.0088	0.0053	0.0014	0.0069	
Barium, Total	2	0.2	0.087	0.087	0.12	0.08	0.086	0.091	0.089	0.1	0.21	0.18	0.12	0.22	
Beryllium, Total	0.004	0.00047 J	0.001	0.001	0.00023 J	0.001 U	0.001 U	0.001	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.001 U	
Cadmium, Total	0.005	0.001	0.001	0.001	0.00035 J	0.001 U	0.001 U	0.001	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.001 U	
Chromium, Total	0.1	0.015	0.002	0.002	0.0065	0.002 U	0.002 U	0.002	0.002 U	0.002 U	0.0065	0.002	0.0017 J	0.002 U	
Cobalt, Total	0.019	0.01	0.00072	0.00086	0.0041	0.0006	0.00021 J	0.00033	0.00031 J	0.00027 J	0.0048	0.0003	0.00025 J	0.0005 U	
Fluoride	4	0.86	0.94	0.87	0.84	0.98	0.15	0.17	0.21	0.14	0.12	0.14	0.31	0.12	
Lead, Total	0.035	0.013	0.00032	0.00039	0.0044	0.001 U	0.001 U	0.00028	0.00014 J	0.001 U	0.0066	0.00032	0.00032 J	0.001 U	
Lithium, Total	0.04	0.022	0.011	0.012	0.015	0.01	0.005 U	0.0043	0.0038 J	0.0042 J	0.005	0.005	0.0038 J	0.0025 J	
Mercury, Total	0.002	0.0002 U	0.0002	0.0002	0.0002 U	0.0002 U	0.0002 U	0.0002	0.0002 U	0.0002 U	0.0002 U	0.0002	0.0002 U	0.0002 U	
Molybdenum, Total	0.1	0.2	0.15	0.15	0.15	0.15	0.15	0.018	0.018	0.018	0.0029 J	0.0022	0.0035 J	0.0027 J	
Selenium, Total	0.05	0.005 U	0.005	0.005	0.005 U	0.005 U	0.005 U	0.005	0.005 U	0.005 U	0.005 U	0.005	0.005 U	0.005 U	
Thallium, Total	0.002	0.00024 J	0.001	0.001	0.00019 J	0.001 U	0.001 U	0.001	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.001 U	
Radiological (pCi/L)															
Radium-226	NA	1 U ± 0.619	1 ± 0.206	1 ± 0.174	1 U ± 0.255	1 U ± 0.188	1 U ± 0.219	0.323 ± 0.223	1 U ± 0.145	1 U ± 0.153	1 U ± 0.247	0.526 ± 0.228	1 U ± 0.148	1 U ± 0.166	
Radium-228	NA	1 U ± 0.56	1 ± 0.284	0.517 ± 0.302	1 U ± 0.542	1 U ± 0.351	1 U ± 0.228	1 ± 0.395	0.854 ± 0.46	1 U ± 0.309	0.539 ± 0.256	1 ± 0.283	1 U ± 0.334	1 U ± 0.337	
Radium-226 & 228	NA	5 U ± 0.835	0.484 ± 0.351	0.749 J ± 0.349	5 UJ ± 0.599	5 UJ ± 0.398	5 U ± 0.316	0.74 J ± 0.454	1.05 J ± 0.482	0.729 UJ ± 0.345	0.867 J ± 0.356	0.717 J ± 0.363	0.553 J ± 0.365	0.914 UJ ± 0.376	
Field Parameters															
Temperature (Deg C)	NA	18.93	16.48	16.48	14.4	18.62	16.77	26.42	14.51	16.74	16.6	25.79	15.52	18.78	
Dissolved Oxygen, Field (mg/L)	NA	0.09	0.28	0.28	0.13	3.34	0	4.79	1.25	2	0	11	6.23	1.53	
Conductivity, Field (mS/cm)	NA	0.54012	0.57417	0.57417	0.5777	0.51836	0.29059	0.40683	0.3955	0.38976	0.32011	0.34784	0.30848	0.36163	
Oxidation Reduction Potential (ORP), Field (mv)	NA	-60.1	81.9	81.9	-81.3	-31.2	-52.1	32.2	-14.3	-53.3	-45.3	44.9	-8.78	-86.1	
Turbidity, Field (NTU)	NA	40.2	20.75	20.75	81.67	11.6	27.2	14.32	0	0	14.62	34.57	12.37	0.09	
pH, Field (pH units)	NA	7.18	7.14	7.14	7.59	7.49	7.26	7.33	7.63	7.44	7.15	7.1	7.56	7.42	

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INSTALLED TO COMPLY WITH IDEM APPROVAL OF CLOSURE/POST-CLOSURE
PLAN

F.B. CULLEY GENERATING STATION
 NEWBURGH, INDIANA

Location Group Location Name Sample Name Sample Date Lab Sample ID	Action Level GWPS	West Ash Pond															
		WAP-6J WAP-6I-20210929 09/29/2021 180-127878-6	WAP-6I WAP-6I-20211102 11/02/2021 180-129535-8	WAP-6I WAP-6I-20220503 05/03/2022 180-137587-8	WAP-6D WAP-6D-20210929 09/29/2021 180-127878-7	WAP-6D WAP-6D-20211102 11/02/2021 180-129535-9	WAP-6D WAP-6D-20220503 05/03/2022 180-137587-9	WAP-7D WAP-7D-20210930 09/30/2021 180-127924-3	WAP-7D WAP-7D-20211103 11/03/2021 180-129538-2	WAP-7D WAP-7D-20220504 05/04/2022 180-137625-5	WAP-8S WAP-8S-20210929 09/29/2021 180-127878-8	WAP-8S WAP-8S-20211102 11/02/2021 180-129535-10	WAP-8S DUP-2-20211102 11/02/2021 180-129535-18	WAP-8S WAP-8S-20220504 05/04/2022 180-137625-6	WAP-8I WAP-8I-20210929 09/29/2021 180-127878-9	WAP-8I WAP-8I-20211102 11/02/2021 180-129535-11	WAP-8I WAP-8I-20220504 05/04/2022 180-137625-7
Detection Monitoring - EPA Appendix III Constituents (mg/L)																	
Boron, Total	4	0.083	0.11 UJ	0.083	0.065 J	0.08 UJ	0.066 J	14	14 J-	12	2.7	3.1 J-	3.1 J-	2.1	0.083	0.14 J	0.13
Calcium, Total	NA	41	46	37	39	41	41	430	450	370	140	150	150	130	44	45	44
Chloride	NA	22	27	19	21	23	23	180	180	150	74	85	86	56	22	23	26
Fluoride	4	0.15	0.13	0.077 J	0.14	0.13	0.16	0.5	0.4	0.36	0.11	0.12	0.11	0.1	0.22	0.17	0.25
Sulfate	NA	38	40	35	38	40	36	1000	1200	890	270	300	300	200	47	41	55
pH (lab) (pH units)	NA	7.9 HF	7.8 J	7.8 J	7.6 HF	7.8 J	8 J	7.6 HF	7.3 J	7.8 J	8 HF	7.9 J	7.9 J	8.1 J	7.9 HF	7.8 J	8 J
Total Dissolved Solids (TDS)	NA	220	270	230	230	210	340	2100	2000	3800	900	780	780	610	240	270	280
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	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic, Total	0.025	0.0033	0.0043	0.0038	0.0054	0.0056	0.0058	0.001	0.0011	0.0014	0.017	0.016	0.016	0.015	0.0034	0.0034	0.01
Barium, Total	2	0.13	0.15	0.12	0.19	0.19	0.19	0.047	0.045	0.036	0.25	0.26	0.26	0.17	0.05	0.05	0.056
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	0.001 U	0.001 U	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	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	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	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt, Total	0.019	0.00023 J	0.00036 J	0.0003 J	0.00013 J	0.0005 U	0.0005 U	0.0065	0.0068	0.0046	0.00066	0.00084	0.00071	0.00069	0.00047 J	0.00049 J	0.00041 J
Fluoride	4	0.15	0.13	0.077 J	0.14	0.13	0.16	0.5	0.4	0.36	0.11	0.12	0.11	0.1	0.22	0.17	0.25
Lead, Total	0.035	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.00022 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lithium, Total	0.04	0.0036 J	0.004 J	0.0036 J	0.005 U	0.005 U	0.0026 J	0.063	0.063	0.057	0.039	0.038	0.038	0.035	0.005 U	0.005 U	0.0033 J
Mercury, Total	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum, Total	0.1	0.0054	0.0061	0.0065	0.0019 J	0.0023 J	0.002 J	0.34	0.29	0.24	0.27	0.27	0.28	0.26	0.033	0.033	0.035
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Thallium, Total	0.002	0.001 U	0.00034 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.00016 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Radiological (pCi/L)																	
Radium-226	NA	0.445 ± 0.174	1 U ± 0.141	1 U ± 0.201	0.302 ± 0.148	1 U ± 0.134	1 U ± 0.269	0.627 ± 0.207	0.595 ± 0.186	1 U ± 0.343	0.358 ± 0.162	1 U ± 0.125	1 U ± 0.213	0.402 ± 0.213	1 U ± 0.166	1 U ± 0.135	0.354 ± 0.204
Radium-228	NA	0.386 ± 0.253	1.71 ± 0.549	1 U ± 0.371	1 U ± 0.207	0.715 ± 0.392	0.628 ± 0.345	1 U ± 0.389	1.05 J ± 0.36	1 U ± 0.495	1 U ± 0.249	1 U ± 0.282	1 U ± 0.248	1 U ± 0.345	1 U ± 0.31	1 U ± 0.38	1 U ± 0.289
Radium-226 & 228	NA	0.831 ± 0.307	1.88 J ± 0.567	5 U ± 0.422	0.365 ± 0.254	0.932 J ± 0.414	1.01 J ± 0.437	1.17 ± 0.441	1.64 J ± 0.405	0.936 ± 0.602	0.608 ± 0.297	0.667 J ± 0.308	5 UJ ± 0.327	1.1 J ± 0.405	5 U ± 0.352	0.703 J ± 0.403	0.583 J ± 0.354
Field Parameters																	
Temperature (Deg C)	NA	17.6	16.45	21.34	16.17	16.12	21.77	17.17	16.7	16.75	17.42	16.21	16.21	17.2	16.83	15.72	17.91
Dissolved Oxygen, Field (mg/L)	NA	0.21	0.19	1.06	0.15	0.25	0.62	0.1	0.17	0.12	0.05	0.15	0.15	0.1	0.1	0.2	0.13
Conductivity, Field (mS/cm)	NA	0.36258	0.39278	0.33227	0.35056	0.35578	0.34998	2.3761	2.2215	2.5692	1.0221	1.1128	1.1128	0.99715	0.37893	0.3692	0.43451
Oxidation Reduction Potential (ORP), Field (mv)	NA	-30.7	-61.6	-46.8	-75.5	-113.6	-114.2	-13.9	-43.1	16.9	-136	-160	-160	45.7	-62.5	-83.6	-2.2
Turbidity, Field (NTU)	NA	0	0	1.62	0.68	0	0.56	0	0	0	6.02	4.31	4.31	13.91	0.76	0	0.37
pH, Field (pH units)	NA	7.79	7.52	7.36	7.79	7.55	7.18	7.72	7.24	6.98	7.952	7.84	7.84	7.35	7.77	7.46	7.02

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PLAN

F.B. CULLEY GENERATING STATION
 NEWBURGH, INDIANA

Location Group Location Name Sample Name Sample Date Lab Sample ID	Action Level GWPS	West Ash Pond		
		WAP-8D WAP-8D-20210929 09/29/2021 180-127878-10	WAP-8D WAP-8D-20211102 11/02/2021 180-129535-12	WAP-8D WAP-8D-20220504 05/04/2022 180-137625-8
Detection Monitoring - EPA Appendix III Constituents (mg/L)				
Boron, Total	4	0.058 J	0.081 UJ	0.084
Calcium, Total	NA	39	42	50
Chloride	NA	20	22	24
Fluoride	4	0.18	0.14	0.14
Sulfate	NA	43	45	52
pH (lab) (pH units)	NA	7.9 HF	7.7 J	8 J
Total Dissolved Solids (TDS)	NA	230	210	220
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)				
Antimony, Total	0.006	0.002 U	0.002 U	0.002 U
Arsenic, Total	0.025	0.0024	0.0026	0.0031
Barium, Total	2	0.061	0.067	0.08
Beryllium, Total	0.004	0.001 U	0.001 U	0.001 U
Cadmium, Total	0.005	0.001 U	0.001 U	0.001 U
Chromium, Total	0.1	0.002 U	0.002 U	0.002 U
Cobalt, Total	0.019	0.0005 U	0.0005 U	0.0005 U
Fluoride	4	0.18	0.14	0.14
Lead, Total	0.035	0.001 U	0.001 U	0.001 U
Lithium, Total	0.04	0.005 U	0.005 U	0.0027 J
Mercury, Total	0.002	0.0002 U	0.0002 U	0.0002 U
Molybdenum, Total	0.1	0.0013 J	0.0013 J	0.0015 J
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U
Thallium, Total	0.002	0.001 U	0.001 U	0.001 U
Radiological (pCi/L)				
Radium-226	NA	1 U ± 0.133	1 U ± 0.136	1 U ± 0.216
Radium-228	NA	1 U ± 0.199	1 U ± 0.425	1 U ± 0.292
Radium-226 & 228	NA	5 U ± 0.239	5 UJ ± 0.446	0.512 ± 0.363
Field Parameters				
Temperature (Deg C)	NA	17.87	16.14	17.26
Dissolved Oxygen, Field (mg/L)	NA	0.2	0.26	0.15
Conductivity, Field (mS/cm)	NA	0.34592	0.29429	0.42741
Oxidation Reduction Potential (ORP), Field (mv)	NA	-68.4	-121.1	-36
Turbidity, Field (NTU)	NA	0.08	0	0
pH, Field (pH units)	NA	7.48	7.57	7.08

ABBREVIATIONS AND NOTES:









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FIGURES

GIS FILE PATH: C:\Users\hwechob\Documents\working\spas\med\42796_EVANSVILLE\GIS\Map\2021_071128420_001_0001_GROUNDWATER_MONITORING_WELL_NETWORK.mxd — USER: hwechob — LAST SAVED: 7/19/2021 3:48:24 PM

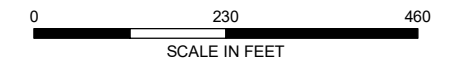


LEGEND

-  UPGRADIENT CCR COMPLIANCE MONITORING WELL
-  DOWNGRADIENT CCR COMPLIANCE MONITORING WELL
-  DOWNGRADIENT WELL TO ASSESS NATURE AND EXTENT OF APPENDIX IV SSLs
-  DOWNGRADIENT WELL TO COMPLY WITH IDEM APPROVAL OF CLOSURE/POST CLOSURE PLAN
-  APPROXIMATE LIMITS OF WEST ASH POND FINAL COVER
-  APPROXIMATE LIMITS OF WEST ASH POND CCR REMOVAL
-  WEST ASH POND
-  APPROXIMATE F.B. CULLEY PROPERTY BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: GOOGLE 2018



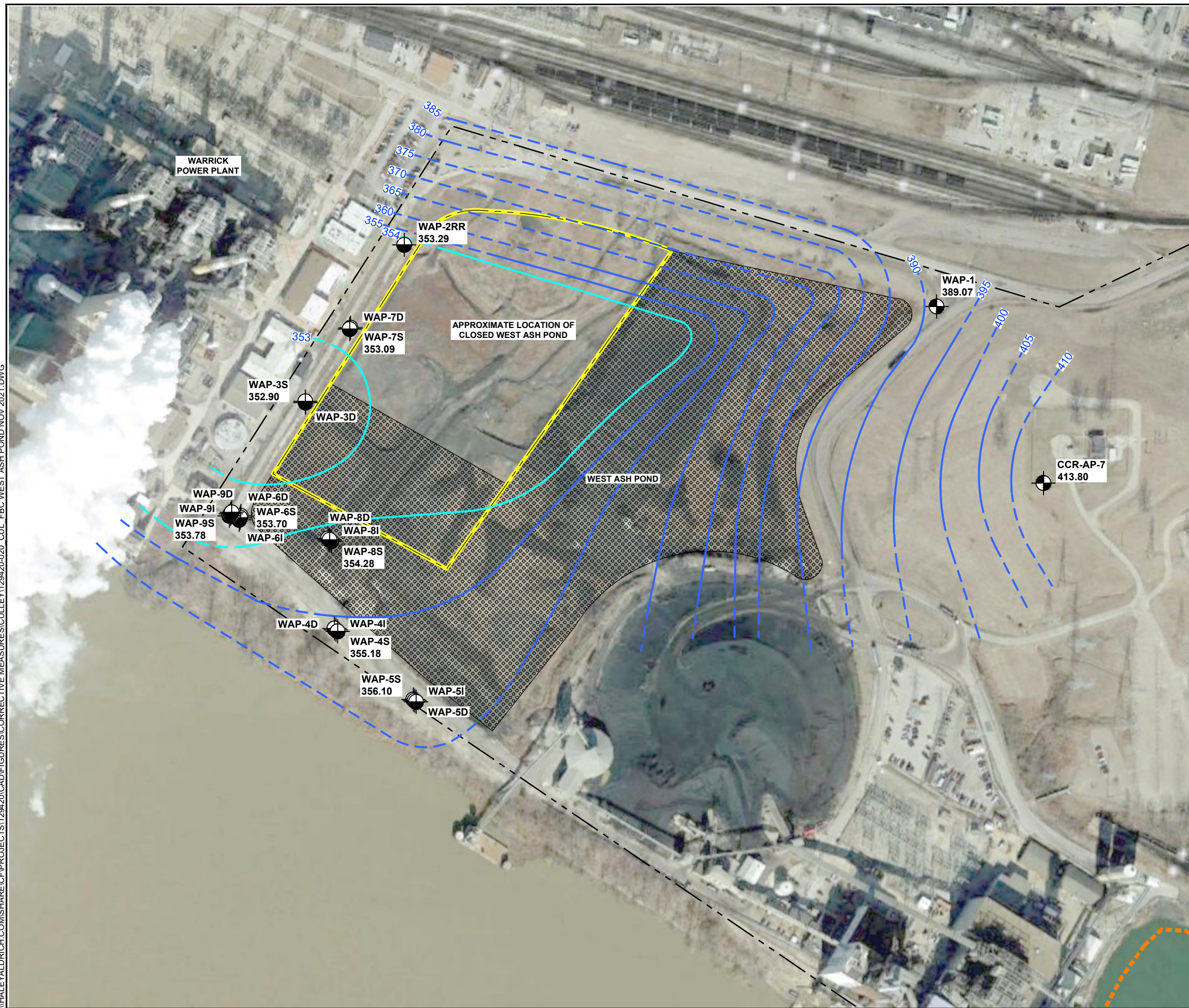
F.B. CULLEY GENERATING STATION
WEST ASH POND
NEWBURGH, INDIANA

GROUNDWATER MONITORING WELL NETWORK







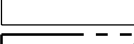

JANUARY 2022

FIGURE 1

KRAKORA, MATTHEW Printed: 2/1/2022 11:43 AM Layout: 1
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\129420\CAD\FIGURES\CORRECTIVE MEASURES\CULLEY\129420-020_CUL_FBC WEST ASH POND NOV 2021.DWG

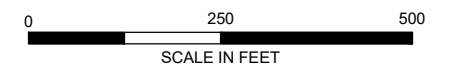


LEGEND

-  UPGRADIENT WELL
-  DOWNGRADIENT WELL
-  GROUNDWATER ELEVATION CONTOUR, 5-FT INTERVAL
DASHED WHERE INFERRED
-  GROUNDWATER ELEVATION CONTOUR, 1-FT INTERVAL
DASHED WHERE INFERRED
-  APPROXIMATE LIMITS OF WEST ASH POND FINAL COVER
-  APPROXIMATE LIMITS OF WEST ASH POND CCR REMOVAL
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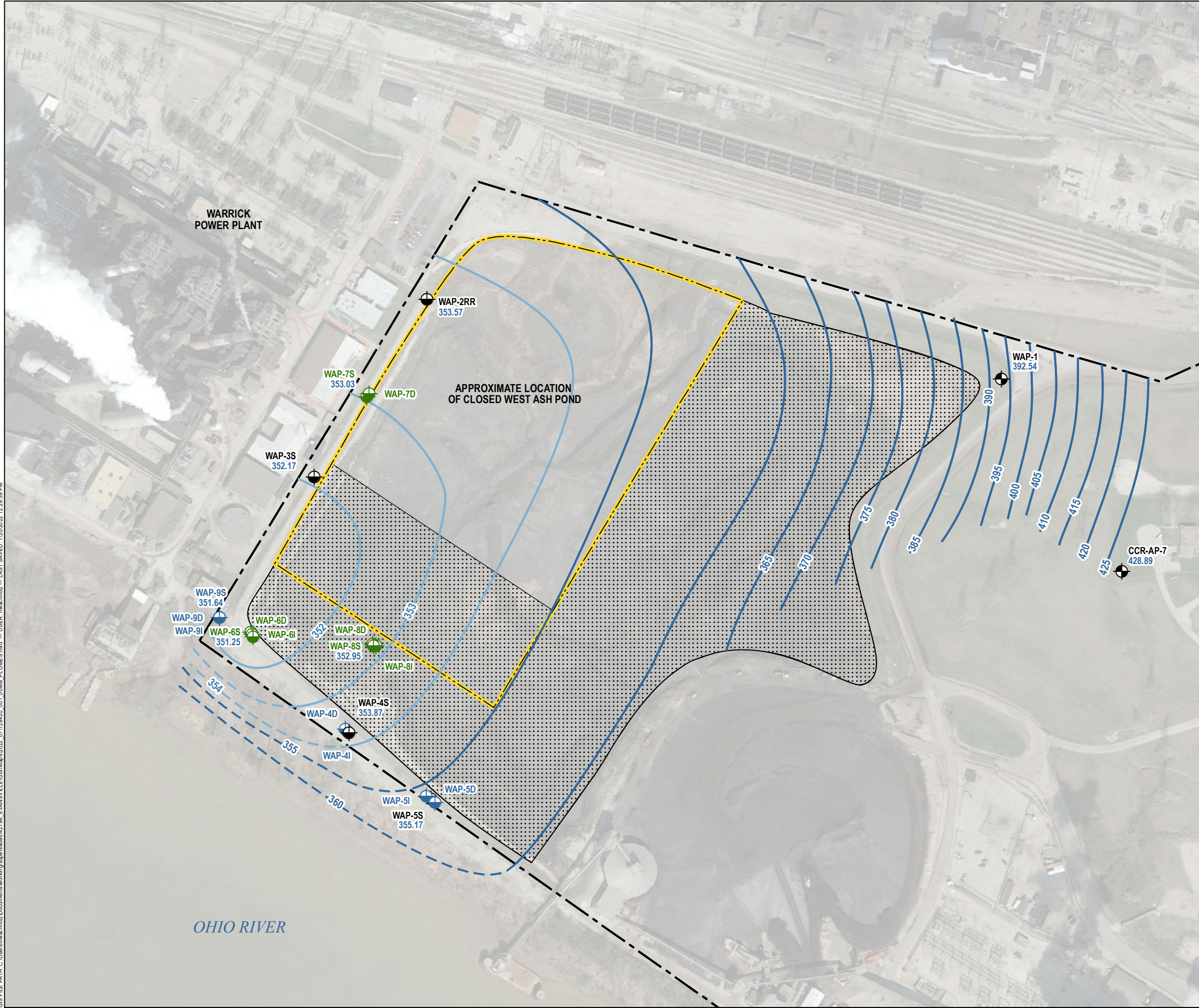


F.B. CULLEY GENERATING STATION
WEST ASH POND
NEWBURGH, INDIANA

WATER TABLE CONFIGURATION MAP
1 NOVEMBER 2021

SCALE: AS SHOWN
FEBRUARY 2022

GIS FILE PATH: C:\Users\hwhob\Documents\working\spans\mxd\42796_EVANSVILLE\GIS\Map\2022_071128420_001_00MB_PLUMES.mxd — USER: hwhob — LAST SAVED: 7/20/2022 12:29:59 PM

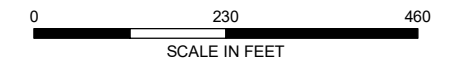


LEGEND

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HALEY ALDRICH F.B. CULLEY GENERATING STATION
WEST ASH POND
NEWBURGH, INDIANA

WATER TABLE CONFIGURATION MAP
3 MAY 2022

JULY 2022

FIGURE 3

APPENDIX A

Summary of Statistical Analysis

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	Number of Non-Detection Exceedances	Outlier Presence	Outlier Removed	Trend	Distribution Well*	May 2021 Concentration (mg/L)	Detect?	LCL (mg/L)	Upper Tolerance Limit (mg/L)	SSI	GWPS (Higher of MCL/RSL or Upper Tolerance Limit) mg/L	Exceedance above Background at Individual Well	SSL May 2021
CCR Appendix-IV: Antimony, Total (mg/L)																											
CCR-AP-7	3/17	82%	0.002-0.002	0.00174	0.002	0.002	0.00083	3.453E-07	0.0005876	0.3374	0.006	mg/L	N	0	0	No	No	NA	Non-parametric				0.002		0.006		
WAP-1	7/14	50%	0.002-0.002	0.0015	0.0019	0.002	0.0018	3.792E-07	0.0006158	0.4117	0.006	mg/L	N	0	0	No	No	Decreasing									
WAP-2RR	0/14	100%	0.002-0.002	0.002	0.002	0.002		0	0	0	0.006	mg/L	N	0	0	NA	NA	NA		0.002	N			N		N	No
WAP-3S	1/14	93%	0.002-0.002	0.00189	0.002	0.002	0.00043	1.761E-07	0.0004196	0.2223	0.006	mg/L	N	0	0	NA	NA	NA		0.002	N			N		N	No
WAP-4S	0/14	100%	0.002-0.002	0.002	0.002	0.002		0	0	0	0.006	mg/L	N	0	0	NA	NA	NA		0.002	N			N		N	No
WAP-5S	0/14	100%	0.002-0.0021	0.00201	0.002	0.002035		7.143E-10	0.00002673	0.01332	0.006	mg/L	N	0	0	NA	NA	NA		0.002	N			N		N	No
CCR Appendix-IV: Arsenic, Total (mg/L)																											
CCR-AP-7	17/17	0%	-	0.00696	0.0064	0.0156	0.018	0.00001735	0.004165	0.598	0.01	mg/L	Y	2	0	Yes	No	Stable	Log-transformed				0.018		0.018		
WAP-1	14/14	0%	-	0.00904	0.00695	0.0224	0.025	0.00004571	0.006761	0.7477	0.01	mg/L	Y	4	0	Yes	No	Stable									
WAP-2RR	13/14	7%	0.001-0.001	0.00173	0.00088	0.006565	0.0078	0.00004995	0.002235	1.291	0.01	mg/L	N	0	0	Yes	No	Stable		0.00210	Y			N		N	No
WAP-3S	14/14	0%	-	0.00263	0.0025	0.00471	0.0064	0.000001924	0.001387	0.528	0.01	mg/L	N	0	0	Yes	No	Decreasing		0.00097	Y			N		N	No
WAP-4S	14/14	0%	-	0.00395	0.0039	0.005645	0.0061	0.000001782	0.001335	0.3383	0.01	mg/L	N	0	0	No	No	Stable		0.00510	Y			N		N	No
WAP-5S	12/14	14%	0.001-0.001	0.0011	0.00081	0.002575	0.0042	9.009E-07	0.0009492	0.8651	0.01	mg/L	N	0	0	Yes	No	Stable		0.00061	Y			N		N	No
CCR Appendix-IV: Barium, Total (mg/L)																											
CCR-AP-7	17/17	0%	-	0.138	0.14	0.19	0.19	0.0006529	0.02555	0.1848	2	mg/L	N	0	0	No	No	Stable	Non-parametric				0.990		2.000		
WAP-1	14/14	0%	-	0.546	0.485	0.9185	0.99	0.0381	0.1952	0.3572	2	mg/L	N	0	0	Yes	No	Stable									
WAP-2RR	14/14	0%	-	0.0417	0.041	0.0704	0.086	0.0002828	0.01682	0.4032	2	mg/L	N	0	0	No	No	Decreasing		0.043	Y			N		N	No
WAP-3S	14/14	0%	-	0.207	0.21	0.364	0.39	0.01319	0.1149	0.5554	2	mg/L	N	0	0	No	No	Stable		0.024	Y			N		N	No
WAP-4S	14/14	0%	-	0.0569	0.056	0.06895	0.08	0.00006259	0.007912	0.1391	2	mg/L	N	0	0	Yes	No	Decreasing		0.054	Y			N		N	No
WAP-5S	14/14	0%	-	0.0542	0.053	0.0617	0.063	0.0000268	0.005177	0.09548	2	mg/L	N	0	0	No	No	Stable		0.052	Y			N		N	No
CCR Appendix-IV: Beryllium, Total (mg/L)																											
CCR-AP-7	7/17	59%	0.001-0.001	0.000691	0.001	0.001	0.00075	1.648E-07	0.000406	0.5875	0.004	mg/L	N	0	0	No	No	Stable	Non-parametric				0.001		0.004		
WAP-1	12/14	14%	0.001-0.001	0.000567	0.000455	0.00107	0.0012	1.435E-07	0.0003788	0.6686	0.004	mg/L	N	0	0	No	No	Stable									
WAP-2RR	2/14	86%	0.001-0.001	0.000901	0.001	0.001	0.00037	6.435E-08	0.0002537	0.2816	0.004	mg/L	N	0	0	Yes	No	Stable		0.001	N			N		N	No
WAP-3S	1/14	93%	0.001-0.001	0.000933	0.001	0.001	0.000068	6.204E-08	0.0002491	0.2669	0.004	mg/L	N	0	0	No	No	Stable		0.001	N			N		N	No
WAP-4S	0/14	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.004	mg/L	N	0	0	NA	NA	NA		0.001	N			N		N	No
WAP-5S	1/14	93%	0.001-0.001	0.000935	0.001	0.001	0.000084	5.993E-08	0.0002448	0.262	0.004	mg/L	N	0	0	No	No	Stable		0.001	N			N		N	No
CCR Appendix-IV: Cadmium, Total (mg/L)																											
CCR-AP-7	2/17	88%	0.001-0.001	0.000909	0.001	0.001	0.00032	6.641E-08	0.0002577	0.2834	0.005	mg/L	N	0	0	No	No	Stable	Non-parametric				0.0010		0.005		
WAP-1	7/14	50%	0.001-0.001	0.000643	0.000745	0.001	0.00049	1.461E-07	0.0003822	0.5945	0.005	mg/L	N	0	0	No	No	Stable									
WAP-2RR	12/14	14%	0.001-0.001	0.000543	0.00044	0.001	0.001	6.728E-08	0.0002594	0.4778	0.005	mg/L	N	0	0	No	No	Stable		0.0004	Y			N		N	No
WAP-3S	9/14	36%	0.001-0.001	0.000496	0.00023	0.001	0.0003	1.527E-07	0.0003908	0.7872	0.005	mg/L	N	0	0	No	No	Stable		0.0010	N			N		N	No
WAP-4S	2/14	86%	0.001-0.001	0.000888	0.001	0.001	0.00025	8.145E-08	0.0002854	0.3214	0.005	mg/L	N	0	0	Yes	No	Stable		0.0010	N			N		N	No
WAP-5S	1/14	93%	0.001-0.001	0.000939	0.001	0.001	0.00015	5.161E-08	0.0002272	0.2419	0.005	mg/L	N	0	0	No	No	Stable		0.0010	N			N		N	No
CCR Appendix-IV: Chromium, Total (mg/L)																											
CCR-AP-7	11/17	35%	0.0014-0.002	0.00367	0.002	0.00876	0.019	0.00001852	0.004304	1.172	0.1	mg/L	N	0	0	Yes	No	Stable	Log-transformed				0.037		0.100		
WAP-1	13/14	7%	0.0022-0.0022	0.0163	0.013	0.04405	0.046	0.0001834	0.01354	0.8291	0.1	mg/L	N	0	0	Yes	No	Stable									
WAP-2RR	2/14	86%	0.002-0.002	0.00241	0.002	0.00466	0.0057	0.000001207	0.001099	0.4551	0.1	mg/L	N	0	0	Yes	No	Stable		0.0020	N			N		N	No
WAP-3S	3/14	79%	0.002-0.0029	0.0021	0.002	0.002935	0.003	2.202E-07	0.0004692	0.2235	0.1	mg/L	N	0	0	Yes	No	Stable		0.0020	N			N		N	No
WAP-4S	1/14	93%	0.002-0.002	0.00192	0.002	0.002	0.00088	8.96E-08	0.0002993	0.1559	0.1	mg/L	N	0	0	No	No	Stable		0.0020	N			N		N	No
WAP-5S	0/14	100%	0.002-0.002	0.002	0.002	0.002		0	0	0	0.1	mg/L	N	0	0	NA	NA	NA		0.002	N			N		N	No
CCR Appendix-IV: Cobalt, Total (mg/L)																											
CCR-AP-7	17/17	0%	-	0.00276	0.0012	0.00732	0.015	0.00001328	0.003645	1.319	0.006	mg/L	Y	1	0	Yes	No	Decreasing	Log-transformed				0.021		0.021		
WAP-1	14/14	0%	-	0.00676	0.00525	0.0177	0.019	0.00003101	0.005569	0.8238	0.006	mg/L	Y	5	0	No	No	Stable									
WAP-2RR	14/14	0%	-	0.00269	0.0021	0.007425	0.0097	0.000005924	0.002434	0.9036	0.006	mg/L	Y	2	0	Yes	No	Stable		0.00320	Y			N		N	No
WAP-3S	14/14	0%	-	0.000879	0.00069	0.00167	0.0018	2.596E-07	0.0005095	0.5795	0.006	mg/L	N	0	0	No	No	Stable		0.00140	Y			N		N	No
WAP-4S	14/14	0%	-	0.00236	0.00185	0.004945	0.0093	0.000004132	0.002033	0.8624	0.006	mg/L	Y	1	0	Yes	No	Stable		0.00180	Y			N		N	No
WAP-5S	14/14	0%	-	0.00758	0.00795	0.009335	0.0094	0.00000393	0.001982	0.2616	0.006	mg/L	Y	13	0	Yes	No	Stable		0.00740	Y			N		N	No
CCR Appendix-III: Fluoride (mg/L)																											
CCR-AP-7	17/17	0%	-	1.056	1.12	1.402	1.48	0.018428	0.27148	1.028	4	mg/L	N	0	0	Yes	No	Stable	Normal				0.366		4.000		
WAP-1	14/14	0%	-	1.468	1.1	5.632	8	0.8628	1.8576	5.06	4	mg/L	N	0	0	Yes	Yes	Stable									
WAP-2RR	14/14	0%	-	0.824	0.86	1.21	1.28	0.014204	0.23836	1.1588	4	mg/L	N	0	0	No	No	Stable		0.320	Y			N		N	No
WAP-3S	14/14	0%	-	2.168	2.16	3.066	3.08	0.10128	0.6364	1.174	4	mg/L	N	0	0	No	No	Stable		0.760	Y			Y		N	No
WAP-4S	14/14	0%	-	0.792	0.82	0.986	1	0.007416	0.17224	0.8708	4	mg/L	N	0	0	No	No	Stable		0.220	Y			N		N	No
WAP-5S	13/14	7%	0.1																								

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	Number of Non-Detection Exceedances	Outlier Presence	Outlier Removed	Trend	Distribution Well*	May 2021 Concentration (mg/L)	Detect?	LCL (mg/L)	Upper Tolerance Limit (mg/L)	SSI	GWPS (Higher of MCL/RSL or Upper Tolerance Limit) mg/L	Exceedance above Background at Individual Well	SSL May 2021
CCR Appendix-IV: Lead, Total (mg/L)																											
CCR-AP-7	12/17	29%	0.001-0.001	0.00364	0.0014	0.01096	0.02	0.00002474	0.004974	1.366	0.015	mg/L	Y	1	0	Yes	No	Stable	Non-parametric				0.035		0.035		
WAP-1	14/14	0%	-	0.0126	0.00965	0.03435	0.035	0.0001162	0.01078	0.8565	0.015	mg/L	Y	3	0	No	No	Stable									
WAP-2RR	6/14	57%	0.001-0.001	0.00157	0.001	0.00588	0.0064	0.000003675	0.001917	1.223	0.015	mg/L	N	0	0	Yes	No	Stable		0.00130	Y			N		N	No
WAP-3S	13/14	7%	0.001-0.001	0.000854	0.000725	0.002115	0.0027	4.717E-07	0.0006868	0.8039	0.015	mg/L	N	0	0	Yes	No	Stable		0.00074	Y			N		N	No
WAP-4S	3/14	79%	0.001-0.001	0.000869	0.001	0.001	0.0007	8.052E-08	0.0002838	0.3267	0.015	mg/L	N	0	0	Yes	No	Stable		0.00100	N			N		N	No
WAP-5S	2/14	86%	0.001-0.001	0.000897	0.001	0.001	0.00036	6.935E-08	0.0002633	0.2935	0.015	mg/L	N	0	0	NA	NA	NA		0.00020	Y			N		N	No
CCR Appendix-IV: Lithium, Total (mg/L)																											
CCR-AP-7	17/17	0%	-	0.0151	0.012	0.0238	0.039	0.00005337	0.007306	0.4853	0.04	mg/L	N	0	0	Yes	No	Stable	Non-parametric				0.039		0.039		
WAP-1	14/14	0%	-	0.0139	0.0115	0.02505	0.027	0.00003656	0.006046	0.4348	0.04	mg/L	N	0	0	No	No	Stable									
WAP-2RR	14/14	0%	-	0.0339	0.0325	0.05935	0.06	0.0002505	0.01583	0.4665	0.04	mg/L	Y	5	0	No	No	Decreasing		0.0320	Y	0.0259		N		N	No
WAP-3S	14/14	0%	-	0.0639	0.064	0.09155	0.1	0.0004358	0.02087	0.3265	0.04	mg/L	Y	11	0	No	No	Increasing		0.0850	Y	0.0520		Y		Y	Yes
WAP-4S	9/14	36%	0.005-0.005	0.00844	0.005	0.01635	0.017	0.00002344	0.004841	0.5734	0.04	mg/L	N	0	0	No	No	Decreasing		0.0050	N			N		N	No
WAP-5S	4/14	71%	0.005-0.05	0.00887	0.005	0.0279	0.016	0.0001491	0.01221	1.376	0.04	mg/L	N	0	1	Yes	No	Stable		0.0050	N			N		N	No
CCR Appendix-IV: Mercury, Total (mg/L)																											
CCR-AP-7	0/14	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA	Non-parametric				0.0002		0.0002		
WAP-1	0/12	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA									
WAP-2RR	0/12	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.0002	N			N		N	No
WAP-3S	0/12	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.0002	N			N		N	No
WAP-4S	0/13	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.0002	N			N		N	No
WAP-5S	0/12	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.0002	N			N		N	No
CCR Appendix-IV: Molybdenum, Total (mg/L)																											
CCR-AP-7	17/17	0%	-	0.00434	0.0028	0.00964	0.013	0.00001088	0.003298	0.7608	0.1	mg/L	N	0	0	No	No	Decreasing	Log-transformed				0.009		0.009		
WAP-1	13/14	7%	0.005-0.005	0.00177	0.00135	0.00357	0.0028	0.000001371	0.001171	0.6598	0.1	mg/L	N	0	0	No	No	Stable									
WAP-2RR	14/14	0%	-	0.0516	0.041	0.1086	0.16	0.001321	0.03635	0.7039	0.1	mg/L	Y	1	0	Yes	No	Stable		0.0810	Y			Y		N	No
WAP-3S	14/14	0%	-	0.902	0.95	1.305	1.5	0.1034	0.3216	0.3565	0.1	mg/L	Y	14	0	No	No	Stable		1.0000	Y	0.7290		Y		Y	Yes
WAP-4S	14/14	0%	-	0.396	0.425	0.5	0.5	0.01578	0.1256	0.3174	0.1	mg/L	Y	13	0	Yes	No	Increasing		0.4800	Y	0.3250		Y		Y	Yes
WAP-5S	13/14	7%	0.005-0.005	0.0297	0.0008	0.1433	0.4	0.01136	0.1066	3.588	0.1	mg/L	Y	1	0	Yes	No	Stable		0.001	Y			N		N	No
CCR Appendix-IV: Radium-226 & 228 (mg/L)																											
CCR-AP-7	15/18	17%	5-5	1.59	1.008	5	1.72	2.597	1.611	1.013	5	mg/L	Y	6	3	No	No	NA	Non-parametric				5.00		5.000		
WAP-1	12/14	14%	5-5	2.03	1.42	5	4.74	2.517	1.586	0.781	5	mg/L	Y	9	2	No	No	NA									
WAP-2RR	6/12	50%	5-5	2.8	2.939	5	0.878	5.301	2.302	0.8228	5	mg/L	N	0	6	No	No	Stable		0.517	Y			N		N	No
WAP-3S	11/14	21%	5-5	1.89	1.085	5	1.38	2.869	1.694	0.8963	5	mg/L	Y	6	3	Yes	No	Stable		5.000	N			N		N	No
WAP-4S	6/14	57%	5-5	3.15	5	5	1.21	4.949	2.225	0.7064	5	mg/L	Y	1	8	No	No	Stable		5.000	N			N		N	No
WAP-5S	5/14	64%	5-5	3.38	5	5	0.648	5.086	2.255	0.6671	5	mg/L	N	0	9	No	No	Stable		5.000	N			N		N	No
CCR Appendix-IV: Selenium, Total (mg/L)																											
CCR-AP-7	3/15	80%	0.005-0.005	0.00426	0.005	0.005	0.0028	0.000002604	0.001614	0.3789	0.05	mg/L	N	0	0	Yes	NA	NA	Non-parametric				0.005		0.005		
WAP-1	2/12	83%	0.005-0.005	0.00447	0.005	0.005	0.0018	0.000001552	0.001246	0.2789	0.05	mg/L	N	0	0	Yes	NA	NA									
WAP-2RR	2/12	83%	0.005-0.005	0.00485	0.005	0.005	0.0049	2.391E-07	0.000489	0.1008	0.05	mg/L	N	0	0	Yes	No	NA		0.0049	Y			N		N	No
WAP-3S	0/12	100%	0.005-0.005	0.005	0.005	0.005		1.478E-20	1.216E-10	2.432E-08	0.05	mg/L	N	0	0	NA	NA	NA		0.005	N			N		N	No
WAP-4S	0/12	100%	0.005-0.005	0.005	0.005	0.005		1.478E-20	1.216E-10	2.432E-08	0.05	mg/L	N	0	0	NA	NA	NA		0.005	N			N		N	No
WAP-5S	0/12	100%	0.005-0.005	0.005	0.005	0.005		1.478E-20	1.216E-10	2.432E-08	0.05	mg/L	N	0	0	NA	NA	NA		0.005	N			N		N	No
CCR Appendix-IV: Thallium, Total (mg/L)																											
CCR-AP-7	4/17	76%	0.001-0.001	0.000814	0.001	0.001	0.00061	1.323E-07	0.0003637	0.4466	0.002	mg/L	N	0	0	No	No	NA	Non-parametric				0.001		0.001		
WAP-1	11/14	21%	0.001-0.001	0.000455	0.00034	0.001	0.00063	1.115E-07	0.0003339	0.7346	0.002	mg/L	N	0	0	No	No	NA									
WAP-2RR	10/14	29%	0.001-0.001	0.000421	0.00025	0.001	0.00047	1.558E-07	0.0003947	0.9378	0.002	mg/L	N	0	0	No	No	NA		0.000	Y			N		N	No
WAP-3S	0/14	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.001	N			N		N	No
WAP-4S	0/14	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.001	N			N		N	No
WAP-5S	2/14	86%	0.001-0.001	0.000881	0.001	0.001	0.00022	9.241E-08	0.000304	0.3452	0.002	mg/L	N	0	0	No	No	NA		0.001	N			N		N	No

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	Number of Non-Detection Exceedances	Outlier Presence	Outlier Removed	Trend	Distribution Well*	November 2021 Concentration (mg/L)	Detect?	LCL (mg/L)	Upper Tolerance Limit (mg/L)	SSI	GWPS (Higher of MCL/RSL or Upper Tolerance Limit) mg/L	Exceedance above Background at Individual Well	SSL November 2021		
CCR Appendix-IV: Antimony, Total (mg/L)																													
CCR-AP-7	3/19	84%	0.002-0.002	0.00177	0.002	0.002	0.00083	3.136E-07	0.00056	0.3166	0.006	mg/L	N	0	0	No	No	NA	Non-parametric				0.002		0.006				
WAP-1	7/15	53%	0.002-0.002	0.00153	0.002	0.002	0.0018	3.691E-07	0.0006075	0.3973	0.006	mg/L	N	0	0	No	No	Decreasing											
WAP-2RR	0/15	100%	0.002-0.002	0.002	0.002	0.002		0	0	0	0.006	mg/L	N	0	0	NA	NA	NA			0.002	N			N		N	No	
WAP-3S	1/15	93%	0.002-0.002	0.0019	0.002	0.002	0.00043	1.643E-07	0.0004054	0.2139	0.006	mg/L	N	0	0	NA	NA	NA			0.002	N			N		N	No	
WAP-4S	0/15	100%	0.002-0.02	0.0032	0.002	0.0074		0.0000216	0.004648	1.452	0.006	mg/L	N	0	1	NA	NA	NA			0.020	N			Y		Y	No	
WAP-5S	0/15	100%	0.002-0.0021	0.00201	0.002	0.00203		6.667E-10	0.00002582	0.01287	0.006	mg/L	N	0	0	NA	NA	NA		0.002	N			N		N	No		
CCR Appendix-IV: Arsenic, Total (mg/L)																													
CCR-AP-7	19/19	0%	-	0.00656	0.0062	0.0153	0.018	0.0000175	0.004183	0.6375	0.01	mg/L	Y	2	0	Yes	No	Stable	Non-parametric				0.025		0.025				
WAP-1	15/15	0%	-	0.00871	0.0066	0.0222	0.025	0.00004408	0.006639	0.7619	0.01	mg/L	Y	4	0	No	No	Stable											
WAP-2RR	14/15	7%	0.001-0.001	0.0017	0.00092	0.00647	0.0078	0.000004651	0.002157	1.267	0.01	mg/L	N	0	0	Yes	No	Stable			0.00130	Y			N		N	No	
WAP-3S	15/15	0%	-	0.0025	0.0023	0.00458	0.0064	0.000002047	0.001431	0.5734	0.01	mg/L	N	0	0	Yes	No	Decreasing			0.00065	Y			N		N	No	
WAP-4S	15/15	0%	-	0.00399	0.0042	0.00561	0.0061	0.000001683	0.001297	0.3252	0.01	mg/L	N	0	0	Yes	No	Stable			0.00460	Y			N		N	No	
WAP-5S	13/15	13%	0.001-0.001	0.00107	0.00076	0.00245	0.0042	8.471E-07	0.0009204	0.8596	0.01	mg/L	N	0	0	Yes	No	Stable		0.00070	Y			N		N	No		
CCR Appendix-IV: Barium, Total (mg/L)																													
CCR-AP-7	19/19	0%	-	0.135	0.13	0.19	0.19	0.0007055	0.02656	0.197	2	mg/L	N	0	0	No	No	Stable	Non-parametric				0.990		2.000				
WAP-1	15/15	0%	-	0.537	0.46	0.913	0.99	0.03662	0.1914	0.3561	2	mg/L	N	0	0	Yes	No	Stable											
WAP-2RR	15/15	0%	-	0.0427	0.041	0.0692	0.086	0.0002782	0.01668	0.3903	2	mg/L	N	0	0	No	No	Decreasing			0.057	Y			N		N	No	
WAP-3S	15/15	0%	-	0.195	0.2	0.362	0.39	0.0144	0.12	0.6161	2	mg/L	N	0	0	No	No	Stable			0.027	Y			N		N	No	
WAP-4S	15/15	0%	-	0.0559	0.056	0.0681	0.08	0.00007092	0.008422	0.1506	2	mg/L	N	0	0	Yes	No	Decreasing			0.043	Y			N		N	No	
WAP-5S	15/15	0%	-	0.0537	0.053	0.0616	0.063	0.00002938	0.00542	0.101	2	mg/L	N	0	0	No	No	Decreasing		0.046	Y			N		N	No		
CCR Appendix-IV: Beryllium, Total (mg/L)																													
CCR-AP-7	7/19	63%	0.001-0.001	0.000724	0.001	0.001	0.00075	0.000000156	0.000395	0.5459	0.004	mg/L	N	0	0	No	No	Stable	Non-parametric				0.001		0.004				
WAP-1	12/15	20%	0.001-0.001	0.000595	0.00049	0.00106	0.0012	1.457E-07	0.0003818	0.6412	0.004	mg/L	N	0	0	No	No	Stable											
WAP-2RR	2/15	87%	0.001-0.001	0.000907	0.001	0.001	0.00037	6.041E-08	0.0002458	0.2709	0.004	mg/L	N	0	0	Yes	No	Stable			0.001	N			N		N	No	
WAP-3S	1/15	93%	0.001-0.001	0.000938	0.001	0.001	0.00068	5.791E-08	0.0002406	0.2566	0.004	mg/L	N	0	0	No	No	Stable			0.001	N			N		N	No	
WAP-4S	0/15	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.004	mg/L	N	0	0	NA	NA	NA			0.001	N			N		N	No	
WAP-5S	1/15	93%	0.001-0.001	0.000939	0.001	0.001	0.00084	5.594E-08	0.0002365	0.2519	0.004	mg/L	N	0	0	No	No	Stable		0.001	N			N		N	No		
CCR Appendix-IV: Cadmium, Total (mg/L)																													
CCR-AP-7	2/19	89%	0.001-0.001	0.000919	0.001	0.001	0.00032	5.984E-08	0.0002446	0.2662	0.005	mg/L	N	0	0	No	No	Stable	Non-parametric				0.0010		0.005				
WAP-1	7/15	53%	0.001-0.001	0.000667	0.001	0.001	0.00049	1.441E-07	0.0003796	0.5695	0.005	mg/L	N	0	0	No	No	Stable											
WAP-2RR	13/15	13%	0.001-0.001	0.000535	0.00044	0.001	0.001	6.348E-08	0.000252	0.4712	0.005	mg/L	N	0	0	No	No	Stable			0.0004	Y			N		N	No	
WAP-3S	9/15	40%	0.001-0.001	0.00053	0.00024	0.001	0.0003	1.587E-07	0.0003984	0.7517	0.005	mg/L	N	0	0	No	No	Stable			0.0010	N			N		N	No	
WAP-4S	2/15	87%	0.001-0.001	0.000895	0.001	0.001	0.00025	7.647E-08	0.0002765	0.3089	0.005	mg/L	N	0	0	Yes	No	Stable			0.0010	N			N		N	No	
WAP-5S	1/15	93%	0.001-0.001	0.000943	0.001	0.001	0.00015	4.817E-08	0.0002195	0.2327	0.005	mg/L	N	0	0	No	No	Stable		0.0010	N			N		N	No		
CCR Appendix-IV: Chromium, Total (mg/L)																													
CCR-AP-7	11/19	42%	0.0014-0.002	0.0035	0.002	0.00748	0.019	0.00001674	0.004092	1.17	0.1	mg/L	N	0	0	Yes	No	Stable	Non-parametric				0.046		0.100				
WAP-1	14/15	7%	0.0022-0.0022	0.0155	0.012	0.0439	0.046	0.0001817	0.01348	0.8715	0.1	mg/L	N	0	0	No	No	Stable											
WAP-2RR	2/15	87%	0.002-0.002	0.00239	0.002	0.00458	0.0057	0.000001133	0.001064	0.4459	0.1	mg/L	N	0	0	Yes	No	Stable			0.0020	N			N		N	No	
WAP-3S	3/15	80%	0.002-0.0029	0.00209	0.002	0.00293	0.003	2.051E-07	0.0004529	0.2164	0.1	mg/L	N	0	0	Yes	No	Stable			0.0020	N			N		N	No	
WAP-4S	1/15	93%	0.002-0.002	0.00193	0.002	0.002	0.00088	8.363E-08	0.0002892	0.1502	0.1	mg/L	N	0	0	No	No	Stable			0.0020	N			N		N	No	
WAP-5S	0/15	100%	0.002-0.002	0.002	0.002	0.002		0	0	0	0.1	mg/L	N	0	0	NA	NA	NA		0.002	N			N		N	No		
CCR Appendix-IV: Cobalt, Total (mg/L)																													
CCR-AP-7	19/19	0%	-	0.00254	0.0011	0.00636	0.015	0.00001225	0.0035	1.378	0.006	mg/L	Y	1	0	Yes	No	Decreasing	Non-parametric				0.019		0.019				
WAP-1	15/15	0%	-	0.00642	0.0047	0.0176	0.019	0.0000305	0.005523	0.8599	0.006	mg/L	Y	5	0	No	No	Stable											
WAP-2RR	15/15	0%	-	0.0027	0.0022	0.00725	0.0097	0.000005501	0.002345	0.8685	0.006	mg/L	Y	2	0	Yes	No	Stable			0.00280	Y			N		N	No	
WAP-3S	15/15	0%	-	0.000894	0.00071	0.00166	0.0018	2.443E-07	0.0004943	0.5529	0.006	mg/L	N	0	0	No	No	Stable			0.00110	Y			N		N	No	
WAP-4S	15/15	0%	-	0.00235	0.0019	0.00461	0.0093	0.000003837	0.001959	0.8324	0.006	mg/L	Y	1	0	Yes	No	Stable			0.00230	Y			N		N	No	
WAP-5S	15/15	0%	-	0.00758	0.0079	0.00933	0.0094	0.000003649	0.00191	0.252	0.006	mg/L	Y	14	0	Yes	No	Stable		0.00760	Y			N		N	No		
CCR Appendix-IV: Fluoride (mg/L)																													
CCR-AP-7	19/19	0%	-	1.152	1.16	1.77		0.039492	0.39744	1.378	4	mg/L	N	0	0	Yes	No	Stable	Normal				0.433		4.000				
WAP-1	15/15	0%	-	1.492	1.12	5.212		0.8048	1.7944	4.816	4	mg/L	N	0	0	Yes	Yes	Stable											
WAP-2RR	15/15	0%	-	0.864	0.92	1.368		0.019356	0.27824	1.288	4	mg/L	N	0	0	No	No	Stable			0.360	Y			N		N	No	
WAP-3S	15/15	0%	-	2.204	2.2	3.062		0.09852	0.6276	1.14	4	mg/L	N	0	0	No	No	Stable			0.670	Y			Y		N	No	
WAP-4S	15/15	0%	-	0.812	0.88	1.066		0.008644	0.18596	0.9144	4	mg/L	N	0	0	No	No	Stable			0.280	Y			N		N	No	
WAP-5S</																													

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	Number of Non-Detection Exceedances	Outlier Presence	Outlier Removed	Trend	Distribution Well*	November 2021 Concentration (mg/L)	Detect?	LCL (mg/L)	Upper Tolerance Limit (mg/L)	SSI	GWPS (Higher of MCL/RSL or Upper Tolerance Limit) mg/L	Exceedance above Background at Individual Well	SSL November 2021
CCR Appendix-IV: Lithium, Total (mg/L)																											
CCR-AP-7	19/19	0%	-	0.0145	0.011	0.0219	0.039	0.00005068	0.007119	0.4926	0.04	mg/L	N	0	0	Yes	No	Decreasing	Non-parametric				0.039		0.040		
WAP-1	15/15	0%	-	0.0134	0.011	0.0249	0.027	0.00003801	0.006165	0.4605	0.04	mg/L	N	0	0	No	No	Stable									
WAP-2RR	15/15	0%	-	0.0334	0.032	0.0593	0.06	0.0002368	0.01539	0.4608	0.04	mg/L	Y	5	0	No	No	Decreasing		0.0260	Y	0.0259		N		N	No
WAP-3S	15/15	0%	-	0.0648	0.066	0.0909	0.1	0.000416	0.0204	0.3148	0.04	mg/L	Y	12	0	No	No	Increasing		0.0770	Y	0.0520		Y		Y	Yes
WAP-4S	9/15	40%	0.005-0.005	0.00821	0.005	0.0163	0.017	0.00002256	0.004749	0.5782	0.04	mg/L	N	0	0	No	No	Decreasing		0.0050	N			N		N	No
WAP-5S	4/15	73%	0.005-0.05	0.00861	0.005	0.0262	0.016	0.0001395	0.01181	1.371	0.04	mg/L	N	0	1	Yes	No	Stable		0.0050	N			N		N	No
CCR Appendix-IV: Mercury, Total (mg/L)																											
CCR-AP-7	0/16	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA	Non-parametric				0.0002		0.002		
WAP-1	0/13	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA									
WAP-2RR	0/13	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.0002	N			N		N	No
WAP-3S	0/13	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.0002	N			N		N	No
WAP-4S	0/14	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.0002	N			N		N	No
WAP-5S	0/13	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.0002	N			N		N	No
CCR Appendix-IV: Molybdenum, Total (mg/L)																											
CCR-AP-7	19/19	0%	-	0.00406	0.0026	0.00922	0.013	0.00001036	0.003219	0.7934	0.1	mg/L	N	0	0	No	No	Decreasing	Non-parametric				0.013		0.100		
WAP-1	14/15	7%	0.005-0.005	0.0017	0.0013	0.00346	0.0028	0.00000135	0.001162	0.6823	0.1	mg/L	N	0	0	No	No	Stable									
WAP-2RR	15/15	0%	-	0.0549	0.042	0.118	0.16	0.001383	0.03719	0.6778	0.1	mg/L	Y	2	0	Yes	No	Stable		0.1000	Y			Y		N	No
WAP-3S	15/15	0%	-	0.905	0.95	1.29	1.5	0.09621	0.3102	0.3426	0.1	mg/L	Y	15	0	No	No	Stable		0.9500	Y	0.7290		Y		Y	Yes
WAP-4S	15/15	0%	-	0.4	0.43	0.5	0.5	0.01493	0.1222	0.3054	0.1	mg/L	Y	14	0	Yes	No	Increasing		0.4600	Y	0.3250		Y		Y	Yes
WAP-5S	14/15	7%	0.005-0.005	0.0278	0.00081	0.1235	0.4	0.0106	0.103	3.704	0.1	mg/L	Y	1	0	Yes	No	Stable		0.001	Y			N		N	No
CCR Appendix-IV: Radium-226 & 228 (pCi/L)																											
CCR-AP-7	15/19	21%	5-5	1.77	1.02	5	1.72	3.064	1.75	0.9888	5	pCi/L	N	0	0	No	No	NA	Non-parametric				5.00		5.000		
WAP-1	12/15	20%	5-5	2.23	1.48	5	4.74	2.925	1.71	0.7672	5	pCi/L	N	0	0	No	No	NA									
WAP-2RR	9/15	40%	5-5	2.52	1.53	5	2.15	4.598	2.144	0.8515	5	pCi/L	N	0	0	No	No	Stable		2.150	Y			N		N	No
WAP-3S	11/15	27%	5-5	2.1	1.09	5	1.38	3.309	1.819	0.8674	5	pCi/L	N	0	0	Yes	No	Stable		5.000	N			N		N	No
WAP-4S	6/15	60%	5-5	3.27	5	5	1.21	4.824	2.196	0.6711	5	pCi/L	N	0	0	No	No	Stable		5.000	N			N		N	No
WAP-5S	6/15	60%	5-5	3.2	5	5	0.677	5.21	2.283	0.7132	5	pCi/L	N	0	0	No	No	Stable		0.677	Y			N		N	No
CCR Appendix-IV: Selenium, Total (mg/L)																											
CCR-AP-7	3/17	82%	0.005-0.005	0.00435	0.005	0.005	0.0028	0.000002339	0.001529	0.3519	0.05	mg/L	N	0	0	Yes	NA	NA	Non-parametric				0.005		0.050		
WAP-1	2/13	85%	0.005-0.005	0.00451	0.005	0.005	0.0018	0.000001444	0.001202	0.2666	0.05	mg/L	N	0	0	Yes	NA	NA									
WAP-2RR	2/13	85%	0.005-0.005	0.00486	0.005	0.005	0.0049	2.209E-07	0.00047	0.09668	0.05	mg/L	N	0	0	Yes	No	NA		0.0050	N			N		N	No
WAP-3S	0/13	100%	0.005-0.005	0.005	0.005	0.005		1.807E-20	1.344E-10	2.688E-08	0.05	mg/L	N	0	0	NA	NA	NA		0.005	N			N		N	No
WAP-4S	0/13	100%	0.005-0.005	0.005	0.005	0.005		1.807E-20	1.344E-10	2.688E-08	0.05	mg/L	N	0	0	NA	NA	NA		0.005	N			N		N	No
WAP-5S	0/13	100%	0.005-0.005	0.005	0.005	0.005		1.807E-20	1.344E-10	2.688E-08	0.05	mg/L	N	0	0	NA	NA	NA		0.005	N			N		N	No
CCR Appendix-IV: Thallium, Total (mg/L)																											
CCR-AP-7	4/19	79%	0.001-0.001	0.000834	0.001	0.001	0.00061	0.000000121	0.0003479	0.4172	0.002	mg/L	N	0	0	No	No	NA	Non-parametric				0.001		0.002		
WAP-1	11/15	27%	0.001-0.001	0.000491	0.00041	0.001	0.00063	1.234E-07	0.0003512	0.7155	0.002	mg/L	N	0	0	No	No	NA									
WAP-2RR	10/15	33%	0.001-0.001	0.00046	0.00027	0.001	0.00047	1.671E-07	0.0004087	0.8894	0.002	mg/L	N	0	0	No	No	NA		0.001	N			N		N	No
WAP-3S	0/15	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.001	N			N		N	No
WAP-4S	0/15	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.001	N			N		N	No
WAP-5S	2/15	87%	0.001-0.001	0.000889	0.001	0.001	0.00022	8.676E-08	0.0002945	0.3314	0.002	mg/L	N	0	0	No	No	NA		0.001	N			N		N	No

TABLE 3
SUMMARY OF STATISTICAL ANALYSIS
 F.B. CULLEY GENERATING STATION - WEST ASH POND
 NEWBURGH, INDIANA

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	Number of Non-Detection Exceedances	Outlier Presence	Outlier Removed	Trend	Distribution Well*	May 2022 Concentration (mg/L)	Detect?	LCL (mg/L)	Upper Tolerance Limit (mg/L)	SSI
CCR Appendix-IV: Antimony, Total (mg/L)																								
CCR-AP-7	3/20	85%	0.002-0.002	0.00178	0.002	0.002	0.00083	2.998E-07	0.0005475	0.3075	0.006	mg/L	N	0	0	No	No	NA	Non-parametric				0.002	
WAP-1	8/16	50%	0.002-0.002	0.00156	0.002	0.002	0.002	3.583E-07	0.0005986	0.384	0.006	mg/L	N	0	0	No	No	Stable						
WAP-2RR	0/16	100%	0.002-0.002	0.002	0.002	0.002	0	0	0	0	0.006	mg/L	N	0	0	NA	NA	NA		0.002	N			N
WAP-3S	1/16	94%	0.002-0.002	0.0019	0.002	0.002	0.00043	1.541E-07	0.0003925	0.2064	0.006	mg/L	N	0	0	No	No	NA		0.002	N			N
WAP-4S	0/16	100%	0.002-0.02	0.00313	0.002	0.0065	0.00002025	0.0045	1.44	0.006	mg/L	N	0	1	NA	NA	NA		0.002	N				N
WAP-5S	0/16	100%	0.002-0.0021	0.00201	0.002	0.002025	6.25E-10	0.000025	0.01246	0.006	mg/L	N	0	0	NA	NA	NA		0.002	N				N
WAP-6S	1/9	89%	0.002-0.002	0.00185	0.002	0.002	0.00066	1.995E-07	0.0004467	0.2413	0.006	mg/L	N	0	0	No	No	NA		0.002	N			N
WAP-7S	6/9	33%	0.002-0.002	0.00132	0.0013	0.002	0.0014	3.246E-07	0.0005697	0.4302	0.006	mg/L	N	0	0	No	No	Stable		0.001	Y			N
CCR Appendix-IV: Arsenic, Total (mg/L)																								
CCR-AP-7	20/20	0%	-	0.00627	0.006	0.01515	0.018	0.0001832	0.00428	0.683	0.01	mg/L	Y	2	0	Yes	No	Stable	Non-parametric				0.025	
WAP-1	16/16	0%	-	0.00872	0.00695	0.022	0.025	0.00004114	0.006414	0.7357	0.01	mg/L	Y	4	0	Yes	No	Stable						
WAP-2RR	15/16	6%	0.001-0.001	0.00166	0.000935	0.006375	0.0078	0.000004372	0.002091	1.261	0.01	mg/L	N	0	0	Yes	No	Stable		0.00100	Y			N
WAP-3S	16/16	0%	-	0.00236	0.00225	0.00445	0.0064	0.000002209	0.001486	0.6301	0.01	mg/L	N	0	0	Yes	No	Decrease		0.00031	Y			N
WAP-4S	16/16	0%	-	0.00412	0.00425	0.0061	0.0061	0.000001849	0.00136	0.33	0.01	mg/L	N	0	0	Yes	No	Stable		0.006	Y			N
WAP-5S	14/16	12%	0.001-0.001	0.00103	0.00073	0.002325	0.0042	8.195E-07	0.0009053	0.8805	0.01	mg/L	N	0	0	Yes	No	Stable		0.000	Y			N
WAP-6S	9/9	0%	-	0.00169	0.001	0.00396	0.0046	0.000001868	0.001367	0.8076	0.01	mg/L	N	0	0	No	No	Stable		0.002	Y			N
WAP-7S	9/9	0%	-	0.00538	0.004	0.01172	0.014	0.00001546	0.003932	0.7311	0.01	mg/L	Y	1	0	No	No	Stable		0.007	Y			N
CCR Appendix-IV: Barium, Total (mg/L)																								
CCR-AP-7	20/20	0%	-	0.132	0.13	0.19	0.19	0.0008415	0.02901	0.2199	2	mg/L	N	0	0	No	No	Stable	Non-parametric				0.990	
WAP-1	16/16	0%	-	0.534	0.475	0.9075	0.99	0.03432	0.1853	0.3467	2	mg/L	N	0	0	Yes	No	Stable						
WAP-2RR	16/16	0%	-	0.0416	0.041	0.068	0.086	0.0002793	0.01671	0.4015	2	mg/L	N	0	0	No	No	Stable		0.025	Y			N
WAP-3S	16/16	0%	-	0.184	0.185	0.36	0.39	0.01514	0.1231	0.6669	2	mg/L	N	0	0	No	No	Stable		0.030	Y			N
WAP-4S	16/16	0%	-	0.056	0.056	0.06725	0.08	0.00006627	0.00814	0.1454	2	mg/L	N	0	0	Yes	No	Decrease		0.057	Y			N
WAP-5S	16/16	0%	-	0.0533	0.053	0.0615	0.063	0.00002943	0.005425	0.1018	2	mg/L	N	0	0	No	No	Decrease		0.048	Y			N
WAP-6S	9/9	0%	-	0.0716	0.068	0.11	0.11	0.000605	0.0246	0.3438	2	mg/L	N	0	0	No	No	Stable		0.074	Y			N
WAP-7S	9/9	0%	-	0.0602	0.047	0.1268	0.17	0.001786	0.04226	0.7017	2	mg/L	N	0	0	Yes	No	Decrease		0.046	Y			N
CCR Appendix-IV: Beryllium, Total (mg/L)																								
CCR-AP-7	7/20	65%	0.001-0.001	0.000737	0.001	0.001	0.00075	1.516E-07	0.0003894	0.5281	0.004	mg/L	N	0	0	No	No	Stable	Non-parametric				0.001	
WAP-1	13/16	19%	0.001-0.001	0.000576	0.000455	0.00105	0.0012	1.422E-07	0.0003771	0.6551	0.004	mg/L	N	0	0	No	No	Stable						
WAP-2RR	2/16	88%	0.001-0.001	0.000913	0.001	0.001	0.00037	5.692E-08	0.0002386	0.2613	0.004	mg/L	N	0	0	No	No	NA		0.001	N			N
WAP-3S	1/16	94%	0.001-0.001	0.000942	0.001	0.001	0.000068	5.429E-08	0.000233	0.2474	0.004	mg/L	N	0	0	No	No	NA		0.001	N			N
WAP-4S	0/16	100%	0.001-0.001	0.001	0.001	0.001	0	0	0	0.004	mg/L	N	0	0	NA	NA	NA		0.001	N				N
WAP-5S	1/16	94%	0.001-0.001	0.000943	0.001	0.001	0.000084	5.244E-08	0.000229	0.2429	0.004	mg/L	N	0	0	No	No	NA		0.001	N			N
WAP-6S	2/9	78%	0.001-0.001	0.000856	0.001	0.001	0.00049	8.705E-08	0.000295	0.3449	0.004	mg/L	N	0	0	No	No	NA		0.001	N			N
WAP-7S	1/9	89%	0.001-0.001	0.000914	0.001	0.001	0.00023	6.588E-08	0.0002567	0.2807	0.004	mg/L	N	0	0	No	No	NA		0.001	N			N
CCR Appendix-IV: Cadmium, Total (mg/L)																								
CCR-AP-7	2/20	90%	0.001-0.001	0.000923	0.001	0.001	0.00032	5.702E-08	0.0002388	0.2587	0.005	mg/L	N	0	0	No	No	NA	Non-parametric				0.0010	
WAP-1	7/16	56%	0.001-0.001	0.000688	0.001	0.001	0.00049	1.415E-07	0.0003761	0.5471	0.005	mg/L	N	0	0	No	No	Stable						
WAP-2RR	14/16	12%	0.001-0.001	0.00053	0.00044	0.001	0.001	5.96E-08	0.0002441	0.4606	0.005	mg/L	N	0	0	No	No	Stable		0.0005	Y			N
WAP-3S	9/16	44%	0.001-0.001	0.000559	0.00027	0.001	0.0003	0.000000162	0.0004024	0.7194	0.005	mg/L	N	0	0	No	No	Stable		0.0010	N			N
WAP-4S	2/16	88%	0.001-0.001	0.000902	0.001	0.001	0.00025	7.206E-08	0.0002684	0.2976	0.005	mg/L	N	0	0	No	No	NA		0.001	N			N
WAP-5S	1/16	94%	0.001-0.001	0.000947	0.001	0.001	0.00015	4.516E-08	0.0002125	0.2244	0.005	mg/L	N	0	0	No	No	NA		0.001	N			N
WAP-6S	1/9	89%	0.001-0.001	0.000914	0.001	0.001	0.00023	6.588E-08	0.0002567	0.2807	0.005	mg/L	N	0	0	No	No	NA		0.001	N			N
WAP-7S	1/9	89%	0.001-0.001	0.000934	0.001	0.001	0.00041	3.868E-08	0.0001967	0.2105	0.005	mg/L	N	0	0	No	No	NA		0.001	N			N
CCR Appendix-IV: Chromium, Total (mg/L)																								
CCR-AP-7	11/20	45%	0.0014-0.002	0.00342	0.002	0.00684	0.019	0.00001597	0.003997	1.168	0.1	mg/L	N	0	0	Yes	No	Stable	Non-parametric				0.046	
WAP-1	15/16	6%	0.0022-0.0022	0.0151	0.0115	0.04375	0.046	0.0001714	0.01309	0.8657	0.1	mg/L	N	0	0	No	No	Stable						
WAP-2RR	2/16	88%	0.002-0.002	0.00236	0.002	0.0045	0.0057	0.000001066	0.001033	0.4371	0.1	mg/L	N	0	0	No	No	Stable		0.0020	N			N
WAP-3S	3/16	81%	0.002-0.0029	0.00209	0.002	0.002925	0.003	0.000000192	0.0004381	0.2099	0.1	mg/L	N	0	0	Yes	No	Stable		0.0020	N			N
WAP-4S	1/16	94%	0.002-0.002	0.00193	0.002	0.002	0.00088	7.84E-08	0.00028	0.1451	0.1	mg/L	N	0	0	No	No	NA		0.002	N			N
WAP-5S	0/16	100%	0.002-0.002	0.002	0.002	0.002	0	0	0	0	0.1	mg/L	N	0	0	No	No	NA		0.002	N			N
WAP-6S	2/9	78%	0.002-0.002	0.00316	0.002	0.00762	0.0093	0.00000636	0.002522	0.7992	0.1	mg/L	N	0	0	Yes	No	NA		0.002	N			N
WAP-7S	1/9	89%	0.002-0.002	0.00227	0.002	0.00344	0.0044	0.00000064	0.0008	0.3529	0.1	mg/L	N	0	0	No	No	NA		0.002	N			N
CCR Appendix-IV: Cobalt, Total (mg/L)																								
CCR-AP-7	19/20	5%	0.0005-0.0005	0.00244	0.00105	0.00588	0.015	0.00001182	0.003437	1.41	0.006	mg/L	Y	1	0	Yes	No	Decrease	Non-parametric				0.019	
WAP-1	16/16	0%	-	0.00625	0.0047	0.0175	0.019	0.00002893	0.005379	0.8603	0.006	mg/L	Y	5	0	No	No	Stable						
WAP-2RR	16/16	0%	-	0.00267	0.0022	0.007075	0.0097	0.000																

APPENDIX B

Laboratory Reports

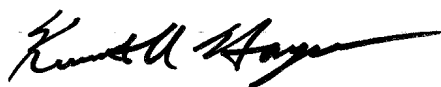
ANALYTICAL REPORT

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

Laboratory Job ID: 180-125560-1
Client Project/Site: West Ash Pond

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

Attn: Mark Miesfeldt



Authorized for release by:
9/13/2021 9:59:33 AM

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

LINKS

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results through
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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

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	5
Certification Summary	6
Sample Summary	8
Method Summary	9
Lab Chronicle	10
Client Sample Results	13
QC Sample Results	17
QC Association Summary	21
Chain of Custody	23
Receipt Checklists	25

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

Job ID: 180-125560-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-125560-1

Comments

Final Pending completion of Radiological analyses.

No additional comments.

Receipt

The samples were received on 8/10/2021 10:30 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 4.8° C.

GC Semi VOA

No analytical or quality issues were noted, other than those described 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.

Narrative

Job Narrative
180-125560-2

Comments

No additional comments.

Receipt

The samples were received on 8/10/2021 10:30 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 4.8° C.

RAD

Methods 903.0, 9315: Radium 226 prep batch 160-522532:

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. WAP-9S (180-125560-1), WAP-9I (180-125560-2), WAP-9D (180-125560-3), (LCS 160-522532/1-A), (LCSD 160-522532/2-A) and (MB 160-522532/10-A)

Method 9320: Radium 228 Prep batch 160-522541:

The detection goal was not met for the following sample(s). Sample was prepped at a reduced aliquot due to the presence of matrix interferences: WAP-9S (180-125560-1). Analytical results are reported with the detection limit achieved.

Methods 904.0, 9320: Radium 228 Prep batch 160-522541:

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. WAP-9S (180-125560-1), WAP-9I (180-125560-2), WAP-9D (180-125560-3), (LCS 160-522541/1-A), (LCSD 160-522541/2-A) and (MB 160-522541/10-A)

Method PrecSep_0: Ra-228 Batch 160-522541:

Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: WAP-9I (180-125560-2) and WAP-9D (180-125560-3). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep_0: Ra-228 Batch 160-522541:

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

Job ID: 180-125560-1 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

The following samples were prepared at a reduced aliquot due to Matrix: WAP-9S (180-125560-1). 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: Ra-226 Batch 160-522532:

Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: WAP-9I (180-125560-2) and WAP-9D (180-125560-3). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Ra-226 Batch 160-522532:

The following samples were prepared at a reduced aliquot due to Matrix: WAP-9S (180-125560-1). 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.



Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

Qualifiers

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.
α	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.
Project/Site: West Ash Pond

Job ID: 180-125560-1

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

Laboratory: Eurofins TestAmerica, 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	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-21
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	06-30-21 *
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-22
HI - RadChem Recognition	State	n/a	06-30-22
Illinois	NELAP	004553	11-30-21
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-21
Kentucky (DW)	State	KY90125	01-01-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-21

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

Eurofins TestAmerica, Pittsburgh

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

Laboratory: Eurofins TestAmerica, 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	12-31-21
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	04-01-22
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	03-01-22
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	MO000542019-11	07-31-21 *
Virginia	NELAP	10310	06-14-22
Washington	State	C592	08-30-21 *
West Virginia DEP	State	381	10-31-22

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

Eurofins TestAmerica, Pittsburgh

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-125560-1	WAP-9S	Water	08/04/21 15:00	08/10/21 10:30
180-125560-2	WAP-9I	Water	08/04/21 16:05	08/10/21 10:30
180-125560-3	WAP-9D	Water	08/04/21 17:00	08/10/21 10:30

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Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

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
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
7470A	Preparation, Mercury	SW846	TAL PIT

Protocol References:

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.

Laboratory References:

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

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

Client Sample ID: WAP-9S

Lab Sample ID: 180-125560-1

Date Collected: 08/04/21 15:00

Matrix: Water

Date Received: 08/10/21 10:30

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			368501	08/19/21 15:14	SAB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	367811	08/12/21 11:09	TLP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			368509	08/18/21 16:15	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	367793	08/12/21 10:20	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			368001	08/13/21 12:25	KEM	TAL PIT
Instrument ID: HGZ										
Total/NA	Analysis	EPA 9040C		1			367783	08/12/21 10:35	SMW	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	367709	08/11/21 17:13	PMH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			499.72 mL	1.0 g	522532	08/13/21 10:51	MJ	TAL SL
Total/NA	Analysis	9315		1			526070	09/09/21 17:18	ANW	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			499.72 mL	1.0 g	522541	08/13/21 11:19	MJ	TAL SL
Total/NA	Analysis	9320		1			526070	09/09/21 13:05	ANW	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			526410	09/10/21 19:20	EMH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-9I

Lab Sample ID: 180-125560-2

Date Collected: 08/04/21 16:05

Matrix: Water

Date Received: 08/10/21 10:30

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			368501	08/19/21 15:46	SAB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	367811	08/12/21 11:09	TLP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			368509	08/18/21 16:30	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	367793	08/12/21 10:20	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			368001	08/13/21 12:26	KEM	TAL PIT
Instrument ID: HGZ										
Total/NA	Analysis	EPA 9040C		1			367783	08/12/21 11:35	SMW	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	367709	08/11/21 17:13	PMH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1000.25 mL	1.0 g	522532	08/13/21 10:51	MJ	TAL SL
Total/NA	Analysis	9315		1			526075	09/09/21 17:21	ANW	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1000.25 mL	1.0 g	522541	08/13/21 11:19	MJ	TAL SL
Total/NA	Analysis	9320		1			526070	09/09/21 13:05	ANW	TAL SL
Instrument ID: GFPCBLUE										

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

Client Sample ID: WAP-9I
Date Collected: 08/04/21 16:05
Date Received: 08/10/21 10:30

Lab Sample ID: 180-125560-2
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	Ra226_Ra228		1			526410	09/10/21 19:20	EMH	TAL SL

Client Sample ID: WAP-9D
Date Collected: 08/04/21 17:00
Date Received: 08/10/21 10:30

Lab Sample ID: 180-125560-3
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 Instrument ID: CHIC2100A		1			368501	08/19/21 10:19	SAB	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	367811	08/12/21 11:09	TLP	TAL PIT
Total Recoverable	Analysis	EPA 6020A Instrument ID: A		1			368509	08/18/21 16:34	RSK	TAL PIT
Total/NA	Prep	7470A			25 mL	25 mL	367793	08/12/21 10:20	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A Instrument ID: HGZ		1			368001	08/13/21 12:29	KEM	TAL PIT
Total/NA	Analysis	EPA 9040C Instrument ID: NOEQUIP		1			367783	08/12/21 12:05	SMW	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	367709	08/11/21 17:13	PMH	TAL PIT
Total/NA	Prep	PrecSep-21			999.17 mL	1.0 g	522532	08/13/21 10:51	MJ	TAL SL
Total/NA	Analysis	9315 Instrument ID: GFPCRED		1			526075	09/09/21 17:22	ANW	TAL SL
Total/NA	Prep	PrecSep_0			999.17 mL	1.0 g	522541	08/13/21 11:19	MJ	TAL SL
Total/NA	Analysis	9320 Instrument ID: GFPCBLUE		1			526070	09/09/21 13:05	ANW	TAL SL
Total/NA	Analysis	Ra226_Ra228 Instrument ID: NOEQUIP		1			526410	09/10/21 19:20	EMH	TAL SL

Laboratory References:

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

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

Analyst References:

Lab: TAL PIT

Batch Type: Prep

MM1 = Mary Beth Miller

TLP = Tara Peterson

Batch Type: Analysis

KEM = Kimberly Mahoney

PMH = Paloma Hoelzle

RSK = Robert Kurtz

SAB = Sharon Bacha

SMW = Shelby Walters

Lab: TAL SL

Batch Type: Prep

MJ = Mary Johns

Batch Type: Analysis

ANW = Aamber Woods

EMH = Elizabeth Hoerchler

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Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

Client Sample ID: WAP-9S

Lab Sample ID: 180-125560-1

Date Collected: 08/04/21 15:00

Matrix: Water

Date Received: 08/10/21 10:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	33		1.0	0.71	mg/L			08/19/21 15:14	1
Fluoride	0.86		0.10	0.026	mg/L			08/19/21 15:14	1
Sulfate	99		1.0	0.76	mg/L			08/19/21 15:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00097	J	0.0020	0.00038	mg/L		08/12/21 11:09	08/18/21 16:15	1
Arsenic	0.0076		0.0010	0.00031	mg/L		08/12/21 11:09	08/18/21 16:15	1
Barium	0.20		0.010	0.0016	mg/L		08/12/21 11:09	08/18/21 16:15	1
Beryllium	0.00047	J	0.0010	0.00018	mg/L		08/12/21 11:09	08/18/21 16:15	1
Boron	2.7		0.080	0.039	mg/L		08/12/21 11:09	08/18/21 16:15	1
Cadmium	0.0010		0.0010	0.00022	mg/L		08/12/21 11:09	08/18/21 16:15	1
Calcium	99		0.50	0.13	mg/L		08/12/21 11:09	08/18/21 16:15	1
Chromium	0.015		0.0020	0.0015	mg/L		08/12/21 11:09	08/18/21 16:15	1
Cobalt	0.010		0.00050	0.00013	mg/L		08/12/21 11:09	08/18/21 16:15	1
Lead	0.013		0.0010	0.00013	mg/L		08/12/21 11:09	08/18/21 16:15	1
Lithium	0.022		0.0050	0.0034	mg/L		08/12/21 11:09	08/18/21 16:15	1
Molybdenum	0.20		0.0050	0.00061	mg/L		08/12/21 11:09	08/18/21 16:15	1
Selenium	ND		0.0050	0.0015	mg/L		08/12/21 11:09	08/18/21 16:15	1
Thallium	0.00024	J	0.0010	0.00015	mg/L		08/12/21 11:09	08/18/21 16:15	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		08/12/21 10:20	08/13/21 12:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	540		10	10	mg/L			08/11/21 17:13	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1	0.1	SU			08/12/21 10:35	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.616	U	0.616	0.619	1.00	0.975	pCi/L	08/13/21 10:51	09/09/21 17:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	76.3		40 - 110					08/13/21 10:51	09/09/21 17:18	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.191	U G	0.560	0.560	1.00	1.04	pCi/L	08/13/21 11:19	09/09/21 13:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	76.3		40 - 110					08/13/21 11:19	09/09/21 13:05	1
Y Carrier	86.7		40 - 110					08/13/21 11:19	09/09/21 13:05	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

Client Sample ID: WAP-9S

Lab Sample ID: 180-125560-1

Date Collected: 08/04/21 15:00

Matrix: Water

Date Received: 08/10/21 10:30

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

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
Combined Radium 226 + 228	0.425	U	0.832	0.835	5.00	1.04	pCi/L		09/10/21 19:20	1

Client Sample ID: WAP-9I

Lab Sample ID: 180-125560-2

Date Collected: 08/04/21 16:05

Matrix: Water

Date Received: 08/10/21 10:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	22		1.0	0.71	mg/L			08/19/21 15:46	1
Fluoride	0.15		0.10	0.026	mg/L			08/19/21 15:46	1
Sulfate	36		1.0	0.76	mg/L			08/19/21 15:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		08/12/21 11:09	08/18/21 16:30	1
Arsenic	0.0039		0.0010	0.00031	mg/L		08/12/21 11:09	08/18/21 16:30	1
Barium	0.086		0.010	0.0016	mg/L		08/12/21 11:09	08/18/21 16:30	1
Beryllium	ND		0.0010	0.00018	mg/L		08/12/21 11:09	08/18/21 16:30	1
Boron	0.096		0.080	0.039	mg/L		08/12/21 11:09	08/18/21 16:30	1
Cadmium	ND		0.0010	0.00022	mg/L		08/12/21 11:09	08/18/21 16:30	1
Calcium	40		0.50	0.13	mg/L		08/12/21 11:09	08/18/21 16:30	1
Chromium	ND		0.0020	0.0015	mg/L		08/12/21 11:09	08/18/21 16:30	1
Cobalt	0.00021	J	0.00050	0.00013	mg/L		08/12/21 11:09	08/18/21 16:30	1
Lead	ND		0.0010	0.00013	mg/L		08/12/21 11:09	08/18/21 16:30	1
Lithium	ND		0.0050	0.0034	mg/L		08/12/21 11:09	08/18/21 16:30	1
Molybdenum	0.018		0.0050	0.00061	mg/L		08/12/21 11:09	08/18/21 16:30	1
Selenium	ND		0.0050	0.0015	mg/L		08/12/21 11:09	08/18/21 16:30	1
Thallium	ND		0.0010	0.00015	mg/L		08/12/21 11:09	08/18/21 16:30	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		08/12/21 10:20	08/13/21 12:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	230		10	10	mg/L			08/11/21 17:13	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1	0.1	SU			08/12/21 11:35	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
Radium-226	0.103	U	0.219	0.219	1.00	0.390	pCi/L	08/13/21 10:51	09/09/21 17:21	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	93.9		40 - 110	08/13/21 10:51	09/09/21 17:21	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

Client Sample ID: WAP-9I

Date Collected: 08/04/21 16:05

Date Received: 08/10/21 10:30

Lab Sample ID: 180-125560-2

Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.198	U	0.227	0.228	1.00	0.373	pCi/L	08/13/21 11:19	09/09/21 13:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.9		40 - 110					08/13/21 11:19	09/09/21 13:05	1
Y Carrier	90.5		40 - 110					08/13/21 11:19	09/09/21 13:05	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	0.301	U	0.315	0.316	5.00	0.390	pCi/L		09/10/21 19:20	1

Client Sample ID: WAP-9D

Date Collected: 08/04/21 17:00

Date Received: 08/10/21 10:30

Lab Sample ID: 180-125560-3

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21		1.0	0.71	mg/L			08/19/21 10:19	1
Fluoride	0.12		0.10	0.026	mg/L			08/19/21 10:19	1
Sulfate	41		1.0	0.76	mg/L			08/19/21 10:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00082	J	0.0020	0.00038	mg/L		08/12/21 11:09	08/18/21 16:34	1
Arsenic	0.0088		0.0010	0.00031	mg/L		08/12/21 11:09	08/18/21 16:34	1
Barium	0.21		0.010	0.0016	mg/L		08/12/21 11:09	08/18/21 16:34	1
Beryllium	ND		0.0010	0.00018	mg/L		08/12/21 11:09	08/18/21 16:34	1
Boron	0.066	J	0.080	0.039	mg/L		08/12/21 11:09	08/18/21 16:34	1
Cadmium	ND		0.0010	0.00022	mg/L		08/12/21 11:09	08/18/21 16:34	1
Calcium	40		0.50	0.13	mg/L		08/12/21 11:09	08/18/21 16:34	1
Chromium	0.0065		0.0020	0.0015	mg/L		08/12/21 11:09	08/18/21 16:34	1
Cobalt	0.0048		0.00050	0.00013	mg/L		08/12/21 11:09	08/18/21 16:34	1
Lead	0.0066		0.0010	0.00013	mg/L		08/12/21 11:09	08/18/21 16:34	1
Lithium	0.0050		0.0050	0.0034	mg/L		08/12/21 11:09	08/18/21 16:34	1
Molybdenum	0.0029	J	0.0050	0.00061	mg/L		08/12/21 11:09	08/18/21 16:34	1
Selenium	ND		0.0050	0.0015	mg/L		08/12/21 11:09	08/18/21 16:34	1
Thallium	ND		0.0010	0.00015	mg/L		08/12/21 11:09	08/18/21 16:34	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		08/12/21 10:20	08/13/21 12:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	230		10	10	mg/L			08/11/21 17:13	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1	0.1	SU			08/12/21 12:05	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

Client Sample ID: WAP-9D

Lab Sample ID: 180-125560-3

Date Collected: 08/04/21 17:00

Matrix: Water

Date Received: 08/10/21 10:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.327	U	0.246	0.247	1.00	0.357	pCi/L	08/13/21 10:51	09/09/21 17:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					08/13/21 10:51	09/09/21 17:22	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.539		0.251	0.256	1.00	0.362	pCi/L	08/13/21 11:19	09/09/21 13:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					08/13/21 11:19	09/09/21 13:05	1
Y Carrier	91.6		40 - 110					08/13/21 11:19	09/09/21 13:05	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	0.867		0.351	0.356	5.00	0.362	pCi/L		09/10/21 19:20	1

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-368501/6
Matrix: Water
Analysis Batch: 368501

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			08/19/21 08:24	1
Fluoride	ND		0.10	0.026	mg/L			08/19/21 08:24	1
Sulfate	ND		1.0	0.76	mg/L			08/19/21 08:24	1

Lab Sample ID: LCS 180-368501/5
Matrix: Water
Analysis Batch: 368501

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	51.9		mg/L		104	80 - 120
Fluoride	2.50	2.49		mg/L		100	80 - 120
Sulfate	50.0	53.9		mg/L		108	80 - 120

Lab Sample ID: 180-125560-3 MS
Matrix: Water
Analysis Batch: 368501

Client Sample ID: WAP-9D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	21		50.0	72.2		mg/L		102	80 - 120
Fluoride	0.12		2.50	2.56		mg/L		98	80 - 120
Sulfate	41		50.0	92.4		mg/L		103	80 - 120

Lab Sample ID: 180-125560-3 MSD
Matrix: Water
Analysis Batch: 368501

Client Sample ID: WAP-9D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	21		50.0	75.0		mg/L		107	80 - 120	4	15
Fluoride	0.12		2.50	2.68		mg/L		102	80 - 120	4	15
Sulfate	41		50.0	96.0		mg/L		110	80 - 120	4	15

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

Lab Sample ID: MB 180-367811/1-A
Matrix: Water
Analysis Batch: 368509

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 367811

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		08/12/21 11:09	08/18/21 15:06	1
Arsenic	ND		0.0010	0.00031	mg/L		08/12/21 11:09	08/18/21 15:06	1
Barium	ND		0.010	0.0016	mg/L		08/12/21 11:09	08/18/21 15:06	1
Beryllium	ND		0.0010	0.00018	mg/L		08/12/21 11:09	08/18/21 15:06	1
Boron	ND		0.080	0.039	mg/L		08/12/21 11:09	08/18/21 15:06	1
Cadmium	ND		0.0010	0.00022	mg/L		08/12/21 11:09	08/18/21 15:06	1
Calcium	ND		0.50	0.13	mg/L		08/12/21 11:09	08/18/21 15:06	1
Chromium	ND		0.0020	0.0015	mg/L		08/12/21 11:09	08/18/21 15:06	1
Cobalt	ND		0.00050	0.00013	mg/L		08/12/21 11:09	08/18/21 15:06	1
Lead	ND		0.0010	0.00013	mg/L		08/12/21 11:09	08/18/21 15:06	1
Lithium	ND		0.0050	0.0034	mg/L		08/12/21 11:09	08/18/21 15:06	1
Molybdenum	ND		0.0050	0.00061	mg/L		08/12/21 11:09	08/18/21 15:06	1

Eurofins TestAmerica, Pittsburgh

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

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

Lab Sample ID: MB 180-367811/1-A
Matrix: Water
Analysis Batch: 368509

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 367811

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.0050	0.0015	mg/L		08/12/21 11:09	08/18/21 15:06	1
Thallium	ND		0.0010	0.00015	mg/L		08/12/21 11:09	08/18/21 15:06	1

Lab Sample ID: LCS 180-367811/2-A
Matrix: Water
Analysis Batch: 368509

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 367811

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.250	0.248		mg/L		99	80 - 120
Arsenic	1.00	1.04		mg/L		104	80 - 120
Barium	1.00	1.03		mg/L		103	80 - 120
Beryllium	0.500	0.490		mg/L		98	80 - 120
Boron	1.25	1.19		mg/L		95	80 - 120
Cadmium	0.500	0.525		mg/L		105	80 - 120
Calcium	25.0	26.4		mg/L		106	80 - 120
Chromium	0.500	0.528		mg/L		106	80 - 120
Cobalt	0.500	0.518		mg/L		104	80 - 120
Lead	0.500	0.529		mg/L		106	80 - 120
Lithium	0.500	0.495		mg/L		99	80 - 120
Molybdenum	0.500	0.530		mg/L		106	80 - 120
Selenium	1.00	1.04		mg/L		104	80 - 120
Thallium	1.00	1.05		mg/L		105	80 - 120

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-367793/1-A
Matrix: Water
Analysis Batch: 368001

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 367793

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		08/12/21 10:20	08/13/21 12:13	1

Lab Sample ID: LCS 180-367793/2-A
Matrix: Water
Analysis Batch: 368001

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 367793

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00250	0.00241		mg/L		96	80 - 120

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-367783/1
Matrix: Water
Analysis Batch: 367783

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

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

Method: EPA 9040C - pH (Continued)

Lab Sample ID: 180-125560-1 DU
Matrix: Water
Analysis Batch: 367783

Client Sample ID: WAP-9S
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		0.5	2

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

Lab Sample ID: MB 180-367709/1
Matrix: Water
Analysis Batch: 367709

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			08/11/21 17:13	1

Lab Sample ID: LCS 180-367709/2
Matrix: Water
Analysis Batch: 367709

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	685	704		mg/L		103	80 - 120

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-522532/10-A
Matrix: Water
Analysis Batch: 526075

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 522532

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1245	U	0.204	0.205	1.00	0.355	pCi/L	08/13/21 10:51	09/09/21 17:22	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		40 - 110					08/13/21 10:51	09/09/21 17:22	1

Lab Sample ID: LCS 160-522532/1-A
Matrix: Water
Analysis Batch: 526071

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 522532

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.3	11.28		1.51	1.00	0.503	pCi/L	99	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	78.9		40 - 110						

Lab Sample ID: LCSD 160-522532/2-A
Matrix: Water
Analysis Batch: 526070

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 522532

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	11.3	10.99		1.24	1.00	0.328	pCi/L	97	75 - 125	0.11	1

Eurofins TestAmerica, Pittsburgh

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

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

Lab Sample ID: LCSD 160-522532/2-A
Matrix: Water
Analysis Batch: 526070

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 522532

Carrier	LCSD		Limits
	%Yield	Qualifier	
Ba Carrier	94.3		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-522541/10-A
Matrix: Water
Analysis Batch: 526070

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 522541

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1971	U	0.213	0.214	1.00	0.348	pCi/L	08/13/21 11:19	09/09/21 13:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		40 - 110					08/13/21 11:19	09/09/21 13:05	1
Y Carrier	89.7		40 - 110					08/13/21 11:19	09/09/21 13:05	1

Lab Sample ID: LCS 160-522541/1-A
Matrix: Water
Analysis Batch: 526070

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 522541

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	9.35	8.830		1.08	1.00	0.460	pCi/L	94	75 - 125
Carrier	%Yield	Qualifier	Limits						
Ba Carrier	78.9		40 - 110						
Y Carrier	90.5		40 - 110						

Lab Sample ID: LCSD 160-522541/2-A
Matrix: Water
Analysis Batch: 526070

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 522541

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	9.35	9.514		1.10	1.00	0.346	pCi/L	102	75 - 125	0.31	1
Carrier	%Yield	Qualifier	Limits								
Ba Carrier	94.3		40 - 110								
Y Carrier	92.3		40 - 110								

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

HPLC/IC

Analysis Batch: 368501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-125560-1	WAP-9S	Total/NA	Water	EPA 9056A	
180-125560-2	WAP-9I	Total/NA	Water	EPA 9056A	
180-125560-3	WAP-9D	Total/NA	Water	EPA 9056A	
MB 180-368501/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-368501/5	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-125560-3 MS	WAP-9D	Total/NA	Water	EPA 9056A	
180-125560-3 MSD	WAP-9D	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 367793

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-125560-1	WAP-9S	Total/NA	Water	7470A	
180-125560-2	WAP-9I	Total/NA	Water	7470A	
180-125560-3	WAP-9D	Total/NA	Water	7470A	
MB 180-367793/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-367793/2-A	Lab Control Sample	Total/NA	Water	7470A	

Prep Batch: 367811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-125560-1	WAP-9S	Total Recoverable	Water	3005A	
180-125560-2	WAP-9I	Total Recoverable	Water	3005A	
180-125560-3	WAP-9D	Total Recoverable	Water	3005A	
MB 180-367811/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-367811/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 368001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-125560-1	WAP-9S	Total/NA	Water	EPA 7470A	367793
180-125560-2	WAP-9I	Total/NA	Water	EPA 7470A	367793
180-125560-3	WAP-9D	Total/NA	Water	EPA 7470A	367793
MB 180-367793/1-A	Method Blank	Total/NA	Water	EPA 7470A	367793
LCS 180-367793/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	367793

Analysis Batch: 368509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-125560-1	WAP-9S	Total Recoverable	Water	EPA 6020A	367811
180-125560-2	WAP-9I	Total Recoverable	Water	EPA 6020A	367811
180-125560-3	WAP-9D	Total Recoverable	Water	EPA 6020A	367811
MB 180-367811/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	367811
LCS 180-367811/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	367811

General Chemistry

Analysis Batch: 367709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-125560-1	WAP-9S	Total/NA	Water	SM 2540C	
180-125560-2	WAP-9I	Total/NA	Water	SM 2540C	
180-125560-3	WAP-9D	Total/NA	Water	SM 2540C	
MB 180-367709/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-367709/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Eurofins TestAmerica, Pittsburgh

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-125560-1

General Chemistry

Analysis Batch: 367783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-125560-1	WAP-9S	Total/NA	Water	EPA 9040C	
180-125560-2	WAP-9I	Total/NA	Water	EPA 9040C	
180-125560-3	WAP-9D	Total/NA	Water	EPA 9040C	
LCS 180-367783/1	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-125560-1 DU	WAP-9S	Total/NA	Water	EPA 9040C	

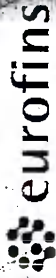
Rad

Prep Batch: 522532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-125560-1	WAP-9S	Total/NA	Water	PrecSep-21	
180-125560-2	WAP-9I	Total/NA	Water	PrecSep-21	
180-125560-3	WAP-9D	Total/NA	Water	PrecSep-21	
MB 160-522532/10-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-522532/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-522532/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 522541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-125560-1	WAP-9S	Total/NA	Water	PrecSep_0	
180-125560-2	WAP-9I	Total/NA	Water	PrecSep_0	
180-125560-3	WAP-9D	Total/NA	Water	PrecSep_0	
MB 160-522541/10-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-522541/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-522541/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	



Enviro
TestA

08/10 1030
555A
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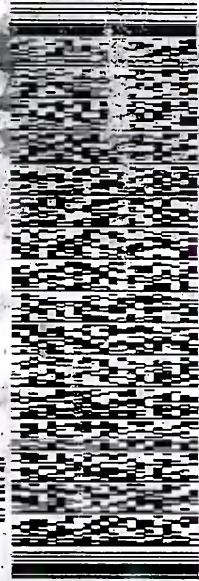
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MARK E. BREITING
AB BROWN GENERATING STATION
8511 BELL BORN RD
EVANSVILLE IN 47712
UNITED STATES US

SHIP'DRAT:INSTAY21
ACTMGT: 10ADD LB HAN
CAO3: 055P005Z0ARF00B

EUROFINS TESTAMERICA PITTSBURGH
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 152382907

(412) 963-7068
REF: S180-71059

RMA: ||| ||| |||



FedEx

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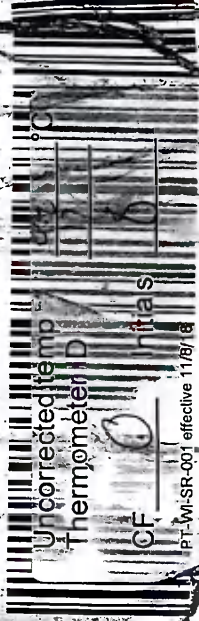
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NA AGCA

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PRIORITY OVERNIGHT

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PA-US

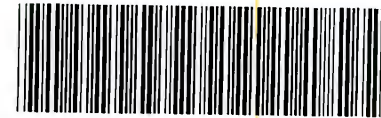


Uncorrected Temp
Thermometer ID

CF 1100 Intas

PT-WI-SR-001 effective 11/07/08

24 08/09 56DJ1/BRFS/FE4A



180-125560 Waybill

- 1
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- 13

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-125560-1

Login Number: 125560

List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Watson, Debbie

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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.	False	
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



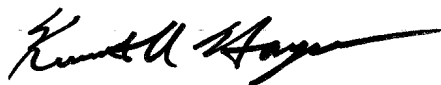
ANALYTICAL REPORT

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

Laboratory Job ID: 180-126888-1
Client Project/Site: West Ash Pond

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

Attn: Mark Miesfeldt



Authorized for release by:
10/21/2021 7:14:39 PM

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

LINKS

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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

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	4
Certification Summary	5
Sample Summary	7
Method Summary	8
Lab Chronicle	9
Client Sample Results	12
QC Sample Results	17
QC Association Summary	22
Chain of Custody	24
Receipt Checklists	25

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

Job ID: 180-126888-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

**Job Narrative
180-126888-1**

Comments

No additional comments.

Receipt

The samples were received on 9/10/2021 10:00 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 3.5° C.

GC Semi VOA

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

RAD

Methods 903.0, 9315: Radium 226 prep batch 160-527855

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. WAP-9D (180-126888-1), WAP-9I (180-126888-2), WAP-9S (180-126888-3), BLIND DUPLICATE (180-126888-4), (LCS 160-527855/1-A), (LCSD 160-527855/2-A) and (MB 160-527855/23-A)

Methods 904.0, 9320: Radium-228 Batch 527862

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. WAP-9D (180-126888-1), WAP-9I (180-126888-2), WAP-9S (180-126888-3), BLIND DUPLICATE (180-126888-4), (LCS 160-527862/1-A), (LCSD 160-527862/2-A) and (MB 160-527862/23-A)

Method PrecSep-21: Radium-226 Prep Batch 160-527855:

The following samples were prepared at a reduced aliquot due to Matrix: WAP-9I (180-126888-2). 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 160-527855:

Insufficient sample volume was available to perform a sample duplicate for the following samples: WAP-9D (180-126888-1), WAP-9S (180-126888-3) and BLIND DUPLICATE (180-126888-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

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: West Ash Pond

Job ID: 180-126888-1

Qualifiers

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
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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.
Project/Site: West Ash Pond

Job ID: 180-126888-1

Laboratory: Eurofins TestAmerica, 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	06-27-21 *
California	State	2891	04-30-22
Connecticut	State	PH-0688	09-30-22
Florida	NELAP	E871008	06-30-22
Georgia	State	PA 02-00416	04-30-22
Illinois	NELAP	004375	06-30-22
Kansas	NELAP	E-10350	01-31-22
Kentucky (UST)	State	162013	04-30-22
Kentucky (WW)	State	KY98043	12-31-21
Louisiana	NELAP	04041	06-30-22
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-21
Nevada	State	PA00164	08-31-22
New Hampshire	NELAP	2030	04-05-22
New Jersey	NELAP	PA005	06-30-22
New York	NELAP	11182	04-01-22
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-22
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	04-30-22
Rhode Island	State	LAO00362	12-31-21
South Carolina	State	89014	04-30-22
Texas	NELAP	T104704528	03-31-22
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	09-15-22
West Virginia DEP	State	142	01-31-22
Wisconsin	State	998027800	08-31-22

Laboratory: Eurofins TestAmerica, 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	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-21
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	06-30-21 *
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-22
HI - RadChem Recognition	State	n/a	06-30-22
Illinois	NELAP	004553	11-30-21
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-21
Kentucky (DW)	State	KY90125	01-01-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-21

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

Eurofins TestAmerica, Pittsburgh

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

Laboratory: Eurofins TestAmerica, 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	12-31-21
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	04-01-22
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	03-01-22
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	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-126888-1	WAP-9D	Water	09/09/21 14:10	09/10/21 10:00
180-126888-2	WAP-9I	Water	09/09/21 15:20	09/10/21 10:00
180-126888-3	WAP-9S	Water	09/09/21 17:30	09/10/21 10:00
180-126888-4	BLIND DUPLICATE	Water	09/09/21 00:01	09/10/21 10:00

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Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

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 TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

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

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

Client Sample ID: WAP-9D

Lab Sample ID: 180-126888-1

Date Collected: 09/09/21 14:10

Matrix: Water

Date Received: 09/10/21 10:00

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			372382	09/23/21 07:07	J1T	TAL PIT
Instrument ID: CHIC2100A										
Total/NA	Analysis	EPA 9056A		1			372546	09/24/21 00:14	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	372134	09/20/21 13:26	AMD	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			372523	09/22/21 08:51	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	372111	09/20/21 11:17	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			372463	09/22/21 11:49	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			372962	09/27/21 08:06	MTW	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	371390	09/14/21 14:31	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1000.14 mL	1.0 g	527855	09/21/21 11:45	BMP	TAL SL
Total/NA	Analysis	9315		1			532781	10/19/21 14:27	ANW	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1000.14 mL	1.0 g	527862	09/21/21 12:55	BMP	TAL SL
Total/NA	Analysis	9320		1			532799	10/18/21 14:02	ANW	TAL SL
Instrument ID: GFPCRED										
Total/NA	Analysis	Ra226_Ra228		1			533128	10/21/21 16:19	CAH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-9I

Lab Sample ID: 180-126888-2

Date Collected: 09/09/21 15:20

Matrix: Water

Date Received: 09/10/21 10:00

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			372382	09/23/21 06:18	J1T	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	372134	09/20/21 13:26	AMD	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			372523	09/22/21 08:55	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	372111	09/20/21 11:17	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			372463	09/22/21 11:52	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			372710	09/23/21 14:12	LWM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	371390	09/14/21 14:31	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			750.39 mL	1.0 g	527855	09/21/21 11:45	BMP	TAL SL
Total/NA	Analysis	9315		1			532781	10/19/21 14:27	ANW	TAL SL
Instrument ID: GFPCRED										

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

Client Sample ID: WAP-9I

Lab Sample ID: 180-126888-2

Date Collected: 09/09/21 15:20

Matrix: Water

Date Received: 09/10/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep_0			750.39 mL	1.0 g	527862	09/21/21 12:55	BMP	TAL SL
Total/NA	Analysis	9320		1			532483	10/18/21 12:50	FLC	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			533128	10/21/21 16:19	CAH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-9S

Lab Sample ID: 180-126888-3

Date Collected: 09/09/21 17:30

Matrix: Water

Date Received: 09/10/21 10:00

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			372382	09/23/21 05:46	J1T	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	372134	09/20/21 13:26	AMD	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			372523	09/22/21 08:59	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	372111	09/20/21 11:17	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			372463	09/22/21 11:53	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			372710	09/23/21 14:17	LWM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	371390	09/14/21 14:31	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1000.39 mL	1.0 g	527855	09/21/21 11:45	BMP	TAL SL
Total/NA	Analysis	9315		1			532779	10/19/21 14:30	MLK	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.39 mL	1.0 g	527862	09/21/21 12:55	BMP	TAL SL
Total/NA	Analysis	9320		1			532483	10/18/21 12:50	FLC	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			533128	10/21/21 16:19	CAH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: BLIND DUPLICATE

Lab Sample ID: 180-126888-4

Date Collected: 09/09/21 00:01

Matrix: Water

Date Received: 09/10/21 10:00

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			372382	09/23/21 06:02	J1T	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	372134	09/20/21 13:26	AMD	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			372523	09/22/21 09:02	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	372111	09/20/21 11:17	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			372463	09/22/21 11:54	RJR	TAL PIT
Instrument ID: HGY										

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

Client Sample ID: BLIND DUPLICATE

Lab Sample ID: 180-126888-4

Date Collected: 09/09/21 00:01

Matrix: Water

Date Received: 09/10/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9040C		1			372710	09/23/21 14:23	LWM	TAL PIT
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	371390	09/14/21 14:31	KMM	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			999.45 mL	1.0 g	527855	09/21/21 11:45	BMP	TAL SL
Total/NA	Analysis	9315		1			532779	10/19/21 14:32	MLK	TAL SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			999.45 mL	1.0 g	527862	09/21/21 12:55	BMP	TAL SL
Total/NA	Analysis	9320		1			532799	10/18/21 14:02	ANW	TAL SL
		Instrument ID: GFPCRED								
Total/NA	Analysis	Ra226_Ra228		1			533128	10/21/21 16:19	CAH	TAL SL
		Instrument ID: NOEQUIP								

Laboratory References:

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

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

Analyst References:

Lab: TAL PIT

Batch Type: Prep

AMD = Alysha Donlan

MM1 = Mary Beth Miller

Batch Type: Analysis

J1T = Jianwu Tang

JRB = James Burzio

KMM = Kendric Moore

LWM = Larry Matko

MTW = Michael Wesoloski

RJR = Ron Rosenbaum

RSK = Robert Kurtz

Lab: TAL SL

Batch Type: Prep

BMP = Bailey Pinette

Batch Type: Analysis

ANW = Amber Woods

CAH = Chris Hough

FLC = Fernando Cruz

MLK = Micha Korrinhizer

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

Client Sample ID: WAP-9D

Lab Sample ID: 180-126888-1

Date Collected: 09/09/21 14:10

Matrix: Water

Date Received: 09/10/21 10:00

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			09/24/21 00:14	1
Fluoride	0.14		0.10	0.026	mg/L			09/23/21 07:07	1
Sulfate	39		1.0	0.76	mg/L			09/23/21 07:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		09/20/21 13:26	09/22/21 08:51	1
Arsenic	0.0053		0.0010	0.00031	mg/L		09/20/21 13:26	09/22/21 08:51	1
Barium	0.18		0.010	0.0016	mg/L		09/20/21 13:26	09/22/21 08:51	1
Beryllium	ND		0.0010	0.00018	mg/L		09/20/21 13:26	09/22/21 08:51	1
Boron	0.052	J	0.080	0.039	mg/L		09/20/21 13:26	09/22/21 08:51	1
Cadmium	ND		0.0010	0.00022	mg/L		09/20/21 13:26	09/22/21 08:51	1
Calcium	42		0.50	0.13	mg/L		09/20/21 13:26	09/22/21 08:51	1
Chromium	ND		0.0020	0.0015	mg/L		09/20/21 13:26	09/22/21 08:51	1
Cobalt	0.00030	J	0.00050	0.00013	mg/L		09/20/21 13:26	09/22/21 08:51	1
Lead	0.00032	J	0.0010	0.00013	mg/L		09/20/21 13:26	09/22/21 08:51	1
Lithium	ND		0.0050	0.0034	mg/L		09/20/21 13:26	09/22/21 08:51	1
Molybdenum	0.0022	J	0.0050	0.00061	mg/L		09/20/21 13:26	09/22/21 08:51	1
Selenium	ND		0.0050	0.0015	mg/L		09/20/21 13:26	09/22/21 08:51	1
Thallium	ND		0.0010	0.00015	mg/L		09/20/21 13:26	09/22/21 08:51	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		09/20/21 11:17	09/22/21 11:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	210		10	10	mg/L			09/14/21 14:31	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1	0.1	SU			09/27/21 08:06	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.526		0.223	0.228	1.00	0.254	pCi/L	09/21/21 11:45	10/19/21 14:27	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.2		40 - 110					09/21/21 11:45	10/19/21 14:27	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.191	U	0.283	0.283	1.00	0.475	pCi/L	09/21/21 12:55	10/18/21 14:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.2		40 - 110					09/21/21 12:55	10/18/21 14:02	1
Y Carrier	81.9		40 - 110					09/21/21 12:55	10/18/21 14:02	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

Client Sample ID: WAP-9D

Lab Sample ID: 180-126888-1

Date Collected: 09/09/21 14:10

Matrix: Water

Date Received: 09/10/21 10:00

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	0.717		0.360	0.363	5.00	0.475	pCi/L		10/21/21 16:19	1

Client Sample ID: WAP-9I

Lab Sample ID: 180-126888-2

Date Collected: 09/09/21 15:20

Matrix: Water

Date Received: 09/10/21 10:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	22		1.0	0.71	mg/L			09/23/21 06:18	1
Fluoride	0.17		0.10	0.026	mg/L			09/23/21 06:18	1
Sulfate	31		1.0	0.76	mg/L			09/23/21 06:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		09/20/21 13:26	09/22/21 08:55	1
Arsenic	0.0047		0.0010	0.00031	mg/L		09/20/21 13:26	09/22/21 08:55	1
Barium	0.091		0.010	0.0016	mg/L		09/20/21 13:26	09/22/21 08:55	1
Beryllium	ND		0.0010	0.00018	mg/L		09/20/21 13:26	09/22/21 08:55	1
Boron	0.10		0.080	0.039	mg/L		09/20/21 13:26	09/22/21 08:55	1
Cadmium	ND		0.0010	0.00022	mg/L		09/20/21 13:26	09/22/21 08:55	1
Calcium	46		0.50	0.13	mg/L		09/20/21 13:26	09/22/21 08:55	1
Chromium	ND		0.0020	0.0015	mg/L		09/20/21 13:26	09/22/21 08:55	1
Cobalt	0.00033	J	0.00050	0.00013	mg/L		09/20/21 13:26	09/22/21 08:55	1
Lead	0.00028	J	0.0010	0.00013	mg/L		09/20/21 13:26	09/22/21 08:55	1
Lithium	0.0043	J	0.0050	0.0034	mg/L		09/20/21 13:26	09/22/21 08:55	1
Molybdenum	0.020		0.0050	0.00061	mg/L		09/20/21 13:26	09/22/21 08:55	1
Selenium	ND		0.0050	0.0015	mg/L		09/20/21 13:26	09/22/21 08:55	1
Thallium	ND		0.0010	0.00015	mg/L		09/20/21 13:26	09/22/21 08:55	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		09/20/21 11:17	09/22/21 11:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	230		10	10	mg/L			09/14/21 14:31	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.0	HF	0.1	0.1	SU			09/23/21 14:12	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.323		0.221	0.223	1.00	0.305	pCi/L	09/21/21 11:45	10/19/21 14:27	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.3		40 - 110					09/21/21 11:45	10/19/21 14:27	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

Client Sample ID: WAP-9I

Lab Sample ID: 180-126888-2

Date Collected: 09/09/21 15:20

Matrix: Water

Date Received: 09/10/21 10:00

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.417	U	0.393	0.395	1.00	0.636	pCi/L	09/21/21 12:55	10/18/21 12:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.3		40 - 110					09/21/21 12:55	10/18/21 12:50	1
Y Carrier	79.6		40 - 110					09/21/21 12:55	10/18/21 12:50	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	0.740		0.451	0.454	5.00	0.636	pCi/L		10/21/21 16:19	1

Client Sample ID: WAP-9S

Lab Sample ID: 180-126888-3

Date Collected: 09/09/21 17:30

Matrix: Water

Date Received: 09/10/21 10:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26		1.0	0.71	mg/L			09/23/21 05:46	1
Fluoride	0.94		0.10	0.026	mg/L			09/23/21 05:46	1
Sulfate	42		1.0	0.76	mg/L			09/23/21 05:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		09/20/21 13:26	09/22/21 08:59	1
Arsenic	0.00080	J	0.0010	0.00031	mg/L		09/20/21 13:26	09/22/21 08:59	1
Barium	0.087		0.010	0.0016	mg/L		09/20/21 13:26	09/22/21 08:59	1
Beryllium	ND		0.0010	0.00018	mg/L		09/20/21 13:26	09/22/21 08:59	1
Boron	1.2		0.080	0.039	mg/L		09/20/21 13:26	09/22/21 08:59	1
Cadmium	ND		0.0010	0.00022	mg/L		09/20/21 13:26	09/22/21 08:59	1
Calcium	74		0.50	0.13	mg/L		09/20/21 13:26	09/22/21 08:59	1
Chromium	ND		0.0020	0.0015	mg/L		09/20/21 13:26	09/22/21 08:59	1
Cobalt	0.00072		0.00050	0.00013	mg/L		09/20/21 13:26	09/22/21 08:59	1
Lead	0.00032	J	0.0010	0.00013	mg/L		09/20/21 13:26	09/22/21 08:59	1
Lithium	0.011		0.0050	0.0034	mg/L		09/20/21 13:26	09/22/21 08:59	1
Molybdenum	0.15		0.0050	0.00061	mg/L		09/20/21 13:26	09/22/21 08:59	1
Selenium	ND		0.0050	0.0015	mg/L		09/20/21 13:26	09/22/21 08:59	1
Thallium	ND		0.0010	0.00015	mg/L		09/20/21 13:26	09/22/21 08:59	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		09/20/21 11:17	09/22/21 11:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	340		10	10	mg/L			09/14/21 14:31	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1	0.1	SU			09/23/21 14:17	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

Client Sample ID: WAP-9S

Date Collected: 09/09/21 17:30

Date Received: 09/10/21 10:00

Lab Sample ID: 180-126888-3

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.291	U	0.205	0.206	1.00	0.298	pCi/L	09/21/21 11:45	10/19/21 14:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.7		40 - 110					09/21/21 11:45	10/19/21 14:30	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.192	U	0.283	0.284	1.00	0.475	pCi/L	09/21/21 12:55	10/18/21 12:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.7		40 - 110					09/21/21 12:55	10/18/21 12:50	1
Y Carrier	77.4		40 - 110					09/21/21 12:55	10/18/21 12:50	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	0.484		0.349	0.351	5.00	0.475	pCi/L		10/21/21 16:19	1

Client Sample ID: BLIND DUPLICATE

Date Collected: 09/09/21 00:01

Date Received: 09/10/21 10:00

Lab Sample ID: 180-126888-4

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23		1.0	0.71	mg/L			09/23/21 06:02	1
Fluoride	0.87		0.10	0.026	mg/L			09/23/21 06:02	1
Sulfate	40		1.0	0.76	mg/L			09/23/21 06:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		09/20/21 13:26	09/22/21 09:02	1
Arsenic	0.00094	J	0.0010	0.00031	mg/L		09/20/21 13:26	09/22/21 09:02	1
Barium	0.087		0.010	0.0016	mg/L		09/20/21 13:26	09/22/21 09:02	1
Beryllium	ND		0.0010	0.00018	mg/L		09/20/21 13:26	09/22/21 09:02	1
Boron	1.3		0.080	0.039	mg/L		09/20/21 13:26	09/22/21 09:02	1
Cadmium	ND		0.0010	0.00022	mg/L		09/20/21 13:26	09/22/21 09:02	1
Calcium	75		0.50	0.13	mg/L		09/20/21 13:26	09/22/21 09:02	1
Chromium	ND		0.0020	0.0015	mg/L		09/20/21 13:26	09/22/21 09:02	1
Cobalt	0.00086		0.00050	0.00013	mg/L		09/20/21 13:26	09/22/21 09:02	1
Lead	0.00039	J	0.0010	0.00013	mg/L		09/20/21 13:26	09/22/21 09:02	1
Lithium	0.012		0.0050	0.0034	mg/L		09/20/21 13:26	09/22/21 09:02	1
Molybdenum	0.15		0.0050	0.00061	mg/L		09/20/21 13:26	09/22/21 09:02	1
Selenium	ND		0.0050	0.0015	mg/L		09/20/21 13:26	09/22/21 09:02	1
Thallium	ND		0.0010	0.00015	mg/L		09/20/21 13:26	09/22/21 09:02	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

Client Sample ID: BLIND DUPLICATE

Lab Sample ID: 180-126888-4

Date Collected: 09/09/21 00:01

Matrix: Water

Date Received: 09/10/21 10:00

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		09/20/21 11:17	09/22/21 11:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	340		10	10	mg/L			09/14/21 14:31	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.0	HF	0.1	0.1	SU			09/23/21 14:23	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.232	U	0.173	0.174	1.00	0.248	pCi/L	09/21/21 11:45	10/19/21 14:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.6		40 - 110					09/21/21 11:45	10/19/21 14:32	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.517		0.299	0.302	1.00	0.443	pCi/L	09/21/21 12:55	10/18/21 14:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.6		40 - 110					09/21/21 12:55	10/18/21 14:02	1
Y Carrier	83.0		40 - 110					09/21/21 12:55	10/18/21 14:02	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	0.749		0.345	0.349	5.00	0.443	pCi/L		10/21/21 16:19	1

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-372382/42
Matrix: Water
Analysis Batch: 372382

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			09/23/21 00:51	1
Fluoride	ND		0.10	0.026	mg/L			09/23/21 00:51	1
Sulfate	ND		1.0	0.76	mg/L			09/23/21 00:51	1

Lab Sample ID: LCS 180-372382/41
Matrix: Water
Analysis Batch: 372382

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	47.9		mg/L		96	80 - 120
Fluoride	2.50	2.55		mg/L		102	80 - 120
Sulfate	50.0	48.4		mg/L		97	80 - 120

Lab Sample ID: MB 180-372546/30
Matrix: Water
Analysis Batch: 372546

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			09/23/21 22:03	1
Fluoride	ND		0.10	0.026	mg/L			09/23/21 22:03	1
Sulfate	ND		1.0	0.76	mg/L			09/23/21 22:03	1

Lab Sample ID: LCS 180-372546/29
Matrix: Water
Analysis Batch: 372546

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	48.2		mg/L		96	80 - 120
Fluoride	2.50	2.58		mg/L		103	80 - 120
Sulfate	50.0	47.9		mg/L		96	80 - 120

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

Lab Sample ID: MB 180-372134/1-A
Matrix: Water
Analysis Batch: 372523

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 372134

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		09/20/21 13:26	09/22/21 07:42	1
Arsenic	ND		0.0010	0.00031	mg/L		09/20/21 13:26	09/22/21 07:42	1
Barium	ND		0.010	0.0016	mg/L		09/20/21 13:26	09/22/21 07:42	1
Beryllium	ND		0.0010	0.00018	mg/L		09/20/21 13:26	09/22/21 07:42	1
Boron	ND		0.080	0.039	mg/L		09/20/21 13:26	09/22/21 07:42	1
Cadmium	ND		0.0010	0.00022	mg/L		09/20/21 13:26	09/22/21 07:42	1
Calcium	ND		0.50	0.13	mg/L		09/20/21 13:26	09/22/21 07:42	1
Chromium	ND		0.0020	0.0015	mg/L		09/20/21 13:26	09/22/21 07:42	1
Cobalt	ND		0.00050	0.00013	mg/L		09/20/21 13:26	09/22/21 07:42	1
Lead	ND		0.0010	0.00013	mg/L		09/20/21 13:26	09/22/21 07:42	1
Lithium	ND		0.0050	0.0034	mg/L		09/20/21 13:26	09/22/21 07:42	1
Molybdenum	ND		0.0050	0.00061	mg/L		09/20/21 13:26	09/22/21 07:42	1

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QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

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

Lab Sample ID: MB 180-372134/1-A
Matrix: Water
Analysis Batch: 372523

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 372134

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.0050	0.0015	mg/L		09/20/21 13:26	09/22/21 07:42	1
Thallium	ND		0.0010	0.00015	mg/L		09/20/21 13:26	09/22/21 07:42	1

Lab Sample ID: LCS 180-372134/2-A
Matrix: Water
Analysis Batch: 372523

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 372134

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.250	0.242		mg/L		97	80 - 120
Arsenic	1.00	1.05		mg/L		105	80 - 120
Barium	1.00	1.01		mg/L		101	80 - 120
Beryllium	0.500	0.521		mg/L		104	80 - 120
Boron	1.25	1.23		mg/L		99	80 - 120
Cadmium	0.500	0.511		mg/L		102	80 - 120
Calcium	25.0	28.8		mg/L		115	80 - 120
Chromium	0.500	0.521		mg/L		104	80 - 120
Cobalt	0.500	0.500		mg/L		100	80 - 120
Lead	0.500	0.513		mg/L		103	80 - 120
Lithium	0.500	0.493		mg/L		99	80 - 120
Molybdenum	0.500	0.512		mg/L		102	80 - 120
Selenium	1.00	1.00		mg/L		100	80 - 120
Thallium	1.00	1.03		mg/L		103	80 - 120

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-372111/1-A
Matrix: Water
Analysis Batch: 372463

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372111

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		09/20/21 11:17	09/22/21 11:46	1

Lab Sample ID: LCS 180-372111/2-A
Matrix: Water
Analysis Batch: 372463

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372111

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00250	0.00250		mg/L		100	80 - 120

Lab Sample ID: 180-126888-1 MS
Matrix: Water
Analysis Batch: 372463

Client Sample ID: WAP-9D
Prep Type: Total/NA
Prep Batch: 372111

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.00100	0.000968		mg/L		97	75 - 125

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

Method: EPA 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 180-126888-1 MSD
Matrix: Water
Analysis Batch: 372463

Client Sample ID: WAP-9D
Prep Type: Total/NA
Prep Batch: 372111

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.00100	0.000973		mg/L		97	75 - 125	1	20

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-372710/1
Matrix: Water
Analysis Batch: 372710

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 180-372962/1
Matrix: Water
Analysis Batch: 372962

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 180-371390/2
Matrix: Water
Analysis Batch: 371390

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			09/14/21 14:31	1

Lab Sample ID: LCS 180-371390/1
Matrix: Water
Analysis Batch: 371390

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	685	678		mg/L		99	80 - 120

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-527855/23-A
Matrix: Water
Analysis Batch: 532779

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 527855

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03405	U	0.148	0.148	1.00	0.278	pCi/L	09/21/21 11:45	10/19/21 14:32	1
Carrier	%Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					09/21/21 11:45	10/19/21 14:32	1

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QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

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

Lab Sample ID: LCS 160-527855/1-A
Matrix: Water
Analysis Batch: 532486

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 527855

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
									75	125	
Radium-226	11.3	11.06		1.35	1.00	0.317	pCi/L	98	75 - 125		
Carrier	%Yield	LCS Qualifier	Limits								
Ba Carrier	107		40 - 110								

Lab Sample ID: LCSD 160-527855/2-A
Matrix: Water
Analysis Batch: 532486

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 527855

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		RER	RER Limit
									75	125	0.19	1
Radium-226	11.3	10.56		1.34	1.00	0.370	pCi/L	93	75 - 125	0.19	1	
Carrier	%Yield	LCSD Qualifier	Limits									
Ba Carrier	94.3		40 - 110									

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-527862/23-A
Matrix: Water
Analysis Batch: 532483

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 527862

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared		Analyzed		Dil Fac
								09/21/21 12:55	10/18/21 14:48	10/18/21 14:48	10/18/21 14:48	1
Radium-228	0.4521	U	0.395	0.397	1.00	0.634	pCi/L	09/21/21 12:55	10/18/21 14:48	10/18/21 14:48	10/18/21 14:48	1
Carrier	%Yield	MB Qualifier	Limits									
Ba Carrier	98.2		40 - 110									
Y Carrier	71.8		40 - 110									

Lab Sample ID: LCS 160-527862/1-A
Matrix: Water
Analysis Batch: 532488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 527862

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
									75	125	
Radium-228	9.23	8.997		1.05	1.00	0.329	pCi/L	97	75 - 125		
Carrier	%Yield	LCS Qualifier	Limits								
Ba Carrier	107		40 - 110								
Y Carrier	81.5		40 - 110								

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

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

Lab Sample ID: LCSD 160-527862/2-A
Matrix: Water
Analysis Batch: 532488

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 527862

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	9.23	10.26		1.20	1.00	0.410	pCi/L	111	75 - 125	0.56	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	94.3		40 - 110
Y Carrier	80.4		40 - 110

- 1
- 2
- 3
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- 5
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- 7
- 8
- 9
- 10
- 11
- 12
- 13

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

HPLC/IC

Analysis Batch: 372382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-126888-1	WAP-9D	Total/NA	Water	EPA 9056A	
180-126888-2	WAP-9I	Total/NA	Water	EPA 9056A	
180-126888-3	WAP-9S	Total/NA	Water	EPA 9056A	
180-126888-4	BLIND DUPLICATE	Total/NA	Water	EPA 9056A	
MB 180-372382/42	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-372382/41	Lab Control Sample	Total/NA	Water	EPA 9056A	

Analysis Batch: 372546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-126888-1	WAP-9D	Total/NA	Water	EPA 9056A	
MB 180-372546/30	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-372546/29	Lab Control Sample	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 372111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-126888-1	WAP-9D	Total/NA	Water	7470A	
180-126888-2	WAP-9I	Total/NA	Water	7470A	
180-126888-3	WAP-9S	Total/NA	Water	7470A	
180-126888-4	BLIND DUPLICATE	Total/NA	Water	7470A	
MB 180-372111/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-372111/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-126888-1 MS	WAP-9D	Total/NA	Water	7470A	
180-126888-1 MSD	WAP-9D	Total/NA	Water	7470A	

Prep Batch: 372134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-126888-1	WAP-9D	Total Recoverable	Water	3005A	
180-126888-2	WAP-9I	Total Recoverable	Water	3005A	
180-126888-3	WAP-9S	Total Recoverable	Water	3005A	
180-126888-4	BLIND DUPLICATE	Total Recoverable	Water	3005A	
MB 180-372134/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-372134/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 372463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-126888-1	WAP-9D	Total/NA	Water	EPA 7470A	372111
180-126888-2	WAP-9I	Total/NA	Water	EPA 7470A	372111
180-126888-3	WAP-9S	Total/NA	Water	EPA 7470A	372111
180-126888-4	BLIND DUPLICATE	Total/NA	Water	EPA 7470A	372111
MB 180-372111/1-A	Method Blank	Total/NA	Water	EPA 7470A	372111
LCS 180-372111/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	372111
180-126888-1 MS	WAP-9D	Total/NA	Water	EPA 7470A	372111
180-126888-1 MSD	WAP-9D	Total/NA	Water	EPA 7470A	372111

Analysis Batch: 372523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-126888-1	WAP-9D	Total Recoverable	Water	EPA 6020A	372134
180-126888-2	WAP-9I	Total Recoverable	Water	EPA 6020A	372134
180-126888-3	WAP-9S	Total Recoverable	Water	EPA 6020A	372134

Eurofins TestAmerica, Pittsburgh

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: West Ash Pond

Job ID: 180-126888-1

Metals (Continued)

Analysis Batch: 372523 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-126888-4	BLIND DUPLICATE	Total Recoverable	Water	EPA 6020A	372134
MB 180-372134/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	372134
LCS 180-372134/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	372134

General Chemistry

Analysis Batch: 371390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-126888-1	WAP-9D	Total/NA	Water	SM 2540C	
180-126888-2	WAP-9I	Total/NA	Water	SM 2540C	
180-126888-3	WAP-9S	Total/NA	Water	SM 2540C	
180-126888-4	BLIND DUPLICATE	Total/NA	Water	SM 2540C	
MB 180-371390/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-371390/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 372710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-126888-2	WAP-9I	Total/NA	Water	EPA 9040C	
180-126888-3	WAP-9S	Total/NA	Water	EPA 9040C	
180-126888-4	BLIND DUPLICATE	Total/NA	Water	EPA 9040C	
LCS 180-372710/1	Lab Control Sample	Total/NA	Water	EPA 9040C	

Analysis Batch: 372962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-126888-1	WAP-9D	Total/NA	Water	EPA 9040C	
LCS 180-372962/1	Lab Control Sample	Total/NA	Water	EPA 9040C	

Rad

Prep Batch: 527855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-126888-1	WAP-9D	Total/NA	Water	PrecSep-21	
180-126888-2	WAP-9I	Total/NA	Water	PrecSep-21	
180-126888-3	WAP-9S	Total/NA	Water	PrecSep-21	
180-126888-4	BLIND DUPLICATE	Total/NA	Water	PrecSep-21	
MB 160-527855/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-527855/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-527855/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 527862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-126888-1	WAP-9D	Total/NA	Water	PrecSep_0	
180-126888-2	WAP-9I	Total/NA	Water	PrecSep_0	
180-126888-3	WAP-9S	Total/NA	Water	PrecSep_0	
180-126888-4	BLIND DUPLICATE	Total/NA	Water	PrecSep_0	
MB 160-527862/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-527862/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-527862/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Eurofins TestAmerica, Pittsburgh

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-126888-1

Login Number: 126888

List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Jodis, Matthew V

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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 <math><6\text{mm}</math> (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: 180-126888-1

Login Number: 126888

List Number: 2

Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis

List Creation: 09/13/21 01:54 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	



ANALYTICAL REPORT

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

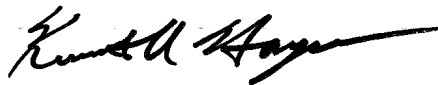
Laboratory Job ID: 180-127878-1

Client Project/Site: CCR Groundwater Monitoring

For:

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

Attn: Mark Miesfeldt



Authorized for release by:
10/15/2021 3:19:37 PM

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

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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

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	4
Certification Summary	5
Sample Summary	6
Method Summary	7
Lab Chronicle	8
Client Sample Results	13
QC Sample Results	22
QC Association Summary	28
Chain of Custody	32
Receipt Checklists	34



Case Narrative

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

Job ID: 180-127878-1

Job ID: 180-127878-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-127878-1

Comments

No additional comments.

Receipt

The samples were received on 9/30/2021 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 2.3° C, 2.6° C, 2.6° C and 3.4° C.

Receipt Exceptions

The following samples were listed on the Chain of Custody (COC); however, no samples were received: WAP-4D (180-127878-4), WAP-6S (180-127878-5), WAP-6I (180-127878-6) and WAP-6D (180-127878-7). The samples were received later on the same day.

GC Semi VOA

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

Metals

Method 6020A: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 180-374970 and analytical batch 180-375344 was outside control limits for thallium. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample(LCS) was within acceptance limits.

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.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-127878-1

Qualifiers

Metals

Qualifier	Qualifier Description
F2	MS/MSD RPD 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.

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.
 Project/Site: CCR Groundwater Monitoring

Job ID: 180-127878-1

Laboratory: Eurofins TestAmerica, 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	06-27-21 *
California	State	2891	04-30-22
Connecticut	State	PH-0688	09-30-22
Florida	NELAP	E871008	06-30-22
Georgia	State	PA 02-00416	04-30-22
Illinois	NELAP	004375	06-30-22
Kansas	NELAP	E-10350	01-31-22
Kentucky (UST)	State	162013	04-30-22
Kentucky (WW)	State	KY98043	12-31-21
Louisiana	NELAP	04041	06-30-22
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-21
Nevada	State	PA00164	08-31-22
New Hampshire	NELAP	2030	04-05-22
New Jersey	NELAP	PA005	06-30-22
New York	NELAP	11182	04-01-22
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-22
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	04-30-22
Rhode Island	State	LAO00362	12-31-21
South Carolina	State	89014	04-30-22
Texas	NELAP	T104704528	03-31-22
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	09-15-22
West Virginia DEP	State	142	01-31-22
Wisconsin	State	998027800	08-31-22

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



Sample Summary

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

Job ID: 180-127878-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-127878-1	WAP-5I	Water	09/28/21 09:50	09/30/21 10:30
180-127878-2	WAP-5D	Water	09/28/21 10:47	09/30/21 10:30
180-127878-3	WAP-4I	Water	09/28/21 11:40	09/30/21 10:30
180-127878-4	WAP-4D	Water	09/28/21 12:42	09/30/21 15:40
180-127878-5	WAP-6S	Water	09/29/21 10:00	09/30/21 15:40
180-127878-6	WAP-6I	Water	09/29/21 10:57	09/30/21 15:40
180-127878-7	WAP-6D	Water	09/29/21 11:35	09/30/21 15:40
180-127878-8	WAP-8S	Water	09/29/21 12:30	09/30/21 10:30
180-127878-9	WAP-8I	Water	09/29/21 13:20	09/30/21 10:30
180-127878-10	WAP-8D	Water	09/29/21 14:10	09/30/21 10:30
180-127878-11	DUP-1	Water	09/28/21 00:00	09/30/21 15:40
180-127878-12	FIELD BLANK	Water	09/28/21 11:30	09/30/21 15:40



Method Summary

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

Job ID: 180-127878-1

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
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
7470A	Preparation, Mercury	SW846	TAL PIT

Protocol References:

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.

Laboratory References:

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

Lab Chronicle

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

Job ID: 180-127878-1

Client Sample ID: WAP-5I

Lab Sample ID: 180-127878-1

Date Collected: 09/28/21 09:50

Matrix: Water

Date Received: 09/30/21 10:30

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			373753	10/02/21 13:07	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	374970	10/12/21 15:54	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			375344	10/14/21 12:03	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	374161	10/06/21 06:18	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			374321	10/06/21 16:26	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			373892	10/01/21 16:42	MJH	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374112	10/05/21 14:55	KMM	TAL PIT
Instrument ID: NOEQUIP										

Client Sample ID: WAP-5D

Lab Sample ID: 180-127878-2

Date Collected: 09/28/21 10:47

Matrix: Water

Date Received: 09/30/21 10:30

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			373753	10/02/21 12:50	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	374970	10/12/21 15:54	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			375344	10/14/21 12:06	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	374161	10/06/21 06:18	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			374321	10/06/21 16:27	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			373892	10/01/21 16:47	MJH	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374112	10/05/21 14:55	KMM	TAL PIT
Instrument ID: NOEQUIP										

Client Sample ID: WAP-4I

Lab Sample ID: 180-127878-3

Date Collected: 09/28/21 11:40

Matrix: Water

Date Received: 09/30/21 10:30

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			373596	10/01/21 11:32	J1T	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	374970	10/12/21 15:54	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			375344	10/14/21 12:10	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	374161	10/06/21 06:18	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			374321	10/06/21 16:28	RJR	TAL PIT
Instrument ID: HGY										

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

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

Job ID: 180-127878-1

Client Sample ID: WAP-4I
Date Collected: 09/28/21 11:40
Date Received: 09/30/21 10:30

Lab Sample ID: 180-127878-3
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 9040C		1			373866	10/04/21 08:23	MJH	TAL PIT
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374112	10/05/21 14:55	KMM	TAL PIT
Instrument ID: NOEQUIP										

Client Sample ID: WAP-4D
Date Collected: 09/28/21 12:42
Date Received: 09/30/21 15:40

Lab Sample ID: 180-127878-4
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		1			373753	10/02/21 11:29	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	374970	10/12/21 15:54	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			375344	10/14/21 12:35	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	374161	10/06/21 06:18	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			374321	10/06/21 16:34	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			373892	10/01/21 17:04	MJH	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374112	10/05/21 14:55	KMM	TAL PIT
Instrument ID: NOEQUIP										

Client Sample ID: WAP-6S
Date Collected: 09/29/21 10:00
Date Received: 09/30/21 15:40

Lab Sample ID: 180-127878-5
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			373596	10/01/21 12:22	J1T	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	374970	10/12/21 15:54	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			375344	10/14/21 12:39	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	374161	10/06/21 06:18	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			374321	10/06/21 16:35	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			373892	10/01/21 17:10	MJH	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374232	10/06/21 11:24	KMM	TAL PIT
Instrument ID: NOEQUIP										

Lab Chronicle

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

Job ID: 180-127878-1

Client Sample ID: WAP-6I
Date Collected: 09/29/21 10:57
Date Received: 09/30/21 15:40

Lab Sample ID: 180-127878-6
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			373596	10/01/21 12:55	J1T	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	374970	10/12/21 15:54	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			375344	10/14/21 12:50	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	374161	10/06/21 06:18	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			374321	10/06/21 16:36	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			373892	10/01/21 17:15	MJH	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374232	10/06/21 11:24	KMM	TAL PIT
Instrument ID: NOEQUIP										

Client Sample ID: WAP-6D
Date Collected: 09/29/21 11:35
Date Received: 09/30/21 15:40

Lab Sample ID: 180-127878-7
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			373596	10/01/21 13:11	J1T	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	374970	10/12/21 15:54	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			375344	10/14/21 12:53	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	374161	10/06/21 06:18	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			374321	10/06/21 16:37	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			373892	10/01/21 17:21	MJH	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374232	10/06/21 11:24	KMM	TAL PIT
Instrument ID: NOEQUIP										

Client Sample ID: WAP-8S
Date Collected: 09/29/21 12:30
Date Received: 09/30/21 10:30

Lab Sample ID: 180-127878-8
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			373753	10/02/21 13:23	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total/NA	Analysis	EPA 9056A		5			373753	10/02/21 13:39	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	374970	10/12/21 15:54	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			375344	10/14/21 12:57	RSK	TAL PIT
Instrument ID: A										

Lab Chronicle

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

Job ID: 180-127878-1

Client Sample ID: WAP-8S

Lab Sample ID: 180-127878-8

Date Collected: 09/29/21 12:30

Matrix: Water

Date Received: 09/30/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			25 mL	25 mL	374161	10/06/21 06:18	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			374321	10/06/21 16:38	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			373892	10/01/21 17:47	MJH	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374232	10/06/21 11:24	KMM	TAL PIT
Instrument ID: NOEQUIP										

Client Sample ID: WAP-8I

Lab Sample ID: 180-127878-9

Date Collected: 09/29/21 13:20

Matrix: Water

Date Received: 09/30/21 10:30

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			373596	10/01/21 13:27	J1T	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	374970	10/12/21 15:54	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			375344	10/14/21 13:08	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	374161	10/06/21 06:18	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			374321	10/06/21 16:39	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			373892	10/01/21 17:53	MJH	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374232	10/06/21 11:24	KMM	TAL PIT
Instrument ID: NOEQUIP										

Client Sample ID: WAP-8D

Lab Sample ID: 180-127878-10

Date Collected: 09/29/21 14:10

Matrix: Water

Date Received: 09/30/21 10:30

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			373753	10/02/21 12:18	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	374970	10/12/21 15:54	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			375344	10/14/21 13:19	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	374161	10/06/21 06:18	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			374321	10/06/21 16:40	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			373892	10/01/21 17:58	MJH	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374232	10/06/21 11:24	KMM	TAL PIT
Instrument ID: NOEQUIP										

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

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

Job ID: 180-127878-1

Client Sample ID: DUP-1

Lab Sample ID: 180-127878-11

Date Collected: 09/28/21 00:00

Matrix: Water

Date Received: 09/30/21 15:40

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			373753	10/02/21 12:34	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	374970	10/12/21 15:54	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			375344	10/14/21 11:59	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	374161	10/06/21 06:18	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			374321	10/06/21 16:41	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			373892	10/01/21 18:04	MJH	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374112	10/05/21 14:55	KMM	TAL PIT
Instrument ID: NOEQUIP										

Client Sample ID: FIELD BLANK

Lab Sample ID: 180-127878-12

Date Collected: 09/28/21 11:30

Matrix: Water

Date Received: 09/30/21 15:40

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			373753	10/02/21 11:12	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	375103	10/13/21 11:32	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			375344	10/14/21 17:05	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	374161	10/06/21 06:18	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			374321	10/06/21 16:42	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			373892	10/01/21 18:09	MJH	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374112	10/05/21 14:55	KMM	TAL PIT
Instrument ID: NOEQUIP										

Laboratory References:

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

Analyst References:

Lab: TAL PIT

Batch Type: Prep

MM1 = Mary Beth Miller

RJR = Ron Rosenbaum

Batch Type: Analysis

J1T = Jianwu Tang

JRB = James Burzio

KMM = Kendric Moore

MJH = Michael Houde

RJR = Ron Rosenbaum

RSK = Robert Kurtz

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-127878-1

Client Sample ID: WAP-51

Lab Sample ID: 180-127878-1

Date Collected: 09/28/21 09:50

Matrix: Water

Date Received: 09/30/21 10:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	22		1.0	0.71	mg/L			10/02/21 13:07	1
Fluoride	0.16		0.10	0.026	mg/L			10/02/21 13:07	1
Sulfate	43		1.0	0.76	mg/L			10/02/21 13:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:54	10/14/21 12:03	1
Arsenic	0.012		0.0010	0.00031	mg/L		10/12/21 15:54	10/14/21 12:03	1
Barium	0.12		0.010	0.0016	mg/L		10/12/21 15:54	10/14/21 12:03	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:54	10/14/21 12:03	1
Boron	0.060	J	0.080	0.039	mg/L		10/12/21 15:54	10/14/21 12:03	1
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:54	10/14/21 12:03	1
Calcium	39		0.50	0.13	mg/L		10/12/21 15:54	10/14/21 12:03	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:54	10/14/21 12:03	1
Cobalt	0.00042	J	0.00050	0.00013	mg/L		10/12/21 15:54	10/14/21 12:03	1
Lead	0.00020	J	0.0010	0.00013	mg/L		10/12/21 15:54	10/14/21 12:03	1
Lithium	0.0039	J	0.0050	0.0034	mg/L		10/12/21 15:54	10/14/21 12:03	1
Molybdenum	0.0016	J	0.0050	0.00061	mg/L		10/12/21 15:54	10/14/21 12:03	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:54	10/14/21 12:03	1
Thallium	ND		0.0010	0.00015	mg/L		10/12/21 15:54	10/14/21 12:03	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		10/06/21 06:18	10/06/21 16:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	220		10	10	mg/L			10/05/21 14:55	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1	0.1	SU			10/01/21 16:42	1

Client Sample ID: WAP-5D

Lab Sample ID: 180-127878-2

Date Collected: 09/28/21 10:47

Matrix: Water

Date Received: 09/30/21 10:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19		1.0	0.71	mg/L			10/02/21 12:50	1
Fluoride	0.15		0.10	0.026	mg/L			10/02/21 12:50	1
Sulfate	41		1.0	0.76	mg/L			10/02/21 12:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:54	10/14/21 12:06	1
Arsenic	0.0099		0.0010	0.00031	mg/L		10/12/21 15:54	10/14/21 12:06	1
Barium	0.20		0.010	0.0016	mg/L		10/12/21 15:54	10/14/21 12:06	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:54	10/14/21 12:06	1
Boron	0.041	J	0.080	0.039	mg/L		10/12/21 15:54	10/14/21 12:06	1
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:54	10/14/21 12:06	1
Calcium	46		0.50	0.13	mg/L		10/12/21 15:54	10/14/21 12:06	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:54	10/14/21 12:06	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-127878-1

Client Sample ID: WAP-5D

Lab Sample ID: 180-127878-2

Date Collected: 09/28/21 10:47

Matrix: Water

Date Received: 09/30/21 10:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND		0.00050	0.00013	mg/L		10/12/21 15:54	10/14/21 12:06	1
Lead	ND		0.0010	0.00013	mg/L		10/12/21 15:54	10/14/21 12:06	1
Lithium	ND		0.0050	0.0034	mg/L		10/12/21 15:54	10/14/21 12:06	1
Molybdenum	0.0038	J	0.0050	0.00061	mg/L		10/12/21 15:54	10/14/21 12:06	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:54	10/14/21 12:06	1
Thallium	ND		0.0010	0.00015	mg/L		10/12/21 15:54	10/14/21 12:06	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		10/06/21 06:18	10/06/21 16:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	230		10	10	mg/L			10/05/21 14:55	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1	0.1	SU			10/01/21 16:47	1

Client Sample ID: WAP-4I

Lab Sample ID: 180-127878-3

Date Collected: 09/28/21 11:40

Matrix: Water

Date Received: 09/30/21 10:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21		1.0	0.71	mg/L			10/01/21 11:32	1
Fluoride	0.15		0.10	0.026	mg/L			10/01/21 11:32	1
Sulfate	37		1.0	0.76	mg/L			10/01/21 11:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:54	10/14/21 12:10	1
Arsenic	0.0045		0.0010	0.00031	mg/L		10/12/21 15:54	10/14/21 12:10	1
Barium	0.17		0.010	0.0016	mg/L		10/12/21 15:54	10/14/21 12:10	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:54	10/14/21 12:10	1
Boron	0.070	J	0.080	0.039	mg/L		10/12/21 15:54	10/14/21 12:10	1
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:54	10/14/21 12:10	1
Calcium	38		0.50	0.13	mg/L		10/12/21 15:54	10/14/21 12:10	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:54	10/14/21 12:10	1
Cobalt	0.00047	J	0.00050	0.00013	mg/L		10/12/21 15:54	10/14/21 12:10	1
Lead	ND		0.0010	0.00013	mg/L		10/12/21 15:54	10/14/21 12:10	1
Lithium	0.0042	J	0.0050	0.0034	mg/L		10/12/21 15:54	10/14/21 12:10	1
Molybdenum	0.0020	J	0.0050	0.00061	mg/L		10/12/21 15:54	10/14/21 12:10	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:54	10/14/21 12:10	1
Thallium	ND	F2	0.0010	0.00015	mg/L		10/12/21 15:54	10/14/21 12:10	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		10/06/21 06:18	10/06/21 16:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	230		10	10	mg/L			10/05/21 14:55	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-127878-1

Client Sample ID: WAP-4I

Date Collected: 09/28/21 11:40

Date Received: 09/30/21 10:30

Lab Sample ID: 180-127878-3

Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1	0.1	SU			10/04/21 08:23	1

Client Sample ID: WAP-4D

Date Collected: 09/28/21 12:42

Date Received: 09/30/21 15:40

Lab Sample ID: 180-127878-4

Matrix: Water

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			10/02/21 11:29	1
Fluoride	0.14		0.10	0.026	mg/L			10/02/21 11:29	1
Sulfate	28		1.0	0.76	mg/L			10/02/21 11:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:54	10/14/21 12:35	1
Arsenic	0.0093		0.0010	0.00031	mg/L		10/12/21 15:54	10/14/21 12:35	1
Barium	0.28		0.010	0.0016	mg/L		10/12/21 15:54	10/14/21 12:35	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:54	10/14/21 12:35	1
Boron	0.11		0.080	0.039	mg/L		10/12/21 15:54	10/14/21 12:35	1
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:54	10/14/21 12:35	1
Calcium	46		0.50	0.13	mg/L		10/12/21 15:54	10/14/21 12:35	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:54	10/14/21 12:35	1
Cobalt	0.00023	J	0.00050	0.00013	mg/L		10/12/21 15:54	10/14/21 12:35	1
Lead	0.00015	J	0.0010	0.00013	mg/L		10/12/21 15:54	10/14/21 12:35	1
Lithium	ND		0.0050	0.0034	mg/L		10/12/21 15:54	10/14/21 12:35	1
Molybdenum	0.0052		0.0050	0.00061	mg/L		10/12/21 15:54	10/14/21 12:35	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:54	10/14/21 12:35	1
Thallium	0.00024	J	0.0010	0.00015	mg/L		10/12/21 15:54	10/14/21 12:35	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		10/06/21 06:18	10/06/21 16:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	230		10	10	mg/L			10/05/21 14:55	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1	0.1	SU			10/01/21 17:04	1

Client Sample ID: WAP-6S

Date Collected: 09/29/21 10:00

Date Received: 09/30/21 15:40

Lab Sample ID: 180-127878-5

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31		1.0	0.71	mg/L			10/01/21 12:22	1
Fluoride	0.47		0.10	0.026	mg/L			10/01/21 12:22	1
Sulfate	96		1.0	0.76	mg/L			10/01/21 12:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:54	10/14/21 12:39	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-127878-1

Client Sample ID: WAP-6S

Lab Sample ID: 180-127878-5

Date Collected: 09/29/21 10:00

Matrix: Water

Date Received: 09/30/21 15:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00057	J	0.0010	0.00031	mg/L		10/12/21 15:54	10/14/21 12:39	1
Barium	0.042		0.010	0.0016	mg/L		10/12/21 15:54	10/14/21 12:39	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:54	10/14/21 12:39	1
Boron	2.3		0.080	0.039	mg/L		10/12/21 15:54	10/14/21 12:39	1
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:54	10/14/21 12:39	1
Calcium	85		0.50	0.13	mg/L		10/12/21 15:54	10/14/21 12:39	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:54	10/14/21 12:39	1
Cobalt	0.00079		0.00050	0.00013	mg/L		10/12/21 15:54	10/14/21 12:39	1
Lead	0.00016	J	0.0010	0.00013	mg/L		10/12/21 15:54	10/14/21 12:39	1
Lithium	ND		0.0050	0.0034	mg/L		10/12/21 15:54	10/14/21 12:39	1
Molybdenum	0.16		0.0050	0.00061	mg/L		10/12/21 15:54	10/14/21 12:39	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:54	10/14/21 12:39	1
Thallium	ND		0.0010	0.00015	mg/L		10/12/21 15:54	10/14/21 12:39	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		10/06/21 06:18	10/06/21 16:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	460		10	10	mg/L			10/06/21 11:24	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1	0.1	SU			10/01/21 17:10	1

Client Sample ID: WAP-6I

Lab Sample ID: 180-127878-6

Date Collected: 09/29/21 10:57

Matrix: Water

Date Received: 09/30/21 15:40

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	22		1.0	0.71	mg/L			10/01/21 12:55	1
Fluoride	0.15		0.10	0.026	mg/L			10/01/21 12:55	1
Sulfate	38		1.0	0.76	mg/L			10/01/21 12:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:54	10/14/21 12:50	1
Arsenic	0.0033		0.0010	0.00031	mg/L		10/12/21 15:54	10/14/21 12:50	1
Barium	0.13		0.010	0.0016	mg/L		10/12/21 15:54	10/14/21 12:50	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:54	10/14/21 12:50	1
Boron	0.083		0.080	0.039	mg/L		10/12/21 15:54	10/14/21 12:50	1
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:54	10/14/21 12:50	1
Calcium	41		0.50	0.13	mg/L		10/12/21 15:54	10/14/21 12:50	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:54	10/14/21 12:50	1
Cobalt	0.00023	J	0.00050	0.00013	mg/L		10/12/21 15:54	10/14/21 12:50	1
Lead	ND		0.0010	0.00013	mg/L		10/12/21 15:54	10/14/21 12:50	1
Lithium	0.0036	J	0.0050	0.0034	mg/L		10/12/21 15:54	10/14/21 12:50	1
Molybdenum	0.0054		0.0050	0.00061	mg/L		10/12/21 15:54	10/14/21 12:50	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:54	10/14/21 12:50	1
Thallium	ND		0.0010	0.00015	mg/L		10/12/21 15:54	10/14/21 12:50	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-127878-1

Client Sample ID: WAP-6I

Date Collected: 09/29/21 10:57

Date Received: 09/30/21 15:40

Lab Sample ID: 180-127878-6

Matrix: Water

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		10/06/21 06:18	10/06/21 16:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	220		10	10	mg/L			10/06/21 11:24	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1	0.1	SU			10/01/21 17:15	1

Client Sample ID: WAP-6D

Date Collected: 09/29/21 11:35

Date Received: 09/30/21 15:40

Lab Sample ID: 180-127878-7

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21		1.0	0.71	mg/L			10/01/21 13:11	1
Fluoride	0.14		0.10	0.026	mg/L			10/01/21 13:11	1
Sulfate	38		1.0	0.76	mg/L			10/01/21 13:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:54	10/14/21 12:53	1
Arsenic	0.0054		0.0010	0.00031	mg/L		10/12/21 15:54	10/14/21 12:53	1
Barium	0.19		0.010	0.0016	mg/L		10/12/21 15:54	10/14/21 12:53	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:54	10/14/21 12:53	1
Boron	0.065	J	0.080	0.039	mg/L		10/12/21 15:54	10/14/21 12:53	1
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:54	10/14/21 12:53	1
Calcium	39		0.50	0.13	mg/L		10/12/21 15:54	10/14/21 12:53	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:54	10/14/21 12:53	1
Cobalt	0.00013	J	0.00050	0.00013	mg/L		10/12/21 15:54	10/14/21 12:53	1
Lead	ND		0.0010	0.00013	mg/L		10/12/21 15:54	10/14/21 12:53	1
Lithium	ND		0.0050	0.0034	mg/L		10/12/21 15:54	10/14/21 12:53	1
Molybdenum	0.0019	J	0.0050	0.00061	mg/L		10/12/21 15:54	10/14/21 12:53	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:54	10/14/21 12:53	1
Thallium	ND		0.0010	0.00015	mg/L		10/12/21 15:54	10/14/21 12:53	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		10/06/21 06:18	10/06/21 16:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	230		10	10	mg/L			10/06/21 11:24	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1	0.1	SU			10/01/21 17:21	1

Client Sample Results

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

Job ID: 180-127878-1

Client Sample ID: WAP-8S

Lab Sample ID: 180-127878-8

Date Collected: 09/29/21 12:30

Matrix: Water

Date Received: 09/30/21 10:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	74		1.0	0.71	mg/L			10/02/21 13:23	1
Fluoride	0.11		0.10	0.026	mg/L			10/02/21 13:23	1
Sulfate	270		5.0	3.8	mg/L			10/02/21 13:39	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:54	10/14/21 12:57	1
Arsenic	0.017		0.0010	0.00031	mg/L		10/12/21 15:54	10/14/21 12:57	1
Barium	0.25		0.010	0.0016	mg/L		10/12/21 15:54	10/14/21 12:57	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:54	10/14/21 12:57	1
Boron	2.7		0.080	0.039	mg/L		10/12/21 15:54	10/14/21 12:57	1
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:54	10/14/21 12:57	1
Calcium	140		0.50	0.13	mg/L		10/12/21 15:54	10/14/21 12:57	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:54	10/14/21 12:57	1
Cobalt	0.00066		0.00050	0.00013	mg/L		10/12/21 15:54	10/14/21 12:57	1
Lead	ND		0.0010	0.00013	mg/L		10/12/21 15:54	10/14/21 12:57	1
Lithium	0.039		0.0050	0.0034	mg/L		10/12/21 15:54	10/14/21 12:57	1
Molybdenum	0.27		0.0050	0.00061	mg/L		10/12/21 15:54	10/14/21 12:57	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:54	10/14/21 12:57	1
Thallium	ND		0.0010	0.00015	mg/L		10/12/21 15:54	10/14/21 12:57	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		10/06/21 06:18	10/06/21 16:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	900		10	10	mg/L			10/06/21 11:24	1
pH	8.0	HF	0.1	0.1	SU			10/01/21 17:47	1

Client Sample ID: WAP-8I

Lab Sample ID: 180-127878-9

Date Collected: 09/29/21 13:20

Matrix: Water

Date Received: 09/30/21 10:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	22		1.0	0.71	mg/L			10/01/21 13:27	1
Fluoride	0.22		0.10	0.026	mg/L			10/01/21 13:27	1
Sulfate	47		1.0	0.76	mg/L			10/01/21 13:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:54	10/14/21 13:08	1
Arsenic	0.0034		0.0010	0.00031	mg/L		10/12/21 15:54	10/14/21 13:08	1
Barium	0.050		0.010	0.0016	mg/L		10/12/21 15:54	10/14/21 13:08	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:54	10/14/21 13:08	1
Boron	0.083		0.080	0.039	mg/L		10/12/21 15:54	10/14/21 13:08	1
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:54	10/14/21 13:08	1
Calcium	44		0.50	0.13	mg/L		10/12/21 15:54	10/14/21 13:08	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:54	10/14/21 13:08	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-127878-1

Client Sample ID: WAP-8I

Lab Sample ID: 180-127878-9

Date Collected: 09/29/21 13:20

Matrix: Water

Date Received: 09/30/21 10:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00047	J	0.00050	0.00013	mg/L		10/12/21 15:54	10/14/21 13:08	1
Lead	ND		0.0010	0.00013	mg/L		10/12/21 15:54	10/14/21 13:08	1
Lithium	ND		0.0050	0.0034	mg/L		10/12/21 15:54	10/14/21 13:08	1
Molybdenum	0.033		0.0050	0.00061	mg/L		10/12/21 15:54	10/14/21 13:08	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:54	10/14/21 13:08	1
Thallium	ND		0.0010	0.00015	mg/L		10/12/21 15:54	10/14/21 13:08	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		10/06/21 06:18	10/06/21 16:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	240		10	10	mg/L			10/06/21 11:24	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1	0.1	SU			10/01/21 17:53	1

Client Sample ID: WAP-8D

Lab Sample ID: 180-127878-10

Date Collected: 09/29/21 14:10

Matrix: Water

Date Received: 09/30/21 10:30

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			10/02/21 12:18	1
Fluoride	0.18		0.10	0.026	mg/L			10/02/21 12:18	1
Sulfate	43		1.0	0.76	mg/L			10/02/21 12:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:54	10/14/21 13:19	1
Arsenic	0.0024		0.0010	0.00031	mg/L		10/12/21 15:54	10/14/21 13:19	1
Barium	0.061		0.010	0.0016	mg/L		10/12/21 15:54	10/14/21 13:19	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:54	10/14/21 13:19	1
Boron	0.058	J	0.080	0.039	mg/L		10/12/21 15:54	10/14/21 13:19	1
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:54	10/14/21 13:19	1
Calcium	39		0.50	0.13	mg/L		10/12/21 15:54	10/14/21 13:19	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:54	10/14/21 13:19	1
Cobalt	ND		0.00050	0.00013	mg/L		10/12/21 15:54	10/14/21 13:19	1
Lead	ND		0.0010	0.00013	mg/L		10/12/21 15:54	10/14/21 13:19	1
Lithium	ND		0.0050	0.0034	mg/L		10/12/21 15:54	10/14/21 13:19	1
Molybdenum	0.0013	J	0.0050	0.00061	mg/L		10/12/21 15:54	10/14/21 13:19	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:54	10/14/21 13:19	1
Thallium	ND		0.0010	0.00015	mg/L		10/12/21 15:54	10/14/21 13:19	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		10/06/21 06:18	10/06/21 16:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	230		10	10	mg/L			10/06/21 11:24	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-127878-1

Client Sample ID: WAP-8D

Lab Sample ID: 180-127878-10

Date Collected: 09/29/21 14:10

Matrix: Water

Date Received: 09/30/21 10:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1	0.1	SU			10/01/21 17:58	1

Client Sample ID: DUP-1

Lab Sample ID: 180-127878-11

Date Collected: 09/28/21 00:00

Matrix: Water

Date Received: 09/30/21 15:40

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19		1.0	0.71	mg/L			10/02/21 12:34	1
Fluoride	0.14		0.10	0.026	mg/L			10/02/21 12:34	1
Sulfate	26		1.0	0.76	mg/L			10/02/21 12:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:54	10/14/21 11:59	1
Arsenic	0.0092		0.0010	0.00031	mg/L		10/12/21 15:54	10/14/21 11:59	1
Barium	0.28		0.010	0.0016	mg/L		10/12/21 15:54	10/14/21 11:59	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:54	10/14/21 11:59	1
Boron	0.039	J	0.080	0.039	mg/L		10/12/21 15:54	10/14/21 11:59	1
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:54	10/14/21 11:59	1
Calcium	48		0.50	0.13	mg/L		10/12/21 15:54	10/14/21 11:59	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:54	10/14/21 11:59	1
Cobalt	ND		0.00050	0.00013	mg/L		10/12/21 15:54	10/14/21 11:59	1
Lead	ND		0.0010	0.00013	mg/L		10/12/21 15:54	10/14/21 11:59	1
Lithium	ND		0.0050	0.0034	mg/L		10/12/21 15:54	10/14/21 11:59	1
Molybdenum	0.0051		0.0050	0.00061	mg/L		10/12/21 15:54	10/14/21 11:59	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:54	10/14/21 11:59	1
Thallium	ND		0.0010	0.00015	mg/L		10/12/21 15:54	10/14/21 11:59	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		10/06/21 06:18	10/06/21 16:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	240		10	10	mg/L			10/05/21 14:55	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.0	HF	0.1	0.1	SU			10/01/21 18:04	1

Client Sample ID: FIELD BLANK

Lab Sample ID: 180-127878-12

Date Collected: 09/28/21 11:30

Matrix: Water

Date Received: 09/30/21 15:40

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			10/02/21 11:12	1
Fluoride	ND		0.10	0.026	mg/L			10/02/21 11:12	1
Sulfate	ND		1.0	0.76	mg/L			10/02/21 11:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/13/21 11:32	10/14/21 17:05	1

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Client Sample Results

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

Job ID: 180-127878-1

Client Sample ID: FIELD BLANK

Lab Sample ID: 180-127878-12

Date Collected: 09/28/21 11:30

Matrix: Water

Date Received: 09/30/21 15:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00031	mg/L		10/13/21 11:32	10/14/21 17:05	1
Barium	ND		0.010	0.0016	mg/L		10/13/21 11:32	10/14/21 17:05	1
Beryllium	ND		0.0010	0.00018	mg/L		10/13/21 11:32	10/14/21 17:05	1
Boron	0.057	J	0.080	0.039	mg/L		10/13/21 11:32	10/14/21 17:05	1
Cadmium	ND		0.0010	0.00022	mg/L		10/13/21 11:32	10/14/21 17:05	1
Calcium	ND		0.50	0.13	mg/L		10/13/21 11:32	10/14/21 17:05	1
Chromium	ND		0.0020	0.0015	mg/L		10/13/21 11:32	10/14/21 17:05	1
Cobalt	ND		0.00050	0.00013	mg/L		10/13/21 11:32	10/14/21 17:05	1
Lead	ND		0.0010	0.00013	mg/L		10/13/21 11:32	10/14/21 17:05	1
Lithium	ND		0.0050	0.0034	mg/L		10/13/21 11:32	10/14/21 17:05	1
Molybdenum	ND		0.0050	0.00061	mg/L		10/13/21 11:32	10/14/21 17:05	1
Selenium	ND		0.0050	0.0015	mg/L		10/13/21 11:32	10/14/21 17:05	1
Thallium	0.00020	J	0.0010	0.00015	mg/L		10/13/21 11:32	10/14/21 17:05	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		10/06/21 06:18	10/06/21 16:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			10/05/21 14:55	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.0	HF	0.1	0.1	SU			10/01/21 18:09	1

QC Sample Results

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

Job ID: 180-127878-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-373596/7
Matrix: Water
Analysis Batch: 373596

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			10/01/21 11:16	1
Fluoride	ND		0.10	0.026	mg/L			10/01/21 11:16	1
Sulfate	ND		1.0	0.76	mg/L			10/01/21 11:16	1

Lab Sample ID: LCS 180-373596/6
Matrix: Water
Analysis Batch: 373596

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	50.9		mg/L		102	80 - 120
Fluoride	2.50	2.41		mg/L		97	80 - 120
Sulfate	50.0	48.3		mg/L		97	80 - 120

Lab Sample ID: 180-127878-3 MS
Matrix: Water
Analysis Batch: 373596

Client Sample ID: WAP-4I
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	21		50.0	63.9		mg/L		86	80 - 120
Fluoride	0.15		2.50	2.34		mg/L		88	80 - 120
Sulfate	37		50.0	78.7		mg/L		83	80 - 120

Lab Sample ID: 180-127878-3 MSD
Matrix: Water
Analysis Batch: 373596

Client Sample ID: WAP-4I
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	21		50.0	65.7		mg/L		89	80 - 120	3	15
Fluoride	0.15		2.50	2.47		mg/L		93	80 - 120	6	15
Sulfate	37		50.0	80.2		mg/L		86	80 - 120	2	15

Lab Sample ID: MB 180-373753/7
Matrix: Water
Analysis Batch: 373753

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			10/02/21 09:20	1
Fluoride	ND		0.10	0.026	mg/L			10/02/21 09:20	1
Sulfate	ND		1.0	0.76	mg/L			10/02/21 09:20	1

Lab Sample ID: LCS 180-373753/6
Matrix: Water
Analysis Batch: 373753

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	52.8		mg/L		106	80 - 120
Fluoride	2.50	2.84		mg/L		114	80 - 120
Sulfate	50.0	53.6		mg/L		107	80 - 120

QC Sample Results

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

Job ID: 180-127878-1

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

Lab Sample ID: MB 180-374970/1-A
Matrix: Water
Analysis Batch: 375344

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 374970

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:54	10/14/21 11:12	1
Arsenic	ND		0.0010	0.00031	mg/L		10/12/21 15:54	10/14/21 11:12	1
Barium	ND		0.010	0.0016	mg/L		10/12/21 15:54	10/14/21 11:12	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:54	10/14/21 11:12	1
Boron	ND		0.080	0.039	mg/L		10/12/21 15:54	10/14/21 11:12	1
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:54	10/14/21 11:12	1
Calcium	ND		0.50	0.13	mg/L		10/12/21 15:54	10/14/21 11:12	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:54	10/14/21 11:12	1
Cobalt	ND		0.00050	0.00013	mg/L		10/12/21 15:54	10/14/21 11:12	1
Lead	ND		0.0010	0.00013	mg/L		10/12/21 15:54	10/14/21 11:12	1
Lithium	ND		0.0050	0.0034	mg/L		10/12/21 15:54	10/14/21 11:12	1
Molybdenum	ND		0.0050	0.00061	mg/L		10/12/21 15:54	10/14/21 11:12	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:54	10/14/21 11:12	1
Thallium	ND		0.0010	0.00015	mg/L		10/12/21 15:54	10/14/21 11:12	1

Lab Sample ID: LCS 180-374970/2-A
Matrix: Water
Analysis Batch: 375344

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 374970

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.250	0.239		mg/L		96	80 - 120
Arsenic	1.00	0.986		mg/L		99	80 - 120
Barium	1.00	0.965		mg/L		97	80 - 120
Beryllium	0.500	0.487		mg/L		97	80 - 120
Boron	1.25	1.21		mg/L		97	80 - 120
Cadmium	0.500	0.487		mg/L		97	80 - 120
Calcium	25.0	25.8		mg/L		103	80 - 120
Chromium	0.500	0.487		mg/L		97	80 - 120
Cobalt	0.500	0.486		mg/L		97	80 - 120
Lead	0.500	0.492		mg/L		98	80 - 120
Lithium	0.500	0.467		mg/L		93	80 - 120
Molybdenum	0.500	0.494		mg/L		99	80 - 120
Selenium	1.00	0.960		mg/L		96	80 - 120
Thallium	1.00	1.03		mg/L		103	80 - 120

Lab Sample ID: 180-127878-3 MS
Matrix: Water
Analysis Batch: 375344

Client Sample ID: WAP-4I
Prep Type: Total Recoverable
Prep Batch: 374970

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		0.250	0.235		mg/L		94	75 - 125
Arsenic	0.0045		1.00	0.842		mg/L		84	75 - 125
Barium	0.17		1.00	0.996		mg/L		83	75 - 125
Beryllium	ND		0.500	0.417		mg/L		83	75 - 125
Boron	0.070	J	1.25	1.24		mg/L		93	75 - 125
Cadmium	ND		0.500	0.406		mg/L		81	75 - 125
Calcium	38		25.0	65.2		mg/L		108	75 - 125
Chromium	ND		0.500	0.415		mg/L		83	75 - 125
Cobalt	0.00047	J	0.500	0.408		mg/L		81	75 - 125

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QC Sample Results

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

Job ID: 180-127878-1

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

Lab Sample ID: 180-127878-3 MS
Matrix: Water
Analysis Batch: 375344

Client Sample ID: WAP-4I
Prep Type: Total Recoverable
Prep Batch: 374970

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		0.500	0.412		mg/L		82	75 - 125
Lithium	0.0042	J	0.500	0.410		mg/L		81	75 - 125
Molybdenum	0.0020	J	0.500	0.419		mg/L		83	75 - 125
Selenium	ND		1.00	0.830		mg/L		83	75 - 125
Thallium	ND	F2	1.00	0.837		mg/L		84	75 - 125

Lab Sample ID: 180-127878-3 MSD
Matrix: Water
Analysis Batch: 375344

Client Sample ID: WAP-4I
Prep Type: Total Recoverable
Prep Batch: 374970

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND		0.250	0.236		mg/L		95	75 - 125	1	20
Arsenic	0.0045		1.00	1.02		mg/L		101	75 - 125	19	20
Barium	0.17		1.00	1.18		mg/L		101	75 - 125	17	20
Beryllium	ND		0.500	0.505		mg/L		101	75 - 125	19	20
Boron	0.070	J	1.25	1.32		mg/L		100	75 - 125	7	20
Cadmium	ND		0.500	0.498		mg/L		100	75 - 125	20	20
Calcium	38		25.0	65.8		mg/L		110	75 - 125	1	20
Chromium	ND		0.500	0.498		mg/L		100	75 - 125	18	20
Cobalt	0.00047	J	0.500	0.492		mg/L		98	75 - 125	19	20
Lead	ND		0.500	0.495		mg/L		99	75 - 125	18	20
Lithium	0.0042	J	0.500	0.485		mg/L		96	75 - 125	17	20
Molybdenum	0.0020	J	0.500	0.504		mg/L		100	75 - 125	18	20
Selenium	ND		1.00	0.987		mg/L		99	75 - 125	17	20
Thallium	ND	F2	1.00	1.03	F2	mg/L		103	75 - 125	21	20

Lab Sample ID: MB 180-375103/1-A
Matrix: Water
Analysis Batch: 375344

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 375103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/13/21 11:32	10/14/21 16:50	1
Arsenic	ND		0.0010	0.00031	mg/L		10/13/21 11:32	10/14/21 16:50	1
Barium	ND		0.010	0.0016	mg/L		10/13/21 11:32	10/14/21 16:50	1
Beryllium	ND		0.0010	0.00018	mg/L		10/13/21 11:32	10/14/21 16:50	1
Boron	ND		0.080	0.039	mg/L		10/13/21 11:32	10/14/21 16:50	1
Cadmium	ND		0.0010	0.00022	mg/L		10/13/21 11:32	10/14/21 16:50	1
Calcium	ND		0.50	0.13	mg/L		10/13/21 11:32	10/14/21 16:50	1
Chromium	ND		0.0020	0.0015	mg/L		10/13/21 11:32	10/14/21 16:50	1
Cobalt	ND		0.00050	0.00013	mg/L		10/13/21 11:32	10/14/21 16:50	1
Lead	ND		0.0010	0.00013	mg/L		10/13/21 11:32	10/14/21 16:50	1
Lithium	ND		0.0050	0.0034	mg/L		10/13/21 11:32	10/14/21 16:50	1
Molybdenum	ND		0.0050	0.00061	mg/L		10/13/21 11:32	10/14/21 16:50	1
Selenium	ND		0.0050	0.0015	mg/L		10/13/21 11:32	10/14/21 16:50	1
Thallium	ND		0.0010	0.00015	mg/L		10/13/21 11:32	10/14/21 16:50	1

QC Sample Results

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

Job ID: 180-127878-1

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

Lab Sample ID: LCS 180-375103/2-A
Matrix: Water
Analysis Batch: 375344

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 375103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.250	0.246		mg/L		98	80 - 120
Arsenic	1.00	0.999		mg/L		100	80 - 120
Barium	1.00	1.03		mg/L		103	80 - 120
Beryllium	0.500	0.517		mg/L		103	80 - 120
Boron	1.25	1.24		mg/L		99	80 - 120
Cadmium	0.500	0.514		mg/L		103	80 - 120
Calcium	25.0	25.1		mg/L		100	80 - 120
Chromium	0.500	0.522		mg/L		104	80 - 120
Cobalt	0.500	0.500		mg/L		100	80 - 120
Lead	0.500	0.517		mg/L		103	80 - 120
Lithium	0.500	0.503		mg/L		101	80 - 120
Molybdenum	0.500	0.516		mg/L		103	80 - 120
Selenium	1.00	1.04		mg/L		104	80 - 120
Thallium	1.00	1.07		mg/L		107	80 - 120

Lab Sample ID: 180-127878-12 MS
Matrix: Water
Analysis Batch: 375344

Client Sample ID: FIELD BLANK
Prep Type: Total Recoverable
Prep Batch: 375103

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	ND		0.250	0.243		mg/L		97	75 - 125
Arsenic	ND		1.00	0.969		mg/L		97	75 - 125
Barium	ND		1.00	1.01		mg/L		101	75 - 125
Beryllium	ND		0.500	0.507		mg/L		101	75 - 125
Boron	0.057	J	1.25	1.23		mg/L		94	75 - 125
Cadmium	ND		0.500	0.503		mg/L		101	75 - 125
Calcium	ND		25.0	25.4		mg/L		101	75 - 125
Chromium	ND		0.500	0.509		mg/L		102	75 - 125
Cobalt	ND		0.500	0.487		mg/L		97	75 - 125
Lead	ND		0.500	0.503		mg/L		101	75 - 125
Lithium	ND		0.500	0.499		mg/L		100	75 - 125
Molybdenum	ND		0.500	0.502		mg/L		100	75 - 125
Selenium	ND		1.00	1.00		mg/L		100	75 - 125
Thallium	0.00020	J	1.00	1.03		mg/L		103	75 - 125

Lab Sample ID: 180-127878-12 MSD
Matrix: Water
Analysis Batch: 375344

Client Sample ID: FIELD BLANK
Prep Type: Total Recoverable
Prep Batch: 375103

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	ND		0.250	0.244		mg/L		98	75 - 125	1	20
Arsenic	ND		1.00	1.01		mg/L		101	75 - 125	4	20
Barium	ND		1.00	1.04		mg/L		104	75 - 125	3	20
Beryllium	ND		0.500	0.517		mg/L		103	75 - 125	2	20
Boron	0.057	J	1.25	1.29		mg/L		99	75 - 125	5	20
Cadmium	ND		0.500	0.520		mg/L		104	75 - 125	3	20
Calcium	ND		25.0	25.8		mg/L		103	75 - 125	2	20
Chromium	ND		0.500	0.528		mg/L		106	75 - 125	4	20
Cobalt	ND		0.500	0.501		mg/L		100	75 - 125	3	20

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QC Sample Results

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

Job ID: 180-127878-1

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

Lab Sample ID: 180-127878-12 MSD
Matrix: Water
Analysis Batch: 375344

Client Sample ID: FIELD BLANK
Prep Type: Total Recoverable
Prep Batch: 375103

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		0.500	0.521		mg/L		104	75 - 125	3	20
Lithium	ND		0.500	0.509		mg/L		102	75 - 125	2	20
Molybdenum	ND		0.500	0.519		mg/L		104	75 - 125	3	20
Selenium	ND		1.00	1.05		mg/L		105	75 - 125	5	20
Thallium	0.00020	J	1.00	1.06		mg/L		106	75 - 125	4	20

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-374161/1-A
Matrix: Water
Analysis Batch: 374321

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374161

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		10/06/21 06:18	10/06/21 16:24	1

Lab Sample ID: LCS 180-374161/2-A
Matrix: Water
Analysis Batch: 374321

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 374161

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00250	0.00240		mg/L		96	80 - 120

Lab Sample ID: 180-127878-3 MS
Matrix: Water
Analysis Batch: 374321

Client Sample ID: WAP-4I
Prep Type: Total/NA
Prep Batch: 374161

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.00100	0.000913		mg/L		91	75 - 125

Lab Sample ID: 180-127878-3 MSD
Matrix: Water
Analysis Batch: 374321

Client Sample ID: WAP-4I
Prep Type: Total/NA
Prep Batch: 374161

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.00100	0.000904		mg/L		90	75 - 125	1	20

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-373866/1
Matrix: Water
Analysis Batch: 373866

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: 180-127878-3 DU
Matrix: Water
Analysis Batch: 373866

Client Sample ID: WAP-4I
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.8	HF	7.8	HF	SU		0.4	2

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QC Sample Results

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

Job ID: 180-127878-1

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-373892/28
 Matrix: Water
 Analysis Batch: 373892

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 180-374112/2
 Matrix: Water
 Analysis Batch: 374112

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			10/05/21 14:55	1

Lab Sample ID: LCS 180-374112/1
 Matrix: Water
 Analysis Batch: 374112

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	422	400		mg/L		95	80 - 120

Lab Sample ID: 180-127878-3 DU
 Matrix: Water
 Analysis Batch: 374112

Client Sample ID: WAP-4I
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	230		228		mg/L		2	10

Lab Sample ID: MB 180-374232/2
 Matrix: Water
 Analysis Batch: 374232

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			10/06/21 11:24	1

Lab Sample ID: LCS 180-374232/1
 Matrix: Water
 Analysis Batch: 374232

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	422	422		mg/L		100	80 - 120

Lab Sample ID: 180-127878-6 DU
 Matrix: Water
 Analysis Batch: 374232

Client Sample ID: WAP-6I
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	220		240		mg/L		8	10

QC Association Summary

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

Job ID: 180-127878-1

HPLC/IC

Analysis Batch: 373596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127878-3	WAP-4I	Total/NA	Water	EPA 9056A	
180-127878-5	WAP-6S	Total/NA	Water	EPA 9056A	
180-127878-6	WAP-6I	Total/NA	Water	EPA 9056A	
180-127878-7	WAP-6D	Total/NA	Water	EPA 9056A	
180-127878-9	WAP-8I	Total/NA	Water	EPA 9056A	
MB 180-373596/7	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-373596/6	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-127878-3 MS	WAP-4I	Total/NA	Water	EPA 9056A	
180-127878-3 MSD	WAP-4I	Total/NA	Water	EPA 9056A	

Analysis Batch: 373753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127878-1	WAP-5I	Total/NA	Water	EPA 9056A	
180-127878-2	WAP-5D	Total/NA	Water	EPA 9056A	
180-127878-4	WAP-4D	Total/NA	Water	EPA 9056A	
180-127878-8	WAP-8S	Total/NA	Water	EPA 9056A	
180-127878-8	WAP-8S	Total/NA	Water	EPA 9056A	
180-127878-10	WAP-8D	Total/NA	Water	EPA 9056A	
180-127878-11	DUP-1	Total/NA	Water	EPA 9056A	
180-127878-12	FIELD BLANK	Total/NA	Water	EPA 9056A	
MB 180-373753/7	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-373753/6	Lab Control Sample	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 374161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127878-1	WAP-5I	Total/NA	Water	7470A	
180-127878-2	WAP-5D	Total/NA	Water	7470A	
180-127878-3	WAP-4I	Total/NA	Water	7470A	
180-127878-4	WAP-4D	Total/NA	Water	7470A	
180-127878-5	WAP-6S	Total/NA	Water	7470A	
180-127878-6	WAP-6I	Total/NA	Water	7470A	
180-127878-7	WAP-6D	Total/NA	Water	7470A	
180-127878-8	WAP-8S	Total/NA	Water	7470A	
180-127878-9	WAP-8I	Total/NA	Water	7470A	
180-127878-10	WAP-8D	Total/NA	Water	7470A	
180-127878-11	DUP-1	Total/NA	Water	7470A	
180-127878-12	FIELD BLANK	Total/NA	Water	7470A	
MB 180-374161/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-374161/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-127878-3 MS	WAP-4I	Total/NA	Water	7470A	
180-127878-3 MSD	WAP-4I	Total/NA	Water	7470A	

Analysis Batch: 374321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127878-1	WAP-5I	Total/NA	Water	EPA 7470A	374161
180-127878-2	WAP-5D	Total/NA	Water	EPA 7470A	374161
180-127878-3	WAP-4I	Total/NA	Water	EPA 7470A	374161
180-127878-4	WAP-4D	Total/NA	Water	EPA 7470A	374161
180-127878-5	WAP-6S	Total/NA	Water	EPA 7470A	374161

Eurofins TestAmerica, Pittsburgh

QC Association Summary

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

Job ID: 180-127878-1

Metals (Continued)

Analysis Batch: 374321 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127878-6	WAP-6I	Total/NA	Water	EPA 7470A	374161
180-127878-7	WAP-6D	Total/NA	Water	EPA 7470A	374161
180-127878-8	WAP-8S	Total/NA	Water	EPA 7470A	374161
180-127878-9	WAP-8I	Total/NA	Water	EPA 7470A	374161
180-127878-10	WAP-8D	Total/NA	Water	EPA 7470A	374161
180-127878-11	DUP-1	Total/NA	Water	EPA 7470A	374161
180-127878-12	FIELD BLANK	Total/NA	Water	EPA 7470A	374161
MB 180-374161/1-A	Method Blank	Total/NA	Water	EPA 7470A	374161
LCS 180-374161/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	374161
180-127878-3 MS	WAP-4I	Total/NA	Water	EPA 7470A	374161
180-127878-3 MSD	WAP-4I	Total/NA	Water	EPA 7470A	374161

Prep Batch: 374970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127878-1	WAP-5I	Total Recoverable	Water	3005A	
180-127878-2	WAP-5D	Total Recoverable	Water	3005A	
180-127878-3	WAP-4I	Total Recoverable	Water	3005A	
180-127878-4	WAP-4D	Total Recoverable	Water	3005A	
180-127878-5	WAP-6S	Total Recoverable	Water	3005A	
180-127878-6	WAP-6I	Total Recoverable	Water	3005A	
180-127878-7	WAP-6D	Total Recoverable	Water	3005A	
180-127878-8	WAP-8S	Total Recoverable	Water	3005A	
180-127878-9	WAP-8I	Total Recoverable	Water	3005A	
180-127878-10	WAP-8D	Total Recoverable	Water	3005A	
180-127878-11	DUP-1	Total Recoverable	Water	3005A	
MB 180-374970/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-374970/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-127878-3 MS	WAP-4I	Total Recoverable	Water	3005A	
180-127878-3 MSD	WAP-4I	Total Recoverable	Water	3005A	

Prep Batch: 375103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127878-12	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-375103/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-375103/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-127878-12 MS	FIELD BLANK	Total Recoverable	Water	3005A	
180-127878-12 MSD	FIELD BLANK	Total Recoverable	Water	3005A	

Analysis Batch: 375344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127878-1	WAP-5I	Total Recoverable	Water	EPA 6020A	374970
180-127878-2	WAP-5D	Total Recoverable	Water	EPA 6020A	374970
180-127878-3	WAP-4I	Total Recoverable	Water	EPA 6020A	374970
180-127878-4	WAP-4D	Total Recoverable	Water	EPA 6020A	374970
180-127878-5	WAP-6S	Total Recoverable	Water	EPA 6020A	374970
180-127878-6	WAP-6I	Total Recoverable	Water	EPA 6020A	374970
180-127878-7	WAP-6D	Total Recoverable	Water	EPA 6020A	374970
180-127878-8	WAP-8S	Total Recoverable	Water	EPA 6020A	374970
180-127878-9	WAP-8I	Total Recoverable	Water	EPA 6020A	374970
180-127878-10	WAP-8D	Total Recoverable	Water	EPA 6020A	374970
180-127878-11	DUP-1	Total Recoverable	Water	EPA 6020A	374970

Eurofins TestAmerica, Pittsburgh

QC Association Summary

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

Job ID: 180-127878-1

Metals (Continued)

Analysis Batch: 375344 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127878-12	FIELD BLANK	Total Recoverable	Water	EPA 6020A	375103
MB 180-374970/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	374970
MB 180-375103/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	375103
LCS 180-374970/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	374970
LCS 180-375103/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	375103
180-127878-3 MS	WAP-4I	Total Recoverable	Water	EPA 6020A	374970
180-127878-3 MSD	WAP-4I	Total Recoverable	Water	EPA 6020A	374970
180-127878-12 MS	FIELD BLANK	Total Recoverable	Water	EPA 6020A	375103
180-127878-12 MSD	FIELD BLANK	Total Recoverable	Water	EPA 6020A	375103

General Chemistry

Analysis Batch: 373866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127878-3	WAP-4I	Total/NA	Water	EPA 9040C	
LCS 180-373866/1	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-127878-3 DU	WAP-4I	Total/NA	Water	EPA 9040C	

Analysis Batch: 373892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127878-1	WAP-5I	Total/NA	Water	EPA 9040C	
180-127878-2	WAP-5D	Total/NA	Water	EPA 9040C	
180-127878-4	WAP-4D	Total/NA	Water	EPA 9040C	
180-127878-5	WAP-6S	Total/NA	Water	EPA 9040C	
180-127878-6	WAP-6I	Total/NA	Water	EPA 9040C	
180-127878-7	WAP-6D	Total/NA	Water	EPA 9040C	
180-127878-8	WAP-8S	Total/NA	Water	EPA 9040C	
180-127878-9	WAP-8I	Total/NA	Water	EPA 9040C	
180-127878-10	WAP-8D	Total/NA	Water	EPA 9040C	
180-127878-11	DUP-1	Total/NA	Water	EPA 9040C	
180-127878-12	FIELD BLANK	Total/NA	Water	EPA 9040C	
LCS 180-373892/28	Lab Control Sample	Total/NA	Water	EPA 9040C	

Analysis Batch: 374112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127878-1	WAP-5I	Total/NA	Water	SM 2540C	
180-127878-2	WAP-5D	Total/NA	Water	SM 2540C	
180-127878-3	WAP-4I	Total/NA	Water	SM 2540C	
180-127878-4	WAP-4D	Total/NA	Water	SM 2540C	
180-127878-11	DUP-1	Total/NA	Water	SM 2540C	
180-127878-12	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 180-374112/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-374112/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-127878-3 DU	WAP-4I	Total/NA	Water	SM 2540C	

Analysis Batch: 374232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127878-5	WAP-6S	Total/NA	Water	SM 2540C	
180-127878-6	WAP-6I	Total/NA	Water	SM 2540C	
180-127878-7	WAP-6D	Total/NA	Water	SM 2540C	
180-127878-8	WAP-8S	Total/NA	Water	SM 2540C	

Eurofins TestAmerica, Pittsburgh

QC Association Summary

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

Job ID: 180-127878-1

General Chemistry (Continued)

Analysis Batch: 374232 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127878-9	WAP-8I	Total/NA	Water	SM 2540C	
180-127878-10	WAP-8D	Total/NA	Water	SM 2540C	
MB 180-374232/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-374232/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-127878-6 DU	WAP-6I	Total/NA	Water	SM 2540C	

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Chain of Custody Record

Client Information	Client Contact: Mark Breting	Phone: 317-473-1325	Lab PM: Hayes, Ken
	City: Indianapolis	E-Mail: Ken.Hayes@Eurofnset.com	Carrier Tracking No(s): 180-73122-14168.1
	Address: 7988 Centerpoint Drive Suite 100	State of Origin:	COC No: 180-73122-14168.1
	City: Indianapolis		Page: Page 1 of 1
	State, zip: IN, 46256		Job #:
	Phone #: 864-214-8750(Tel)		
	Email: mark.breting@atcassociates.com		
	Project Name: Vectren Cullley Station		
	Project #: 18016014		
	SSOW#:		

Due Date Requested:	Analysis Requested	Preservation Codes:
Due Date Requested:		
TAT Requested (days):		
City:		
Indianapolis		
State, zip:		
IN, 46256		
Phone #:		
864-214-8750(Tel)		
Project Name:		
Vectren Cullley Station		
Project #:		
18016014		
SSOW#:		

Sample Identification	Sample Date	Sample Time	Sample Type (Grab/Comp)	Matrix (Water, Solid, Other)	Field Filtered Sample (Yes or No)	Performance/MSD (Yes/No)	Preservation Code:
WAP-5I	9-28-21	950					
WAP-5D	1047						
WAP-4I	1140						
WAP-4D	1242						
WAP-6S	9-29-21	1000					
WAP-6I	1057						
WAP-6D	1135						
WAP-8S	1230						
WAP-8I	1320						
WAP-8D	1410						

Possible Hazard Identification		Deliverable Requested: I, II, III, IV, Other (specify)	
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Special Instructions/QC Requirements: <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Dispose By Lab <input type="checkbox"/> Archive For _____ Months Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Empty Kit Relinquished by:		Date:	Time:
Relinquished by: <i>Lee</i>		Date/Time: 9-29-21 1534	Company: ATC
Relinquished by:		Date/Time:	Company:
Relinquished by:		Date/Time: 9-30-21 9:30	Company: <i>ATC</i>
Relinquished by:		Date/Time: 10:30	Company:
Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	

Client Information	Client Contact: Mark Breting	Phone: 317-473-1325	Lab PM: Hayes, Ken
	City: Indianapolis	E-Mail: Ken.Hayes@Eurofnset.com	Carrier Tracking No(s): 180-73122-14168.1
	Address: 7988 Centerpoint Drive Suite 100	State of Origin:	COC No: 180-73122-14168.1
	City: Indianapolis		Page: Page 1 of 1
	State, zip: IN, 46256		Job #:
	Phone #: 864-214-8750(Tel)		
	Email: mark.breting@atcassociates.com		
	Project Name: Vectren Cullley Station		
	Project #: 18016014		
	SSOW#:		

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Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-127878-1

Login Number: 127878

List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Watson, Debbie

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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 <math><6\text{mm}</math> (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: 180-127878-1

Login Number: 127878

List Source: Eurofins TestAmerica, Pittsburgh

List Number: 2

Creator: Watson, Debbie

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

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

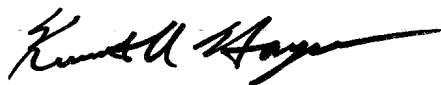
Laboratory Job ID: 180-127924-1

Client Project/Site: CCR Groundwater Monitoring

For:

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

Attn: Mark Miesfeldt



Authorized for release by:
10/19/2021 1:18:33 PM

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

LINKS

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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

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	4
Certification Summary	5
Sample Summary	6
Method Summary	7
Lab Chronicle	8
Client Sample Results	10
QC Sample Results	13
QC Association Summary	16
Chain of Custody	18
Receipt Checklists	19

Case Narrative

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

Job ID: 180-127924-1

Job ID: 180-127924-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-127924-1

Comments

No additional comments.

Receipt

The samples were received on 10/1/2021 10:15 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 2.5° C.

GC Semi VOA

Method 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 180-373879 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

Metals

Method 6020A: The continuing calibration blank (CCB) associated with batch 180-375723 recovered above the upper control limit for sodium. The samples associated with this CCB were 10X the CCB concentration for the affected analytes; therefore, the data have been reported. The associated samples are impacted: (CCB 180-375723/74), (CCB 180-375723/84), (180-127915-R-1-D ^20), (180-127915-R-1-E MS ^20), (180-127915-R-1-F MSD ^20), (180-127915-R-1-D PDS ^20) and (180-127915-R-1-D SD ^100).

Method 6020A: The following samples were diluted to bring the concentration of target analytes within the calibration range: WAP-7S (180-127924-2), WAP-7D (180-127924-3), (180-127915-R-1-D ^20), (180-127915-R-1-E MS ^20), (180-127915-R-1-F MSD ^20), (180-127915-R-1-D PDS ^20) and (180-127915-R-1-D SD ^100). Elevated reporting limits (RLs) are provided.

Method 6020A: The continuing calibration blank (CCB) associated with batch 180-375723 recovered above the upper control limit for nickel. The samples associated with this CCB were non-detects -or- less than the RL for the affected analytes; therefore, the data have been reported. The associated samples are impacted: (CCB 180-375723/93), (180-127915-R-1-D), (180-127915-R-1-E MS), (180-127915-R-1-F MSD), (180-127915-R-1-D PDS) and (180-127915-R-1-D SD ^5).

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.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-127924-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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.
 Project/Site: CCR Groundwater Monitoring

Job ID: 180-127924-1

Laboratory: Eurofins TestAmerica, 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	06-27-21 *
California	State	2891	04-30-22
Connecticut	State	PH-0688	09-30-22
Florida	NELAP	E871008	06-30-22
Georgia	State	PA 02-00416	04-30-22
Illinois	NELAP	004375	06-30-22
Kansas	NELAP	E-10350	01-31-22
Kentucky (UST)	State	162013	04-30-22
Kentucky (WW)	State	KY98043	12-31-21
Louisiana	NELAP	04041	06-30-22
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-21
Nevada	State	PA00164	08-31-22
New Hampshire	NELAP	2030	04-05-22
New Jersey	NELAP	PA005	06-30-22
New York	NELAP	11182	04-01-22
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-22
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	04-30-22
Rhode Island	State	LAO00362	12-31-21
South Carolina	State	89014	04-30-22
Texas	NELAP	T104704528	03-31-22
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	09-15-22
West Virginia DEP	State	142	01-31-22
Wisconsin	State	998027800	08-31-22

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



Sample Summary

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

Job ID: 180-127924-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-127924-1	WAP-3D	Water	09/30/21 08:05	10/01/21 10:15
180-127924-2	WAP-7S	Water	09/30/21 08:56	10/01/21 10:15
180-127924-3	WAP-7D	Water	09/30/21 09:30	10/01/21 10:15

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Method Summary

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

Job ID: 180-127924-1

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
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
7470A	Preparation, Mercury	SW846	TAL PIT

Protocol References:

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.

Laboratory References:

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

Lab Chronicle

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

Job ID: 180-127924-1

Client Sample ID: WAP-3D

Lab Sample ID: 180-127924-1

Date Collected: 09/30/21 08:05

Matrix: Water

Date Received: 10/01/21 10:15

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			373753	10/02/21 13:56	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total/NA	Analysis	EPA 9056A		5			373753	10/02/21 14:12	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	374972	10/12/21 15:57	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			375365	10/14/21 13:03	RSK	TAL PIT
Instrument ID: NEMO										
Total/NA	Prep	7470A			25 mL	25 mL	374160	10/06/21 06:17	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			374321	10/06/21 16:13	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			374096	10/05/21 14:11	MJH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374236	10/06/21 11:39	KMM	TAL PIT
Instrument ID: NOEQUIP										

Client Sample ID: WAP-7S

Lab Sample ID: 180-127924-2

Date Collected: 09/30/21 08:56

Matrix: Water

Date Received: 10/01/21 10:15

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			373879	10/04/21 11:24	JRB	TAL PIT
Instrument ID: INTEGRION										
Total/NA	Analysis	EPA 9056A		5			373879	10/04/21 11:42	JRB	TAL PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			50 mL	50 mL	374972	10/12/21 15:57	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		10			375723	10/16/21 09:05	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	374972	10/12/21 15:57	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			375365	10/14/21 13:08	RSK	TAL PIT
Instrument ID: NEMO										
Total/NA	Prep	7470A			25 mL	25 mL	374160	10/06/21 06:17	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			374321	10/06/21 16:14	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			374096	10/05/21 14:12	MJH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	374236	10/06/21 11:39	KMM	TAL PIT
Instrument ID: NOEQUIP										

Client Sample ID: WAP-7D

Lab Sample ID: 180-127924-3

Date Collected: 09/30/21 09:30

Matrix: Water

Date Received: 10/01/21 10:15

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			373753	10/02/21 14:28	JRB	TAL PIT
Instrument ID: CHIC2100A										

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

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

Job ID: 180-127924-1

Client Sample ID: WAP-7D

Lab Sample ID: 180-127924-3

Date Collected: 09/30/21 09:30

Matrix: Water

Date Received: 10/01/21 10:15

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			373753	10/02/21 14:45	JRB	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	374972	10/12/21 15:57	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		10			375723	10/16/21 09:09	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	374972	10/12/21 15:57	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			375365	10/14/21 13:20	RSK	TAL PIT
Instrument ID: NEMO										
Total/NA	Prep	7470A			25 mL	25 mL	374160	10/06/21 06:17	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			374321	10/06/21 16:15	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			374096	10/05/21 14:17	MJH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	374236	10/06/21 11:39	KMM	TAL PIT
Instrument ID: NOEQUIP										

Laboratory References:

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

Analyst References:

Lab: TAL PIT

Batch Type: Prep

MM1 = Mary Beth Miller

RJR = Ron Rosenbaum

Batch Type: Analysis

JRB = James Burzio

KMM = Kendric Moore

MJH = Michael Houde

RJR = Ron Rosenbaum

RSK = Robert Kurtz

Client Sample Results

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

Job ID: 180-127924-1

Client Sample ID: WAP-3D

Lab Sample ID: 180-127924-1

Date Collected: 09/30/21 08:05

Matrix: Water

Date Received: 10/01/21 10:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	42		1.0	0.71	mg/L			10/02/21 13:56	1
Fluoride	0.48		0.10	0.026	mg/L			10/02/21 13:56	1
Sulfate	190		5.0	3.8	mg/L			10/02/21 14:12	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:57	10/14/21 13:03	1
Arsenic	ND		0.0010	0.00031	mg/L		10/12/21 15:57	10/14/21 13:03	1
Barium	0.015		0.010	0.0016	mg/L		10/12/21 15:57	10/14/21 13:03	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:57	10/14/21 13:03	1
Boron	5.1		0.080	0.039	mg/L		10/12/21 15:57	10/14/21 13:03	1
Cadmium	0.00026	J	0.0010	0.00022	mg/L		10/12/21 15:57	10/14/21 13:03	1
Calcium	120		0.50	0.13	mg/L		10/12/21 15:57	10/14/21 13:03	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:57	10/14/21 13:03	1
Cobalt	0.00085		0.00050	0.00013	mg/L		10/12/21 15:57	10/14/21 13:03	1
Lead	0.00025	J	0.0010	0.00013	mg/L		10/12/21 15:57	10/14/21 13:03	1
Lithium	0.078		0.0050	0.0034	mg/L		10/12/21 15:57	10/14/21 13:03	1
Molybdenum	0.44		0.0050	0.00061	mg/L		10/12/21 15:57	10/14/21 13:03	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:57	10/14/21 13:03	1
Thallium	0.00026	J	0.0010	0.00015	mg/L		10/12/21 15:57	10/14/21 13:03	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		10/06/21 06:17	10/06/21 16:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	570		10	10	mg/L			10/06/21 11:39	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.0	HF	0.1	0.1	SU			10/05/21 14:11	1

Client Sample ID: WAP-7S

Lab Sample ID: 180-127924-2

Date Collected: 09/30/21 08:56

Matrix: Water

Date Received: 10/01/21 10:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	58		1.0	0.71	mg/L			10/04/21 11:24	1
Fluoride	0.42		0.10	0.026	mg/L			10/04/21 11:24	1
Sulfate	270	F1	5.0	3.8	mg/L			10/04/21 11:42	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00074	J	0.0020	0.00038	mg/L		10/12/21 15:57	10/14/21 13:08	1
Arsenic	0.0050		0.0010	0.00031	mg/L		10/12/21 15:57	10/14/21 13:08	1
Barium	0.036		0.010	0.0016	mg/L		10/12/21 15:57	10/14/21 13:08	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:57	10/14/21 13:08	1
Boron	9.8		0.80	0.39	mg/L		10/12/21 15:57	10/16/21 09:05	10
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:57	10/14/21 13:08	1
Calcium	140		0.50	0.13	mg/L		10/12/21 15:57	10/14/21 13:08	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:57	10/14/21 13:08	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-127924-1

Client Sample ID: WAP-7S

Date Collected: 09/30/21 08:56

Date Received: 10/01/21 10:15

Lab Sample ID: 180-127924-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00019	J	0.00050	0.00013	mg/L		10/12/21 15:57	10/14/21 13:08	1
Lead	ND		0.0010	0.00013	mg/L		10/12/21 15:57	10/14/21 13:08	1
Lithium	0.12		0.0050	0.0034	mg/L		10/12/21 15:57	10/14/21 13:08	1
Molybdenum	0.22		0.0050	0.00061	mg/L		10/12/21 15:57	10/14/21 13:08	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:57	10/14/21 13:08	1
Thallium	ND		0.0010	0.00015	mg/L		10/12/21 15:57	10/14/21 13:08	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		10/06/21 06:17	10/06/21 16:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	630		10	10	mg/L			10/06/21 11:39	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.4	HF	0.1	0.1	SU			10/05/21 14:12	1

Client Sample ID: WAP-7D

Date Collected: 09/30/21 09:30

Date Received: 10/01/21 10:15

Lab Sample ID: 180-127924-3

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	180		1.0	0.71	mg/L			10/02/21 14:28	1
Fluoride	0.50		0.10	0.026	mg/L			10/02/21 14:28	1
Sulfate	1000		10	7.6	mg/L			10/02/21 14:45	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:57	10/14/21 13:20	1
Arsenic	0.0010		0.0010	0.00031	mg/L		10/12/21 15:57	10/14/21 13:20	1
Barium	0.047		0.010	0.0016	mg/L		10/12/21 15:57	10/14/21 13:20	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:57	10/14/21 13:20	1
Boron	14		0.80	0.39	mg/L		10/12/21 15:57	10/16/21 09:09	10
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:57	10/14/21 13:20	1
Calcium	430		0.50	0.13	mg/L		10/12/21 15:57	10/14/21 13:20	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:57	10/14/21 13:20	1
Cobalt	0.0065		0.00050	0.00013	mg/L		10/12/21 15:57	10/14/21 13:20	1
Lead	0.00022	J	0.0010	0.00013	mg/L		10/12/21 15:57	10/14/21 13:20	1
Lithium	0.063		0.0050	0.0034	mg/L		10/12/21 15:57	10/14/21 13:20	1
Molybdenum	0.34		0.0050	0.00061	mg/L		10/12/21 15:57	10/14/21 13:20	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:57	10/14/21 13:20	1
Thallium	ND		0.0010	0.00015	mg/L		10/12/21 15:57	10/14/21 13:20	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		10/06/21 06:17	10/06/21 16:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2100		20	20	mg/L			10/06/21 11:39	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-127924-1

Client Sample ID: WAP-7D
Date Collected: 09/30/21 09:30
Date Received: 10/01/21 10:15

Lab Sample ID: 180-127924-3
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1	0.1	SU			10/05/21 14:17	1

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QC Sample Results

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

Job ID: 180-127924-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-373753/7
Matrix: Water
Analysis Batch: 373753

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			10/02/21 09:20	1
Fluoride	ND		0.10	0.026	mg/L			10/02/21 09:20	1
Sulfate	ND		1.0	0.76	mg/L			10/02/21 09:20	1

Lab Sample ID: LCS 180-373753/6
Matrix: Water
Analysis Batch: 373753

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	52.8		mg/L		106	80 - 120
Fluoride	2.50	2.84		mg/L		114	80 - 120
Sulfate	50.0	53.6		mg/L		107	80 - 120

Lab Sample ID: MB 180-373879/7
Matrix: Water
Analysis Batch: 373879

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			10/04/21 10:39	1
Fluoride	ND		0.10	0.026	mg/L			10/04/21 10:39	1
Sulfate	ND		1.0	0.76	mg/L			10/04/21 10:39	1

Lab Sample ID: LCS 180-373879/6
Matrix: Water
Analysis Batch: 373879

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	50.4		mg/L		101	80 - 120
Fluoride	2.50	2.46		mg/L		98	80 - 120
Sulfate	50.0	49.3		mg/L		99	80 - 120

Lab Sample ID: 180-127924-2 MS
Matrix: Water
Analysis Batch: 373879

Client Sample ID: WAP-7S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	59		250	298		mg/L		96	80 - 120
Fluoride	0.38	J	12.5	13.1		mg/L		102	80 - 120
Sulfate	270	F1	250	448	F1	mg/L		73	80 - 120

Lab Sample ID: 180-127924-2 MSD
Matrix: Water
Analysis Batch: 373879

Client Sample ID: WAP-7S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	59		250	286		mg/L		91	80 - 120	4	15
Fluoride	0.38	J	12.5	12.5		mg/L		97	80 - 120	5	15
Sulfate	270	F1	250	430	F1	mg/L		66	80 - 120	4	15

Eurofins TestAmerica, Pittsburgh

QC Sample Results

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

Job ID: 180-127924-1

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

Lab Sample ID: MB 180-374972/1-A
Matrix: Water
Analysis Batch: 375365

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 374972

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:57	10/14/21 12:40	1
Arsenic	ND		0.0010	0.00031	mg/L		10/12/21 15:57	10/14/21 12:40	1
Barium	ND		0.010	0.0016	mg/L		10/12/21 15:57	10/14/21 12:40	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:57	10/14/21 12:40	1
Boron	ND		0.080	0.039	mg/L		10/12/21 15:57	10/14/21 12:40	1
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:57	10/14/21 12:40	1
Calcium	ND		0.50	0.13	mg/L		10/12/21 15:57	10/14/21 12:40	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:57	10/14/21 12:40	1
Cobalt	ND		0.00050	0.00013	mg/L		10/12/21 15:57	10/14/21 12:40	1
Lead	ND		0.0010	0.00013	mg/L		10/12/21 15:57	10/14/21 12:40	1
Lithium	ND		0.0050	0.0034	mg/L		10/12/21 15:57	10/14/21 12:40	1
Molybdenum	ND		0.0050	0.00061	mg/L		10/12/21 15:57	10/14/21 12:40	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:57	10/14/21 12:40	1
Thallium	ND		0.0010	0.00015	mg/L		10/12/21 15:57	10/14/21 12:40	1

Lab Sample ID: LCS 180-374972/2-A
Matrix: Water
Analysis Batch: 375365

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 374972

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.250	0.231		mg/L		93	80 - 120
Arsenic	1.00	0.869		mg/L		87	80 - 120
Barium	1.00	0.832		mg/L		83	80 - 120
Beryllium	0.500	0.420		mg/L		84	80 - 120
Boron	1.25	1.20		mg/L		96	80 - 120
Cadmium	0.500	0.426		mg/L		85	80 - 120
Calcium	25.0	26.0		mg/L		104	80 - 120
Chromium	0.500	0.413		mg/L		83	80 - 120
Cobalt	0.500	0.406		mg/L		81	80 - 120
Lead	0.500	0.411		mg/L		82	80 - 120
Lithium	0.500	0.417		mg/L		83	80 - 120
Molybdenum	0.500	0.430		mg/L		86	80 - 120
Selenium	1.00	0.861		mg/L		86	80 - 120
Thallium	1.00	0.850		mg/L		85	80 - 120

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-374160/1-A
Matrix: Water
Analysis Batch: 374321

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374160

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		10/06/21 06:17	10/06/21 15:55	1

QC Sample Results

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

Job ID: 180-127924-1

Method: EPA 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 180-374160/2-A
 Matrix: Water
 Analysis Batch: 374321

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 374160
 %Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.00250	0.00227		mg/L		91	80 - 120

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-374096/1
 Matrix: Water
 Analysis Batch: 374096

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

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

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

Lab Sample ID: MB 180-374236/2
 Matrix: Water
 Analysis Batch: 374236

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			10/06/21 11:39	1

Lab Sample ID: LCS 180-374236/1
 Matrix: Water
 Analysis Batch: 374236

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Total Dissolved Solids	422	406		mg/L		96	80 - 120

QC Association Summary

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

Job ID: 180-127924-1

HPLC/IC

Analysis Batch: 373753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-1	WAP-3D	Total/NA	Water	EPA 9056A	
180-127924-1	WAP-3D	Total/NA	Water	EPA 9056A	
180-127924-3	WAP-7D	Total/NA	Water	EPA 9056A	
180-127924-3	WAP-7D	Total/NA	Water	EPA 9056A	
MB 180-373753/7	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-373753/6	Lab Control Sample	Total/NA	Water	EPA 9056A	

Analysis Batch: 373879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-2	WAP-7S	Total/NA	Water	EPA 9056A	
180-127924-2	WAP-7S	Total/NA	Water	EPA 9056A	
MB 180-373879/7	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-373879/6	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-127924-2 MS	WAP-7S	Total/NA	Water	EPA 9056A	
180-127924-2 MSD	WAP-7S	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 374160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-1	WAP-3D	Total/NA	Water	7470A	
180-127924-2	WAP-7S	Total/NA	Water	7470A	
180-127924-3	WAP-7D	Total/NA	Water	7470A	
MB 180-374160/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-374160/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 374321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-1	WAP-3D	Total/NA	Water	EPA 7470A	374160
180-127924-2	WAP-7S	Total/NA	Water	EPA 7470A	374160
180-127924-3	WAP-7D	Total/NA	Water	EPA 7470A	374160
MB 180-374160/1-A	Method Blank	Total/NA	Water	EPA 7470A	374160
LCS 180-374160/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	374160

Prep Batch: 374972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-1	WAP-3D	Total Recoverable	Water	3005A	
180-127924-2	WAP-7S	Total Recoverable	Water	3005A	
180-127924-3	WAP-7D	Total Recoverable	Water	3005A	
MB 180-374972/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-374972/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 375365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-1	WAP-3D	Total Recoverable	Water	EPA 6020A	374972
180-127924-2	WAP-7S	Total Recoverable	Water	EPA 6020A	374972
180-127924-3	WAP-7D	Total Recoverable	Water	EPA 6020A	374972
MB 180-374972/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	374972
LCS 180-374972/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	374972

QC Association Summary

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

Job ID: 180-127924-1

Metals

Analysis Batch: 375723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-2	WAP-7S	Total Recoverable	Water	EPA 6020A	374972
180-127924-3	WAP-7D	Total Recoverable	Water	EPA 6020A	374972

General Chemistry

Analysis Batch: 374096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-1	WAP-3D	Total/NA	Water	EPA 9040C	
180-127924-2	WAP-7S	Total/NA	Water	EPA 9040C	
180-127924-3	WAP-7D	Total/NA	Water	EPA 9040C	
LCS 180-374096/1	Lab Control Sample	Total/NA	Water	EPA 9040C	

Analysis Batch: 374236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-1	WAP-3D	Total/NA	Water	SM 2540C	
180-127924-2	WAP-7S	Total/NA	Water	SM 2540C	
180-127924-3	WAP-7D	Total/NA	Water	SM 2540C	
MB 180-374236/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-374236/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-127924-1

Login Number: 127924

List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Abernathy, Eric L

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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 <math><6\text{mm}</math> (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: 180-127924-1

Login Number: 127924

List Number: 2

Creator: Abernathy, Eric L

List Source: Eurofins TestAmerica, 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	

ANALYTICAL REPORT

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

Laboratory Job ID: 180-127924-1

Client Project/Site: CCR Groundwater Monitoring
Revision: 1

For:

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

Attn: Mark Miesfeldt



Authorized for release by:
11/4/2021 10:16:14 AM

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

LINKS

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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

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	5
Certification Summary	6
Sample Summary	8
Method Summary	9
Lab Chronicle	10
Client Sample Results	13
QC Sample Results	17
QC Association Summary	22
Chain of Custody	24
Receipt Checklists	25

Case Narrative

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

Job ID: 180-127924-1

Job ID: 180-127924-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-127924-1

Comments

No additional comments.

Receipt

The samples were received on 10/1/2021 10:15 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 2.5° C.

GC Semi VOA

Method 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 180-373879 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

Metals

Method 6020A: The continuing calibration blank (CCB) associated with batch 180-375723 recovered above the upper control limit for sodium. The samples associated with this CCB were 10X the CCB concentration for the affected analytes; therefore, the data have been reported. The associated samples are impacted: (CCB 180-375723/74), (CCB 180-375723/84), (180-127915-R-1-D ^20), (180-127915-R-1-E MS ^20), (180-127915-R-1-F MSD ^20), (180-127915-R-1-D PDS ^20) and (180-127915-R-1-D SD ^100).

Method 6020A: The following samples were diluted to bring the concentration of target analytes within the calibration range: WAP-7S (180-127924-2), WAP-7D (180-127924-3), (180-127915-R-1-D ^20), (180-127915-R-1-E MS ^20), (180-127915-R-1-F MSD ^20), (180-127915-R-1-D PDS ^20) and (180-127915-R-1-D SD ^100). Elevated reporting limits (RLs) are provided.

Method 6020A: The continuing calibration blank (CCB) associated with batch 180-375723 recovered above the upper control limit for nickel. The samples associated with this CCB were non-detects -or- less than the RL for the affected analytes; therefore, the data have been reported. The associated samples are impacted: (CCB 180-375723/93), (180-127915-R-1-D), (180-127915-R-1-E MS), (180-127915-R-1-F MSD), (180-127915-R-1-D PDS) and (180-127915-R-1-D SD ^5).

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

RAD

Methods 903.0, 9315: Radium 226 batch 530435

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: WAP-3D (180-127924-1), WAP-7S (180-127924-2), WAP-7D (180-127924-3), (LCS 160-530435/1-A), (LCSD 160-530435/2-A) and (MB 160-530435/22-A)

Methods 904.0, 9320: Radium 228 batch 530438

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.:WAP-3D (180-127924-1), WAP-7S (180-127924-2), WAP-7D (180-127924-3), (LCS 160-530438/1-A), (LCSD 160-530438/2-A) and (MB 160-530438/22-A)

Method PrecSep_0: Radium-228 Prep Batch 160-530438

The following samples were prepared at a reduced aliquot due to Matrix: WAP-3D (180-127924-1), WAP-7S (180-127924-2) and WAP-7D (180-127924-3). 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 160-530435

The following samples were prepared at a reduced aliquot due to Matrix: WAP-3D (180-127924-1), WAP-7S (180-127924-2) and WAP-7D (180-127924-3). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample

Case Narrative

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

Job ID: 180-127924-1

Job ID: 180-127924-1 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

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.

General Chemistry

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

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Definitions/Glossary

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

Job ID: 180-127924-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

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
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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.
 Project/Site: CCR Groundwater Monitoring

Job ID: 180-127924-1

Laboratory: Eurofins TestAmerica, 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	06-27-21 *
California	State	2891	04-30-22
Connecticut	State	PH-0688	09-30-22
Florida	NELAP	E871008	06-30-22
Georgia	State	PA 02-00416	10-26-21
Illinois	NELAP	004375	10-26-21
Kansas	NELAP	E-10350	10-26-21
Kentucky (UST)	State	162013	04-30-22
Kentucky (WW)	State	KY98043	12-31-21
Louisiana	NELAP	04041	06-30-22
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	10-26-21
Nevada	State	PA00164	08-31-22
New Hampshire	NELAP	2030	04-05-22
New Jersey	NELAP	PA005	10-26-21
New York	NELAP	11182	10-26-21
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-22
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	10-26-21
Rhode Island	State	LAO00362	12-31-21
South Carolina	State	89014	04-30-22
Texas	NELAP	T104704528	10-26-21
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	10-26-21
West Virginia DEP	State	142	10-26-21
Wisconsin	State	998027800	08-31-22

Laboratory: Eurofins TestAmerica, 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	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-21
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	06-30-21 *
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	10-31-21 *
Kentucky (DW)	State	KY90125	01-01-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-21

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

Eurofins TestAmerica, Pittsburgh

Accreditation/Certification Summary

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

Job ID: 180-127924-1

Laboratory: Eurofins TestAmerica, 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	12-31-21
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	04-01-22
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	03-01-22
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	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

Sample Summary

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

Job ID: 180-127924-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-127924-1	WAP-3D	Water	09/30/21 08:05	10/01/21 10:15
180-127924-2	WAP-7S	Water	09/30/21 08:56	10/01/21 10:15
180-127924-3	WAP-7D	Water	09/30/21 09:30	10/01/21 10:15

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Method Summary

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

Job ID: 180-127924-1

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 TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = Eurofins TestAmerica, 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: 180-127924-1

Client Sample ID: WAP-3D

Lab Sample ID: 180-127924-1

Date Collected: 09/30/21 08:05

Matrix: Water

Date Received: 10/01/21 10:15

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 Instrument ID: CHIC2100A		1			373753	10/02/21 13:56	JRB	TAL PIT
Total/NA	Analysis	EPA 9056A Instrument ID: CHIC2100A		5			373753	10/02/21 14:12	JRB	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	374972	10/12/21 15:57	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A Instrument ID: NEMO		1			375365	10/14/21 13:03	RSK	TAL PIT
Total/NA	Prep	7470A			25 mL	25 mL	374160	10/06/21 06:17	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A Instrument ID: HGY		1			374321	10/06/21 16:13	RJR	TAL PIT
Total/NA	Analysis	EPA 9040C Instrument ID: NOEQUIP		1			374096	10/05/21 14:11	MJH	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	374236	10/06/21 11:39	KMM	TAL PIT
Total/NA	Prep	PrecSep-21			749.46 mL	1.0 g	530435	10/06/21 12:58	BMP	TAL SL
Total/NA	Analysis	9315 Instrument ID: GFPCBLUE		1			534853	11/03/21 09:37	FLC	TAL SL
Total/NA	Prep	PrecSep_0			749.46 mL	1.0 g	530438	10/06/21 13:35	BMP	TAL SL
Total/NA	Analysis	9320 Instrument ID: GFPCPROTEAN		1			534290	10/29/21 17:03	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228 Instrument ID: NOEQUIP		1			535009	11/03/21 17:55	MLK	TAL SL

Client Sample ID: WAP-7S

Lab Sample ID: 180-127924-2

Date Collected: 09/30/21 08:56

Matrix: Water

Date Received: 10/01/21 10:15

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 Instrument ID: INTEGRION		1			373879	10/04/21 11:24	JRB	TAL PIT
Total/NA	Analysis	EPA 9056A Instrument ID: INTEGRION		5			373879	10/04/21 11:42	JRB	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	374972	10/12/21 15:57	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A Instrument ID: A		10			375723	10/16/21 09:05	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	374972	10/12/21 15:57	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A Instrument ID: NEMO		1			375365	10/14/21 13:08	RSK	TAL PIT
Total/NA	Prep	7470A			25 mL	25 mL	374160	10/06/21 06:17	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A Instrument ID: HGY		1			374321	10/06/21 16:14	RJR	TAL PIT
Total/NA	Analysis	EPA 9040C Instrument ID: NOEQUIP		1			374096	10/05/21 14:12	MJH	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	374236	10/06/21 11:39	KMM	TAL PIT

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

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

Job ID: 180-127924-1

Client Sample ID: WAP-7S

Lab Sample ID: 180-127924-2

Date Collected: 09/30/21 08:56

Matrix: Water

Date Received: 10/01/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			749.82 mL	1.0 g	530435	10/06/21 12:58	BMP	TAL SL
Total/NA	Analysis	9315		1			534853	11/03/21 09:37	FLC	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			749.82 mL	1.0 g	530438	10/06/21 13:35	BMP	TAL SL
Total/NA	Analysis	9320		1			534290	10/29/21 17:03	SCB	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			535009	11/03/21 17:55	MLK	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-7D

Lab Sample ID: 180-127924-3

Date Collected: 09/30/21 09:30

Matrix: Water

Date Received: 10/01/21 10:15

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			373753	10/02/21 14:28	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total/NA	Analysis	EPA 9056A		10			373753	10/02/21 14:45	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	374972	10/12/21 15:57	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		10			375723	10/16/21 09:09	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	374972	10/12/21 15:57	MM1	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			375365	10/14/21 13:20	RSK	TAL PIT
Instrument ID: NEMO										
Total/NA	Prep	7470A			25 mL	25 mL	374160	10/06/21 06:17	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			374321	10/06/21 16:15	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			374096	10/05/21 14:17	MJH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	374236	10/06/21 11:39	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			750.50 mL	1.0 g	530435	10/06/21 12:58	BMP	TAL SL
Total/NA	Analysis	9315		1			534853	11/03/21 09:37	FLC	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			750.50 mL	1.0 g	530438	10/06/21 13:35	BMP	TAL SL
Total/NA	Analysis	9320		1			534290	10/29/21 17:03	SCB	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			535009	11/03/21 17:55	MLK	TAL SL
Instrument ID: NOEQUIP										

Laboratory References:

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

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

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

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

Job ID: 180-127924-1

Analyst References:

Lab: TAL PIT

Batch Type: Prep

MM1 = Mary Beth Miller

RJR = Ron Rosenbaum

Batch Type: Analysis

JRB = James Burzio

KMM = Kendric Moore

MJH = Michael Houde

RJR = Ron Rosenbaum

RSK = Robert Kurtz

Lab: TAL SL

Batch Type: Prep

BMP = Bailey Pinette

Batch Type: Analysis

FLC = Fernando Cruz

MLK = Micha Korrinhizer

SCB = Sarah Bernsen

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Client Sample Results

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

Job ID: 180-127924-1

Client Sample ID: WAP-3D

Lab Sample ID: 180-127924-1

Date Collected: 09/30/21 08:05

Matrix: Water

Date Received: 10/01/21 10:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	42		1.0	0.71	mg/L			10/02/21 13:56	1
Fluoride	0.48		0.10	0.026	mg/L			10/02/21 13:56	1
Sulfate	190		5.0	3.8	mg/L			10/02/21 14:12	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:57	10/14/21 13:03	1
Arsenic	ND		0.0010	0.00031	mg/L		10/12/21 15:57	10/14/21 13:03	1
Barium	0.015		0.010	0.0016	mg/L		10/12/21 15:57	10/14/21 13:03	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:57	10/14/21 13:03	1
Boron	5.1		0.080	0.039	mg/L		10/12/21 15:57	10/14/21 13:03	1
Cadmium	0.00026	J	0.0010	0.00022	mg/L		10/12/21 15:57	10/14/21 13:03	1
Calcium	120		0.50	0.13	mg/L		10/12/21 15:57	10/14/21 13:03	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:57	10/14/21 13:03	1
Cobalt	0.00085		0.00050	0.00013	mg/L		10/12/21 15:57	10/14/21 13:03	1
Lead	0.00025	J	0.0010	0.00013	mg/L		10/12/21 15:57	10/14/21 13:03	1
Lithium	0.078		0.0050	0.0034	mg/L		10/12/21 15:57	10/14/21 13:03	1
Molybdenum	0.44		0.0050	0.00061	mg/L		10/12/21 15:57	10/14/21 13:03	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:57	10/14/21 13:03	1
Thallium	0.00026	J	0.0010	0.00015	mg/L		10/12/21 15:57	10/14/21 13:03	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		10/06/21 06:17	10/06/21 16:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	570		10	10	mg/L			10/06/21 11:39	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.0	HF	0.1	0.1	SU			10/05/21 14:11	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.213	U	0.153	0.154	1.00	0.222	pCi/L	10/06/21 12:58	11/03/21 09:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.0		40 - 110					10/06/21 12:58	11/03/21 09:37	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.557	U	0.430	0.433	1.00	0.680	pCi/L	10/06/21 13:35	10/29/21 17:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.0		40 - 110					10/06/21 13:35	10/29/21 17:03	1
Y Carrier	74.0		40 - 110					10/06/21 13:35	10/29/21 17:03	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-127924-1

Client Sample ID: WAP-3D

Lab Sample ID: 180-127924-1

Date Collected: 09/30/21 08:05

Matrix: Water

Date Received: 10/01/21 10:15

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	0.770		0.456	0.460	5.00	0.680	pCi/L		11/03/21 17:55	1

Client Sample ID: WAP-7S

Lab Sample ID: 180-127924-2

Date Collected: 09/30/21 08:56

Matrix: Water

Date Received: 10/01/21 10:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	58		1.0	0.71	mg/L			10/04/21 11:24	1
Fluoride	0.42		0.10	0.026	mg/L			10/04/21 11:24	1
Sulfate	270	F1	5.0	3.8	mg/L			10/04/21 11:42	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00074	J	0.0020	0.00038	mg/L		10/12/21 15:57	10/14/21 13:08	1
Arsenic	0.0050		0.0010	0.00031	mg/L		10/12/21 15:57	10/14/21 13:08	1
Barium	0.036		0.010	0.0016	mg/L		10/12/21 15:57	10/14/21 13:08	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:57	10/14/21 13:08	1
Boron	9.8		0.80	0.39	mg/L		10/12/21 15:57	10/16/21 09:05	10
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:57	10/14/21 13:08	1
Calcium	140		0.50	0.13	mg/L		10/12/21 15:57	10/14/21 13:08	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:57	10/14/21 13:08	1
Cobalt	0.00019	J	0.00050	0.00013	mg/L		10/12/21 15:57	10/14/21 13:08	1
Lead	ND		0.0010	0.00013	mg/L		10/12/21 15:57	10/14/21 13:08	1
Lithium	0.12		0.0050	0.0034	mg/L		10/12/21 15:57	10/14/21 13:08	1
Molybdenum	0.22		0.0050	0.00061	mg/L		10/12/21 15:57	10/14/21 13:08	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:57	10/14/21 13:08	1
Thallium	ND		0.0010	0.00015	mg/L		10/12/21 15:57	10/14/21 13:08	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		10/06/21 06:17	10/06/21 16:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	630		10	10	mg/L			10/06/21 11:39	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.4	HF	0.1	0.1	SU			10/05/21 14:12	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.211	U	0.156	0.157	1.00	0.231	pCi/L	10/06/21 12:58	11/03/21 09:37	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.9		40 - 110	10/06/21 12:58	11/03/21 09:37	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-127924-1

Client Sample ID: WAP-7S

Date Collected: 09/30/21 08:56

Date Received: 10/01/21 10:15

Lab Sample ID: 180-127924-2

Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.304	U	0.387	0.388	1.00	0.642	pCi/L	10/06/21 13:35	10/29/21 17:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.9		40 - 110					10/06/21 13:35	10/29/21 17:03	1
Y Carrier	75.9		40 - 110					10/06/21 13:35	10/29/21 17:03	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	0.515	U	0.417	0.419	5.00	0.642	pCi/L		11/03/21 17:55	1

Client Sample ID: WAP-7D

Date Collected: 09/30/21 09:30

Date Received: 10/01/21 10:15

Lab Sample ID: 180-127924-3

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	180		1.0	0.71	mg/L			10/02/21 14:28	1
Fluoride	0.50		0.10	0.026	mg/L			10/02/21 14:28	1
Sulfate	1000		10	7.6	mg/L			10/02/21 14:45	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:57	10/14/21 13:20	1
Arsenic	0.0010		0.0010	0.00031	mg/L		10/12/21 15:57	10/14/21 13:20	1
Barium	0.047		0.010	0.0016	mg/L		10/12/21 15:57	10/14/21 13:20	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:57	10/14/21 13:20	1
Boron	14		0.80	0.39	mg/L		10/12/21 15:57	10/16/21 09:09	10
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:57	10/14/21 13:20	1
Calcium	430		0.50	0.13	mg/L		10/12/21 15:57	10/14/21 13:20	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:57	10/14/21 13:20	1
Cobalt	0.0065		0.00050	0.00013	mg/L		10/12/21 15:57	10/14/21 13:20	1
Lead	0.00022	J	0.0010	0.00013	mg/L		10/12/21 15:57	10/14/21 13:20	1
Lithium	0.063		0.0050	0.0034	mg/L		10/12/21 15:57	10/14/21 13:20	1
Molybdenum	0.34		0.0050	0.00061	mg/L		10/12/21 15:57	10/14/21 13:20	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:57	10/14/21 13:20	1
Thallium	ND		0.0010	0.00015	mg/L		10/12/21 15:57	10/14/21 13:20	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		10/06/21 06:17	10/06/21 16:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2100		20	20	mg/L			10/06/21 11:39	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1	0.1	SU			10/05/21 14:17	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-127924-1

Client Sample ID: WAP-7D

Lab Sample ID: 180-127924-3

Date Collected: 09/30/21 09:30

Matrix: Water

Date Received: 10/01/21 10:15

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.627		0.199	0.207	1.00	0.199	pCi/L	10/06/21 12:58	11/03/21 09:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.9		40 - 110					10/06/21 12:58	11/03/21 09:37	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.540	U	0.386	0.389	1.00	0.603	pCi/L	10/06/21 13:35	10/29/21 17:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.9		40 - 110					10/06/21 13:35	10/29/21 17:03	1
Y Carrier	77.8		40 - 110					10/06/21 13:35	10/29/21 17:03	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	1.17		0.434	0.441	5.00	0.603	pCi/L		11/03/21 17:55	1

QC Sample Results

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

Job ID: 180-127924-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-373753/7
Matrix: Water
Analysis Batch: 373753

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			10/02/21 09:20	1
Fluoride	ND		0.10	0.026	mg/L			10/02/21 09:20	1
Sulfate	ND		1.0	0.76	mg/L			10/02/21 09:20	1

Lab Sample ID: LCS 180-373753/6
Matrix: Water
Analysis Batch: 373753

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	52.8		mg/L		106	80 - 120
Fluoride	2.50	2.84		mg/L		114	80 - 120
Sulfate	50.0	53.6		mg/L		107	80 - 120

Lab Sample ID: MB 180-373879/7
Matrix: Water
Analysis Batch: 373879

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			10/04/21 10:39	1
Fluoride	ND		0.10	0.026	mg/L			10/04/21 10:39	1
Sulfate	ND		1.0	0.76	mg/L			10/04/21 10:39	1

Lab Sample ID: LCS 180-373879/6
Matrix: Water
Analysis Batch: 373879

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	50.4		mg/L		101	80 - 120
Fluoride	2.50	2.46		mg/L		98	80 - 120
Sulfate	50.0	49.3		mg/L		99	80 - 120

Lab Sample ID: 180-127924-2 MS
Matrix: Water
Analysis Batch: 373879

Client Sample ID: WAP-7S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	59		250	298		mg/L		96	80 - 120
Fluoride	0.38	J	12.5	13.1		mg/L		102	80 - 120
Sulfate	270	F1	250	448	F1	mg/L		73	80 - 120

Lab Sample ID: 180-127924-2 MSD
Matrix: Water
Analysis Batch: 373879

Client Sample ID: WAP-7S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	59		250	286		mg/L		91	80 - 120	4	15
Fluoride	0.38	J	12.5	12.5		mg/L		97	80 - 120	5	15
Sulfate	270	F1	250	430	F1	mg/L		66	80 - 120	4	15

Eurofins TestAmerica, Pittsburgh

QC Sample Results

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

Job ID: 180-127924-1

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

Lab Sample ID: MB 180-374972/1-A
Matrix: Water
Analysis Batch: 375365

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 374972

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		10/12/21 15:57	10/14/21 12:40	1
Arsenic	ND		0.0010	0.00031	mg/L		10/12/21 15:57	10/14/21 12:40	1
Barium	ND		0.010	0.0016	mg/L		10/12/21 15:57	10/14/21 12:40	1
Beryllium	ND		0.0010	0.00018	mg/L		10/12/21 15:57	10/14/21 12:40	1
Boron	ND		0.080	0.039	mg/L		10/12/21 15:57	10/14/21 12:40	1
Cadmium	ND		0.0010	0.00022	mg/L		10/12/21 15:57	10/14/21 12:40	1
Calcium	ND		0.50	0.13	mg/L		10/12/21 15:57	10/14/21 12:40	1
Chromium	ND		0.0020	0.0015	mg/L		10/12/21 15:57	10/14/21 12:40	1
Cobalt	ND		0.00050	0.00013	mg/L		10/12/21 15:57	10/14/21 12:40	1
Lead	ND		0.0010	0.00013	mg/L		10/12/21 15:57	10/14/21 12:40	1
Lithium	ND		0.0050	0.0034	mg/L		10/12/21 15:57	10/14/21 12:40	1
Molybdenum	ND		0.0050	0.00061	mg/L		10/12/21 15:57	10/14/21 12:40	1
Selenium	ND		0.0050	0.0015	mg/L		10/12/21 15:57	10/14/21 12:40	1
Thallium	ND		0.0010	0.00015	mg/L		10/12/21 15:57	10/14/21 12:40	1

Lab Sample ID: LCS 180-374972/2-A
Matrix: Water
Analysis Batch: 375365

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 374972

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.250	0.231		mg/L		93	80 - 120
Arsenic	1.00	0.869		mg/L		87	80 - 120
Barium	1.00	0.832		mg/L		83	80 - 120
Beryllium	0.500	0.420		mg/L		84	80 - 120
Boron	1.25	1.20		mg/L		96	80 - 120
Cadmium	0.500	0.426		mg/L		85	80 - 120
Calcium	25.0	26.0		mg/L		104	80 - 120
Chromium	0.500	0.413		mg/L		83	80 - 120
Cobalt	0.500	0.406		mg/L		81	80 - 120
Lead	0.500	0.411		mg/L		82	80 - 120
Lithium	0.500	0.417		mg/L		83	80 - 120
Molybdenum	0.500	0.430		mg/L		86	80 - 120
Selenium	1.00	0.861		mg/L		86	80 - 120
Thallium	1.00	0.850		mg/L		85	80 - 120

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-374160/1-A
Matrix: Water
Analysis Batch: 374321

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374160

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		10/06/21 06:17	10/06/21 15:55	1

Eurofins TestAmerica, Pittsburgh

QC Sample Results

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

Job ID: 180-127924-1

Method: EPA 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 180-374160/2-A
 Matrix: Water
 Analysis Batch: 374321

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 374160
 %Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.00250	0.00227		mg/L		91	80 - 120

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-374096/1
 Matrix: Water
 Analysis Batch: 374096

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

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

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

Lab Sample ID: MB 180-374236/2
 Matrix: Water
 Analysis Batch: 374236

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			10/06/21 11:39	1

Lab Sample ID: LCS 180-374236/1
 Matrix: Water
 Analysis Batch: 374236

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Total Dissolved Solids	422	406		mg/L		96	80 - 120

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-530435/22-A
 Matrix: Water
 Analysis Batch: 534853

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 530435

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.02510	U	0.118	0.118	1.00	0.245	pCi/L	10/06/21 12:58	11/03/21 09:38	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.5		40 - 110					10/06/21 12:58	11/03/21 09:38	1

Lab Sample ID: LCS 160-530435/1-A
 Matrix: Water
 Analysis Batch: 534853

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 530435

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	Limits
Radium-226	15.1	12.78		1.40	1.00	0.218	pCi/L	85	75 - 125

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QC Sample Results

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

Job ID: 180-127924-1

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

Lab Sample ID: LCS 160-530435/1-A
 Matrix: Water
 Analysis Batch: 534853

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 530435

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	96.9		40 - 110

Lab Sample ID: LCSD 160-530435/2-A
 Matrix: Water
 Analysis Batch: 534853

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA
 Prep Batch: 530435

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec.		RER	RER
									Limits	RER	Limit	
Radium-226	15.1	14.17		1.54	1.00	0.248	pCi/L	94	75 - 125	0.47		1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	90.7		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-530438/22-A
 Matrix: Water
 Analysis Batch: 534290

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 530438

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared		Analyzed	Dil Fac
								Prepared	Analyzed	Dil Fac	
Radium-228	0.05138	U	0.323	0.323	1.00	0.571	pCi/L	10/06/21 13:35	10/29/21 17:04		1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	85.5		40 - 110	10/06/21 13:35	10/29/21 17:04	1
Y Carrier	90.8		40 - 110	10/06/21 13:35	10/29/21 17:04	1

Lab Sample ID: LCS 160-530438/1-A
 Matrix: Water
 Analysis Batch: 534292

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 530438

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec.	
									Limits	RER
Radium-228	12.3	11.59		1.40	1.00	0.516	pCi/L	95	75 - 125	

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	96.9		40 - 110
Y Carrier	81.1		40 - 110

Lab Sample ID: LCSD 160-530438/2-A
 Matrix: Water
 Analysis Batch: 534292

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA
 Prep Batch: 530438

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec.		RER
									Limits	RER	Limit
Radium-228	12.3	13.24		1.79	1.00	1.11	pCi/L	108	75 - 125	0.52	1

Eurofins TestAmerica, Pittsburgh

QC Sample Results

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

Job ID: 180-127924-1

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

Lab Sample ID: LCSD 160-530438/2-A
Matrix: Water
Analysis Batch: 534292

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 530438

Carrier	LCSD		Limits
	%Yield	Qualifier	
Ba Carrier	90.7		40 - 110
Y Carrier	53.8		40 - 110

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QC Association Summary

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

Job ID: 180-127924-1

HPLC/IC

Analysis Batch: 373753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-1	WAP-3D	Total/NA	Water	EPA 9056A	
180-127924-1	WAP-3D	Total/NA	Water	EPA 9056A	
180-127924-3	WAP-7D	Total/NA	Water	EPA 9056A	
180-127924-3	WAP-7D	Total/NA	Water	EPA 9056A	
MB 180-373753/7	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-373753/6	Lab Control Sample	Total/NA	Water	EPA 9056A	

Analysis Batch: 373879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-2	WAP-7S	Total/NA	Water	EPA 9056A	
180-127924-2	WAP-7S	Total/NA	Water	EPA 9056A	
MB 180-373879/7	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-373879/6	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-127924-2 MS	WAP-7S	Total/NA	Water	EPA 9056A	
180-127924-2 MSD	WAP-7S	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 374160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-1	WAP-3D	Total/NA	Water	7470A	
180-127924-2	WAP-7S	Total/NA	Water	7470A	
180-127924-3	WAP-7D	Total/NA	Water	7470A	
MB 180-374160/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-374160/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 374321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-1	WAP-3D	Total/NA	Water	EPA 7470A	374160
180-127924-2	WAP-7S	Total/NA	Water	EPA 7470A	374160
180-127924-3	WAP-7D	Total/NA	Water	EPA 7470A	374160
MB 180-374160/1-A	Method Blank	Total/NA	Water	EPA 7470A	374160
LCS 180-374160/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	374160

Prep Batch: 374972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-1	WAP-3D	Total Recoverable	Water	3005A	
180-127924-2	WAP-7S	Total Recoverable	Water	3005A	
180-127924-3	WAP-7D	Total Recoverable	Water	3005A	
MB 180-374972/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-374972/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 375365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-1	WAP-3D	Total Recoverable	Water	EPA 6020A	374972
180-127924-2	WAP-7S	Total Recoverable	Water	EPA 6020A	374972
180-127924-3	WAP-7D	Total Recoverable	Water	EPA 6020A	374972
MB 180-374972/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	374972
LCS 180-374972/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	374972

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QC Association Summary

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

Job ID: 180-127924-1

Metals

Analysis Batch: 375723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-2	WAP-7S	Total Recoverable	Water	EPA 6020A	374972
180-127924-3	WAP-7D	Total Recoverable	Water	EPA 6020A	374972

General Chemistry

Analysis Batch: 374096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-1	WAP-3D	Total/NA	Water	EPA 9040C	
180-127924-2	WAP-7S	Total/NA	Water	EPA 9040C	
180-127924-3	WAP-7D	Total/NA	Water	EPA 9040C	
LCS 180-374096/1	Lab Control Sample	Total/NA	Water	EPA 9040C	

Analysis Batch: 374236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-1	WAP-3D	Total/NA	Water	SM 2540C	
180-127924-2	WAP-7S	Total/NA	Water	SM 2540C	
180-127924-3	WAP-7D	Total/NA	Water	SM 2540C	
MB 180-374236/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-374236/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 530435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-1	WAP-3D	Total/NA	Water	PrecSep-21	
180-127924-2	WAP-7S	Total/NA	Water	PrecSep-21	
180-127924-3	WAP-7D	Total/NA	Water	PrecSep-21	
MB 160-530435/22-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-530435/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-530435/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 530438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127924-1	WAP-3D	Total/NA	Water	PrecSep_0	
180-127924-2	WAP-7S	Total/NA	Water	PrecSep_0	
180-127924-3	WAP-7D	Total/NA	Water	PrecSep_0	
MB 160-530438/22-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-530438/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-530438/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-127924-1

Login Number: 127924

List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Abernathy, Eric L

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: 180-127924-1

Login Number: 127924

List Source: Eurofins TestAmerica, Pittsburgh

List Number: 2

Creator: Abernathy, Eric L

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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 <math><6\text{mm}</math> (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: 180-127924-1

Login Number: 127924

List Number: 3

Creator: Mazariegos, Leonel A

List Source: Eurofins TestAmerica, St. Louis

List Creation: 10/05/21 03:37 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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.	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

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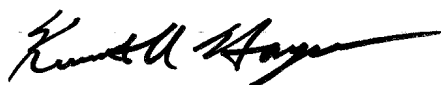
Laboratory Job ID: 180-129535-1

Client Project/Site: CCR Groundwater Monitoring FB Culley

For:

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

Attn: Mark Miesfeldt



Authorized for release by:
1/7/2022 5:12:05 PM

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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

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	5
Certification Summary	6
Sample Summary	8
Method Summary	9
Lab Chronicle	10
Client Sample Results	24
QC Sample Results	49
QC Association Summary	58
Chain of Custody	65
Receipt Checklists	67

Case Narrative

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

Job ID: 180-129535-1

Job ID: 180-129535-1

Laboratory: Eurofins Pittsburgh

Narrative

Job Narrative 180-129535-1

Comments

No additional comments.

Receipt

The samples were received on 11/4/2021 2:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 2.0° C, 2.4° C, 2.4° C, 2.4° C and 3.4° C.

GC Semi VOA

Method 9056A: Analyst error the wrong sample was used or the sample vial was placed in the wrong position on the auto-sampler in the initial reported results. Re-analysis confirms the duplication results in sample number 129535-17. These out of holding time values are the correct results for this sample.: WAP-5S (180-129535-4)

Method 9056A: Re-analysis confirms the duplication results in sample number 129535-17. These out of holding time results for this sample 129535-17 are very similar to the actual initial results. This is a good confirmation of the initial results.
DUP-1 (180-129535-17)

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

RAD

Method 9315: Radium 226 batch 535772

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. WAP-4S (180-129535-1), WAP-4I (180-129535-2), WAP-4D (180-129535-3), WAP-5S (180-129535-4), WAP-5I (180-129535-5), WAP-5D (180-129535-6), WAP-6S (180-129535-7), WAP-6S (180-129535-7[DUJ]), WAP-6I (180-129535-8), WAP-6D (180-129535-9), WAP-8S (180-129535-10), WAP-8I (180-129535-11), WAP-8D (180-129535-12), WAP-9S (180-129535-13), WAP-9I (180-129535-14), WAP-9D (180-129535-15), FB-1 (180-129535-16), DUP-1 (180-129535-17), DUP-2 (180-129535-18), WAP-3S (180-129535-19), WAP-3D (180-129535-20), (LCS 160-535772/1-A) and (MB 160-535772/23-A)

Method 9320: Radium 226 batch 542176

The detection goal was not met. Sample was prepped at a reduced aliquot due to the presence of matrix interferences: WAP-9S (180-129535-13). Analytical results are reported with the detection limit achieved.

Method 9320: Radium 226 batch 542176

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. WAP-4S (180-129535-1), WAP-4I (180-129535-2), WAP-4D (180-129535-3), WAP-5S (180-129535-4), WAP-5I (180-129535-5), WAP-5D (180-129535-6), WAP-6S (180-129535-7), WAP-6I (180-129535-8), WAP-6D (180-129535-9), WAP-8S (180-129535-10), WAP-8I (180-129535-11), WAP-8D (180-129535-12), WAP-9S (180-129535-13), WAP-9I (180-129535-14), WAP-9D (180-129535-15), FB-1 (180-129535-16), DUP-1 (180-129535-17), DUP-2 (180-129535-18), WAP-3S (180-129535-19), WAP-3D (180-129535-20), (LCS 160-542176/1-A), (LCSD 160-542176/2-A) and (MB 160-542176/23-A)

Method PrecSep_0: Radium-228 Prep Batch 160-542176

The following samples were prepared at a reduced aliquot due to Matrix: WAP-4S (180-129535-1), WAP-4I (180-129535-2), WAP-4D (180-129535-3), WAP-5I (180-129535-5), WAP-6S (180-129535-7), WAP-6I (180-129535-8), WAP-6D (180-129535-9), WAP-8I (180-129535-11), WAP-8D (180-129535-12), WAP-9S (180-129535-13), WAP-9I (180-129535-14), WAP-9D (180-129535-15) and FB-1 (180-129535-16). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0: Radium-228 Prep Batch 160-540407

The Ra226/228 methods can be run sequentially and separated during the process, which enables us to use 1L to run them together. Unfortunately, the 228 portion resulted in a high MB result, indicating some sort of potential beta emitting contamination. Since the results

Case Narrative

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

Job ID: 180-129535-1

Job ID: 180-129535-1 (Continued)

Laboratory: Eurofins Pittsburgh (Continued)

were not U flagged, the samples required reanalysis. The Ra226 portion was run successfully, with no indication of contamination, as it is an alpha emitter, and was therefore reported.

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

Metals

Method 6020A: The post digestion spike % recovery for manganese associated with batch 180-378827 was outside of control limits. The associated sample is: WAP-6S (180-129535-7).

Method 6020A: The following samples were diluted for boron due to the nature of the sample matrix: WAP-8S (180-129535-10), DUP-1 (180-129535-17), DUP-2 (180-129535-18), WAP-3S (180-129535-19) and WAP-3D (180-129535-20). Elevated reporting limits (RLs) are provided.

Method 6020A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 180-378429 and analytical batch 180-378981 were below the control limits for boron. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Methods 6020A, 6020B: The cobalt concentrations found in the bracketing continuing calibration blanks (CCB) were greater than the reporting limit. The associated samples bracketed by this CCB had cobalt concentrations below the reporting limit (RL) for cobalt. Results are reported as is with the addition of this narrative for samples: WAP-4D (180-129535-3), WAP-5I (180-129535-5) and WAP-5D (180-129535-6)

Method 6020A: The post digestion spike % recovery for Boron associated with batch 180-378981 was below the control limits for boron. The associated sample is: WAP-6S (180-129535-7).

Method 6020A: The Antimony and Thallium concentrations found in the bracketing continuing calibration blanks (CCB) were greater than the reporting limit. The associated samples bracketed by this CCB had Antimony and Thallium concentrations below the reporting limit (RL) for Antimony and Thallium. Results are reported as is with the addition of this narrative for samples: WAP-4S (180-129535-1), WAP-4I (180-129535-2), WAP-4D (180-129535-3), WAP-5S (180-129535-4), WAP-5I (180-129535-5) and WAP-5D (180-129535-6)

Method 6020A: The following sample was diluted to bring the concentration of target analytes within the calibration range: WAP-4S (180-129535-1). Elevated reporting limits (RLs) are provided.

Method 6020A: The following samples were diluted to bring the concentration of target analytes within the calibration range: (180-129538-E-1-B ^10), (180-129538-E-1-C MS ^10), (180-129538-E-1-D MSD ^10), (180-129538-E-1-B PDS ^10) and (180-129538-E-1-B SD ^50). Elevated reporting limits (RLs) are provided.

Method 6020A: The following sample was diluted due to the nature of the sample matrix: WAP-5S (180-129535-4). 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.

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 FB Culley

Job ID: 180-129535-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
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
^2	Calibration Blank (ICB and/or CCB) is outside acceptance limits.
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.
α	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.
 Project/Site: CCR Groundwater Monitoring FB Culley

Job ID: 180-129535-1

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

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	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	06-30-21 *
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	01-01-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-21

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

Eurofins Pittsburgh

Accreditation/Certification Summary

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

Job ID: 180-129535-1

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	12-31-21
Maryland	State	310	09-30-22
MI - RadChem Recognition	State	9005	06-30-22
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	12-27-21
New Jersey	NELAP	MO002	06-30-22
New York	NELAP	11616	04-01-22
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	03-01-22
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	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

Sample Summary

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

Job ID: 180-129535-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-129535-1	WAP-4S	Water	11/02/21 07:47	11/04/21 14:15
180-129535-2	WAP-4I	Water	11/02/21 08:22	11/04/21 14:15
180-129535-3	WAP-4D	Water	11/02/21 09:00	11/04/21 14:15
180-129535-4	WAP-5S	Water	11/01/21 13:55	11/04/21 14:15
180-129535-5	WAP-5I	Water	11/01/21 14:53	11/04/21 14:15
180-129535-6	WAP-5D	Water	11/01/21 15:52	11/04/21 14:15
180-129535-7	WAP-6S	Water	11/02/21 12:29	11/04/21 14:15
180-129535-8	WAP-6I	Water	11/02/21 13:04	11/04/21 14:15
180-129535-9	WAP-6D	Water	11/02/21 15:42	11/04/21 14:15
180-129535-10	WAP-8S	Water	11/02/21 09:52	11/04/21 14:15
180-129535-11	WAP-8I	Water	11/02/21 10:34	11/04/21 14:15
180-129535-12	WAP-8D	Water	11/02/21 11:30	11/04/21 14:15
180-129535-13	WAP-9S	Water	11/02/21 15:42	11/04/21 14:15
180-129535-14	WAP-9I	Water	11/03/21 07:50	11/04/21 14:15
180-129535-15	WAP-9D	Water	11/03/21 08:30	11/04/21 14:15
180-129535-16	FB-1	Water	11/01/21 14:12	11/04/21 14:15
180-129535-17	DUP-1	Water	11/01/21 00:00	11/04/21 14:15
180-129535-18	DUP-2	Water	11/02/21 00:00	11/04/21 14:15
180-129535-19	WAP-3S	Water	11/03/21 09:12	11/04/21 14:15
180-129535-20	WAP-3D	Water	11/03/21 09:54	11/04/21 14:15



Method Summary

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

Job ID: 180-129535-1

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.
 Project/Site: CCR Groundwater Monitoring FB Culley

Job ID: 180-129535-1

Client Sample ID: WAP-4S

Lab Sample ID: 180-129535-1

Date Collected: 11/02/21 07:47

Matrix: Water

Date Received: 11/04/21 14:15

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			377720	11/05/21 09:56	JRB	TAL PIT
Instrument ID: INTEGRION										
Total/NA	Analysis	EPA 9056A		10			377720	11/05/21 10:14	JRB	TAL PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 22:09	RJR	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		10			379323	11/17/21 13:52	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:22	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			377902	11/06/21 09:54	MJH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	377880	11/05/21 17:30	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			995.91 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540334	12/05/21 20:18	FLC	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			749.75 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543041	12/20/21 14:04	MLK	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-4I

Lab Sample ID: 180-129535-2

Date Collected: 11/02/21 08:22

Matrix: Water

Date Received: 11/04/21 14:15

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			377720	11/05/21 10:32	JRB	TAL PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 22:24	RJR	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			379323	11/17/21 13:56	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:23	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			377902	11/06/21 09:56	MJH	TAL PIT
Instrument ID: NOEQUIP										

Eurofins Pittsburgh

Lab Chronicle

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

Job ID: 180-129535-1

Client Sample ID: WAP-4I
Date Collected: 11/02/21 08:22
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-2
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	SM 2540C		1	100 mL	100 mL	377880	11/05/21 17:30	KMM	TAL PIT
Total/NA	Prep	PrecSep-21			749.28 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540863	12/08/21 18:26	FLC	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			750.25 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543041	12/20/21 14:05	MLK	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-4D
Date Collected: 11/02/21 09:00
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-3
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		1			377720	11/05/21 10:50	JRB	TAL PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 22:27	RJR	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			379323	11/17/21 13:59	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:24	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			377902	11/06/21 09:58	MJH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	377880	11/05/21 17:30	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			991.25 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540333	12/05/21 20:22	FLC	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			750.60 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543041	12/20/21 14:05	MLK	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
Instrument ID: NOEQUIP										

Lab Chronicle

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

Job ID: 180-129535-1

Client Sample ID: WAP-5S

Lab Sample ID: 180-129535-4

Date Collected: 11/01/21 13:55

Matrix: Water

Date Received: 11/04/21 14:15

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			377720	11/05/21 16:34	JRB	TAL PIT
Instrument ID: INTEGRION										
Total/NA	Analysis	EPA 9056A	RA	1			381392	12/09/21 08:38	JRB	TAL PIT
Instrument ID: INTEGRION										
Total/NA	Analysis	EPA 9056A	RA	10			381392	12/09/21 08:52	JRB	TAL PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 22:31	RJR	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		5			379323	11/17/21 14:03	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:28	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			377902	11/06/21 09:59	MJH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	377880	11/05/21 17:30	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			999.46 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540333	12/05/21 20:22	FLC	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			1000.73 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543041	12/20/21 14:05	MLK	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-5I

Lab Sample ID: 180-129535-5

Date Collected: 11/01/21 14:53

Matrix: Water

Date Received: 11/04/21 14:15

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			377720	11/05/21 23:07	JRB	TAL PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 22:46	RJR	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			379323	11/17/21 14:07	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:29	RJR	TAL PIT
Instrument ID: HGY										

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Lab Chronicle

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

Job ID: 180-129535-1

Client Sample ID: WAP-5I
Date Collected: 11/01/21 14:53
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-5
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 9040C		1			377902	11/06/21 10:01	MJH	TAL PIT
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	377880	11/05/21 17:30	KMM	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			1000.49 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540333	12/05/21 20:22	FLC	TAL SL
		Instrument ID: GFPCPURPLE								
Total/NA	Prep	PrecSep_0			750.53 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543041	12/20/21 14:01	MLK	TAL SL
		Instrument ID: GFPCBLUE								
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
		Instrument ID: NOEQUIP								

Client Sample ID: WAP-5D
Date Collected: 11/01/21 15:52
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-6
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			377720	11/05/21 17:10	JRB	TAL PIT
		Instrument ID: INTEGRION								
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 22:49	RJR	TAL PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			379323	11/17/21 14:10	RSK	TAL PIT
		Instrument ID: A								
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:30	RJR	TAL PIT
		Instrument ID: HGY								
Total/NA	Analysis	EPA 9040C		1			377903	11/06/21 10:06	MJH	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	377880	11/05/21 17:30	KMM	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			1000.17 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540407	12/06/21 10:27	ANW	TAL SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.51 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543041	12/20/21 14:02	MLK	TAL SL
		Instrument ID: GFPCBLUE								
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
		Instrument ID: NOEQUIP								

Lab Chronicle

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

Job ID: 180-129535-1

Client Sample ID: WAP-6S

Lab Sample ID: 180-129535-7

Date Collected: 11/02/21 12:29

Matrix: Water

Date Received: 11/04/21 14:15

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			377720	11/05/21 08:45	JRB	TAL PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378827	11/12/21 13:06	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 11:43	RJR	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:31	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			377903	11/06/21 10:09	MJH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	377880	11/05/21 17:30	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			750.13 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540407	12/06/21 10:27	ANW	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			750.71 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543041	12/20/21 14:02	MLK	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-6I

Lab Sample ID: 180-129535-8

Date Collected: 11/02/21 13:04

Matrix: Water

Date Received: 11/04/21 14:15

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			377720	11/06/21 00:01	JRB	TAL PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378827	11/12/21 13:31	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 12:45	RJR	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:34	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			377903	11/06/21 10:13	MJH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	377880	11/05/21 17:30	KMM	TAL PIT
Instrument ID: NOEQUIP										

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Lab Chronicle

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

Job ID: 180-129535-1

Client Sample ID: WAP-6I
Date Collected: 11/02/21 13:04
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			749.58 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540390	12/06/21 10:32	ANW	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			750.01 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543041	12/20/21 14:02	MLK	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-6D
Date Collected: 11/02/21 15:42
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-9
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			377720	11/06/21 00:19	JRB	TAL PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378827	11/12/21 13:35	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 12:48	RJR	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:35	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			377903	11/06/21 10:14	MJH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	377880	11/05/21 17:30	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			993.59 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540390	12/06/21 10:32	ANW	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			750.28 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543041	12/20/21 14:02	MLK	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-8S
Date Collected: 11/02/21 09:52
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-10
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			377720	11/06/21 00:37	JRB	TAL PIT
Instrument ID: INTEGRION										

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Lab Chronicle

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

Job ID: 180-129535-1

Client Sample ID: WAP-8S

Lab Sample ID: 180-129535-10

Date Collected: 11/02/21 09:52

Matrix: Water

Date Received: 11/04/21 14:15

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			377720	11/06/21 00:54	JRB	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378827	11/12/21 13:39	RSK	TAL PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		2			378981	11/13/21 12:59	RJR	TAL PIT
		Instrument ID: A								
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:36	RJR	TAL PIT
		Instrument ID: HGY								
Total/NA	Analysis	EPA 9040C		1			377903	11/06/21 10:16	MJH	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	377880	11/05/21 17:30	KMM	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			999.34 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540390	12/06/21 10:33	ANW	TAL SL
		Instrument ID: GFPCRED								
Total/NA	Prep	PrecSep_0			1000.58 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543041	12/20/21 14:02	MLK	TAL SL
		Instrument ID: GFPCBLUE								
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
		Instrument ID: NOEQUIP								

Client Sample ID: WAP-8I

Lab Sample ID: 180-129535-11

Date Collected: 11/02/21 10:34

Matrix: Water

Date Received: 11/04/21 14:15

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			377720	11/06/21 01:12	JRB	TAL PIT
		Instrument ID: INTEGRION								
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378827	11/12/21 13:42	RSK	TAL PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 13:03	RJR	TAL PIT
		Instrument ID: A								
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:37	RJR	TAL PIT
		Instrument ID: HGY								
Total/NA	Analysis	EPA 9040C		1			377903	11/06/21 10:18	MJH	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	377880	11/05/21 17:30	KMM	TAL PIT
		Instrument ID: NOEQUIP								

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Lab Chronicle

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

Job ID: 180-129535-1

Client Sample ID: WAP-8I
Date Collected: 11/02/21 10:34
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.12 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540390	12/06/21 10:33	ANW	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			750.86 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543041	12/20/21 14:03	MLK	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-8D
Date Collected: 11/02/21 11:30
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-12
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			377720	11/06/21 02:06	JRB	TAL PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378827	11/12/21 13:46	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 13:06	RJR	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:40	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			377903	11/06/21 10:19	MJH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	377880	11/05/21 17:30	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			999.51 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540390	12/06/21 10:33	ANW	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			749.09 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543041	12/20/21 14:03	MLK	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-9S
Date Collected: 11/02/21 15:42
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-13
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			377720	11/06/21 02:24	JRB	TAL PIT
Instrument ID: INTEGRION										

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Lab Chronicle

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

Job ID: 180-129535-1

Client Sample ID: WAP-9S
Date Collected: 11/02/21 15:42
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-13
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	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378827	11/12/21 13:49	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 13:10	RJR	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:41	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			377903	11/06/21 10:21	MJH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	377880	11/05/21 17:30	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			500.53 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540390	12/06/21 10:33	ANW	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			500.95 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543041	12/20/21 14:03	MLK	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-9I
Date Collected: 11/03/21 07:50
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-14
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			377720	11/06/21 03:00	JRB	TAL PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378827	11/12/21 14:00	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 13:14	RJR	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:42	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			377903	11/06/21 10:24	MJH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	378125	11/08/21 17:13	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			750.60 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540390	12/06/21 10:34	ANW	TAL SL
Instrument ID: GFPCRED										

Eurofins Pittsburgh

Lab Chronicle

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

Job ID: 180-129535-1

Client Sample ID: WAP-9I
Date Collected: 11/03/21 07:50
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-14
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep_0			750.55 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543041	12/20/21 14:03	MLK	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-9D
Date Collected: 11/03/21 08:30
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-15
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			377720	11/06/21 03:17	JRB	TAL PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378827	11/12/21 14:04	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 13:17	RJR	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:43	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			377903	11/06/21 10:28	MJH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	378125	11/08/21 17:13	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			750.27 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540390	12/06/21 10:34	ANW	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			750.19 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543041	12/20/21 14:04	MLK	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: FB-1
Date Collected: 11/01/21 14:12
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-16
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			377720	11/06/21 03:35	JRB	TAL PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378827	11/12/21 14:07	RSK	TAL PIT
Instrument ID: A										

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Lab Chronicle

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

Job ID: 180-129535-1

Client Sample ID: FB-1

Lab Sample ID: 180-129535-16

Date Collected: 11/01/21 14:12

Matrix: Water

Date Received: 11/04/21 14:15

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	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 13:21	RJR	TAL PIT
		Instrument ID: A								
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:44	RJR	TAL PIT
		Instrument ID: HGY								
Total/NA	Analysis	EPA 9040C		1			377903	11/06/21 10:29	MJH	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	377880	11/05/21 17:30	KMM	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			1000.53 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540390	12/06/21 10:34	ANW	TAL SL
		Instrument ID: GFPCRED								
Total/NA	Prep	PrecSep_0			750.21 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543041	12/20/21 14:04	MLK	TAL SL
		Instrument ID: GFPCBLUE								
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
		Instrument ID: NOEQUIP								

Client Sample ID: DUP-1

Lab Sample ID: 180-129535-17

Date Collected: 11/01/21 00:00

Matrix: Water

Date Received: 11/04/21 14:15

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			377720	11/06/21 03:53	JRB	TAL PIT
		Instrument ID: INTEGRION								
Total/NA	Analysis	EPA 9056A		10			377720	11/06/21 04:11	JRB	TAL PIT
		Instrument ID: INTEGRION								
Total/NA	Analysis	EPA 9056A	RA	1			381392	12/09/21 09:07	JRB	TAL PIT
		Instrument ID: INTEGRION								
Total/NA	Analysis	EPA 9056A	RA	10			381392	12/09/21 09:21	JRB	TAL PIT
		Instrument ID: INTEGRION								
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378827	11/12/21 14:11	RSK	TAL PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		2			378981	11/13/21 13:25	RJR	TAL PIT
		Instrument ID: A								
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:45	RJR	TAL PIT
		Instrument ID: HGY								
Total/NA	Analysis	EPA 9040C		1			377903	11/06/21 10:31	MJH	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	377880	11/05/21 17:30	KMM	TAL PIT
		Instrument ID: NOEQUIP								

Eurofins Pittsburgh

Lab Chronicle

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

Job ID: 180-129535-1

Client Sample ID: DUP-1
Date Collected: 11/01/21 00:00
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-17
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.93 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540390	12/06/21 10:31	ANW	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1000.11 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543040	12/20/21 13:58	MLK	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: DUP-2
Date Collected: 11/02/21 00:00
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-18
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			377720	11/06/21 04:29	JRB	TAL PIT
Instrument ID: INTEGRION										
Total/NA	Analysis	EPA 9056A		5			377720	11/06/21 04:47	JRB	TAL PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378827	11/12/21 14:15	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		2			378981	11/13/21 13:36	RJR	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:46	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			377903	11/06/21 10:33	MJH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	377880	11/05/21 17:30	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			750.53 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540390	12/06/21 10:31	ANW	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1000.15 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543040	12/20/21 13:58	MLK	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
Instrument ID: NOEQUIP										

Lab Chronicle

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

Job ID: 180-129535-1

Client Sample ID: WAP-3S

Lab Sample ID: 180-129535-19

Date Collected: 11/03/21 09:12

Matrix: Water

Date Received: 11/04/21 14:15

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			377720	11/06/21 05:40	JRB	TAL PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378827	11/12/21 14:18	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		2			378981	11/13/21 13:46	RJR	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:47	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			377921	11/06/21 08:17	MJH	TAL PIT
Instrument ID: OZ										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	378127	11/08/21 17:25	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			750.35 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540406	12/06/21 10:35	ANW	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			750.76 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543040	12/20/21 13:58	MLK	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-3D

Lab Sample ID: 180-129535-20

Date Collected: 11/03/21 09:54

Matrix: Water

Date Received: 11/04/21 14:15

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			377720	11/06/21 06:16	JRB	TAL PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378827	11/12/21 14:22	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378429	11/11/21 11:00	KFS	TAL PIT
Total Recoverable	Analysis	EPA 6020A		2			378981	11/13/21 13:57	RJR	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378159	11/09/21 06:20	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378967	11/15/21 12:49	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			377921	11/06/21 08:22	MJH	TAL PIT
Instrument ID: OZ										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	378127	11/08/21 17:25	KMM	TAL PIT
Instrument ID: NOEQUIP										

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Lab Chronicle

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

Job ID: 180-129535-1

Client Sample ID: WAP-3D

Lab Sample ID: 180-129535-20

Date Collected: 11/03/21 09:54

Matrix: Water

Date Received: 11/04/21 14:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			749.72 mL	1.0 g	535772	11/09/21 16:45	LPS	TAL SL
Total/NA	Analysis	9315		1			540406	12/06/21 10:36	ANW	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			1000.39 mL	1.0 g	542176	12/15/21 10:20	BMP	TAL SL
Total/NA	Analysis	9320		1			543040	12/20/21 13:59	MLK	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			543272	12/21/21 17:31	EMH	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

- KFS = Kelly Shannon
- RGM = Rebecca Manns
- RJR = Ron Rosenbaum

Batch Type: Analysis

- JRB = James Burzio
- KMM = Kendric Moore
- MJH = Michael Houde
- RJR = Ron Rosenbaum
- RSK = Robert Kurtz

Lab: TAL SL

Batch Type: Prep

- BMP = Bailey Pinette
- LPS = Lauren Szostak

Batch Type: Analysis

- ANW = Amber Woods
- EMH = Elizabeth Hoerchler
- FLC = Fernando Cruz
- MLK = Micha Korrinhizer

Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-4S

Lab Sample ID: 180-129535-1

Date Collected: 11/02/21 07:47

Matrix: Water

Date Received: 11/04/21 14:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	160		1.0	0.71	mg/L			11/05/21 09:56	1
Fluoride	0.28		0.10	0.026	mg/L			11/05/21 09:56	1
Sulfate	520		10	7.6	mg/L			11/05/21 10:14	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0038	mg/L		11/12/21 11:00	11/17/21 13:52	10
Arsenic	0.0046		0.0010	0.00031	mg/L		11/12/21 11:00	11/13/21 22:09	1
Barium	0.043		0.010	0.0016	mg/L		11/12/21 11:00	11/13/21 22:09	1
Beryllium	ND		0.0010	0.00018	mg/L		11/12/21 11:00	11/13/21 22:09	1
Boron	13		0.80	0.39	mg/L		11/12/21 11:00	11/17/21 13:52	10
Cadmium	ND		0.0010	0.00022	mg/L		11/12/21 11:00	11/13/21 22:09	1
Calcium	290		0.50	0.13	mg/L		11/12/21 11:00	11/13/21 22:09	1
Chromium	ND		0.0020	0.0015	mg/L		11/12/21 11:00	11/13/21 22:09	1
Cobalt	0.0023	J	0.0050	0.0013	mg/L		11/12/21 11:00	11/17/21 13:52	10
Lead	0.00013	J	0.0010	0.00013	mg/L		11/12/21 11:00	11/13/21 22:09	1
Lithium	ND		0.0050	0.0034	mg/L		11/12/21 11:00	11/13/21 22:09	1
Molybdenum	0.46		0.0050	0.00061	mg/L		11/12/21 11:00	11/13/21 22:09	1
Selenium	ND		0.0050	0.0015	mg/L		11/12/21 11:00	11/13/21 22:09	1
Thallium	ND		0.0010	0.00015	mg/L		11/12/21 11:00	11/13/21 22:09	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		11/09/21 06:20	11/15/21 12:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1300		10	10	mg/L			11/05/21 17:30	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1	0.1	SU			11/06/21 09:54	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0517	U	0.140	0.140	1.00	0.256	pCi/L	11/09/21 16:45	12/05/21 20:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.8		40 - 110					11/09/21 16:45	12/05/21 20:18	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.262	U	0.362	0.362	1.00	0.605	pCi/L	12/15/21 10:20	12/20/21 14:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.6		40 - 110					12/15/21 10:20	12/20/21 14:04	1
Y Carrier	82.2		40 - 110					12/15/21 10:20	12/20/21 14:04	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-4S

Lab Sample ID: 180-129535-1

Date Collected: 11/02/21 07:47

Matrix: Water

Date Received: 11/04/21 14:15

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	0.313	U	0.388	0.388	5.00	0.605	pCi/L		12/21/21 17:31	1

Client Sample ID: WAP-4I

Lab Sample ID: 180-129535-2

Date Collected: 11/02/21 08:22

Matrix: Water

Date Received: 11/04/21 14:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29		1.0	0.71	mg/L			11/05/21 10:32	1
Fluoride	0.12		0.10	0.026	mg/L			11/05/21 10:32	1
Sulfate	46		1.0	0.76	mg/L			11/05/21 10:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/12/21 11:00	11/13/21 22:24	1
Arsenic	0.013		0.0010	0.00031	mg/L		11/12/21 11:00	11/13/21 22:24	1
Barium	0.21		0.010	0.0016	mg/L		11/12/21 11:00	11/13/21 22:24	1
Beryllium	ND		0.0010	0.00018	mg/L		11/12/21 11:00	11/13/21 22:24	1
Boron	0.18		0.080	0.039	mg/L		11/12/21 11:00	11/17/21 13:56	1
Cadmium	ND		0.0010	0.00022	mg/L		11/12/21 11:00	11/13/21 22:24	1
Calcium	47		0.50	0.13	mg/L		11/12/21 11:00	11/13/21 22:24	1
Chromium	ND		0.0020	0.0015	mg/L		11/12/21 11:00	11/13/21 22:24	1
Cobalt	0.0011		0.00050	0.00013	mg/L		11/12/21 11:00	11/17/21 13:56	1
Lead	0.00015	J	0.0010	0.00013	mg/L		11/12/21 11:00	11/13/21 22:24	1
Lithium	0.0044	J	0.0050	0.0034	mg/L		11/12/21 11:00	11/13/21 22:24	1
Molybdenum	0.0032	J	0.0050	0.00061	mg/L		11/12/21 11:00	11/13/21 22:24	1
Selenium	ND		0.0050	0.0015	mg/L		11/12/21 11:00	11/13/21 22:24	1
Thallium	ND		0.0010	0.00015	mg/L		11/12/21 11:00	11/13/21 22:24	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		11/09/21 06:20	11/15/21 12:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	240		10	10	mg/L			11/05/21 17:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1	0.1	SU			11/06/21 09:56	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.807		0.229	0.241	1.00	0.225	pCi/L	11/09/21 16:45	12/08/21 18:26	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.1		40 - 110	11/09/21 16:45	12/08/21 18:26	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-4I
 Date Collected: 11/02/21 08:22
 Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-2
 Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.797		0.430	0.437	1.00	0.635	pCi/L	12/15/21 10:20	12/20/21 14:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	83.8		40 - 110					12/15/21 10:20	12/20/21 14:05	1
Y Carrier	81.1		40 - 110					12/15/21 10:20	12/20/21 14:05	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	1.60		0.487	0.499	5.00	0.635	pCi/L		12/21/21 17:31	1

Client Sample ID: WAP-4D
 Date Collected: 11/02/21 09:00
 Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-3
 Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21		1.0	0.71	mg/L			11/05/21 10:50	1
Fluoride	0.13		0.10	0.026	mg/L			11/05/21 10:50	1
Sulfate	26		1.0	0.76	mg/L			11/05/21 10:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/12/21 11:00	11/13/21 22:27	1
Arsenic	0.0097		0.0010	0.00031	mg/L		11/12/21 11:00	11/13/21 22:27	1
Barium	0.28		0.010	0.0016	mg/L		11/12/21 11:00	11/13/21 22:27	1
Beryllium	ND		0.0010	0.00018	mg/L		11/12/21 11:00	11/13/21 22:27	1
Boron	0.076	J	0.080	0.039	mg/L		11/12/21 11:00	11/17/21 13:59	1
Cadmium	ND		0.0010	0.00022	mg/L		11/12/21 11:00	11/13/21 22:27	1
Calcium	50		0.50	0.13	mg/L		11/12/21 11:00	11/13/21 22:27	1
Chromium	ND		0.0020	0.0015	mg/L		11/12/21 11:00	11/13/21 22:27	1
Cobalt	0.00023	J ^2	0.00050	0.00013	mg/L		11/12/21 11:00	11/13/21 22:27	1
Lead	ND		0.0010	0.00013	mg/L		11/12/21 11:00	11/13/21 22:27	1
Lithium	ND		0.0050	0.0034	mg/L		11/12/21 11:00	11/13/21 22:27	1
Molybdenum	0.0050		0.0050	0.00061	mg/L		11/12/21 11:00	11/13/21 22:27	1
Selenium	ND		0.0050	0.0015	mg/L		11/12/21 11:00	11/13/21 22:27	1
Thallium	ND		0.0010	0.00015	mg/L		11/12/21 11:00	11/13/21 22:27	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		11/09/21 06:20	11/15/21 12:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	250		10	10	mg/L			11/05/21 17:30	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1	0.1	SU			11/06/21 09:58	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-4D

Date Collected: 11/02/21 09:00

Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-3

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.340		0.155	0.158	1.00	0.184	pCi/L	11/09/21 16:45	12/05/21 20:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.0		40 - 110					11/09/21 16:45	12/05/21 20:22	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.12		0.473	0.484	1.00	0.667	pCi/L	12/15/21 10:20	12/20/21 14:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	81.6		40 - 110					12/15/21 10:20	12/20/21 14:05	1
Y Carrier	81.9		40 - 110					12/15/21 10:20	12/20/21 14:05	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	1.46		0.498	0.509	5.00	0.667	pCi/L		12/21/21 17:31	1

Client Sample ID: WAP-5S

Date Collected: 11/01/21 13:55

Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-4

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23		1.0	0.71	mg/L			11/05/21 16:34	1
Fluoride	1.1		0.10	0.026	mg/L			11/05/21 16:34	1
Sulfate	22		1.0	0.76	mg/L			11/05/21 16:34	1

Method: EPA 9056A - Anions, Ion Chromatography - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	150	H	1.0	0.71	mg/L			12/09/21 08:38	1
Fluoride	0.091	J H	0.10	0.026	mg/L			12/09/21 08:38	1
Sulfate	420	H	10	7.6	mg/L			12/09/21 08:52	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/12/21 11:00	11/13/21 22:31	1
Arsenic	0.00070	J	0.0010	0.00031	mg/L		11/12/21 11:00	11/13/21 22:31	1
Barium	0.046		0.010	0.0016	mg/L		11/12/21 11:00	11/13/21 22:31	1
Beryllium	ND		0.0010	0.00018	mg/L		11/12/21 11:00	11/13/21 22:31	1
Boron	4.8		0.40	0.19	mg/L		11/12/21 11:00	11/17/21 14:03	5
Cadmium	ND		0.0010	0.00022	mg/L		11/12/21 11:00	11/13/21 22:31	1
Calcium	240		0.50	0.13	mg/L		11/12/21 11:00	11/13/21 22:31	1
Chromium	ND		0.0020	0.0015	mg/L		11/12/21 11:00	11/13/21 22:31	1
Cobalt	0.0076		0.0025	0.00067	mg/L		11/12/21 11:00	11/17/21 14:03	5
Lead	ND		0.0010	0.00013	mg/L		11/12/21 11:00	11/13/21 22:31	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-5S
 Date Collected: 11/01/21 13:55
 Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-4
 Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0050	0.0034	mg/L		11/12/21 11:00	11/13/21 22:31	1
Molybdenum	0.0011	J	0.0050	0.00061	mg/L		11/12/21 11:00	11/13/21 22:31	1
Selenium	ND		0.0050	0.0015	mg/L		11/12/21 11:00	11/13/21 22:31	1
Thallium	ND		0.0010	0.00015	mg/L		11/12/21 11:00	11/13/21 22:31	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		11/09/21 06:20	11/15/21 12:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1200		10	10	mg/L			11/05/21 17:30	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.0	HF	0.1	0.1	SU			11/06/21 09:59	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.105	U	0.125	0.125	1.00	0.206	pCi/L	11/09/21 16:45	12/05/21 20:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		40 - 110					11/09/21 16:45	12/05/21 20:22	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.572		0.319	0.323	1.00	0.474	pCi/L	12/15/21 10:20	12/20/21 14:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	80.8		40 - 110					12/15/21 10:20	12/20/21 14:05	1
Y Carrier	83.7		40 - 110					12/15/21 10:20	12/20/21 14:05	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	0.677		0.343	0.346	5.00	0.474	pCi/L		12/21/21 17:31	1

Client Sample ID: WAP-5I
 Date Collected: 11/01/21 14:53
 Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-5
 Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	28		1.0	0.71	mg/L			11/05/21 23:07	1
Fluoride	0.12		0.10	0.026	mg/L			11/05/21 23:07	1
Sulfate	47		1.0	0.76	mg/L			11/05/21 23:07	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-51
 Date Collected: 11/01/21 14:53
 Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-5
 Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/12/21 11:00	11/13/21 22:46	1
Arsenic	0.010		0.0010	0.00031	mg/L		11/12/21 11:00	11/13/21 22:46	1
Barium	0.13		0.010	0.0016	mg/L		11/12/21 11:00	11/13/21 22:46	1
Beryllium	ND		0.0010	0.00018	mg/L		11/12/21 11:00	11/13/21 22:46	1
Boron	0.14		0.080	0.039	mg/L		11/12/21 11:00	11/17/21 14:07	1
Cadmium	ND		0.0010	0.00022	mg/L		11/12/21 11:00	11/13/21 22:46	1
Calcium	45		0.50	0.13	mg/L		11/12/21 11:00	11/13/21 22:46	1
Chromium	ND		0.0020	0.0015	mg/L		11/12/21 11:00	11/13/21 22:46	1
Cobalt	0.00048	J ^2	0.00050	0.00013	mg/L		11/12/21 11:00	11/13/21 22:46	1
Lead	ND		0.0010	0.00013	mg/L		11/12/21 11:00	11/13/21 22:46	1
Lithium	0.0038	J	0.0050	0.0034	mg/L		11/12/21 11:00	11/13/21 22:46	1
Molybdenum	0.0019	J	0.0050	0.00061	mg/L		11/12/21 11:00	11/13/21 22:46	1
Selenium	ND		0.0050	0.0015	mg/L		11/12/21 11:00	11/13/21 22:46	1
Thallium	ND		0.0010	0.00015	mg/L		11/12/21 11:00	11/13/21 22:46	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		11/09/21 06:20	11/15/21 12:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	240		10	10	mg/L			11/05/21 17:30	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1	0.1	SU			11/06/21 10:01	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.415		0.177	0.181	1.00	0.213	pCi/L	11/09/21 16:45	12/05/21 20:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.4		40 - 110					11/09/21 16:45	12/05/21 20:22	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.928		0.385	0.394	1.00	0.532	pCi/L	12/15/21 10:20	12/20/21 14:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110					12/15/21 10:20	12/20/21 14:01	1
Y Carrier	79.6		40 - 110					12/15/21 10:20	12/20/21 14:01	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	1.34		0.424	0.434	5.00	0.532	pCi/L		12/21/21 17:31	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-5D

Lab Sample ID: 180-129535-6

Date Collected: 11/01/21 15:52

Matrix: Water

Date Received: 11/04/21 14:15

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			11/05/21 17:10	1
Fluoride	0.047	J	0.10	0.026	mg/L			11/05/21 17:10	1
Sulfate	0.87	J	1.0	0.76	mg/L			11/05/21 17:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/12/21 11:00	11/13/21 22:49	1
Arsenic	0.010		0.0010	0.00031	mg/L		11/12/21 11:00	11/13/21 22:49	1
Barium	0.19		0.010	0.0016	mg/L		11/12/21 11:00	11/13/21 22:49	1
Beryllium	ND		0.0010	0.00018	mg/L		11/12/21 11:00	11/13/21 22:49	1
Boron	0.082		0.080	0.039	mg/L		11/12/21 11:00	11/17/21 14:10	1
Cadmium	ND		0.0010	0.00022	mg/L		11/12/21 11:00	11/13/21 22:49	1
Calcium	47		0.50	0.13	mg/L		11/12/21 11:00	11/13/21 22:49	1
Chromium	ND		0.0020	0.0015	mg/L		11/12/21 11:00	11/13/21 22:49	1
Cobalt	ND		0.00050	0.00013	mg/L		11/12/21 11:00	11/13/21 22:49	1
Lead	ND		0.0010	0.00013	mg/L		11/12/21 11:00	11/13/21 22:49	1
Lithium	ND		0.0050	0.0034	mg/L		11/12/21 11:00	11/13/21 22:49	1
Molybdenum	0.0039	J	0.0050	0.00061	mg/L		11/12/21 11:00	11/13/21 22:49	1
Selenium	ND		0.0050	0.0015	mg/L		11/12/21 11:00	11/13/21 22:49	1
Thallium	ND		0.0010	0.00015	mg/L		11/12/21 11:00	11/13/21 22:49	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		11/09/21 06:20	11/15/21 12:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	220		10	10	mg/L			11/05/21 17:30	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1	0.1	SU			11/06/21 10:06	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.320		0.158	0.161	1.00	0.204	pCi/L	11/09/21 16:45	12/06/21 10:27	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
<i>Ba Carrier</i>	97.0		40 - 110					11/09/21 16:45	12/06/21 10:27	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.331	U	0.264	0.266	1.00	0.416	pCi/L	12/15/21 10:20	12/20/21 14:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
<i>Ba Carrier</i>	94.0		40 - 110					12/15/21 10:20	12/20/21 14:02	1
<i>Y Carrier</i>	80.0		40 - 110					12/15/21 10:20	12/20/21 14:02	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-5D

Lab Sample ID: 180-129535-6

Date Collected: 11/01/21 15:52

Matrix: Water

Date Received: 11/04/21 14:15

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	0.652		0.308	0.311	5.00	0.416	pCi/L		12/21/21 17:31	1

Client Sample ID: WAP-6S

Lab Sample ID: 180-129535-7

Date Collected: 11/02/21 12:29

Matrix: Water

Date Received: 11/04/21 14:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32		1.0	0.71	mg/L			11/05/21 08:45	1
Fluoride	0.39		0.10	0.026	mg/L			11/05/21 08:45	1
Sulfate	95		1.0	0.76	mg/L			11/05/21 08:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/11/21 11:00	11/12/21 13:06	1
Arsenic	0.0010		0.0010	0.00031	mg/L		11/11/21 11:00	11/12/21 13:06	1
Barium	0.042		0.010	0.0016	mg/L		11/11/21 11:00	11/12/21 13:06	1
Beryllium	ND		0.0010	0.00018	mg/L		11/11/21 11:00	11/12/21 13:06	1
Boron	2.2	F1	0.080	0.039	mg/L		11/11/21 11:00	11/13/21 11:43	1
Cadmium	ND		0.0010	0.00022	mg/L		11/11/21 11:00	11/12/21 13:06	1
Calcium	89		0.50	0.13	mg/L		11/11/21 11:00	11/12/21 13:06	1
Chromium	ND		0.0020	0.0015	mg/L		11/11/21 11:00	11/12/21 13:06	1
Cobalt	0.00092		0.00050	0.00013	mg/L		11/11/21 11:00	11/12/21 13:06	1
Lead	0.00018	J	0.0010	0.00013	mg/L		11/11/21 11:00	11/12/21 13:06	1
Lithium	ND		0.0050	0.0034	mg/L		11/11/21 11:00	11/12/21 13:06	1
Molybdenum	0.16		0.0050	0.00061	mg/L		11/11/21 11:00	11/12/21 13:06	1
Selenium	ND		0.0050	0.0015	mg/L		11/11/21 11:00	11/12/21 13:06	1
Thallium	0.00023	J	0.0010	0.00015	mg/L		11/11/21 11:00	11/12/21 13:06	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		11/09/21 06:20	11/15/21 12:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	430		10	10	mg/L			11/05/21 17:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1	0.1	SU			11/06/21 10:09	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.113	U	0.170	0.170	1.00	0.289	pCi/L	11/09/21 16:45	12/06/21 10:27	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.7		40 - 110	11/09/21 16:45	12/06/21 10:27	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-6S

Date Collected: 11/02/21 12:29

Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-7

Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.872		0.461	0.468	1.00	0.680	pCi/L	12/15/21 10:20	12/20/21 14:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.5		40 - 110					12/15/21 10:20	12/20/21 14:02	1
Y Carrier	69.2		40 - 110					12/15/21 10:20	12/20/21 14:02	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	0.985		0.491	0.498	5.00	0.680	pCi/L		12/21/21 17:31	1

Client Sample ID: WAP-6I

Date Collected: 11/02/21 13:04

Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-8

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	27		1.0	0.71	mg/L			11/06/21 00:01	1
Fluoride	0.13		0.10	0.026	mg/L			11/06/21 00:01	1
Sulfate	40		1.0	0.76	mg/L			11/06/21 00:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/11/21 11:00	11/12/21 13:31	1
Arsenic	0.0043		0.0010	0.00031	mg/L		11/11/21 11:00	11/12/21 13:31	1
Barium	0.15		0.010	0.0016	mg/L		11/11/21 11:00	11/12/21 13:31	1
Beryllium	ND		0.0010	0.00018	mg/L		11/11/21 11:00	11/12/21 13:31	1
Boron	0.11		0.080	0.039	mg/L		11/11/21 11:00	11/13/21 12:45	1
Cadmium	ND		0.0010	0.00022	mg/L		11/11/21 11:00	11/12/21 13:31	1
Calcium	46		0.50	0.13	mg/L		11/11/21 11:00	11/12/21 13:31	1
Chromium	ND		0.0020	0.0015	mg/L		11/11/21 11:00	11/12/21 13:31	1
Cobalt	0.00036	J	0.00050	0.00013	mg/L		11/11/21 11:00	11/12/21 13:31	1
Lead	ND		0.0010	0.00013	mg/L		11/11/21 11:00	11/12/21 13:31	1
Lithium	0.0040	J	0.0050	0.0034	mg/L		11/11/21 11:00	11/12/21 13:31	1
Molybdenum	0.0061		0.0050	0.00061	mg/L		11/11/21 11:00	11/12/21 13:31	1
Selenium	ND		0.0050	0.0015	mg/L		11/11/21 11:00	11/12/21 13:31	1
Thallium	0.00034	J	0.0010	0.00015	mg/L		11/11/21 11:00	11/12/21 13:31	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		11/09/21 06:20	11/15/21 12:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	270		10	10	mg/L			11/05/21 17:30	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1	0.1	SU			11/06/21 10:13	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-6I

Lab Sample ID: 180-129535-8

Date Collected: 11/02/21 13:04

Matrix: Water

Date Received: 11/04/21 14:15

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.170	U	0.140	0.141	1.00	0.204	pCi/L	11/09/21 16:45	12/06/21 10:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.7		40 - 110					11/09/21 16:45	12/06/21 10:32	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.71		0.526	0.549	1.00	0.664	pCi/L	12/15/21 10:20	12/20/21 14:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	75.6		40 - 110					12/15/21 10:20	12/20/21 14:02	1
Y Carrier	80.7		40 - 110					12/15/21 10:20	12/20/21 14:02	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	1.88		0.544	0.567	5.00	0.664	pCi/L		12/21/21 17:31	1

Client Sample ID: WAP-6D

Lab Sample ID: 180-129535-9

Date Collected: 11/02/21 15:42

Matrix: Water

Date Received: 11/04/21 14:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23		1.0	0.71	mg/L			11/06/21 00:19	1
Fluoride	0.13		0.10	0.026	mg/L			11/06/21 00:19	1
Sulfate	40		1.0	0.76	mg/L			11/06/21 00:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/11/21 11:00	11/12/21 13:35	1
Arsenic	0.0056		0.0010	0.00031	mg/L		11/11/21 11:00	11/12/21 13:35	1
Barium	0.19		0.010	0.0016	mg/L		11/11/21 11:00	11/12/21 13:35	1
Beryllium	ND		0.0010	0.00018	mg/L		11/11/21 11:00	11/12/21 13:35	1
Boron	0.069	J	0.080	0.039	mg/L		11/11/21 11:00	11/13/21 12:48	1
Cadmium	ND		0.0010	0.00022	mg/L		11/11/21 11:00	11/12/21 13:35	1
Calcium	41		0.50	0.13	mg/L		11/11/21 11:00	11/12/21 13:35	1
Chromium	ND		0.0020	0.0015	mg/L		11/11/21 11:00	11/12/21 13:35	1
Cobalt	ND		0.00050	0.00013	mg/L		11/11/21 11:00	11/12/21 13:35	1
Lead	ND		0.0010	0.00013	mg/L		11/11/21 11:00	11/12/21 13:35	1
Lithium	ND		0.0050	0.0034	mg/L		11/11/21 11:00	11/12/21 13:35	1
Molybdenum	0.0023	J	0.0050	0.00061	mg/L		11/11/21 11:00	11/12/21 13:35	1
Selenium	ND		0.0050	0.0015	mg/L		11/11/21 11:00	11/12/21 13:35	1
Thallium	ND		0.0010	0.00015	mg/L		11/11/21 11:00	11/12/21 13:35	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-6D

Lab Sample ID: 180-129535-9

Date Collected: 11/02/21 15:42

Matrix: Water

Date Received: 11/04/21 14:15

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		11/09/21 06:20	11/15/21 12:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	210		10	10	mg/L			11/05/21 17:30	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1	0.1	SU			11/06/21 10:14	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.216		0.133	0.134	1.00	0.181	pCi/L	11/09/21 16:45	12/06/21 10:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.7		40 - 110					11/09/21 16:45	12/06/21 10:32	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.715		0.386	0.392	1.00	0.569	pCi/L	12/15/21 10:20	12/20/21 14:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.8		40 - 110					12/15/21 10:20	12/20/21 14:02	1
Y Carrier	80.4		40 - 110					12/15/21 10:20	12/20/21 14:02	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	0.932		0.408	0.414	5.00	0.569	pCi/L		12/21/21 17:31	1

Client Sample ID: WAP-8S

Lab Sample ID: 180-129535-10

Date Collected: 11/02/21 09:52

Matrix: Water

Date Received: 11/04/21 14:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	85		1.0	0.71	mg/L			11/06/21 00:37	1
Fluoride	0.12		0.10	0.026	mg/L			11/06/21 00:37	1
Sulfate	300		5.0	3.8	mg/L			11/06/21 00:54	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/11/21 11:00	11/12/21 13:39	1
Arsenic	0.016		0.0010	0.00031	mg/L		11/11/21 11:00	11/12/21 13:39	1
Barium	0.26		0.010	0.0016	mg/L		11/11/21 11:00	11/12/21 13:39	1
Beryllium	ND		0.0010	0.00018	mg/L		11/11/21 11:00	11/12/21 13:39	1
Boron	3.1		0.16	0.077	mg/L		11/11/21 11:00	11/13/21 12:59	2
Cadmium	ND		0.0010	0.00022	mg/L		11/11/21 11:00	11/12/21 13:39	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-8S

Lab Sample ID: 180-129535-10

Date Collected: 11/02/21 09:52

Matrix: Water

Date Received: 11/04/21 14:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	150		0.50	0.13	mg/L		11/11/21 11:00	11/12/21 13:39	1
Chromium	ND		0.0020	0.0015	mg/L		11/11/21 11:00	11/12/21 13:39	1
Cobalt	0.00084		0.00050	0.00013	mg/L		11/11/21 11:00	11/12/21 13:39	1
Lead	ND		0.0010	0.00013	mg/L		11/11/21 11:00	11/12/21 13:39	1
Lithium	0.038		0.0050	0.0034	mg/L		11/11/21 11:00	11/12/21 13:39	1
Molybdenum	0.27		0.0050	0.00061	mg/L		11/11/21 11:00	11/12/21 13:39	1
Selenium	ND		0.0050	0.0015	mg/L		11/11/21 11:00	11/12/21 13:39	1
Thallium	ND		0.0010	0.00015	mg/L		11/11/21 11:00	11/12/21 13:39	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		11/09/21 06:20	11/15/21 12:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	780		10	10	mg/L			11/05/21 17:30	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1	0.1	SU			11/06/21 10:16	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.272		0.123	0.125	1.00	0.126	pCi/L	11/09/21 16:45	12/06/21 10:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.4		40 - 110					11/09/21 16:45	12/06/21 10:33	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.395	U	0.279	0.282	1.00	0.434	pCi/L	12/15/21 10:20	12/20/21 14:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.8		40 - 110					12/15/21 10:20	12/20/21 14:02	1
Y Carrier	80.7		40 - 110					12/15/21 10:20	12/20/21 14:02	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	0.667		0.305	0.308	5.00	0.434	pCi/L		12/21/21 17:31	1

Client Sample ID: WAP-8I

Lab Sample ID: 180-129535-11

Date Collected: 11/02/21 10:34

Matrix: Water

Date Received: 11/04/21 14:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23		1.0	0.71	mg/L			11/06/21 01:12	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-81

Lab Sample ID: 180-129535-11

Date Collected: 11/02/21 10:34

Matrix: Water

Date Received: 11/04/21 14:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.17		0.10	0.026	mg/L			11/06/21 01:12	1
Sulfate	41		1.0	0.76	mg/L			11/06/21 01:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/11/21 11:00	11/12/21 13:42	1
Arsenic	0.0034		0.0010	0.00031	mg/L		11/11/21 11:00	11/12/21 13:42	1
Barium	0.050		0.010	0.0016	mg/L		11/11/21 11:00	11/12/21 13:42	1
Beryllium	ND		0.0010	0.00018	mg/L		11/11/21 11:00	11/12/21 13:42	1
Boron	0.14		0.080	0.039	mg/L		11/11/21 11:00	11/13/21 13:03	1
Cadmium	ND		0.0010	0.00022	mg/L		11/11/21 11:00	11/12/21 13:42	1
Calcium	45		0.50	0.13	mg/L		11/11/21 11:00	11/12/21 13:42	1
Chromium	ND		0.0020	0.0015	mg/L		11/11/21 11:00	11/12/21 13:42	1
Cobalt	0.00049	J	0.00050	0.00013	mg/L		11/11/21 11:00	11/12/21 13:42	1
Lead	ND		0.0010	0.00013	mg/L		11/11/21 11:00	11/12/21 13:42	1
Lithium	ND		0.0050	0.0034	mg/L		11/11/21 11:00	11/12/21 13:42	1
Molybdenum	0.033		0.0050	0.00061	mg/L		11/11/21 11:00	11/12/21 13:42	1
Selenium	ND		0.0050	0.0015	mg/L		11/11/21 11:00	11/12/21 13:42	1
Thallium	ND		0.0010	0.00015	mg/L		11/11/21 11:00	11/12/21 13:42	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		11/09/21 06:20	11/15/21 12:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	270		10	10	mg/L			11/05/21 17:30	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1	0.1	SU			11/06/21 10:18	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.302		0.133	0.135	1.00	0.138	pCi/L	11/09/21 16:45	12/06/21 10:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.4		40 - 110					11/09/21 16:45	12/06/21 10:33	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.401	U	0.378	0.380	1.00	0.610	pCi/L	12/15/21 10:20	12/20/21 14:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.5		40 - 110					12/15/21 10:20	12/20/21 14:03	1
Y Carrier	80.0		40 - 110					12/15/21 10:20	12/20/21 14:03	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-8I

Lab Sample ID: 180-129535-11

Date Collected: 11/02/21 10:34

Matrix: Water

Date Received: 11/04/21 14:15

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	0.703		0.401	0.403	5.00	0.610	pCi/L		12/21/21 17:31	1

Client Sample ID: WAP-8D

Lab Sample ID: 180-129535-12

Date Collected: 11/02/21 11:30

Matrix: Water

Date Received: 11/04/21 14:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	22		1.0	0.71	mg/L			11/06/21 02:06	1
Fluoride	0.14		0.10	0.026	mg/L			11/06/21 02:06	1
Sulfate	45		1.0	0.76	mg/L			11/06/21 02:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/11/21 11:00	11/12/21 13:46	1
Arsenic	0.0026		0.0010	0.00031	mg/L		11/11/21 11:00	11/12/21 13:46	1
Barium	0.067		0.010	0.0016	mg/L		11/11/21 11:00	11/12/21 13:46	1
Beryllium	ND		0.0010	0.00018	mg/L		11/11/21 11:00	11/12/21 13:46	1
Boron	0.081		0.080	0.039	mg/L		11/11/21 11:00	11/13/21 13:06	1
Cadmium	ND		0.0010	0.00022	mg/L		11/11/21 11:00	11/12/21 13:46	1
Calcium	42		0.50	0.13	mg/L		11/11/21 11:00	11/12/21 13:46	1
Chromium	ND		0.0020	0.0015	mg/L		11/11/21 11:00	11/12/21 13:46	1
Cobalt	ND		0.00050	0.00013	mg/L		11/11/21 11:00	11/12/21 13:46	1
Lead	ND		0.0010	0.00013	mg/L		11/11/21 11:00	11/12/21 13:46	1
Lithium	ND		0.0050	0.0034	mg/L		11/11/21 11:00	11/12/21 13:46	1
Molybdenum	0.0013	J	0.0050	0.00061	mg/L		11/11/21 11:00	11/12/21 13:46	1
Selenium	ND		0.0050	0.0015	mg/L		11/11/21 11:00	11/12/21 13:46	1
Thallium	ND		0.0010	0.00015	mg/L		11/11/21 11:00	11/12/21 13:46	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		11/09/21 06:20	11/15/21 12:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	210		10	10	mg/L			11/05/21 17:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1	0.1	SU			11/06/21 10:19	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.304		0.133	0.136	1.00	0.142	pCi/L	11/09/21 16:45	12/06/21 10:33	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.5		40 - 110	11/09/21 16:45	12/06/21 10:33	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-8D

Lab Sample ID: 180-129535-12

Date Collected: 11/02/21 11:30

Matrix: Water

Date Received: 11/04/21 14:15

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.356	U	0.424	0.425	1.00	0.699	pCi/L	12/15/21 10:20	12/20/21 14:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	78.1		40 - 110					12/15/21 10:20	12/20/21 14:03	1
Y Carrier	78.1		40 - 110					12/15/21 10:20	12/20/21 14:03	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	0.660	U	0.444	0.446	5.00	0.699	pCi/L		12/21/21 17:31	1

Client Sample ID: WAP-9S

Lab Sample ID: 180-129535-13

Date Collected: 11/02/21 15:42

Matrix: Water

Date Received: 11/04/21 14:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	27		1.0	0.71	mg/L			11/06/21 02:24	1
Fluoride	0.84		0.10	0.026	mg/L			11/06/21 02:24	1
Sulfate	55		1.0	0.76	mg/L			11/06/21 02:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/11/21 11:00	11/12/21 13:49	1
Arsenic	0.0034		0.0010	0.00031	mg/L		11/11/21 11:00	11/12/21 13:49	1
Barium	0.12		0.010	0.0016	mg/L		11/11/21 11:00	11/12/21 13:49	1
Beryllium	0.00023	J	0.0010	0.00018	mg/L		11/11/21 11:00	11/12/21 13:49	1
Boron	1.6		0.080	0.039	mg/L		11/11/21 11:00	11/13/21 13:10	1
Cadmium	0.00035	J	0.0010	0.00022	mg/L		11/11/21 11:00	11/12/21 13:49	1
Calcium	82		0.50	0.13	mg/L		11/11/21 11:00	11/12/21 13:49	1
Chromium	0.0065		0.0020	0.0015	mg/L		11/11/21 11:00	11/12/21 13:49	1
Cobalt	0.0041		0.00050	0.00013	mg/L		11/11/21 11:00	11/12/21 13:49	1
Lead	0.0044		0.0010	0.00013	mg/L		11/11/21 11:00	11/12/21 13:49	1
Lithium	0.015		0.0050	0.0034	mg/L		11/11/21 11:00	11/12/21 13:49	1
Molybdenum	0.15		0.0050	0.00061	mg/L		11/11/21 11:00	11/12/21 13:49	1
Selenium	ND		0.0050	0.0015	mg/L		11/11/21 11:00	11/12/21 13:49	1
Thallium	0.00019	J	0.0010	0.00015	mg/L		11/11/21 11:00	11/12/21 13:49	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		11/09/21 06:20	11/15/21 12:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	370		10	10	mg/L			11/05/21 17:30	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1	0.1	SU			11/06/21 10:21	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-9S

Lab Sample ID: 180-129535-13

Date Collected: 11/02/21 15:42

Matrix: Water

Date Received: 11/04/21 14:15

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.487		0.251	0.255	1.00	0.298	pCi/L	11/09/21 16:45	12/06/21 10:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.2		40 - 110					11/09/21 16:45	12/06/21 10:33	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.162	U G	0.542	0.542	1.00	1.01	pCi/L	12/15/21 10:20	12/20/21 14:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.1		40 - 110					12/15/21 10:20	12/20/21 14:03	1
Y Carrier	81.5		40 - 110					12/15/21 10:20	12/20/21 14:03	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	0.325	U	0.597	0.599	5.00	1.01	pCi/L		12/21/21 17:31	1

Client Sample ID: WAP-9I

Lab Sample ID: 180-129535-14

Date Collected: 11/03/21 07:50

Matrix: Water

Date Received: 11/04/21 14:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	24		1.0	0.71	mg/L			11/06/21 03:00	1
Fluoride	0.21		0.10	0.026	mg/L			11/06/21 03:00	1
Sulfate	32		1.0	0.76	mg/L			11/06/21 03:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00057	J	0.0020	0.00038	mg/L		11/11/21 11:00	11/12/21 14:00	1
Arsenic	0.0049		0.0010	0.00031	mg/L		11/11/21 11:00	11/12/21 14:00	1
Barium	0.089		0.010	0.0016	mg/L		11/11/21 11:00	11/12/21 14:00	1
Beryllium	ND		0.0010	0.00018	mg/L		11/11/21 11:00	11/12/21 14:00	1
Boron	0.22		0.080	0.039	mg/L		11/11/21 11:00	11/13/21 13:14	1
Cadmium	ND		0.0010	0.00022	mg/L		11/11/21 11:00	11/12/21 14:00	1
Calcium	47		0.50	0.13	mg/L		11/11/21 11:00	11/12/21 14:00	1
Chromium	ND		0.0020	0.0015	mg/L		11/11/21 11:00	11/12/21 14:00	1
Cobalt	0.00031	J	0.00050	0.00013	mg/L		11/11/21 11:00	11/12/21 14:00	1
Lead	0.00014	J	0.0010	0.00013	mg/L		11/11/21 11:00	11/12/21 14:00	1
Lithium	0.0038	J	0.0050	0.0034	mg/L		11/11/21 11:00	11/12/21 14:00	1
Molybdenum	0.018		0.0050	0.00061	mg/L		11/11/21 11:00	11/12/21 14:00	1
Selenium	ND		0.0050	0.0015	mg/L		11/11/21 11:00	11/12/21 14:00	1
Thallium	ND		0.0010	0.00015	mg/L		11/11/21 11:00	11/12/21 14:00	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-9I
 Date Collected: 11/03/21 07:50
 Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-14
 Matrix: Water

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		11/09/21 06:20	11/15/21 12:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	230		10	10	mg/L			11/08/21 17:13	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1	0.1	SU			11/06/21 10:24	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.198	U	0.143	0.145	1.00	0.200	pCi/L	11/09/21 16:45	12/06/21 10:34	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.7		40 - 110					11/09/21 16:45	12/06/21 10:34	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.854		0.453	0.460	1.00	0.681	pCi/L	12/15/21 10:20	12/20/21 14:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.8		40 - 110					12/15/21 10:20	12/20/21 14:03	1
Y Carrier	82.2		40 - 110					12/15/21 10:20	12/20/21 14:03	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	1.05		0.475	0.482	5.00	0.681	pCi/L		12/21/21 17:31	1

Client Sample ID: WAP-9D
 Date Collected: 11/03/21 08:30
 Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-15
 Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17		1.0	0.71	mg/L			11/06/21 03:17	1
Fluoride	0.31		0.10	0.026	mg/L			11/06/21 03:17	1
Sulfate	36		1.0	0.76	mg/L			11/06/21 03:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0012	J	0.0020	0.00038	mg/L		11/11/21 11:00	11/12/21 14:04	1
Arsenic	0.0014		0.0010	0.00031	mg/L		11/11/21 11:00	11/12/21 14:04	1
Barium	0.12		0.010	0.0016	mg/L		11/11/21 11:00	11/12/21 14:04	1
Beryllium	ND		0.0010	0.00018	mg/L		11/11/21 11:00	11/12/21 14:04	1
Boron	0.15		0.080	0.039	mg/L		11/11/21 11:00	11/13/21 13:17	1
Cadmium	ND		0.0010	0.00022	mg/L		11/11/21 11:00	11/12/21 14:04	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-9D

Lab Sample ID: 180-129535-15

Date Collected: 11/03/21 08:30

Matrix: Water

Date Received: 11/04/21 14:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	37		0.50	0.13	mg/L		11/11/21 11:00	11/12/21 14:04	1
Chromium	0.0017	J	0.0020	0.0015	mg/L		11/11/21 11:00	11/12/21 14:04	1
Cobalt	0.00025	J	0.00050	0.00013	mg/L		11/11/21 11:00	11/12/21 14:04	1
Lead	0.00032	J	0.0010	0.00013	mg/L		11/11/21 11:00	11/12/21 14:04	1
Lithium	0.0038	J	0.0050	0.0034	mg/L		11/11/21 11:00	11/12/21 14:04	1
Molybdenum	0.0035	J	0.0050	0.00061	mg/L		11/11/21 11:00	11/12/21 14:04	1
Selenium	ND		0.0050	0.0015	mg/L		11/11/21 11:00	11/12/21 14:04	1
Thallium	ND		0.0010	0.00015	mg/L		11/11/21 11:00	11/12/21 14:04	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		11/09/21 06:20	11/15/21 12:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	200		10	10	mg/L			11/08/21 17:13	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1	0.1	SU			11/06/21 10:28	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.233		0.146	0.148	1.00	0.191	pCi/L	11/09/21 16:45	12/06/21 10:34	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110	11/09/21 16:45	12/06/21 10:34	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.320	U	0.333	0.334	1.00	0.542	pCi/L	12/15/21 10:20	12/20/21 14:04	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	91.8		40 - 110	12/15/21 10:20	12/20/21 14:04	1
Y Carrier	81.1		40 - 110	12/15/21 10:20	12/20/21 14:04	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	0.553		0.364	0.365	5.00	0.542	pCi/L		12/21/21 17:31	1

Client Sample ID: FB-1

Lab Sample ID: 180-129535-16

Date Collected: 11/01/21 14:12

Matrix: Water

Date Received: 11/04/21 14:15

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			11/06/21 03:35	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: FB-1

Lab Sample ID: 180-129535-16

Date Collected: 11/01/21 14:12

Matrix: Water

Date Received: 11/04/21 14:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.026	mg/L			11/06/21 03:35	1
Sulfate	ND		1.0	0.76	mg/L			11/06/21 03:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/11/21 11:00	11/12/21 14:07	1
Arsenic	ND		0.0010	0.00031	mg/L		11/11/21 11:00	11/12/21 14:07	1
Barium	ND		0.010	0.0016	mg/L		11/11/21 11:00	11/12/21 14:07	1
Beryllium	ND		0.0010	0.00018	mg/L		11/11/21 11:00	11/12/21 14:07	1
Boron	0.042	J	0.080	0.039	mg/L		11/11/21 11:00	11/13/21 13:21	1
Cadmium	ND		0.0010	0.00022	mg/L		11/11/21 11:00	11/12/21 14:07	1
Calcium	ND		0.50	0.13	mg/L		11/11/21 11:00	11/12/21 14:07	1
Chromium	ND		0.0020	0.0015	mg/L		11/11/21 11:00	11/12/21 14:07	1
Cobalt	ND		0.00050	0.00013	mg/L		11/11/21 11:00	11/12/21 14:07	1
Lead	ND		0.0010	0.00013	mg/L		11/11/21 11:00	11/12/21 14:07	1
Lithium	ND		0.0050	0.0034	mg/L		11/11/21 11:00	11/12/21 14:07	1
Molybdenum	ND		0.0050	0.00061	mg/L		11/11/21 11:00	11/12/21 14:07	1
Selenium	ND		0.0050	0.0015	mg/L		11/11/21 11:00	11/12/21 14:07	1
Thallium	ND		0.0010	0.00015	mg/L		11/11/21 11:00	11/12/21 14:07	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		11/09/21 06:20	11/15/21 12:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			11/05/21 17:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.0	HF	0.1	0.1	SU			11/06/21 10:29	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.143	U	0.104	0.105	1.00	0.145	pCi/L	11/09/21 16:45	12/06/21 10:34	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.7		40 - 110	11/09/21 16:45	12/06/21 10:34	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.232	U	0.308	0.308	1.00	0.513	pCi/L	12/15/21 10:20	12/20/21 14:04	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110	12/15/21 10:20	12/20/21 14:04	1
Y Carrier	80.7		40 - 110	12/15/21 10:20	12/20/21 14:04	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: FB-1

Lab Sample ID: 180-129535-16

Date Collected: 11/01/21 14:12

Matrix: Water

Date Received: 11/04/21 14:15

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	0.375	U	0.325	0.325	5.00	0.513	pCi/L		12/21/21 17:31	1

Client Sample ID: DUP-1

Lab Sample ID: 180-129535-17

Date Collected: 11/01/21 00:00

Matrix: Water

Date Received: 11/04/21 14:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	140		1.0	0.71	mg/L			11/06/21 03:53	1
Fluoride	0.086	J	0.10	0.026	mg/L			11/06/21 03:53	1
Sulfate	420		10	7.6	mg/L			11/06/21 04:11	10

Method: EPA 9056A - Anions, Ion Chromatography - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	140	H	1.0	0.71	mg/L			12/09/21 09:07	1
Fluoride	0.18	H	0.10	0.026	mg/L			12/09/21 09:07	1
Sulfate	410	H	10	7.6	mg/L			12/09/21 09:21	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/11/21 11:00	11/12/21 14:11	1
Arsenic	0.00037	J	0.0010	0.00031	mg/L		11/11/21 11:00	11/12/21 14:11	1
Barium	0.048		0.010	0.0016	mg/L		11/11/21 11:00	11/12/21 14:11	1
Beryllium	ND		0.0010	0.00018	mg/L		11/11/21 11:00	11/12/21 14:11	1
Boron	4.6		0.16	0.077	mg/L		11/11/21 11:00	11/13/21 13:25	2
Cadmium	ND		0.0010	0.00022	mg/L		11/11/21 11:00	11/12/21 14:11	1
Calcium	250		0.50	0.13	mg/L		11/11/21 11:00	11/12/21 14:11	1
Chromium	ND		0.0020	0.0015	mg/L		11/11/21 11:00	11/12/21 14:11	1
Cobalt	0.0076		0.00050	0.00013	mg/L		11/11/21 11:00	11/12/21 14:11	1
Lead	ND		0.0010	0.00013	mg/L		11/11/21 11:00	11/12/21 14:11	1
Lithium	ND		0.0050	0.0034	mg/L		11/11/21 11:00	11/12/21 14:11	1
Molybdenum	0.00069	J	0.0050	0.00061	mg/L		11/11/21 11:00	11/12/21 14:11	1
Selenium	ND		0.0050	0.0015	mg/L		11/11/21 11:00	11/12/21 14:11	1
Thallium	ND		0.0010	0.00015	mg/L		11/11/21 11:00	11/12/21 14:11	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		11/09/21 06:20	11/15/21 12:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1200		10	10	mg/L			11/05/21 17:30	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.9	HF	0.1	0.1	SU			11/06/21 10:31	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: DUP-1
 Date Collected: 11/01/21 00:00
 Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-17
 Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.323		0.168	0.170	1.00	0.221	pCi/L	11/09/21 16:45	12/06/21 10:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.1		40 - 110					11/09/21 16:45	12/06/21 10:31	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.162	U	0.258	0.258	1.00	0.435	pCi/L	12/15/21 10:20	12/20/21 13:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.0		40 - 110					12/15/21 10:20	12/20/21 13:58	1
Y Carrier	78.1		40 - 110					12/15/21 10:20	12/20/21 13:58	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	0.485		0.308	0.309	5.00	0.435	pCi/L		12/21/21 17:31	1

Client Sample ID: DUP-2
 Date Collected: 11/02/21 00:00
 Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-18
 Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	86		1.0	0.71	mg/L			11/06/21 04:29	1
Fluoride	0.11		0.10	0.026	mg/L			11/06/21 04:29	1
Sulfate	300		5.0	3.8	mg/L			11/06/21 04:47	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/11/21 11:00	11/12/21 14:15	1
Arsenic	0.016		0.0010	0.00031	mg/L		11/11/21 11:00	11/12/21 14:15	1
Barium	0.26		0.010	0.0016	mg/L		11/11/21 11:00	11/12/21 14:15	1
Beryllium	ND		0.0010	0.00018	mg/L		11/11/21 11:00	11/12/21 14:15	1
Boron	3.1		0.16	0.077	mg/L		11/11/21 11:00	11/13/21 13:36	2
Cadmium	ND		0.0010	0.00022	mg/L		11/11/21 11:00	11/12/21 14:15	1
Calcium	150		0.50	0.13	mg/L		11/11/21 11:00	11/12/21 14:15	1
Chromium	ND		0.0020	0.0015	mg/L		11/11/21 11:00	11/12/21 14:15	1
Cobalt	0.00071		0.00050	0.00013	mg/L		11/11/21 11:00	11/12/21 14:15	1
Lead	ND		0.0010	0.00013	mg/L		11/11/21 11:00	11/12/21 14:15	1
Lithium	0.038		0.0050	0.0034	mg/L		11/11/21 11:00	11/12/21 14:15	1
Molybdenum	0.28		0.0050	0.00061	mg/L		11/11/21 11:00	11/12/21 14:15	1
Selenium	ND		0.0050	0.0015	mg/L		11/11/21 11:00	11/12/21 14:15	1
Thallium	ND		0.0010	0.00015	mg/L		11/11/21 11:00	11/12/21 14:15	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: DUP-2
 Date Collected: 11/02/21 00:00
 Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-18
 Matrix: Water

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		11/09/21 06:20	11/15/21 12:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	780		10	10	mg/L			11/05/21 17:30	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1	0.1	SU			11/06/21 10:33	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.521		0.208	0.213	1.00	0.237	pCi/L	11/09/21 16:45	12/06/21 10:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
<i>Ba Carrier</i>	97.2		40 - 110					11/09/21 16:45	12/06/21 10:31	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.118	U	0.248	0.248	1.00	0.425	pCi/L	12/15/21 10:20	12/20/21 13:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
<i>Ba Carrier</i>	95.8		40 - 110					12/15/21 10:20	12/20/21 13:58	1
<i>Y Carrier</i>	79.6		40 - 110					12/15/21 10:20	12/20/21 13:58	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	0.639		0.324	0.327	5.00	0.425	pCi/L		12/21/21 17:31	1

Client Sample ID: WAP-3S
 Date Collected: 11/03/21 09:12
 Date Received: 11/04/21 14:15

Lab Sample ID: 180-129535-19
 Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34		1.0	0.71	mg/L			11/06/21 05:40	1
Fluoride	0.67		0.10	0.026	mg/L			11/06/21 05:40	1
Sulfate	120		1.0	0.76	mg/L			11/06/21 05:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/11/21 11:00	11/12/21 14:18	1
Arsenic	0.00065	J	0.0010	0.00031	mg/L		11/11/21 11:00	11/12/21 14:18	1
Barium	0.027		0.010	0.0016	mg/L		11/11/21 11:00	11/12/21 14:18	1
Beryllium	ND		0.0010	0.00018	mg/L		11/11/21 11:00	11/12/21 14:18	1
Boron	4.7		0.16	0.077	mg/L		11/11/21 11:00	11/13/21 13:46	2
Cadmium	ND		0.0010	0.00022	mg/L		11/11/21 11:00	11/12/21 14:18	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-3S

Lab Sample ID: 180-129535-19

Date Collected: 11/03/21 09:12

Matrix: Water

Date Received: 11/04/21 14:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	94		0.50	0.13	mg/L		11/11/21 11:00	11/12/21 14:18	1
Chromium	ND		0.0020	0.0015	mg/L		11/11/21 11:00	11/12/21 14:18	1
Cobalt	0.0011		0.00050	0.00013	mg/L		11/11/21 11:00	11/12/21 14:18	1
Lead	0.00037	J	0.0010	0.00013	mg/L		11/11/21 11:00	11/12/21 14:18	1
Lithium	0.077		0.0050	0.0034	mg/L		11/11/21 11:00	11/12/21 14:18	1
Molybdenum	0.95		0.0050	0.00061	mg/L		11/11/21 11:00	11/12/21 14:18	1
Selenium	ND		0.0050	0.0015	mg/L		11/11/21 11:00	11/12/21 14:18	1
Thallium	ND		0.0010	0.00015	mg/L		11/11/21 11:00	11/12/21 14:18	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		11/09/21 06:20	11/15/21 12:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	410		10	10	mg/L			11/08/21 17:25	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1	0.1	SU			11/06/21 08:17	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.809		0.252	0.262	1.00	0.255	pCi/L	11/09/21 16:45	12/06/21 10:35	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.2		40 - 110	11/09/21 16:45	12/06/21 10:35	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.270	U	0.309	0.310	1.00	0.508	pCi/L	12/15/21 10:20	12/20/21 13:58	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.0		40 - 110	12/15/21 10:20	12/20/21 13:58	1
Y Carrier	82.2		40 - 110	12/15/21 10:20	12/20/21 13:58	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	1.08		0.399	0.406	5.00	0.508	pCi/L		12/21/21 17:31	1

Client Sample ID: WAP-3D

Lab Sample ID: 180-129535-20

Date Collected: 11/03/21 09:54

Matrix: Water

Date Received: 11/04/21 14:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	36		1.0	0.71	mg/L			11/06/21 06:16	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-3D

Lab Sample ID: 180-129535-20

Date Collected: 11/03/21 09:54

Matrix: Water

Date Received: 11/04/21 14:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.44		0.10	0.026	mg/L			11/06/21 06:16	1
Sulfate	ND		1.0	0.76	mg/L			11/06/21 06:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/11/21 11:00	11/12/21 14:22	1
Arsenic	ND		0.0010	0.00031	mg/L		11/11/21 11:00	11/12/21 14:22	1
Barium	0.012		0.010	0.0016	mg/L		11/11/21 11:00	11/12/21 14:22	1
Beryllium	ND		0.0010	0.00018	mg/L		11/11/21 11:00	11/12/21 14:22	1
Boron	4.3		0.16	0.077	mg/L		11/11/21 11:00	11/13/21 13:57	2
Cadmium	ND		0.0010	0.00022	mg/L		11/11/21 11:00	11/12/21 14:22	1
Calcium	100		0.50	0.13	mg/L		11/11/21 11:00	11/12/21 14:22	1
Chromium	ND		0.0020	0.0015	mg/L		11/11/21 11:00	11/12/21 14:22	1
Cobalt	0.00075		0.00050	0.00013	mg/L		11/11/21 11:00	11/12/21 14:22	1
Lead	ND		0.0010	0.00013	mg/L		11/11/21 11:00	11/12/21 14:22	1
Lithium	0.073		0.0050	0.0034	mg/L		11/11/21 11:00	11/12/21 14:22	1
Molybdenum	0.44		0.0050	0.00061	mg/L		11/11/21 11:00	11/12/21 14:22	1
Selenium	ND		0.0050	0.0015	mg/L		11/11/21 11:00	11/12/21 14:22	1
Thallium	ND		0.0010	0.00015	mg/L		11/11/21 11:00	11/12/21 14:22	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		11/09/21 06:20	11/15/21 12:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	480		10	10	mg/L			11/08/21 17:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1	0.1	SU			11/06/21 08:22	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.714		0.241	0.249	1.00	0.256	pCi/L	11/09/21 16:45	12/06/21 10:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.0		40 - 110					11/09/21 16:45	12/06/21 10:36	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.213	U	0.246	0.247	1.00	0.405	pCi/L	12/15/21 10:20	12/20/21 13:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110					12/15/21 10:20	12/20/21 13:59	1
Y Carrier	80.7		40 - 110					12/15/21 10:20	12/20/21 13:59	1

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Client Sample Results

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

Job ID: 180-129535-1

Client Sample ID: WAP-3D

Lab Sample ID: 180-129535-20

Date Collected: 11/03/21 09:54

Matrix: Water

Date Received: 11/04/21 14:15

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	0.927		0.344	0.351	5.00	0.405	pCi/L		12/21/21 17:31	1

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

QC Sample Results

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

Job ID: 180-129535-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-377720/55
Matrix: Water
Analysis Batch: 377720

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			11/05/21 22:49	1
Fluoride	ND		0.10	0.026	mg/L			11/05/21 22:49	1
Sulfate	ND		1.0	0.76	mg/L			11/05/21 22:49	1

Lab Sample ID: MB 180-377720/7
Matrix: Water
Analysis Batch: 377720

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			11/05/21 08:06	1
Fluoride	ND		0.10	0.026	mg/L			11/05/21 08:06	1
Sulfate	ND		1.0	0.76	mg/L			11/05/21 08:06	1

Lab Sample ID: LCS 180-377720/54
Matrix: Water
Analysis Batch: 377720

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	47.6		mg/L		95	80 - 120
Fluoride	2.50	2.33		mg/L		93	80 - 120
Sulfate	50.0	46.9		mg/L		94	80 - 120

Lab Sample ID: LCS 180-377720/6
Matrix: Water
Analysis Batch: 377720

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	49.4		mg/L		99	80 - 120
Fluoride	2.50	2.39		mg/L		96	80 - 120
Sulfate	50.0	48.1		mg/L		96	80 - 120

Lab Sample ID: 180-129535-5 MS
Matrix: Water
Analysis Batch: 377720

Client Sample ID: WAP-5I
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	28		50.0	75.3		mg/L		95	80 - 120
Fluoride	0.12		2.50	2.61		mg/L		100	80 - 120
Sulfate	47		50.0	94.1		mg/L		93	80 - 120

Lab Sample ID: 180-129535-5 MSD
Matrix: Water
Analysis Batch: 377720

Client Sample ID: WAP-5I
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	28		50.0	80.8		mg/L		106	80 - 120	7	15
Fluoride	0.12		2.50	2.81		mg/L		108	80 - 120	7	15
Sulfate	47		50.0	101		mg/L		107	80 - 120	7	15

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QC Sample Results

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

Job ID: 180-129535-1

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

Lab Sample ID: 180-129535-7 MS
Matrix: Water
Analysis Batch: 377720

Client Sample ID: WAP-6S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	34		250	305		mg/L		108	80 - 120
Fluoride	0.34	J	12.5	13.9		mg/L		109	80 - 120
Sulfate	100		250	375		mg/L		109	80 - 120

Lab Sample ID: 180-129535-7 MSD
Matrix: Water
Analysis Batch: 377720

Client Sample ID: WAP-6S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	34		250	290		mg/L		102	80 - 120	5	15
Fluoride	0.34	J	12.5	13.3		mg/L		103	80 - 120	5	15
Sulfate	100		250	356		mg/L		101	80 - 120	5	15

Lab Sample ID: MB 180-381392/33
Matrix: Water
Analysis Batch: 381392

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			12/08/21 23:57	1
Fluoride	ND		0.10	0.026	mg/L			12/08/21 23:57	1
Sulfate	ND		1.0	0.76	mg/L			12/08/21 23:57	1

Lab Sample ID: LCS 180-381392/32
Matrix: Water
Analysis Batch: 381392

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	2.59		mg/L		103	80 - 120
Sulfate	50.0	49.6		mg/L		99	80 - 120

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

Lab Sample ID: MB 180-378429/1-A
Matrix: Water
Analysis Batch: 378827

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 378429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/11/21 11:00	11/12/21 12:59	1
Arsenic	ND		0.0010	0.00031	mg/L		11/11/21 11:00	11/12/21 12:59	1
Barium	ND		0.010	0.0016	mg/L		11/11/21 11:00	11/12/21 12:59	1
Beryllium	ND		0.0010	0.00018	mg/L		11/11/21 11:00	11/12/21 12:59	1
Cadmium	ND		0.0010	0.00022	mg/L		11/11/21 11:00	11/12/21 12:59	1
Calcium	ND		0.50	0.13	mg/L		11/11/21 11:00	11/12/21 12:59	1
Chromium	ND		0.0020	0.0015	mg/L		11/11/21 11:00	11/12/21 12:59	1
Cobalt	ND		0.00050	0.00013	mg/L		11/11/21 11:00	11/12/21 12:59	1
Lead	ND		0.0010	0.00013	mg/L		11/11/21 11:00	11/12/21 12:59	1
Lithium	ND		0.0050	0.0034	mg/L		11/11/21 11:00	11/12/21 12:59	1
Molybdenum	ND		0.0050	0.00061	mg/L		11/11/21 11:00	11/12/21 12:59	1
Selenium	ND		0.0050	0.0015	mg/L		11/11/21 11:00	11/12/21 12:59	1

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QC Sample Results

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

Job ID: 180-129535-1

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

Lab Sample ID: MB 180-378429/1-A
Matrix: Water
Analysis Batch: 378827

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 378429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		0.0010	0.00015	mg/L		11/11/21 11:00	11/12/21 12:59	1

Lab Sample ID: MB 180-378429/1-A
Matrix: Water
Analysis Batch: 378981

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 378429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.080	0.039	mg/L		11/11/21 11:00	11/13/21 11:35	1

Lab Sample ID: LCS 180-378429/2-A
Matrix: Water
Analysis Batch: 378827

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 378429

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.250	0.236		mg/L		94	80 - 120
Arsenic	1.00	0.990		mg/L		99	80 - 120
Barium	1.00	0.993		mg/L		99	80 - 120
Beryllium	0.500	0.460		mg/L		92	80 - 120
Cadmium	0.500	0.500		mg/L		100	80 - 120
Calcium	25.0	26.6		mg/L		106	80 - 120
Chromium	0.500	0.493		mg/L		99	80 - 120
Cobalt	0.500	0.507		mg/L		101	80 - 120
Lead	0.500	0.498		mg/L		100	80 - 120
Lithium	0.500	0.454		mg/L		91	80 - 120
Molybdenum	0.500	0.502		mg/L		100	80 - 120
Selenium	1.00	0.991		mg/L		99	80 - 120
Thallium	1.00	1.05		mg/L		105	80 - 120

Lab Sample ID: LCS 180-378429/2-A
Matrix: Water
Analysis Batch: 378981

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 378429

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.15		mg/L		92	80 - 120

Lab Sample ID: 180-129535-7 MS
Matrix: Water
Analysis Batch: 378827

Client Sample ID: WAP-6S
Prep Type: Total Recoverable
Prep Batch: 378429

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		0.250	0.240		mg/L		96	75 - 125
Arsenic	0.0010		1.00	1.04		mg/L		104	75 - 125
Barium	0.042		1.00	1.07		mg/L		103	75 - 125
Beryllium	ND		0.500	0.481		mg/L		96	75 - 125
Cadmium	ND		0.500	0.514		mg/L		103	75 - 125
Calcium	89		25.0	111		mg/L		90	75 - 125
Chromium	ND		0.500	0.504		mg/L		101	75 - 125
Cobalt	0.00092		0.500	0.524		mg/L		105	75 - 125
Lead	0.00018	J	0.500	0.516		mg/L		103	75 - 125
Lithium	ND		0.500	0.471		mg/L		94	75 - 125

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QC Sample Results

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

Job ID: 180-129535-1

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

Lab Sample ID: 180-129535-7 MS
Matrix: Water
Analysis Batch: 378827

Client Sample ID: WAP-6S
Prep Type: Total Recoverable
Prep Batch: 378429

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Molybdenum	0.16		0.500	0.689		mg/L		106	75 - 125
Selenium	ND		1.00	1.02		mg/L		102	75 - 125
Thallium	0.00023	J	1.00	1.11		mg/L		111	75 - 125

Lab Sample ID: 180-129535-7 MS
Matrix: Water
Analysis Batch: 378981

Client Sample ID: WAP-6S
Prep Type: Total Recoverable
Prep Batch: 378429

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	2.2	F1	1.25	3.11	F1	mg/L		72	75 - 125

Lab Sample ID: 180-129535-7 MSD
Matrix: Water
Analysis Batch: 378827

Client Sample ID: WAP-6S
Prep Type: Total Recoverable
Prep Batch: 378429

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Antimony	ND		0.250	0.235		mg/L		94	75 - 125	2	20
Arsenic	0.0010		1.00	1.02		mg/L		102	75 - 125	2	20
Barium	0.042		1.00	1.04		mg/L		100	75 - 125	3	20
Beryllium	ND		0.500	0.472		mg/L		94	75 - 125	2	20
Cadmium	ND		0.500	0.501		mg/L		100	75 - 125	2	20
Calcium	89		25.0	113		mg/L		96	75 - 125	1	20
Chromium	ND		0.500	0.492		mg/L		98	75 - 125	2	20
Cobalt	0.00092		0.500	0.514		mg/L		103	75 - 125	2	20
Lead	0.00018	J	0.500	0.505		mg/L		101	75 - 125	2	20
Lithium	ND		0.500	0.463		mg/L		93	75 - 125	2	20
Molybdenum	0.16		0.500	0.678		mg/L		104	75 - 125	1	20
Selenium	ND		1.00	1.00		mg/L		100	75 - 125	2	20
Thallium	0.00023	J	1.00	1.08		mg/L		108	75 - 125	3	20

Lab Sample ID: 180-129535-7 MSD
Matrix: Water
Analysis Batch: 378981

Client Sample ID: WAP-6S
Prep Type: Total Recoverable
Prep Batch: 378429

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Boron	2.2	F1	1.25	3.11	F1	mg/L		72	75 - 125	0	20

Lab Sample ID: MB 180-378431/1-A
Matrix: Water
Analysis Batch: 378981

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 378431

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/12/21 11:00	11/13/21 17:51	1
Arsenic	ND		0.0010	0.00031	mg/L		11/12/21 11:00	11/13/21 17:51	1
Barium	ND		0.010	0.0016	mg/L		11/12/21 11:00	11/13/21 17:51	1
Beryllium	ND		0.0010	0.00018	mg/L		11/12/21 11:00	11/13/21 17:51	1
Boron	ND		0.080	0.039	mg/L		11/12/21 11:00	11/13/21 17:51	1
Cadmium	ND		0.0010	0.00022	mg/L		11/12/21 11:00	11/13/21 17:51	1
Chromium	ND		0.0020	0.0015	mg/L		11/12/21 11:00	11/13/21 17:51	1
Cobalt	ND		0.00050	0.00013	mg/L		11/12/21 11:00	11/13/21 17:51	1

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QC Sample Results

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

Job ID: 180-129535-1

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

Lab Sample ID: MB 180-378431/1-A
Matrix: Water
Analysis Batch: 378981

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 378431

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0010	0.00013	mg/L		11/12/21 11:00	11/13/21 17:51	1
Lithium	ND		0.0050	0.0034	mg/L		11/12/21 11:00	11/13/21 17:51	1
Molybdenum	ND		0.0050	0.00061	mg/L		11/12/21 11:00	11/13/21 17:51	1
Selenium	ND		0.0050	0.0015	mg/L		11/12/21 11:00	11/13/21 17:51	1
Thallium	ND		0.0010	0.00015	mg/L		11/12/21 11:00	11/13/21 17:51	1

Lab Sample ID: MB 180-378431/1-A
Matrix: Water
Analysis Batch: 379323

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 378431

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.13	mg/L		11/12/21 11:00	11/17/21 12:57	1

Lab Sample ID: LCS 180-378431/2-A
Matrix: Water
Analysis Batch: 378981

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 378431

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.250	0.246		mg/L		98	80 - 120
Arsenic	1.00	1.01		mg/L		101	80 - 120
Barium	1.00	1.01		mg/L		101	80 - 120
Beryllium	0.500	0.477		mg/L		95	80 - 120
Boron	1.25	1.09		mg/L		87	80 - 120
Cadmium	0.500	0.507		mg/L		101	80 - 120
Chromium	0.500	0.501		mg/L		100	80 - 120
Cobalt	0.500	0.515		mg/L		103	80 - 120
Lead	0.500	0.503		mg/L		101	80 - 120
Lithium	0.500	0.479		mg/L		96	80 - 120
Molybdenum	0.500	0.514		mg/L		103	80 - 120
Selenium	1.00	0.980		mg/L		98	80 - 120
Thallium	1.00	1.05		mg/L		105	80 - 120

Lab Sample ID: LCS 180-378431/2-A
Matrix: Water
Analysis Batch: 379323

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 378431

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Calcium	25.0	28.6		mg/L		114	80 - 120

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-378159/1-A
Matrix: Water
Analysis Batch: 378967

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 378159

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		11/09/21 06:20	11/15/21 12:20	1

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QC Sample Results

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

Job ID: 180-129535-1

Method: EPA 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 180-378159/2-A
Matrix: Water
Analysis Batch: 378967

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 378159
 %Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.00250	0.00258		mg/L		103	80 - 120

Lab Sample ID: 180-129535-7 MS
Matrix: Water
Analysis Batch: 378967

Client Sample ID: WAP-6S
Prep Type: Total/NA
Prep Batch: 378159
 %Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	ND		0.00100	0.00101		mg/L		101	75 - 125

Lab Sample ID: 180-129535-7 MSD
Matrix: Water
Analysis Batch: 378967

Client Sample ID: WAP-6S
Prep Type: Total/NA
Prep Batch: 378159
 %Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	ND		0.00100	0.000949		mg/L		95	75 - 125	6	20

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-377902/1
Matrix: Water
Analysis Batch: 377902

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

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

Lab Sample ID: LCS 180-377903/1
Matrix: Water
Analysis Batch: 377903

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

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

Lab Sample ID: 180-129535-6 DU
Matrix: Water
Analysis Batch: 377903

Client Sample ID: WAP-5D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
pH	7.6	HF	7.6		SU		0.1	2

Lab Sample ID: 180-129535-7 DU
Matrix: Water
Analysis Batch: 377903

Client Sample ID: WAP-6S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
pH	7.6	HF	7.5	HF	SU		1	2

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QC Sample Results

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

Job ID: 180-129535-1

Method: EPA 9040C - pH (Continued)

Lab Sample ID: 180-129535-14 DU
Matrix: Water
Analysis Batch: 377903

Client Sample ID: WAP-9I
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
pH	7.6	HF	7.6		SU		0.3	2

Lab Sample ID: LCS 180-377921/1
Matrix: Water
Analysis Batch: 377921

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 180-377880/2
Matrix: Water
Analysis Batch: 377880

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			11/05/21 17:30	1

Lab Sample ID: LCS 180-377880/1
Matrix: Water
Analysis Batch: 377880

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	422	426		mg/L		101	80 - 120

Lab Sample ID: 180-129535-7 DU
Matrix: Water
Analysis Batch: 377880

Client Sample ID: WAP-6S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	430		429		mg/L		0.9	10

Lab Sample ID: 180-129535-11 DU
Matrix: Water
Analysis Batch: 377880

Client Sample ID: WAP-8I
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	270		285		mg/L		6	10

Lab Sample ID: MB 180-378125/2
Matrix: Water
Analysis Batch: 378125

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			11/08/21 17:13	1

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QC Sample Results

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

Job ID: 180-129535-1

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

Lab Sample ID: LCS 180-378125/1
 Matrix: Water
 Analysis Batch: 378125

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	422	480		mg/L		114	80 - 120

Lab Sample ID: MB 180-378127/2
 Matrix: Water
 Analysis Batch: 378127

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			11/08/21 17:25	1

Lab Sample ID: LCS 180-378127/1
 Matrix: Water
 Analysis Batch: 378127

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	422	376		mg/L		89	80 - 120

Lab Sample ID: 180-129535-20 DU
 Matrix: Water
 Analysis Batch: 378127

Client Sample ID: WAP-3D
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	480		473		mg/L		2	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-535772/23-A
 Matrix: Water
 Analysis Batch: 540406

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 535772

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.6023		0.195	0.202	1.00	0.190	pCi/L	11/09/21 16:45	12/06/21 10:36	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	83.5		40 - 110	11/09/21 16:45	12/06/21 10:36	1

Lab Sample ID: LCS 160-535772/1-A
 Matrix: Water
 Analysis Batch: 540334

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 535772

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.3	9.947		1.15	1.00	0.253	pCi/L	88	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	92.7		40 - 110

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QC Sample Results

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

Job ID: 180-129535-1

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

Lab Sample ID: 180-129535-7 DU
Matrix: Water
Analysis Batch: 540407

Client Sample ID: WAP-6S
Prep Type: Total/NA
Prep Batch: 535772

Analyte	Sample	Sample	DU	DU	Total	RL	MDC	Unit	RER	RER	
	Result	Qual	Result	Qual	Uncert. (2σ+/-)						Limit
Radium-226	0.113	U	-0.00665	U	0.148	1.00	0.296	pCi/L	0.38	1	
					6						
Carrier	DU	DU									
	%Yield	Qualifier	Limits								
Ba Carrier	90.6		40 - 110								

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-542176/23-A
Matrix: Water
Analysis Batch: 543040

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 542176

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.1122	U	0.327	0.327	1.00	0.567	pCi/L	12/15/21 10:20	12/20/21 13:59	1
Carrier	MB	MB	Limits				Prepared		Analyzed	
	%Yield	Qualifier	Limits				Prepared		Analyzed	
Ba Carrier	98.3		40 - 110				12/15/21 10:20		12/20/21 13:59	
Y Carrier	82.6		40 - 110				12/15/21 10:20		12/20/21 13:59	

Lab Sample ID: LCS 160-542176/1-A
Matrix: Water
Analysis Batch: 543041

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 542176

Analyte	Spike Added	LCS	LCS	Total	RL	MDC	Unit	%Rec	%Rec.	Limits
				Uncert. (2σ+/-)						
Radium-228	12.1	14.14	Qual	1.68	1.00	0.546	pCi/L	117	75 - 125	
Carrier	LCS	LCS	Limits							
	%Yield	Qualifier	Limits							
Ba Carrier	84.1		40 - 110							
Y Carrier	81.9		40 - 110							

Lab Sample ID: LCSD 160-542176/2-A
Matrix: Water
Analysis Batch: 543041

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 542176

Analyte	Spike Added	LCSD	LCSD	Total	RL	MDC	Unit	%Rec	%Rec.	Limits	RER	RER
				Uncert. (2σ+/-)								
Radium-228	12.1	13.39	Qual	1.61	1.00	0.589	pCi/L	111	75 - 125	0.23	1	
Carrier	LCSD	LCSD	Limits									
	%Yield	Qualifier	Limits									
Ba Carrier	86.6		40 - 110									
Y Carrier	81.9		40 - 110									

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QC Association Summary

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

Job ID: 180-129535-1

HPLC/IC

Analysis Batch: 377720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-1	WAP-4S	Total/NA	Water	EPA 9056A	
180-129535-1	WAP-4S	Total/NA	Water	EPA 9056A	
180-129535-2	WAP-4I	Total/NA	Water	EPA 9056A	
180-129535-3	WAP-4D	Total/NA	Water	EPA 9056A	
180-129535-4	WAP-5S	Total/NA	Water	EPA 9056A	
180-129535-5	WAP-5I	Total/NA	Water	EPA 9056A	
180-129535-6	WAP-5D	Total/NA	Water	EPA 9056A	
180-129535-7	WAP-6S	Total/NA	Water	EPA 9056A	
180-129535-8	WAP-6I	Total/NA	Water	EPA 9056A	
180-129535-9	WAP-6D	Total/NA	Water	EPA 9056A	
180-129535-10	WAP-8S	Total/NA	Water	EPA 9056A	
180-129535-10	WAP-8S	Total/NA	Water	EPA 9056A	
180-129535-11	WAP-8I	Total/NA	Water	EPA 9056A	
180-129535-12	WAP-8D	Total/NA	Water	EPA 9056A	
180-129535-13	WAP-9S	Total/NA	Water	EPA 9056A	
180-129535-14	WAP-9I	Total/NA	Water	EPA 9056A	
180-129535-15	WAP-9D	Total/NA	Water	EPA 9056A	
180-129535-16	FB-1	Total/NA	Water	EPA 9056A	
180-129535-17	DUP-1	Total/NA	Water	EPA 9056A	
180-129535-17	DUP-1	Total/NA	Water	EPA 9056A	
180-129535-18	DUP-2	Total/NA	Water	EPA 9056A	
180-129535-18	DUP-2	Total/NA	Water	EPA 9056A	
180-129535-19	WAP-3S	Total/NA	Water	EPA 9056A	
180-129535-20	WAP-3D	Total/NA	Water	EPA 9056A	
MB 180-377720/55	Method Blank	Total/NA	Water	EPA 9056A	
MB 180-377720/7	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-377720/54	Lab Control Sample	Total/NA	Water	EPA 9056A	
LCS 180-377720/6	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-129535-5 MS	WAP-5I	Total/NA	Water	EPA 9056A	
180-129535-5 MSD	WAP-5I	Total/NA	Water	EPA 9056A	
180-129535-7 MS	WAP-6S	Total/NA	Water	EPA 9056A	
180-129535-7 MSD	WAP-6S	Total/NA	Water	EPA 9056A	

Analysis Batch: 381392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-4 - RA	WAP-5S	Total/NA	Water	EPA 9056A	
180-129535-4 - RA	WAP-5S	Total/NA	Water	EPA 9056A	
180-129535-17 - RA	DUP-1	Total/NA	Water	EPA 9056A	
180-129535-17 - RA	DUP-1	Total/NA	Water	EPA 9056A	
MB 180-381392/33	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-381392/32	Lab Control Sample	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 378159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-1	WAP-4S	Total/NA	Water	7470A	
180-129535-2	WAP-4I	Total/NA	Water	7470A	
180-129535-3	WAP-4D	Total/NA	Water	7470A	
180-129535-4	WAP-5S	Total/NA	Water	7470A	
180-129535-5	WAP-5I	Total/NA	Water	7470A	

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QC Association Summary

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

Job ID: 180-129535-1

Metals (Continued)

Prep Batch: 378159 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-6	WAP-5D	Total/NA	Water	7470A	
180-129535-7	WAP-6S	Total/NA	Water	7470A	
180-129535-8	WAP-6I	Total/NA	Water	7470A	
180-129535-9	WAP-6D	Total/NA	Water	7470A	
180-129535-10	WAP-8S	Total/NA	Water	7470A	
180-129535-11	WAP-8I	Total/NA	Water	7470A	
180-129535-12	WAP-8D	Total/NA	Water	7470A	
180-129535-13	WAP-9S	Total/NA	Water	7470A	
180-129535-14	WAP-9I	Total/NA	Water	7470A	
180-129535-15	WAP-9D	Total/NA	Water	7470A	
180-129535-16	FB-1	Total/NA	Water	7470A	
180-129535-17	DUP-1	Total/NA	Water	7470A	
180-129535-18	DUP-2	Total/NA	Water	7470A	
180-129535-19	WAP-3S	Total/NA	Water	7470A	
180-129535-20	WAP-3D	Total/NA	Water	7470A	
MB 180-378159/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-378159/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-129535-7 MS	WAP-6S	Total/NA	Water	7470A	
180-129535-7 MSD	WAP-6S	Total/NA	Water	7470A	

Prep Batch: 378429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-7	WAP-6S	Total Recoverable	Water	3005A	
180-129535-8	WAP-6I	Total Recoverable	Water	3005A	
180-129535-9	WAP-6D	Total Recoverable	Water	3005A	
180-129535-10	WAP-8S	Total Recoverable	Water	3005A	
180-129535-11	WAP-8I	Total Recoverable	Water	3005A	
180-129535-12	WAP-8D	Total Recoverable	Water	3005A	
180-129535-13	WAP-9S	Total Recoverable	Water	3005A	
180-129535-14	WAP-9I	Total Recoverable	Water	3005A	
180-129535-15	WAP-9D	Total Recoverable	Water	3005A	
180-129535-16	FB-1	Total Recoverable	Water	3005A	
180-129535-17	DUP-1	Total Recoverable	Water	3005A	
180-129535-18	DUP-2	Total Recoverable	Water	3005A	
180-129535-19	WAP-3S	Total Recoverable	Water	3005A	
180-129535-20	WAP-3D	Total Recoverable	Water	3005A	
MB 180-378429/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-378429/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-129535-7 MS	WAP-6S	Total Recoverable	Water	3005A	
180-129535-7 MSD	WAP-6S	Total Recoverable	Water	3005A	

Prep Batch: 378431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-1	WAP-4S	Total Recoverable	Water	3005A	
180-129535-2	WAP-4I	Total Recoverable	Water	3005A	
180-129535-3	WAP-4D	Total Recoverable	Water	3005A	
180-129535-4	WAP-5S	Total Recoverable	Water	3005A	
180-129535-5	WAP-5I	Total Recoverable	Water	3005A	
180-129535-6	WAP-5D	Total Recoverable	Water	3005A	
MB 180-378431/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-378431/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

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QC Association Summary

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

Job ID: 180-129535-1

Metals

Analysis Batch: 378827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-7	WAP-6S	Total Recoverable	Water	EPA 6020A	378429
180-129535-8	WAP-6I	Total Recoverable	Water	EPA 6020A	378429
180-129535-9	WAP-6D	Total Recoverable	Water	EPA 6020A	378429
180-129535-10	WAP-8S	Total Recoverable	Water	EPA 6020A	378429
180-129535-11	WAP-8I	Total Recoverable	Water	EPA 6020A	378429
180-129535-12	WAP-8D	Total Recoverable	Water	EPA 6020A	378429
180-129535-13	WAP-9S	Total Recoverable	Water	EPA 6020A	378429
180-129535-14	WAP-9I	Total Recoverable	Water	EPA 6020A	378429
180-129535-15	WAP-9D	Total Recoverable	Water	EPA 6020A	378429
180-129535-16	FB-1	Total Recoverable	Water	EPA 6020A	378429
180-129535-17	DUP-1	Total Recoverable	Water	EPA 6020A	378429
180-129535-18	DUP-2	Total Recoverable	Water	EPA 6020A	378429
180-129535-19	WAP-3S	Total Recoverable	Water	EPA 6020A	378429
180-129535-20	WAP-3D	Total Recoverable	Water	EPA 6020A	378429
MB 180-378429/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	378429
LCS 180-378429/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	378429
180-129535-7 MS	WAP-6S	Total Recoverable	Water	EPA 6020A	378429
180-129535-7 MSD	WAP-6S	Total Recoverable	Water	EPA 6020A	378429

Analysis Batch: 378967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-1	WAP-4S	Total/NA	Water	EPA 7470A	378159
180-129535-2	WAP-4I	Total/NA	Water	EPA 7470A	378159
180-129535-3	WAP-4D	Total/NA	Water	EPA 7470A	378159
180-129535-4	WAP-5S	Total/NA	Water	EPA 7470A	378159
180-129535-5	WAP-5I	Total/NA	Water	EPA 7470A	378159
180-129535-6	WAP-5D	Total/NA	Water	EPA 7470A	378159
180-129535-7	WAP-6S	Total/NA	Water	EPA 7470A	378159
180-129535-8	WAP-6I	Total/NA	Water	EPA 7470A	378159
180-129535-9	WAP-6D	Total/NA	Water	EPA 7470A	378159
180-129535-10	WAP-8S	Total/NA	Water	EPA 7470A	378159
180-129535-11	WAP-8I	Total/NA	Water	EPA 7470A	378159
180-129535-12	WAP-8D	Total/NA	Water	EPA 7470A	378159
180-129535-13	WAP-9S	Total/NA	Water	EPA 7470A	378159
180-129535-14	WAP-9I	Total/NA	Water	EPA 7470A	378159
180-129535-15	WAP-9D	Total/NA	Water	EPA 7470A	378159
180-129535-16	FB-1	Total/NA	Water	EPA 7470A	378159
180-129535-17	DUP-1	Total/NA	Water	EPA 7470A	378159
180-129535-18	DUP-2	Total/NA	Water	EPA 7470A	378159
180-129535-19	WAP-3S	Total/NA	Water	EPA 7470A	378159
180-129535-20	WAP-3D	Total/NA	Water	EPA 7470A	378159
MB 180-378159/1-A	Method Blank	Total/NA	Water	EPA 7470A	378159
LCS 180-378159/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	378159
180-129535-7 MS	WAP-6S	Total/NA	Water	EPA 7470A	378159
180-129535-7 MSD	WAP-6S	Total/NA	Water	EPA 7470A	378159

Analysis Batch: 378981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-1	WAP-4S	Total Recoverable	Water	EPA 6020A	378431
180-129535-2	WAP-4I	Total Recoverable	Water	EPA 6020A	378431
180-129535-3	WAP-4D	Total Recoverable	Water	EPA 6020A	378431

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QC Association Summary

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

Job ID: 180-129535-1

Metals (Continued)

Analysis Batch: 378981 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-4	WAP-5S	Total Recoverable	Water	EPA 6020A	378431
180-129535-5	WAP-5I	Total Recoverable	Water	EPA 6020A	378431
180-129535-6	WAP-5D	Total Recoverable	Water	EPA 6020A	378431
180-129535-7	WAP-6S	Total Recoverable	Water	EPA 6020A	378429
180-129535-8	WAP-6I	Total Recoverable	Water	EPA 6020A	378429
180-129535-9	WAP-6D	Total Recoverable	Water	EPA 6020A	378429
180-129535-10	WAP-8S	Total Recoverable	Water	EPA 6020A	378429
180-129535-11	WAP-8I	Total Recoverable	Water	EPA 6020A	378429
180-129535-12	WAP-8D	Total Recoverable	Water	EPA 6020A	378429
180-129535-13	WAP-9S	Total Recoverable	Water	EPA 6020A	378429
180-129535-14	WAP-9I	Total Recoverable	Water	EPA 6020A	378429
180-129535-15	WAP-9D	Total Recoverable	Water	EPA 6020A	378429
180-129535-16	FB-1	Total Recoverable	Water	EPA 6020A	378429
180-129535-17	DUP-1	Total Recoverable	Water	EPA 6020A	378429
180-129535-18	DUP-2	Total Recoverable	Water	EPA 6020A	378429
180-129535-19	WAP-3S	Total Recoverable	Water	EPA 6020A	378429
180-129535-20	WAP-3D	Total Recoverable	Water	EPA 6020A	378429
MB 180-378429/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	378429
MB 180-378431/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	378431
LCS 180-378429/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	378429
LCS 180-378431/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	378431
180-129535-7 MS	WAP-6S	Total Recoverable	Water	EPA 6020A	378429
180-129535-7 MSD	WAP-6S	Total Recoverable	Water	EPA 6020A	378429

Analysis Batch: 379323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-1	WAP-4S	Total Recoverable	Water	EPA 6020A	378431
180-129535-2	WAP-4I	Total Recoverable	Water	EPA 6020A	378431
180-129535-3	WAP-4D	Total Recoverable	Water	EPA 6020A	378431
180-129535-4	WAP-5S	Total Recoverable	Water	EPA 6020A	378431
180-129535-5	WAP-5I	Total Recoverable	Water	EPA 6020A	378431
180-129535-6	WAP-5D	Total Recoverable	Water	EPA 6020A	378431
MB 180-378431/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	378431
LCS 180-378431/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	378431

General Chemistry

Analysis Batch: 377880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-1	WAP-4S	Total/NA	Water	SM 2540C	
180-129535-2	WAP-4I	Total/NA	Water	SM 2540C	
180-129535-3	WAP-4D	Total/NA	Water	SM 2540C	
180-129535-4	WAP-5S	Total/NA	Water	SM 2540C	
180-129535-5	WAP-5I	Total/NA	Water	SM 2540C	
180-129535-6	WAP-5D	Total/NA	Water	SM 2540C	
180-129535-7	WAP-6S	Total/NA	Water	SM 2540C	
180-129535-8	WAP-6I	Total/NA	Water	SM 2540C	
180-129535-9	WAP-6D	Total/NA	Water	SM 2540C	
180-129535-10	WAP-8S	Total/NA	Water	SM 2540C	
180-129535-11	WAP-8I	Total/NA	Water	SM 2540C	
180-129535-12	WAP-8D	Total/NA	Water	SM 2540C	

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QC Association Summary

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

Job ID: 180-129535-1

General Chemistry (Continued)

Analysis Batch: 377880 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-13	WAP-9S	Total/NA	Water	SM 2540C	
180-129535-16	FB-1	Total/NA	Water	SM 2540C	
180-129535-17	DUP-1	Total/NA	Water	SM 2540C	
180-129535-18	DUP-2	Total/NA	Water	SM 2540C	
MB 180-377880/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-377880/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-129535-7 DU	WAP-6S	Total/NA	Water	SM 2540C	
180-129535-11 DU	WAP-8I	Total/NA	Water	SM 2540C	

Analysis Batch: 377902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-1	WAP-4S	Total/NA	Water	EPA 9040C	
180-129535-2	WAP-4I	Total/NA	Water	EPA 9040C	
180-129535-3	WAP-4D	Total/NA	Water	EPA 9040C	
180-129535-4	WAP-5S	Total/NA	Water	EPA 9040C	
180-129535-5	WAP-5I	Total/NA	Water	EPA 9040C	
LCS 180-377902/1	Lab Control Sample	Total/NA	Water	EPA 9040C	

Analysis Batch: 377903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-6	WAP-5D	Total/NA	Water	EPA 9040C	
180-129535-7	WAP-6S	Total/NA	Water	EPA 9040C	
180-129535-8	WAP-6I	Total/NA	Water	EPA 9040C	
180-129535-9	WAP-6D	Total/NA	Water	EPA 9040C	
180-129535-10	WAP-8S	Total/NA	Water	EPA 9040C	
180-129535-11	WAP-8I	Total/NA	Water	EPA 9040C	
180-129535-12	WAP-8D	Total/NA	Water	EPA 9040C	
180-129535-13	WAP-9S	Total/NA	Water	EPA 9040C	
180-129535-14	WAP-9I	Total/NA	Water	EPA 9040C	
180-129535-15	WAP-9D	Total/NA	Water	EPA 9040C	
180-129535-16	FB-1	Total/NA	Water	EPA 9040C	
180-129535-17	DUP-1	Total/NA	Water	EPA 9040C	
180-129535-18	DUP-2	Total/NA	Water	EPA 9040C	
LCS 180-377903/1	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-129535-6 DU	WAP-5D	Total/NA	Water	EPA 9040C	
180-129535-7 DU	WAP-6S	Total/NA	Water	EPA 9040C	
180-129535-14 DU	WAP-9I	Total/NA	Water	EPA 9040C	

Analysis Batch: 377921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-19	WAP-3S	Total/NA	Water	EPA 9040C	
180-129535-20	WAP-3D	Total/NA	Water	EPA 9040C	
LCS 180-377921/1	Lab Control Sample	Total/NA	Water	EPA 9040C	

Analysis Batch: 378125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-14	WAP-9I	Total/NA	Water	SM 2540C	
180-129535-15	WAP-9D	Total/NA	Water	SM 2540C	
MB 180-378125/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-378125/1	Lab Control Sample	Total/NA	Water	SM 2540C	

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QC Association Summary

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

Job ID: 180-129535-1

General Chemistry

Analysis Batch: 378127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-19	WAP-3S	Total/NA	Water	SM 2540C	
180-129535-20	WAP-3D	Total/NA	Water	SM 2540C	
MB 180-378127/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-378127/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-129535-20 DU	WAP-3D	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 535772

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-1	WAP-4S	Total/NA	Water	PrecSep-21	
180-129535-2	WAP-4I	Total/NA	Water	PrecSep-21	
180-129535-3	WAP-4D	Total/NA	Water	PrecSep-21	
180-129535-4	WAP-5S	Total/NA	Water	PrecSep-21	
180-129535-5	WAP-5I	Total/NA	Water	PrecSep-21	
180-129535-6	WAP-5D	Total/NA	Water	PrecSep-21	
180-129535-7	WAP-6S	Total/NA	Water	PrecSep-21	
180-129535-8	WAP-6I	Total/NA	Water	PrecSep-21	
180-129535-9	WAP-6D	Total/NA	Water	PrecSep-21	
180-129535-10	WAP-8S	Total/NA	Water	PrecSep-21	
180-129535-11	WAP-8I	Total/NA	Water	PrecSep-21	
180-129535-12	WAP-8D	Total/NA	Water	PrecSep-21	
180-129535-13	WAP-9S	Total/NA	Water	PrecSep-21	
180-129535-14	WAP-9I	Total/NA	Water	PrecSep-21	
180-129535-15	WAP-9D	Total/NA	Water	PrecSep-21	
180-129535-16	FB-1	Total/NA	Water	PrecSep-21	
180-129535-17	DUP-1	Total/NA	Water	PrecSep-21	
180-129535-18	DUP-2	Total/NA	Water	PrecSep-21	
180-129535-19	WAP-3S	Total/NA	Water	PrecSep-21	
180-129535-20	WAP-3D	Total/NA	Water	PrecSep-21	
MB 160-535772/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-535772/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
180-129535-7 DU	WAP-6S	Total/NA	Water	PrecSep-21	

Prep Batch: 542176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-1	WAP-4S	Total/NA	Water	PrecSep_0	
180-129535-2	WAP-4I	Total/NA	Water	PrecSep_0	
180-129535-3	WAP-4D	Total/NA	Water	PrecSep_0	
180-129535-4	WAP-5S	Total/NA	Water	PrecSep_0	
180-129535-5	WAP-5I	Total/NA	Water	PrecSep_0	
180-129535-6	WAP-5D	Total/NA	Water	PrecSep_0	
180-129535-7	WAP-6S	Total/NA	Water	PrecSep_0	
180-129535-8	WAP-6I	Total/NA	Water	PrecSep_0	
180-129535-9	WAP-6D	Total/NA	Water	PrecSep_0	
180-129535-10	WAP-8S	Total/NA	Water	PrecSep_0	
180-129535-11	WAP-8I	Total/NA	Water	PrecSep_0	
180-129535-12	WAP-8D	Total/NA	Water	PrecSep_0	
180-129535-13	WAP-9S	Total/NA	Water	PrecSep_0	
180-129535-14	WAP-9I	Total/NA	Water	PrecSep_0	
180-129535-15	WAP-9D	Total/NA	Water	PrecSep_0	

Eurofins Pittsburgh

QC Association Summary

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

Job ID: 180-129535-1

Rad (Continued)

Prep Batch: 542176 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129535-16	FB-1	Total/NA	Water	PrecSep_0	
180-129535-17	DUP-1	Total/NA	Water	PrecSep_0	
180-129535-18	DUP-2	Total/NA	Water	PrecSep_0	
180-129535-19	WAP-3S	Total/NA	Water	PrecSep_0	
180-129535-20	WAP-3D	Total/NA	Water	PrecSep_0	
MB 160-542176/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-542176/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-542176/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-129535-1

Login Number: 129535

List Source: Eurofins Pittsburgh

List Number: 1

Creator: Watson, Debbie

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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 <math><6\text{mm}</math> (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: 180-129535-1

Login Number: 129535

List Number: 2

Creator: Korrinhizer, Micha L

List Source: Eurofins St. Louis

List Creation: 11/08/21 03:16 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

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

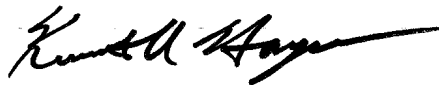
Laboratory Job ID: 180-129538-1

Client Project/Site: CCR Groundwater Monitoring FB Culley

For:

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

Attn: Mark Miesfeldt



Authorized for release by:
12/9/2021 8:16:01 AM

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

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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

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	4
Certification Summary	5
Sample Summary	7
Method Summary	8
Lab Chronicle	9
Client Sample Results	11
QC Sample Results	14
QC Association Summary	19
Chain of Custody	21
Receipt Checklists	22

Case Narrative

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

Job ID: 180-129538-1

Job ID: 180-129538-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

**Job Narrative
180-129538-1**

Comments

No additional comments.

Receipt

The samples were received on 11/4/2021 2:15 PM. 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 2.7° C.

GC Semi VOA

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

RAD

Methods 903.0, 904.0, 9315, 9320: Radium 226 batch 535811

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. WAP-7S (180-129538-1), WAP-7D (180-129538-2), (LCS 160-535811/1-A), (LCSD 160-535811/2-A) and (MB 160-535811/23-A)

Method PrecSep_0: Radium-228 Prep Batch 160-535814

The following samples were prepared at a reduced aliquot due to Matrix: WAP-7D (180-129538-2). 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 160-535811

The following samples were prepared at a reduced aliquot due to Matrix: WAP-7D (180-129538-2). 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 to bring the concentration of target analytes within the calibration range: WAP-7S (180-129538-1), WAP-7D (180-129538-2), (180-129538-E-1-C MS ^10), (180-129538-E-1-D MSD ^10), (180-129538-E-1-B PDS ^10) and (180-129538-E-1-B SD ^50). 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.
Project/Site: CCR Groundwater Monitoring FB Culley

Job ID: 180-129538-1

Qualifiers

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.
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
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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.
Project/Site: CCR Groundwater Monitoring FB Culley

Job ID: 180-129538-1

Laboratory: Eurofins TestAmerica, 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	04-30-22
Illinois	NELAP	004375	06-30-22
Kansas	NELAP	E-10350	01-31-22
Kentucky (UST)	State	162013	04-30-22
Kentucky (WW)	State	KY98043	12-31-21
Louisiana	NELAP	04041	06-30-22
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-21
Nevada	State	PA00164	08-31-22
New Hampshire	NELAP	2030	04-05-22
New Jersey	NELAP	PA005	06-30-22
New York	NELAP	11182	04-01-22
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-22
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	04-30-22
Rhode Island	State	LAO00362	12-31-21
South Carolina	State	89014	04-30-22
Texas	NELAP	T104704528	03-31-22
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	09-15-22
West Virginia DEP	State	142	01-31-22
Wisconsin	State	998027800	08-31-22

Laboratory: Eurofins TestAmerica, 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	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-21
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	06-30-21 *
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	01-01-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-21

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

Eurofins TestAmerica, Pittsburgh

Accreditation/Certification Summary

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

Job ID: 180-129538-1

Laboratory: Eurofins TestAmerica, 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	12-31-21
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	04-01-22
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	03-01-22
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	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

Sample Summary

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

Job ID: 180-129538-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-129538-1	WAP-7S	Water	11/03/21 10:30	11/04/21 14:15
180-129538-2	WAP-7D	Water	11/03/21 11:10	11/04/21 14:15

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Method Summary

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

Job ID: 180-129538-1

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 TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = Eurofins TestAmerica, 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 FB Culley

Job ID: 180-129538-1

Client Sample ID: WAP-7S
Date Collected: 11/03/21 10:30
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129538-1
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			377721	11/05/21 20:03	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total/NA	Analysis	EPA 9056A		5			377721	11/05/21 20:19	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 18:20	RJR	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		10			379323	11/17/21 13:05	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378157	11/09/21 06:16	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378424	11/10/21 10:57	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			377921	11/06/21 08:27	MJH	TAL PIT
Instrument ID: OZ										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	378127	11/08/21 17:25	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1000.36 mL	1.0 g	535811	11/10/21 10:19	LPS	TAL SL
Total/NA	Analysis	9315		1			540040	12/03/21 10:22	FLC	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.36 mL	1.0 g	535814	11/10/21 10:58	LPS	TAL SL
Total/NA	Analysis	9320		1			538449	11/24/21 17:04	FLC	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			541059	12/08/21 21:34	MLK	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-7D
Date Collected: 11/03/21 11:10
Date Received: 11/04/21 14:15

Lab Sample ID: 180-129538-2
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			377721	11/05/21 20:36	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total/NA	Analysis	EPA 9056A		25			377721	11/05/21 20:52	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			378981	11/13/21 19:33	RJR	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		10			379323	11/17/21 13:19	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			25 mL	25 mL	378157	11/09/21 06:16	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378424	11/10/21 10:58	RJR	TAL PIT
Instrument ID: HGY										

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

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

Job ID: 180-129538-1

Client Sample ID: WAP-7D

Lab Sample ID: 180-129538-2

Date Collected: 11/03/21 11:10

Matrix: Water

Date Received: 11/04/21 14:15

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			377921	11/06/21 08:32	MJH	TAL PIT
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	378127	11/08/21 17:25	KMM	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			750.63 mL	1.0 g	535811	11/10/21 10:19	LPS	TAL SL
Total/NA	Analysis	9315		1			540040	12/03/21 10:22	FLC	TAL SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			750.63 mL	1.0 g	535814	11/10/21 10:58	LPS	TAL SL
Total/NA	Analysis	9320		1	1.0 mL	1.0 mL	538449	11/24/21 17:04	FLC	TAL SL
		Instrument ID: GFPCBLUE								
Total/NA	Analysis	Ra226_Ra228		1			541059	12/08/21 21:34	MLK	TAL SL
		Instrument ID: NOEQUIP								

Laboratory References:

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

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

Analyst References:

Lab: TAL PIT

Batch Type: Prep

RGM = Rebecca Manns

RJR = Ron Rosenbaum

Batch Type: Analysis

JRB = James Burzio

KMM = Kendric Moore

MJH = Michael Houde

RJR = Ron Rosenbaum

RSK = Robert Kurtz

Lab: TAL SL

Batch Type: Prep

LPS = Lauren Szostak

Batch Type: Analysis

FLC = Fernando Cruz

MLK = Micha Korrinhizer

Client Sample Results

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

Job ID: 180-129538-1

Client Sample ID: WAP-7S

Lab Sample ID: 180-129538-1

Date Collected: 11/03/21 10:30

Matrix: Water

Date Received: 11/04/21 14:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	63		1.0	0.71	mg/L			11/05/21 20:03	1
Fluoride	0.13		0.10	0.026	mg/L			11/05/21 20:03	1
Sulfate	310		5.0	3.8	mg/L			11/05/21 20:19	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0014	J	0.0020	0.00038	mg/L		11/12/21 11:00	11/13/21 18:20	1
Arsenic	0.0083		0.0010	0.00031	mg/L		11/12/21 11:00	11/13/21 18:20	1
Barium	0.032		0.010	0.0016	mg/L		11/12/21 11:00	11/13/21 18:20	1
Beryllium	ND		0.0010	0.00018	mg/L		11/12/21 11:00	11/13/21 18:20	1
Boron	16		0.80	0.39	mg/L		11/12/21 11:00	11/17/21 13:05	10
Cadmium	ND		0.0010	0.00022	mg/L		11/12/21 11:00	11/13/21 18:20	1
Calcium	150		5.0	1.3	mg/L		11/12/21 11:00	11/17/21 13:05	10
Chromium	ND		0.0020	0.0015	mg/L		11/12/21 11:00	11/13/21 18:20	1
Cobalt	0.00016	J	0.00050	0.00013	mg/L		11/12/21 11:00	11/13/21 18:20	1
Lead	0.00022	J	0.0010	0.00013	mg/L		11/12/21 11:00	11/13/21 18:20	1
Lithium	0.13		0.0050	0.0034	mg/L		11/12/21 11:00	11/13/21 18:20	1
Molybdenum	0.17		0.0050	0.00061	mg/L		11/12/21 11:00	11/13/21 18:20	1
Selenium	ND		0.0050	0.0015	mg/L		11/12/21 11:00	11/13/21 18:20	1
Thallium	0.00038	J	0.0010	0.00015	mg/L		11/12/21 11:00	11/13/21 18:20	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		11/09/21 06:16	11/10/21 10:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	720		10	10	mg/L			11/08/21 17:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	9.9	HF	0.1	0.1	SU			11/06/21 08:27	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0550	U	0.0804	0.0806	1.00	0.137	pCi/L	11/10/21 10:19	12/03/21 10:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					11/10/21 10:19	12/03/21 10:22	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.494		0.244	0.248	1.00	0.360	pCi/L	11/10/21 10:58	11/24/21 17:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					11/10/21 10:58	11/24/21 17:04	1
Y Carrier	95.3		40 - 110					11/10/21 10:58	11/24/21 17:04	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-129538-1

Client Sample ID: WAP-7S

Lab Sample ID: 180-129538-1

Date Collected: 11/03/21 10:30

Matrix: Water

Date Received: 11/04/21 14:15

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	0.549		0.257	0.261	5.00	0.360	pCi/L		12/08/21 21:34	1

Client Sample ID: WAP-7D

Lab Sample ID: 180-129538-2

Date Collected: 11/03/21 11:10

Matrix: Water

Date Received: 11/04/21 14:15

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	180		2.5	1.8	mg/L			11/05/21 20:36	2.5
Fluoride	0.40		0.25	0.065	mg/L			11/05/21 20:36	2.5
Sulfate	1200		25	19	mg/L			11/05/21 20:52	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/12/21 11:00	11/13/21 19:33	1
Arsenic	0.0011		0.0010	0.00031	mg/L		11/12/21 11:00	11/13/21 19:33	1
Barium	0.045		0.010	0.0016	mg/L		11/12/21 11:00	11/13/21 19:33	1
Beryllium	ND		0.0010	0.00018	mg/L		11/12/21 11:00	11/13/21 19:33	1
Boron	14		0.80	0.39	mg/L		11/12/21 11:00	11/17/21 13:19	10
Cadmium	ND		0.0010	0.00022	mg/L		11/12/21 11:00	11/13/21 19:33	1
Calcium	450		5.0	1.3	mg/L		11/12/21 11:00	11/17/21 13:19	10
Chromium	ND		0.0020	0.0015	mg/L		11/12/21 11:00	11/13/21 19:33	1
Cobalt	0.0068		0.00050	0.00013	mg/L		11/12/21 11:00	11/13/21 19:33	1
Lead	ND		0.0010	0.00013	mg/L		11/12/21 11:00	11/13/21 19:33	1
Lithium	0.063		0.0050	0.0034	mg/L		11/12/21 11:00	11/13/21 19:33	1
Molybdenum	0.29		0.0050	0.00061	mg/L		11/12/21 11:00	11/13/21 19:33	1
Selenium	ND		0.0050	0.0015	mg/L		11/12/21 11:00	11/13/21 19:33	1
Thallium	0.00016	J	0.0010	0.00015	mg/L		11/12/21 11:00	11/13/21 19:33	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		11/09/21 06:16	11/10/21 10:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2000		20	20	mg/L			11/08/21 17:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.3	HF	0.1	0.1	SU			11/06/21 08:32	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.595		0.178	0.186	1.00	0.176	pCi/L	11/10/21 10:19	12/03/21 10:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					11/10/21 10:19	12/03/21 10:22	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-129538-1

Client Sample ID: WAP-7D

Lab Sample ID: 180-129538-2

Date Collected: 11/03/21 11:10

Matrix: Water

Date Received: 11/04/21 14:15

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.05		0.347	0.360	1.00	0.452	pCi/L	11/10/21 10:58	11/24/21 17:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					11/10/21 10:58	11/24/21 17:04	1
Y Carrier	96.1		40 - 110					11/10/21 10:58	11/24/21 17:04	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	1.64		0.390	0.405	5.00	0.452	pCi/L		12/08/21 21:34	1



QC Sample Results

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

Job ID: 180-129538-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-377721/10
Matrix: Water
Analysis Batch: 377721

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			11/05/21 13:00	1
Fluoride	ND		0.10	0.026	mg/L			11/05/21 13:00	1
Sulfate	ND		1.0	0.76	mg/L			11/05/21 13:00	1

Lab Sample ID: LCS 180-377721/9
Matrix: Water
Analysis Batch: 377721

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	50.1		mg/L		100	80 - 120
Fluoride	2.50	2.54		mg/L		101	80 - 120
Sulfate	50.0	50.7		mg/L		101	80 - 120

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

Lab Sample ID: MB 180-378431/1-A
Matrix: Water
Analysis Batch: 378981

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 378431

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/12/21 11:00	11/13/21 17:51	1
Arsenic	ND		0.0010	0.00031	mg/L		11/12/21 11:00	11/13/21 17:51	1
Barium	ND		0.010	0.0016	mg/L		11/12/21 11:00	11/13/21 17:51	1
Beryllium	ND		0.0010	0.00018	mg/L		11/12/21 11:00	11/13/21 17:51	1
Boron	ND		0.080	0.039	mg/L		11/12/21 11:00	11/13/21 17:51	1
Cadmium	ND		0.0010	0.00022	mg/L		11/12/21 11:00	11/13/21 17:51	1
Chromium	ND		0.0020	0.0015	mg/L		11/12/21 11:00	11/13/21 17:51	1
Cobalt	ND		0.00050	0.00013	mg/L		11/12/21 11:00	11/13/21 17:51	1
Lead	ND		0.0010	0.00013	mg/L		11/12/21 11:00	11/13/21 17:51	1
Lithium	ND		0.0050	0.0034	mg/L		11/12/21 11:00	11/13/21 17:51	1
Molybdenum	ND		0.0050	0.00061	mg/L		11/12/21 11:00	11/13/21 17:51	1
Selenium	ND		0.0050	0.0015	mg/L		11/12/21 11:00	11/13/21 17:51	1
Thallium	ND		0.0010	0.00015	mg/L		11/12/21 11:00	11/13/21 17:51	1

Lab Sample ID: MB 180-378431/1-A
Matrix: Water
Analysis Batch: 379323

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 378431

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.13	mg/L		11/12/21 11:00	11/17/21 12:57	1

Lab Sample ID: LCS 180-378431/2-A
Matrix: Water
Analysis Batch: 378981

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 378431

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.250	0.246		mg/L		98	80 - 120
Arsenic	1.00	1.01		mg/L		101	80 - 120
Barium	1.00	1.01		mg/L		101	80 - 120
Beryllium	0.500	0.477		mg/L		95	80 - 120

Eurofins TestAmerica, Pittsburgh

QC Sample Results

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

Job ID: 180-129538-1

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

Lab Sample ID: LCS 180-378431/2-A
Matrix: Water
Analysis Batch: 378981

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 378431

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.09		mg/L		87	80 - 120
Cadmium	0.500	0.507		mg/L		101	80 - 120
Chromium	0.500	0.501		mg/L		100	80 - 120
Cobalt	0.500	0.515		mg/L		103	80 - 120
Lead	0.500	0.503		mg/L		101	80 - 120
Lithium	0.500	0.479		mg/L		96	80 - 120
Molybdenum	0.500	0.514		mg/L		103	80 - 120
Selenium	1.00	0.980		mg/L		98	80 - 120
Thallium	1.00	1.05		mg/L		105	80 - 120

Lab Sample ID: LCS 180-378431/2-A
Matrix: Water
Analysis Batch: 379323

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 378431

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	25.0	28.6		mg/L		114	80 - 120

Lab Sample ID: 180-129538-1 MS
Matrix: Water
Analysis Batch: 378981

Client Sample ID: WAP-7S
Prep Type: Total Recoverable
Prep Batch: 378431

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0014	J	0.250	0.241		mg/L		96	75 - 125
Arsenic	0.0083		1.00	1.01		mg/L		100	75 - 125
Barium	0.032		1.00	1.01		mg/L		98	75 - 125
Beryllium	ND		0.500	0.464		mg/L		93	75 - 125
Cadmium	ND		0.500	0.486		mg/L		97	75 - 125
Chromium	ND		0.500	0.492		mg/L		98	75 - 125
Cobalt	0.00016	J	0.500	0.508		mg/L		102	75 - 125
Lead	0.00022	J	0.500	0.490		mg/L		98	75 - 125
Lithium	0.13		0.500	0.590		mg/L		91	75 - 125
Molybdenum	0.17		0.500	0.677		mg/L		102	75 - 125
Selenium	ND		1.00	0.939		mg/L		94	75 - 125
Thallium	0.00038	J	1.00	1.01		mg/L		101	75 - 125

Lab Sample ID: 180-129538-1 MS
Matrix: Water
Analysis Batch: 379323

Client Sample ID: WAP-7S
Prep Type: Total Recoverable
Prep Batch: 378431

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	16		1.25	17.3	4	mg/L		97	75 - 125
Calcium	150		25.0	182	4	mg/L		109	75 - 125

Lab Sample ID: 180-129538-1 MSD
Matrix: Water
Analysis Batch: 378981

Client Sample ID: WAP-7S
Prep Type: Total Recoverable
Prep Batch: 378431

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limit	RPD
Antimony	0.0014	J	0.250	0.239		mg/L		95	75 - 125	1
Arsenic	0.0083		1.00	1.01		mg/L		100	75 - 125	0

Eurofins TestAmerica, Pittsburgh

QC Sample Results

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

Job ID: 180-129538-1

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

Lab Sample ID: 180-129538-1 MSD
Matrix: Water
Analysis Batch: 378981

Client Sample ID: WAP-7S
Prep Type: Total Recoverable
Prep Batch: 378431

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Barium	0.032		1.00	0.995		mg/L		96	75 - 125	1	20
Beryllium	ND		0.500	0.464		mg/L		93	75 - 125	0	20
Cadmium	ND		0.500	0.486		mg/L		97	75 - 125	0	20
Chromium	ND		0.500	0.486		mg/L		97	75 - 125	1	20
Cobalt	0.00016	J	0.500	0.507		mg/L		101	75 - 125	0	20
Lead	0.00022	J	0.500	0.487		mg/L		97	75 - 125	1	20
Lithium	0.13		0.500	0.588		mg/L		91	75 - 125	0	20
Molybdenum	0.17		0.500	0.671		mg/L		101	75 - 125	1	20
Selenium	ND		1.00	0.943		mg/L		94	75 - 125	0	20
Thallium	0.00038	J	1.00	0.996		mg/L		100	75 - 125	1	20

Lab Sample ID: 180-129538-1 MSD
Matrix: Water
Analysis Batch: 379323

Client Sample ID: WAP-7S
Prep Type: Total Recoverable
Prep Batch: 378431

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Boron	16		1.25	17.8	4	mg/L		138	75 - 125	3	20
Calcium	150		25.0	185	4	mg/L		122	75 - 125	2	20

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-378157/1-A
Matrix: Water
Analysis Batch: 378424

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 378157

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier								
Mercury	ND		0.00020	0.00013	mg/L		11/09/21 06:16	11/10/21 10:43		1

Lab Sample ID: LCS 180-378157/2-A
Matrix: Water
Analysis Batch: 378424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 378157

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
Mercury	0.00250	0.00246		mg/L		98	80 - 120

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-377921/1
Matrix: Water
Analysis Batch: 377921

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

QC Sample Results

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

Job ID: 180-129538-1

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

Lab Sample ID: MB 180-378127/2
 Matrix: Water
 Analysis Batch: 378127

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			11/08/21 17:25	1

Lab Sample ID: LCS 180-378127/1
 Matrix: Water
 Analysis Batch: 378127

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	422	376		mg/L		89	80 - 120

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-535811/23-A
 Matrix: Water
 Analysis Batch: 540016

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 535811

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1409	U	0.108	0.108	1.00	0.157	pCi/L	11/10/21 10:19	12/03/21 11:09	1
Carrier	%Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.2		40 - 110					11/10/21 10:19	12/03/21 11:09	1

Lab Sample ID: LCS 160-535811/1-A
 Matrix: Water
 Analysis Batch: 540040

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 535811

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	15.1	12.06		1.27	1.00	0.142	pCi/L	80	75 - 125
Carrier	%Yield	LCS Qualifier	Limits						
Ba Carrier	105		40 - 110						

Lab Sample ID: LCSD 160-535811/2-A
 Matrix: Water
 Analysis Batch: 540040

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA
 Prep Batch: 535811

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	15.1	13.10		1.36	1.00	0.154	pCi/L	87	75 - 125	0.40	1
Carrier	%Yield	LCSD Qualifier	Limits								
Ba Carrier	104		40 - 110								

QC Sample Results

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

Job ID: 180-129538-1

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-535814/23-A
Matrix: Water
Analysis Batch: 538451

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 535814

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.1380	U	0.350	0.350	1.00	0.600	pCi/L	11/10/21 10:58	11/24/21 17:10	1
Carrier	MB %Yield	MB Qualifier	Limits				Prepared		Analyzed	
Ba Carrier	92.2		40 - 110				11/10/21 10:58		11/24/21 17:10	
Y Carrier	96.1		40 - 110				11/10/21 10:58		11/24/21 17:10	

Lab Sample ID: LCS 160-535814/1-A
Matrix: Water
Analysis Batch: 538449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 535814

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-228	12.2	9.179		1.11	1.00	0.407	pCi/L	76	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	105		40 - 110						
Y Carrier	93.5		40 - 110						

Lab Sample ID: LCSD 160-535814/2-A
Matrix: Water
Analysis Batch: 538449

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 535814

Analyte	Spike Added	LCSD Result	LCSD Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER
				Uncert. (2σ+/-)							Limit
Radium-228	12.2	9.632		1.17	1.00	0.481	pCi/L	79	75 - 125	0.20	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits								
Ba Carrier	104		40 - 110								
Y Carrier	93.5		40 - 110								

QC Association Summary

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

Job ID: 180-129538-1

HPLC/IC

Analysis Batch: 377721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129538-1	WAP-7S	Total/NA	Water	EPA 9056A	
180-129538-1	WAP-7S	Total/NA	Water	EPA 9056A	
180-129538-2	WAP-7D	Total/NA	Water	EPA 9056A	
180-129538-2	WAP-7D	Total/NA	Water	EPA 9056A	
MB 180-377721/10	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-377721/9	Lab Control Sample	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 378157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129538-1	WAP-7S	Total/NA	Water	7470A	
180-129538-2	WAP-7D	Total/NA	Water	7470A	
MB 180-378157/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-378157/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 378424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129538-1	WAP-7S	Total/NA	Water	EPA 7470A	378157
180-129538-2	WAP-7D	Total/NA	Water	EPA 7470A	378157
MB 180-378157/1-A	Method Blank	Total/NA	Water	EPA 7470A	378157
LCS 180-378157/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	378157

Prep Batch: 378431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129538-1	WAP-7S	Total Recoverable	Water	3005A	
180-129538-2	WAP-7D	Total Recoverable	Water	3005A	
MB 180-378431/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-378431/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-129538-1 MS	WAP-7S	Total Recoverable	Water	3005A	
180-129538-1 MSD	WAP-7S	Total Recoverable	Water	3005A	

Analysis Batch: 378981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129538-1	WAP-7S	Total Recoverable	Water	EPA 6020A	378431
180-129538-2	WAP-7D	Total Recoverable	Water	EPA 6020A	378431
MB 180-378431/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	378431
LCS 180-378431/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	378431
180-129538-1 MS	WAP-7S	Total Recoverable	Water	EPA 6020A	378431
180-129538-1 MSD	WAP-7S	Total Recoverable	Water	EPA 6020A	378431

Analysis Batch: 379323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129538-1	WAP-7S	Total Recoverable	Water	EPA 6020A	378431
180-129538-2	WAP-7D	Total Recoverable	Water	EPA 6020A	378431
MB 180-378431/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	378431
LCS 180-378431/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	378431
180-129538-1 MS	WAP-7S	Total Recoverable	Water	EPA 6020A	378431
180-129538-1 MSD	WAP-7S	Total Recoverable	Water	EPA 6020A	378431

Eurofins TestAmerica, Pittsburgh

QC Association Summary

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

Job ID: 180-129538-1

General Chemistry

Analysis Batch: 377921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129538-1	WAP-7S	Total/NA	Water	EPA 9040C	
180-129538-2	WAP-7D	Total/NA	Water	EPA 9040C	
LCS 180-377921/1	Lab Control Sample	Total/NA	Water	EPA 9040C	

Analysis Batch: 378127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129538-1	WAP-7S	Total/NA	Water	SM 2540C	
180-129538-2	WAP-7D	Total/NA	Water	SM 2540C	
MB 180-378127/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-378127/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 535811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129538-1	WAP-7S	Total/NA	Water	PrecSep-21	
180-129538-2	WAP-7D	Total/NA	Water	PrecSep-21	
MB 160-535811/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-535811/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-535811/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

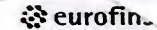
Prep Batch: 535814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129538-1	WAP-7S	Total/NA	Water	PrecSep_0	
180-129538-2	WAP-7D	Total/NA	Water	PrecSep_0	
MB 160-535814/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-535814/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-535814/2-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



Client Information		Sampler: <i>Jon Hill</i>	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-75297-14505.1
Client Contact: Mark Breting		Phone: <i>317.473.1325</i>	E-Mail: Ken.Hayes@Eurofinset.com	State of Origin: <i>IN</i>	Page: Page 1 of 2
Company: Atlas Technical Consultants LLC		Analysis Requested			Job #:
Address: 7988 Centerpoint Drive Suite 100		Due Date Requested:			Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other:
City: Indianapolis		TAT Requested (days):			
State, Zip: IN, 46256		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No			
Phone: 864-214-8750(Tel)		PO #: FB-242026. AB-241410			
Email: mark.breting@atcassociates.com		WO #:			
Project Name: CCR Groundwater Monitoring FB Culley		Project #: 18016014			
Site:		SSOW#:			
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=soil, BT=Tissue, A=Air)
					Field Filtered Sample (C=Comp)
					9040C, 9056A_ORGPM_28D
					6020A, 7470A
					2840C_Calcd - TDS
					9316_Rez26, 9320_Rez26
					Field Filtered Sample (C=Comp)
					9040C, 9056A_ORGPM_28D
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					2840C_Calcd - TDS
					9316_Rez26, 9320_Rez26
					Field Filtered Sample (C=Comp)
					9040C, 9056A_ORGPM_28D

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-129538-1

Login Number: 129538

List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Watson, Debbie

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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 <math><6\text{mm}</math> (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: 180-129538-1

Login Number: 129538

List Number: 2

Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis

List Creation: 11/08/21 03:15 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	



ANALYTICAL REPORT

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

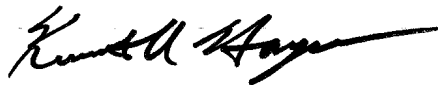
Laboratory Job ID: 180-129641-1

Client Project/Site: CCR Groundwater Monitoring Culley West

For:

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

Attn: Mark Miesfeldt



Authorized for release by:
12/14/2021 3:22:30 PM

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

LINKS

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results through
TotalAccess

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www.eurofinsus.com/Env

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

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	5
Certification Summary	6
Sample Summary	8
Method Summary	9
Lab Chronicle	10
Client Sample Results	13
QC Sample Results	17
QC Association Summary	23
Chain of Custody	25
Receipt Checklists	27

Case Narrative

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

Job ID: 180-129641-1

Job ID: 180-129641-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-129641-1

Comments

No additional comments.

Receipt

The samples were received on 11/6/2021 9:30 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 4.2° C.

GC Semi VOA

Method 9056A: The matrix spike duplicate (MSD) recoveries for analytical batch 180-378057 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 9056A: The sample duplicate precision for the following sample associated with analytical batch 180-378057 was outside control limits: CCR-AP-7 (180-129641-3[MSD]). The associated Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD) precision met acceptance criteria.

Method 9056A: The sample duplicate precision for the following sample associated with analytical batch 180-378057 was outside control limits: CCR-AP-7 (180-129641-3[MSD]). Non-homogeneity of the sample matrix is suspected. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision met acceptance criteria.

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

RAD

Methods 903.0, 9315: Radium-226 prep batch 160-536422:

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. WAP-1 (180-129641-1), WAP-2R (180-129641-2), CCR-AP-7 (180-129641-3), CCR-AP-7 (180-129641-3[DU]), (LCS 160-536422/1-A) and (MB 160-536422/23-A)

Methods 904.0, 9320: Radium 228 batch 536427

The detection goal was not met. Samples were prepped at a reduced volume due to the presence of matrix interferences: WAP-1 (180-129641-1) and WAP-2R (180-129641-2). Analytical results are reported with the detection limit achieved.

Methods 904.0, 9320: Radium 228 batch 536427

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.

WAP-1 (180-129641-1), WAP-2R (180-129641-2), CCR-AP-7 (180-129641-3), CCR-AP-7 (180-129641-3[DU]), (LCS 160-536427/1-A) and (MB 160-536427/23-A)

Method PrecSep-21: Radium-226 Prep Batch 160-536422

The following samples were prepared at a reduced aliquot due to Matrix: CCR-AP-7 (180-129641-3[DU]). 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

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

General Chemistry

Method SM 2540C: The following sample was analyzed outside of analytical holding time due to analyst error. CCR-AP-7 (180-129641-3[DU]).

Case Narrative

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

Job ID: 180-129641-1

Job ID: 180-129641-1 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

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

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Definitions/Glossary

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

Job ID: 180-129641-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

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.
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
H	Sample was prepped or analyzed beyond the specified holding time
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.
 Project/Site: CCR Groundwater Monitoring Culley West

Job ID: 180-129641-1

Laboratory: Eurofins TestAmerica, 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	04-30-22
Illinois	NELAP	004375	06-30-22
Kansas	NELAP	E-10350	01-31-22
Kentucky (UST)	State	162013	04-30-22
Kentucky (WW)	State	KY98043	12-31-21
Louisiana	NELAP	04041	06-30-22
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-21
Nevada	State	PA00164	08-31-22
New Hampshire	NELAP	2030	04-05-22
New Jersey	NELAP	PA005	06-30-22
New York	NELAP	11182	04-01-22
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-22
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	04-30-22
Rhode Island	State	LAO00362	12-31-21
South Carolina	State	89014	04-30-22
Texas	NELAP	T104704528	03-31-22
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	09-15-22
West Virginia DEP	State	142	01-31-22
Wisconsin	State	998027800	08-31-22

Laboratory: Eurofins TestAmerica, 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	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	06-30-21 *
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	01-01-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-21

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

Eurofins TestAmerica, Pittsburgh

Accreditation/Certification Summary

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

Job ID: 180-129641-1

Laboratory: Eurofins TestAmerica, 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	12-31-21
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	04-01-22
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	03-01-22
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	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

Sample Summary

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

Job ID: 180-129641-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-129641-1	WAP-1	Water	11/04/21 09:00	11/06/21 09:30
180-129641-2	WAP-2R	Water	11/04/21 10:50	11/06/21 09:30
180-129641-3	CCR-AP-7	Water	11/04/21 12:00	11/06/21 09:30

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Method Summary

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

Job ID: 180-129641-1

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 TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = Eurofins TestAmerica, 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 Culley West

Job ID: 180-129641-1

Client Sample ID: WAP-1

Lab Sample ID: 180-129641-1

Date Collected: 11/04/21 09:00

Matrix: Water

Date Received: 11/06/21 09:30

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 Instrument ID: CHICS2100B		1			378057	11/08/21 15:30	JRB	TAL PIT
Total/NA	Analysis	EPA 9056A Instrument ID: CHICS2100B		5			378057	11/08/21 15:46	JRB	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	378725	11/12/21 09:25	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A Instrument ID: DORY		1			379151	11/13/21 12:32	RJR	TAL PIT
Total/NA	Prep	7470A			25 mL	25 mL	378157	11/09/21 06:16	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A Instrument ID: HGY		1			378424	11/10/21 10:51	RJR	TAL PIT
Total/NA	Analysis	EPA 9040C Instrument ID: NOEQUIP		1			378228	11/09/21 11:40	MJH	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	378299	11/09/21 16:49	KMM	TAL PIT
Total/NA	Prep	PrecSep-21			500.56 mL	1.0 g	536422	11/12/21 13:18	LPS	TAL SL
Total/NA	Analysis	9315 Instrument ID: GFPCBLUE		1			540407	12/06/21 17:05	ANW	TAL SL
Total/NA	Prep	PrecSep_0			500.56 mL	1.0 g	536427	11/12/21 14:30	LPS	TAL SL
Total/NA	Analysis	9320 Instrument ID: GFPCPROTEAN		1			539783	12/01/21 14:27	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Instrument ID: NOEQUIP		1			542122	12/14/21 14:37	CAH	TAL SL

Client Sample ID: WAP-2R

Lab Sample ID: 180-129641-2

Date Collected: 11/04/21 10:50

Matrix: Water

Date Received: 11/06/21 09:30

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 Instrument ID: CHICS2100B		1			378057	11/08/21 16:03	JRB	TAL PIT
Total/NA	Analysis	EPA 9056A Instrument ID: CHICS2100B		5			378057	11/08/21 16:19	JRB	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	378725	11/12/21 09:25	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A Instrument ID: DORY		1			379151	11/13/21 12:35	RJR	TAL PIT
Total/NA	Prep	7470A			25 mL	25 mL	378157	11/09/21 06:16	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A Instrument ID: HGY		1			378424	11/10/21 10:48	RJR	TAL PIT
Total/NA	Analysis	EPA 9040C Instrument ID: NOEQUIP		1			378228	11/09/21 11:43	MJH	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	378299	11/09/21 16:49	KMM	TAL PIT
Total/NA	Prep	PrecSep-21			249.81 mL	1.0 g	536422	11/12/21 13:18	LPS	TAL SL
Total/NA	Analysis	9315 Instrument ID: GFPCBLUE		1			540407	12/06/21 17:05	ANW	TAL SL

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

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

Job ID: 180-129641-1

Client Sample ID: WAP-2R

Lab Sample ID: 180-129641-2

Date Collected: 11/04/21 10:50

Matrix: Water

Date Received: 11/06/21 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep_0			249.81 mL	1.0 g	536427	11/12/21 14:30	LPS	TAL SL
Total/NA	Analysis	9320		1			539783	12/01/21 14:27	FLC	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			542122	12/14/21 14:37	CAH	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: CCR-AP-7

Lab Sample ID: 180-129641-3

Date Collected: 11/04/21 12:00

Matrix: Water

Date Received: 11/06/21 09:30

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			378057	11/08/21 14:25	JRB	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	378725	11/12/21 09:25	RGM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			379151	11/13/21 12:49	RJR	TAL PIT
Instrument ID: DORY										
Total/NA	Prep	7470A			25 mL	25 mL	378157	11/09/21 06:16	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			378424	11/10/21 10:45	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			378228	11/09/21 11:23	MJH	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	378299	11/09/21 16:49	KMM	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			750.13 mL	1.0 g	536422	11/12/21 13:18	LPS	TAL SL
Total/NA	Analysis	9315		1			540406	12/06/21 17:06	ANW	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			750.13 mL	1.0 g	536427	11/12/21 14:30	LPS	TAL SL
Total/NA	Analysis	9320		1			539783	12/01/21 14:28	FLC	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			542122	12/14/21 14:37	CAH	TAL SL
Instrument ID: NOEQUIP										

Laboratory References:

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

TAL SL = Eurofins TestAmerica, 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 Culley West

Job ID: 180-129641-1

Analyst References:

Lab: TAL PIT

Batch Type: Prep

RGM = Rebecca Manns

RJR = Ron Rosenbaum

Batch Type: Analysis

JRB = James Burzio

KMM = Kendric Moore

MJH = Michael Houde

RJR = Ron Rosenbaum

Lab: TAL SL

Batch Type: Prep

LPS = Lauren Szostak

Batch Type: Analysis

ANW = Amber Woods

CAH = Chris Hough

FLC = Fernando Cruz

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Client Sample Results

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

Job ID: 180-129641-1

Client Sample ID: WAP-1

Lab Sample ID: 180-129641-1

Date Collected: 11/04/21 09:00

Matrix: Water

Date Received: 11/06/21 09:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	37		1.0	0.71	mg/L			11/08/21 15:30	1
Fluoride	0.45		0.10	0.026	mg/L			11/08/21 15:30	1
Sulfate	330		5.0	3.8	mg/L			11/08/21 15:46	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/12/21 09:25	11/13/21 12:32	1
Arsenic	0.0041		0.0010	0.00031	mg/L		11/12/21 09:25	11/13/21 12:32	1
Barium	0.41		0.010	0.0016	mg/L		11/12/21 09:25	11/13/21 12:32	1
Beryllium	ND		0.0010	0.00018	mg/L		11/12/21 09:25	11/13/21 12:32	1
Boron	0.081		0.080	0.039	mg/L		11/12/21 09:25	11/13/21 12:32	1
Cadmium	ND		0.0010	0.00022	mg/L		11/12/21 09:25	11/13/21 12:32	1
Calcium	180		0.50	0.13	mg/L		11/12/21 09:25	11/13/21 12:32	1
Chromium	0.0033		0.0020	0.0015	mg/L		11/12/21 09:25	11/13/21 12:32	1
Cobalt	0.0017		0.00050	0.00013	mg/L		11/12/21 09:25	11/13/21 12:32	1
Lead	0.0023		0.0010	0.00013	mg/L		11/12/21 09:25	11/13/21 12:32	1
Lithium	0.0061		0.0050	0.0034	mg/L		11/12/21 09:25	11/13/21 12:32	1
Molybdenum	0.00070	J	0.0050	0.00061	mg/L		11/12/21 09:25	11/13/21 12:32	1
Selenium	ND		0.0050	0.0015	mg/L		11/12/21 09:25	11/13/21 12:32	1
Thallium	ND		0.0010	0.00015	mg/L		11/12/21 09:25	11/13/21 12:32	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		11/09/21 06:16	11/10/21 10:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	930		10	10	mg/L			11/09/21 16:49	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.1	HF	0.1	0.1	SU			11/09/21 11:40	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.706		0.345	0.351	1.00	0.444	pCi/L	11/12/21 13:18	12/06/21 17:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	70.4		40 - 110					11/12/21 13:18	12/06/21 17:05	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.264	U G	0.840	0.840	1.00	1.46	pCi/L	11/12/21 14:30	12/01/21 14:27	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	70.4		40 - 110					11/12/21 14:30	12/01/21 14:27	1
Y Carrier	82.6		40 - 110					11/12/21 14:30	12/01/21 14:27	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-129641-1

Client Sample ID: WAP-1

Date Collected: 11/04/21 09:00

Date Received: 11/06/21 09:30

Lab Sample ID: 180-129641-1

Matrix: Water

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

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Combined Radium 226 + 228	0.970	U	0.908	0.910	5.00	1.46	pCi/L		12/14/21 14:37	1

Client Sample ID: WAP-2R

Date Collected: 11/04/21 10:50

Date Received: 11/06/21 09:30

Lab Sample ID: 180-129641-2

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	92		1.0	0.71	mg/L			11/08/21 16:03	1
Fluoride	0.36		0.10	0.026	mg/L			11/08/21 16:03	1
Sulfate	350		5.0	3.8	mg/L			11/08/21 16:19	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/12/21 09:25	11/13/21 12:35	1
Arsenic	0.0013		0.0010	0.00031	mg/L		11/12/21 09:25	11/13/21 12:35	1
Barium	0.057		0.010	0.0016	mg/L		11/12/21 09:25	11/13/21 12:35	1
Beryllium	ND		0.0010	0.00018	mg/L		11/12/21 09:25	11/13/21 12:35	1
Boron	8.3		0.080	0.039	mg/L		11/12/21 09:25	11/13/21 12:35	1
Cadmium	0.00042	J	0.0010	0.00022	mg/L		11/12/21 09:25	11/13/21 12:35	1
Calcium	170		0.50	0.13	mg/L		11/12/21 09:25	11/13/21 12:35	1
Chromium	ND		0.0020	0.0015	mg/L		11/12/21 09:25	11/13/21 12:35	1
Cobalt	0.0028		0.00050	0.00013	mg/L		11/12/21 09:25	11/13/21 12:35	1
Lead	0.00059	J	0.0010	0.00013	mg/L		11/12/21 09:25	11/13/21 12:35	1
Lithium	0.026		0.0050	0.0034	mg/L		11/12/21 09:25	11/13/21 12:35	1
Molybdenum	0.10		0.0050	0.00061	mg/L		11/12/21 09:25	11/13/21 12:35	1
Selenium	ND		0.0050	0.0015	mg/L		11/12/21 09:25	11/13/21 12:35	1
Thallium	ND		0.0010	0.00015	mg/L		11/12/21 09:25	11/13/21 12:35	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		11/09/21 06:16	11/10/21 10:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	870		10	10	mg/L			11/09/21 16:49	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.1	HF	0.1	0.1	SU			11/09/21 11:43	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	1.00		0.529	0.537	1.00	0.696	pCi/L	11/12/21 13:18	12/06/21 17:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.2		40 - 110					11/12/21 13:18	12/06/21 17:05	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-129641-1

Client Sample ID: WAP-2R

Date Collected: 11/04/21 10:50

Date Received: 11/06/21 09:30

Lab Sample ID: 180-129641-2

Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.15	U G	1.25	1.26	1.00	2.05	pCi/L	11/12/21 14:30	12/01/21 14:27	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.2		40 - 110					11/12/21 14:30	12/01/21 14:27	1
Y Carrier	85.6		40 - 110					11/12/21 14:30	12/01/21 14:27	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	2.15		1.36	1.37	5.00	2.05	pCi/L		12/14/21 14:37	1

Client Sample ID: CCR-AP-7

Date Collected: 11/04/21 12:00

Date Received: 11/06/21 09:30

Lab Sample ID: 180-129641-3

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32		1.0	0.71	mg/L			11/08/21 14:25	1
Fluoride	0.42		0.10	0.026	mg/L			11/08/21 14:25	1
Sulfate	75		1.0	0.76	mg/L			11/08/21 14:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/12/21 09:25	11/13/21 12:49	1
Arsenic	0.0055		0.0010	0.00031	mg/L		11/12/21 09:25	11/13/21 12:49	1
Barium	0.12		0.010	0.0016	mg/L		11/12/21 09:25	11/13/21 12:49	1
Beryllium	ND		0.0010	0.00018	mg/L		11/12/21 09:25	11/13/21 12:49	1
Boron	0.13		0.080	0.039	mg/L		11/12/21 09:25	11/13/21 12:49	1
Cadmium	ND		0.0010	0.00022	mg/L		11/12/21 09:25	11/13/21 12:49	1
Calcium	110		0.50	0.13	mg/L		11/12/21 09:25	11/13/21 12:49	1
Chromium	ND		0.0020	0.0015	mg/L		11/12/21 09:25	11/13/21 12:49	1
Cobalt	0.00054		0.00050	0.00013	mg/L		11/12/21 09:25	11/13/21 12:49	1
Lead	0.00013	J	0.0010	0.00013	mg/L		11/12/21 09:25	11/13/21 12:49	1
Lithium	0.0096		0.0050	0.0034	mg/L		11/12/21 09:25	11/13/21 12:49	1
Molybdenum	0.0015	J	0.0050	0.00061	mg/L		11/12/21 09:25	11/13/21 12:49	1
Selenium	ND		0.0050	0.0015	mg/L		11/12/21 09:25	11/13/21 12:49	1
Thallium	ND		0.0010	0.00015	mg/L		11/12/21 09:25	11/13/21 12:49	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		11/09/21 06:16	11/10/21 10:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	530		10	10	mg/L			11/09/21 16:49	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1	0.1	SU			11/09/21 11:23	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

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

Job ID: 180-129641-1

Client Sample ID: CCR-AP-7

Lab Sample ID: 180-129641-3

Date Collected: 11/04/21 12:00

Matrix: Water

Date Received: 11/06/21 09:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.354		0.163	0.166	1.00	0.202	pCi/L	11/12/21 13:18	12/06/21 17:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.4		40 - 110					11/12/21 13:18	12/06/21 17:06	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.313	U	0.407	0.408	1.00	0.677	pCi/L	11/12/21 14:30	12/01/21 14:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.4		40 - 110					11/12/21 14:30	12/01/21 14:28	1
Y Carrier	81.9		40 - 110					11/12/21 14:30	12/01/21 14:28	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	0.668	U	0.438	0.440	5.00	0.677	pCi/L		12/14/21 14:37	1

QC Sample Results

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

Job ID: 180-129641-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-378057/7
Matrix: Water
Analysis Batch: 378057

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			11/08/21 13:32	1
Fluoride	ND		0.10	0.026	mg/L			11/08/21 13:32	1
Sulfate	ND		1.0	0.76	mg/L			11/08/21 13:32	1

Lab Sample ID: LCS 180-378057/6
Matrix: Water
Analysis Batch: 378057

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	46.5		mg/L		93	80 - 120
Fluoride	2.50	2.39		mg/L		96	80 - 120
Sulfate	50.0	46.4		mg/L		93	80 - 120

Lab Sample ID: 180-129641-3 MS
Matrix: Water
Analysis Batch: 378057

Client Sample ID: CCR-AP-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	27	F2	250	294		mg/L		107	80 - 120
Fluoride	0.34	J F2	12.5	13.7		mg/L		107	80 - 120
Sulfate	66	F1 F2	250	335		mg/L		108	80 - 120

Lab Sample ID: 180-129641-3 MSD
Matrix: Water
Analysis Batch: 378057

Client Sample ID: CCR-AP-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	27	F2	250	227	F2	mg/L		80	80 - 120	26	15
Fluoride	0.34	J F2	12.5	10.5	F2	mg/L		81	80 - 120	26	15
Sulfate	66	F1 F2	250	257	F1 F2	mg/L		76	80 - 120	26	15

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

Lab Sample ID: MB 180-378725/1-A
Matrix: Water
Analysis Batch: 379151

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 378725

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00038	mg/L		11/12/21 09:25	11/13/21 12:18	1
Arsenic	ND		0.0010	0.00031	mg/L		11/12/21 09:25	11/13/21 12:18	1
Barium	ND		0.010	0.0016	mg/L		11/12/21 09:25	11/13/21 12:18	1
Beryllium	ND		0.0010	0.00018	mg/L		11/12/21 09:25	11/13/21 12:18	1
Boron	ND		0.080	0.039	mg/L		11/12/21 09:25	11/13/21 12:18	1
Cadmium	ND		0.0010	0.00022	mg/L		11/12/21 09:25	11/13/21 12:18	1
Calcium	ND		0.50	0.13	mg/L		11/12/21 09:25	11/13/21 12:18	1
Chromium	ND		0.0020	0.0015	mg/L		11/12/21 09:25	11/13/21 12:18	1
Cobalt	ND		0.00050	0.00013	mg/L		11/12/21 09:25	11/13/21 12:18	1
Lead	ND		0.0010	0.00013	mg/L		11/12/21 09:25	11/13/21 12:18	1
Lithium	ND		0.0050	0.0034	mg/L		11/12/21 09:25	11/13/21 12:18	1
Molybdenum	ND		0.0050	0.00061	mg/L		11/12/21 09:25	11/13/21 12:18	1

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QC Sample Results

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

Job ID: 180-129641-1

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

Lab Sample ID: MB 180-378725/1-A
Matrix: Water
Analysis Batch: 379151

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 378725

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.0050	0.0015	mg/L		11/12/21 09:25	11/13/21 12:18	1
Thallium	ND		0.0010	0.00015	mg/L		11/12/21 09:25	11/13/21 12:18	1

Lab Sample ID: LCS 180-378725/2-A
Matrix: Water
Analysis Batch: 379151

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 378725

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.250	0.255		mg/L		102	80 - 120
Arsenic	1.00	1.01		mg/L		101	80 - 120
Barium	1.00	1.04		mg/L		104	80 - 120
Beryllium	0.500	0.516		mg/L		103	80 - 120
Boron	1.25	1.18		mg/L		94	80 - 120
Cadmium	0.500	0.513		mg/L		103	80 - 120
Calcium	25.0	29.1		mg/L		116	80 - 120
Chromium	0.500	0.515		mg/L		103	80 - 120
Cobalt	0.500	0.515		mg/L		103	80 - 120
Lead	0.500	0.510		mg/L		102	80 - 120
Lithium	0.500	0.492		mg/L		98	80 - 120
Molybdenum	0.500	0.526		mg/L		105	80 - 120
Selenium	1.00	1.03		mg/L		103	80 - 120
Thallium	1.00	1.07		mg/L		107	80 - 120

Lab Sample ID: 180-129641-3 MS
Matrix: Water
Analysis Batch: 379151

Client Sample ID: CCR-AP-7
Prep Type: Total Recoverable
Prep Batch: 378725

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		0.250	0.251		mg/L		100	75 - 125
Arsenic	0.0055		1.00	1.00		mg/L		100	75 - 125
Barium	0.12		1.00	1.16		mg/L		104	75 - 125
Beryllium	ND		0.500	0.519		mg/L		104	75 - 125
Boron	0.13		1.25	1.23		mg/L		88	75 - 125
Cadmium	ND		0.500	0.501		mg/L		100	75 - 125
Calcium	110		25.0	142	4	mg/L		135	75 - 125
Chromium	ND		0.500	0.502		mg/L		100	75 - 125
Cobalt	0.00054		0.500	0.499		mg/L		100	75 - 125
Lead	0.00013	J	0.500	0.507		mg/L		101	75 - 125
Lithium	0.0096		0.500	0.501		mg/L		98	75 - 125
Molybdenum	0.0015	J	0.500	0.517		mg/L		103	75 - 125
Selenium	ND		1.00	0.984		mg/L		98	75 - 125
Thallium	ND		1.00	1.07		mg/L		107	75 - 125

Lab Sample ID: 180-129641-3 MSD
Matrix: Water
Analysis Batch: 379151

Client Sample ID: CCR-AP-7
Prep Type: Total Recoverable
Prep Batch: 378725

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND		0.250	0.248		mg/L		99	75 - 125	1	20

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QC Sample Results

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

Job ID: 180-129641-1

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

Lab Sample ID: 180-129641-3 MSD
Matrix: Water
Analysis Batch: 379151

Client Sample ID: CCR-AP-7
Prep Type: Total Recoverable
Prep Batch: 378725

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Arsenic	0.0055		1.00	1.01		mg/L		100	75 - 125	1	20
Barium	0.12		1.00	1.14		mg/L		102	75 - 125	1	20
Beryllium	ND		0.500	0.513		mg/L		103	75 - 125	1	20
Boron	0.13		1.25	1.24		mg/L		89	75 - 125	1	20
Cadmium	ND		0.500	0.498		mg/L		100	75 - 125	1	20
Calcium	110		25.0	139	4	mg/L		124	75 - 125	2	20
Chromium	ND		0.500	0.506		mg/L		101	75 - 125	1	20
Cobalt	0.00054		0.500	0.507		mg/L		101	75 - 125	2	20
Lead	0.00013	J	0.500	0.504		mg/L		101	75 - 125	1	20
Lithium	0.0096		0.500	0.493		mg/L		97	75 - 125	2	20
Molybdenum	0.0015	J	0.500	0.521		mg/L		104	75 - 125	1	20
Selenium	ND		1.00	0.982		mg/L		98	75 - 125	0	20
Thallium	ND		1.00	1.06		mg/L		106	75 - 125	1	20

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-378157/1-A
Matrix: Water
Analysis Batch: 378424

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 378157

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.00020	0.00013	mg/L		11/09/21 06:16	11/10/21 10:43	1

Lab Sample ID: LCS 180-378157/2-A
Matrix: Water
Analysis Batch: 378424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 378157

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
Mercury	0.00250	0.00246		mg/L		98	80 - 120

Lab Sample ID: 180-129641-3 MS
Matrix: Water
Analysis Batch: 378424

Client Sample ID: CCR-AP-7
Prep Type: Total/NA
Prep Batch: 378157

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Mercury	ND		0.00100	0.000948		mg/L		95	75 - 125

Lab Sample ID: 180-129641-3 MSD
Matrix: Water
Analysis Batch: 378424

Client Sample ID: CCR-AP-7
Prep Type: Total/NA
Prep Batch: 378157

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Mercury	ND		0.00100	0.000955		mg/L		96	75 - 125	1	20

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QC Sample Results

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

Job ID: 180-129641-1

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-378228/1
Matrix: Water
Analysis Batch: 378228

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: 180-129641-3 DU
Matrix: Water
Analysis Batch: 378228

Client Sample ID: CCR-AP-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.4	HF	7.4	HF	SU		0.3	2

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

Lab Sample ID: MB 180-378299/2
Matrix: Water
Analysis Batch: 378299

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			11/09/21 16:49	1

Lab Sample ID: LCS 180-378299/1
Matrix: Water
Analysis Batch: 378299

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	422	442		mg/L		105	80 - 120

Lab Sample ID: MB 180-379135/2
Matrix: Water
Analysis Batch: 379135

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			11/16/21 12:49	1

Lab Sample ID: LCS 180-379135/1
Matrix: Water
Analysis Batch: 379135

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	422	392		mg/L		93	80 - 120

Lab Sample ID: 180-129641-3 DU
Matrix: Water
Analysis Batch: 379135

Client Sample ID: CCR-AP-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	530		530	H	mg/L		0.8	10

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QC Sample Results

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

Job ID: 180-129641-1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-536422/23-A
Matrix: Water
Analysis Batch: 540406

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 536422

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.1415	U	0.117	0.118	1.00	0.176	pCi/L	11/12/21 13:18	12/06/21 18:56	1
Carrier	MB	MB	Limits				Prepared		Analyzed	
Ba Carrier	%Yield	Qualifier	40 - 110				11/12/21 13:18		12/06/21 18:56	
	98.5									

Lab Sample ID: LCS 160-536422/1-A
Matrix: Water
Analysis Batch: 540390

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 536422

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits	
				Uncert. (2σ+/-)						
Radium-226	15.1	12.19		1.33	1.00	0.207	pCi/L	81	75 - 125	
Carrier	LCS	LCS	Limits							
Ba Carrier	%Yield	Qualifier	40 - 110							
	98.7									

Lab Sample ID: 180-129641-3 DU
Matrix: Water
Analysis Batch: 540406

Client Sample ID: CCR-AP-7
Prep Type: Total/NA
Prep Batch: 536422

Analyte	Sample	Sample	DU	DU	Total	RL	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual	Uncert. (2σ+/-)					
Radium-226	0.354		0.4335		0.186	1.00	0.217	pCi/L	0.23	1
Carrier	DU	DU	Limits							
Ba Carrier	%Yield	Qualifier	40 - 110							
	89.1									

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-536427/23-A
Matrix: Water
Analysis Batch: 539785

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 536427

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.6272		0.374	0.378	1.00	0.562	pCi/L	11/12/21 14:30	12/01/21 14:32	1
Carrier	MB	MB	Limits				Prepared		Analyzed	
Ba Carrier	%Yield	Qualifier	40 - 110				11/12/21 14:30		12/01/21 14:32	
	98.5									
Y Carrier	87.1		40 - 110				11/12/21 14:30		12/01/21 14:32	

QC Sample Results

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

Job ID: 180-129641-1

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

Lab Sample ID: LCS 160-536427/1-A
Matrix: Water
Analysis Batch: 539996

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 536427

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	
Radium-228	12.1	9.551		1.25	1.00	0.653	pCi/L	79	75 - 125	
LCS LCS										
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	98.7		40 - 110							
Y Carrier	85.6		40 - 110							

Lab Sample ID: 180-129641-3 DU
Matrix: Water
Analysis Batch: 539783

Client Sample ID: CCR-AP-7
Prep Type: Total/NA
Prep Batch: 536427

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.313	U	-0.3537	U	0.385	1.00	0.745	pCi/L	0.84	1
DU DU										
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	89.1		40 - 110							
Y Carrier	86.0		40 - 110							

QC Association Summary

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

Job ID: 180-129641-1

HPLC/IC

Analysis Batch: 378057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129641-1	WAP-1	Total/NA	Water	EPA 9056A	
180-129641-1	WAP-1	Total/NA	Water	EPA 9056A	
180-129641-2	WAP-2R	Total/NA	Water	EPA 9056A	
180-129641-2	WAP-2R	Total/NA	Water	EPA 9056A	
180-129641-3	CCR-AP-7	Total/NA	Water	EPA 9056A	
MB 180-378057/7	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-378057/6	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-129641-3 MS	CCR-AP-7	Total/NA	Water	EPA 9056A	
180-129641-3 MSD	CCR-AP-7	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 378157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129641-1	WAP-1	Total/NA	Water	7470A	
180-129641-2	WAP-2R	Total/NA	Water	7470A	
180-129641-3	CCR-AP-7	Total/NA	Water	7470A	
MB 180-378157/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-378157/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-129641-3 MS	CCR-AP-7	Total/NA	Water	7470A	
180-129641-3 MSD	CCR-AP-7	Total/NA	Water	7470A	

Analysis Batch: 378424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129641-1	WAP-1	Total/NA	Water	EPA 7470A	378157
180-129641-2	WAP-2R	Total/NA	Water	EPA 7470A	378157
180-129641-3	CCR-AP-7	Total/NA	Water	EPA 7470A	378157
MB 180-378157/1-A	Method Blank	Total/NA	Water	EPA 7470A	378157
LCS 180-378157/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	378157
180-129641-3 MS	CCR-AP-7	Total/NA	Water	EPA 7470A	378157
180-129641-3 MSD	CCR-AP-7	Total/NA	Water	EPA 7470A	378157

Prep Batch: 378725

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129641-1	WAP-1	Total Recoverable	Water	3005A	
180-129641-2	WAP-2R	Total Recoverable	Water	3005A	
180-129641-3	CCR-AP-7	Total Recoverable	Water	3005A	
MB 180-378725/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-378725/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-129641-3 MS	CCR-AP-7	Total Recoverable	Water	3005A	
180-129641-3 MSD	CCR-AP-7	Total Recoverable	Water	3005A	

Analysis Batch: 379151

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129641-1	WAP-1	Total Recoverable	Water	EPA 6020A	378725
180-129641-2	WAP-2R	Total Recoverable	Water	EPA 6020A	378725
180-129641-3	CCR-AP-7	Total Recoverable	Water	EPA 6020A	378725
MB 180-378725/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	378725
LCS 180-378725/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	378725
180-129641-3 MS	CCR-AP-7	Total Recoverable	Water	EPA 6020A	378725
180-129641-3 MSD	CCR-AP-7	Total Recoverable	Water	EPA 6020A	378725

Eurofins TestAmerica, Pittsburgh

QC Association Summary

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

Job ID: 180-129641-1

General Chemistry

Analysis Batch: 378228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129641-1	WAP-1	Total/NA	Water	EPA 9040C	
180-129641-2	WAP-2R	Total/NA	Water	EPA 9040C	
180-129641-3	CCR-AP-7	Total/NA	Water	EPA 9040C	
LCS 180-378228/1	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-129641-3 DU	CCR-AP-7	Total/NA	Water	EPA 9040C	

Analysis Batch: 378299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129641-1	WAP-1	Total/NA	Water	SM 2540C	
180-129641-2	WAP-2R	Total/NA	Water	SM 2540C	
180-129641-3	CCR-AP-7	Total/NA	Water	SM 2540C	
MB 180-378299/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-378299/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 379135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-379135/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-379135/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-129641-3 DU	CCR-AP-7	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 536422

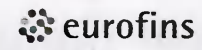
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129641-1	WAP-1	Total/NA	Water	PrecSep-21	
180-129641-2	WAP-2R	Total/NA	Water	PrecSep-21	
180-129641-3	CCR-AP-7	Total/NA	Water	PrecSep-21	
MB 160-536422/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-536422/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
180-129641-3 DU	CCR-AP-7	Total/NA	Water	PrecSep-21	

Prep Batch: 536427

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129641-1	WAP-1	Total/NA	Water	PrecSep_0	
180-129641-2	WAP-2R	Total/NA	Water	PrecSep_0	
180-129641-3	CCR-AP-7	Total/NA	Water	PrecSep_0	
MB 160-536427/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-536427/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
180-129641-3 DU	CCR-AP-7	Total/NA	Water	PrecSep_0	

Chain of Custody Record

546476



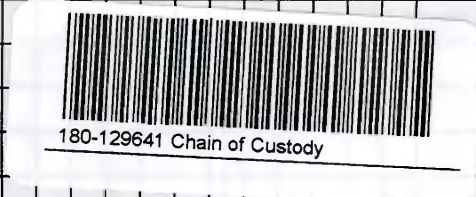
Environment Testing
TestAmerica

Address: _____

Regulatory Program: DW NPDES RCRA Other:

TAL-8210

Client Contact		Project Manager: <i>Mark Breiter</i>		Site Contact: <i>Jon Hill</i>		Date: <i>11.5.21</i>		COC No: _____					
Company Name: <i>ATC</i>		Tel/Email: <i>317-849-9990</i>		Lab Contact: <i>Ken Hayes</i>		Carrier: <i>Fed Ex</i>		____ of ____ COCs					
Address: <i>7988 centerpoint Dr Ste 100</i>		Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____ <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day											
City/State/Zip: <i>Indianapolis, IN 46256</i>													
Phone: <i>317-473-1325</i>													
Fax: _____													
Project Name: <i>Cully west</i>		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)		Matrix		# of Cont.		Filtered Sample (Y/N) Perform MS/MSD (Y/N) <i>9040C, 9056A, 08CFM 280</i> <i>6020A, 7470A</i> <i>2540C, calcd - TDS</i> <i>9315, RAD 226 9320 RD 228</i>	
Site: <i>Western</i>		↓		1050		↓		↓		5			
P O # <i>170 LF 00 898</i>		↓		1200		↓		↓		5			
		↓		1200		↓		↓		5			
		↓		1200		↓		↓		5			
		↓		1200		↓		↓		5			
Sample Identification		Sample Specific Notes:											
		<i>CCR-AP-7</i>											
		<i>↓ ↓ ↓</i>											



Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazardous Flammable Skin Irritant Poison B Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: Yes No Custody Seal No.: _____ Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by: <i>J Hill</i>	Company: <i>ATC</i>	Date/Time: <i>11.5.21/900</i>	Received by: <i>Matthew Job's</i>	Company: <i>EPA Pitt</i>	Date/Time: <i>11/6/21 930</i>
Relinquished by: _____	Company: _____	Date/Time: _____	Received by: _____	Company: _____	Date/Time: _____
Relinquished by: _____	Company: _____	Date/Time: _____	Received in Laboratory by: _____	Company: _____	Date/Time: _____

FedEx

SDR

FedEx Saturday Delivery

151967 REV 7/08 RRD

FedEx Express

Package
US Airbill

FedEx
Tracking
Number

8164 2309 5404

DELIVER HERE

0200

From [Redacted]
Date 11/5/21

Sender's Name Jon 16/11 Phone 317 473-1325

Company ATC

Address 7988 centerpoint Dr Ste 100 Dept/Floor/Suite/Room

City Indianapolis State Ind ZIP 46256

2 Your Internal Billing Reference 1701400398

3 To Recipient's Name Dr. Crivino Phone 412 963-7058

Company EuroFins Test America

Address 301 Alpha Dr RTDC Park Dept/Floor/Suite/Room

Address PA ZIP 15238

4 Express Package Service *To most locations

Next Business Day

FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Priority Overnight
Next business morning. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Standard Overnight
Next business afternoon. Saturday Delivery NOT available.

5 Packaging *Declared value limit \$500

FedEx Envelope* FedEx Pak*

6 Special Handling and Delivery Signature

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx AM, or FedEx Home Delivery.

No Signature Required
Package may be left without obtaining a signature for delivery.

Direct Signature
Signature required for delivery. May not apply for all services.

Does this shipment contain dangerous goods?

No Yes
If Yes, attach Shipper's Declaration. Restrictions apply to dangerous goods. See the current FedEx Restricted List.

7 Payment Bill to:

Sender Recipient

Total Packages

shipper/flap. Follow the pack
© 2018 FedEx U.S. Patent

fedex.com 1800.GoFedEx 1800.463.3339

FedEx

TRK# 0200 8164 2309 5404

X0 AGCA

Uncorrected temp Thermometer ID

4.2 °C
8

CF 0 Initials 2g

15238 PA-US PIT

650238 05Nov2021 MZZA 560G/9A7E/1B23



180-129641 Waybill



Do Not Lift Usr This Tag

Align FedEx Pouch Here

Do Not Lift Using This

1
2
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11
12
13

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-129641-1

Login Number: 129641

List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Abernathy, Eric L

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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 <math><6\text{mm}</math> (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: 180-129641-1

Login Number: 129641

List Number: 2

Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis

List Creation: 11/10/21 12:16 AM

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	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-129641-1

Login Number: 129641

List Number: 3

Creator: Johnson, Autumn R

List Source: Eurofins TestAmerica, St. Louis

List Creation: 11/12/21 12:27 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	

ANALYTICAL REPORT

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

Laboratory Job ID: 180-137587-1

Client Project/Site: CCR GW Monitoring FB Culley West
Revision: 1

For:

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

Attn: Mark Miesfeldt



Authorized for release by:
6/8/2022 1:57:59 PM

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

LINKS

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results through



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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

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	4
Certification Summary	5
Sample Summary	7
Method Summary	8
Lab Chronicle	9
Client Sample Results	18
QC Sample Results	34
QC Association Summary	45
Chain of Custody	50
Receipt Checklists	52

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Job ID: 180-137587-1

Laboratory: Eurofins Pittsburgh

Narrative

Job Narrative 180-137587-1

Revised Report: Revised to incorporate Radiological analysis. This report replaces the one generated on 05/25/22 @ 14:09

Comments

No additional comments.

Receipt

The samples were received on 5/4/2022 11:15 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9° C and 2.2° C.

GC Semi VOA

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

RAD

Method 9315: Radium-226 batch 564511

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.

WAP-4S (180-137587-1), WAP-4I (180-137587-2), WAP-4D (180-137587-3), WAP-5S (180-137587-4), WAP-5I (180-137587-5), WAP-5I (180-137587-5[MSJ]), WAP-5I (180-137587-5[MSD]), WAP-5D (180-137587-6), WAP-6S (180-137587-7), WAP-6I (180-137587-8), WAP-6D (180-137587-9), CCR-AP-7 (180-137587-10), CCR-AP-7 (180-137587-10[MSJ]), CCR-AP-7 (180-137587-10[MSD]), DUP-1 (180-137587-11), DUP-2 (180-137587-12), FIELD BLANK (180-137587-13), (LCS 160-564511/1-A) and (MB 160-564511/24-A)

Method 9320: Radium-228 batch 564514

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.

WAP-4S (180-137587-1), WAP-4I (180-137587-2), WAP-4D (180-137587-3), WAP-5S (180-137587-4), WAP-5I (180-137587-5), WAP-5I (180-137587-5[MSJ]), WAP-5I (180-137587-5[MSD]), WAP-5D (180-137587-6), WAP-6S (180-137587-7), WAP-6I (180-137587-8), WAP-6D (180-137587-9), CCR-AP-7 (180-137587-10), CCR-AP-7 (180-137587-10[MSJ]), CCR-AP-7 (180-137587-10[MSD]), DUP-1 (180-137587-11), DUP-2 (180-137587-12), FIELD BLANK (180-137587-13), (LCS 160-564514/1-A) and (MB 160-564514/24-A)

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

Metals

Method 6020A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 180-398676 and analytical batch 180-399007 were outside control limits for manganese. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Methods 6020A, 6020B: The ICB recovered above the MDL for nickel but less than the RL ;therefore the data has been reported. (ICB 180-399007/6)

Method 6020A: The following sample was diluted to bring the concentration of target analytes within the calibration range: WAP-4S (180-137587-1). 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.

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

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
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

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	05-29-22
California	State	2891	04-30-22 *
Connecticut	State	PH-0688	05-29-22
Florida	NELAP	E871008	05-29-22
Georgia	State	PA 02-00416	05-29-22
Illinois	NELAP	004375	05-29-22
Kansas	NELAP	E-10350	05-29-22
Kentucky (UST)	State	162013	04-30-22 *
Kentucky (WW)	State	KY98043	05-29-22
Louisiana	NELAP	04041	05-29-22
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	05-29-22
Nevada	State	PA00164	08-31-22
New Hampshire	NELAP	2030	05-29-22
New Jersey	NELAP	PA005	05-29-22
New York	NELAP	11182	05-29-22
North Carolina (WW/SW)	State	434	05-29-22
North Dakota	State	R-227	04-30-22 *
Oregon	NELAP	PA-2151	02-07-23
Pennsylvania	NELAP	02-00416	05-29-22
Rhode Island	State	LAO00362	12-31-21 *
South Carolina	State	89014	05-29-22
Texas	NELAP	T104704528	05-29-22
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	05-25-22
West Virginia DEP	State	142	05-29-22
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.

Eurofins Pittsburgh

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

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	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-137587-1	WAP-4S	Water	05/03/22 11:45	05/04/22 13:40
180-137587-2	WAP-4I	Water	05/03/22 12:30	05/04/22 13:40
180-137587-3	WAP-4D	Water	05/03/22 13:20	05/04/22 13:40
180-137587-4	WAP-5S	Water	05/03/22 08:25	05/04/22 13:40
180-137587-5	WAP-5I	Water	05/03/22 09:20	05/04/22 13:40
180-137587-6	WAP-5D	Water	05/03/22 10:23	05/04/22 13:40
180-137587-7	WAP-6S	Water	05/03/22 13:50	05/04/22 13:40
180-137587-8	WAP-6I	Water	05/03/22 13:00	05/04/22 13:40
180-137587-9	WAP-6D	Water	05/03/22 15:00	05/04/22 13:40
180-137587-10	CCR-AP-7	Water	05/03/22 09:20	05/04/22 13:40
180-137587-11	DUP-1	Water	05/03/22 00:00	05/04/22 13:40
180-137587-12	DUP-2	Water	05/03/22 00:00	05/04/22 13:40
180-137587-13	FIELD BLANK	Water	05/03/22 10:10	05/04/22 13:40



Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

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.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-4S
Date Collected: 05/03/22 11:45
Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-1
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			399469	05/20/22 21:59	LWM	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399007	05/14/22 18:07	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		10			399192	05/17/22 12:30	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:03	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 10:35	HEK	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	397818	05/05/22 17:26	JCR	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1004.87 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			569008	06/07/22 16:04	FLC	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1004.87 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568835	06/07/22 11:56	FLC	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-4I
Date Collected: 05/03/22 12:30
Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-2
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		1			399469	05/20/22 23:28	LWM	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399007	05/14/22 18:21	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399192	05/17/22 12:34	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:04	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 10:40	HEK	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	397818	05/05/22 17:26	JCR	TAL PIT
Instrument ID: NOEQUIP										

Eurofins Pittsburgh

Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-4I

Lab Sample ID: 180-137587-2

Date Collected: 05/03/22 12:30

Matrix: Water

Date Received: 05/04/22 13:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			752.28 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			569008	06/07/22 16:04	FLC	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			752.28 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568835	06/07/22 11:56	FLC	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-4D

Lab Sample ID: 180-137587-3

Date Collected: 05/03/22 13:20

Matrix: Water

Date Received: 05/04/22 13:40

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			399469	05/20/22 22:28	LWM	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399007	05/14/22 18:25	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399192	05/17/22 12:56	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:05	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 10:46	HEK	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	397818	05/05/22 17:26	JCR	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1003.79 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			569008	06/07/22 16:04	FLC	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1003.79 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568835	06/07/22 11:56	FLC	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-5S

Lab Sample ID: 180-137587-4

Date Collected: 05/03/22 08:25

Matrix: Water

Date Received: 05/04/22 13:40

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			399469	05/21/22 00:57	LWM	TAL PIT
Instrument ID: CHIC2100A										

Eurofins Pittsburgh

Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-5S
Date Collected: 05/03/22 08:25
Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-4
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	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399007	05/14/22 18:29	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399192	05/17/22 12:59	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:06	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 10:52	HEK	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	397818	05/05/22 17:26	JCR	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			992.69 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			569008	06/07/22 16:04	FLC	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			992.69 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568835	06/07/22 11:57	FLC	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-5I
Date Collected: 05/03/22 09:20
Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-5
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			399666	05/24/22 00:52	M1D	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399007	05/14/22 18:50	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399192	05/17/22 13:14	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:07	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 10:13	HEK	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	397818	05/05/22 17:26	JCR	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			992.34 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			569008	06/07/22 16:04	FLC	TAL SL
Instrument ID: GFPCBLUE										

Eurofins Pittsburgh

Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-5I

Lab Sample ID: 180-137587-5

Date Collected: 05/03/22 09:20

Matrix: Water

Date Received: 05/04/22 13:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep_0			992.34 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568835	06/07/22 11:57	FLC	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-5D

Lab Sample ID: 180-137587-6

Date Collected: 05/03/22 10:23

Matrix: Water

Date Received: 05/04/22 13:40

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			399469	05/21/22 01:40	LWM	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399007	05/14/22 19:08	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399192	05/17/22 13:32	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:10	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 10:57	HEK	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	397818	05/05/22 17:26	JCR	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			993.84 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			569008	06/07/22 16:05	FLC	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			993.84 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568835	06/07/22 11:59	FLC	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-6S

Lab Sample ID: 180-137587-7

Date Collected: 05/03/22 13:50

Matrix: Water

Date Received: 05/04/22 13:40

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			399469	05/21/22 02:36	LWM	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399007	05/14/22 19:12	RSK	TAL PIT
Instrument ID: A										

Eurofins Pittsburgh

Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-6S
Date Collected: 05/03/22 13:50
Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-7
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	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399192	05/17/22 13:43	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:14	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 11:03	HEK	TAL PIT
	Instrument ID: PHTITRATOR									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	397818	05/05/22 17:26	JCR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			993.50 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			569008	06/07/22 16:05	FLC	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			993.50 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568835	06/07/22 11:58	FLC	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-6I
Date Collected: 05/03/22 13:00
Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-8
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			399469	05/21/22 03:03	LWM	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399007	05/14/22 19:27	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399192	05/17/22 13:58	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	398860	05/16/22 07:49	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			398978	05/16/22 14:40	RJR	TAL PIT
	Instrument ID: HGY									
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 11:22	HEK	TAL PIT
	Instrument ID: PHTITRATOR									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	397818	05/05/22 17:26	JCR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			992.16 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			569008	06/07/22 16:05	FLC	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			992.16 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568835	06/07/22 11:58	FLC	TAL SL
	Instrument ID: GFPCPURPLE									

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Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-6I
Date Collected: 05/03/22 13:00
Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-8
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	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL

Client Sample ID: WAP-6D
Date Collected: 05/03/22 15:00
Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-9
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 Instrument ID: CHIC2100A		1			399469	05/21/22 05:09	LWM	TAL PIT
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A Instrument ID: A		1			399007	05/14/22 19:30	RSK	TAL PIT
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A Instrument ID: A		1			399192	05/17/22 14:01	RSK	TAL PIT
Total/NA	Prep	7470A			50 mL	50 mL	398860	05/16/22 07:49	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A Instrument ID: HGY		1			398978	05/16/22 14:41	RJR	TAL PIT
Total/NA	Analysis	EPA 9040C Instrument ID: PHTITRATOR		1			397958	05/06/22 11:28	HEK	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	397818	05/05/22 17:26	JCR	TAL PIT
Total/NA	Prep	PrecSep-21			992.40 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315 Instrument ID: GFPCBLUE		1			569008	06/07/22 16:05	FLC	TAL SL
Total/NA	Prep	PrecSep_0			992.40 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320 Instrument ID: GFPCPURPLE		1			568835	06/07/22 11:59	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Instrument ID: NOEQUIP		1			569036	06/08/22 12:54	SCB	TAL SL

Client Sample ID: CCR-AP-7
Date Collected: 05/03/22 09:20
Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-10
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 Instrument ID: CHICS2100B		1			399666	05/24/22 01:37	M1D	TAL PIT
Total Recoverable	Prep	3005A			25 mL	25 mL	398537	05/12/22 09:54	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A Instrument ID: A		1			399007	05/14/22 15:56	RSK	TAL PIT
Total/NA	Prep	7470A			50 mL	50 mL	398860	05/16/22 07:49	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A Instrument ID: HGY		1			398978	05/16/22 14:42	RJR	TAL PIT

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Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: CCR-AP-7

Lab Sample ID: 180-137587-10

Date Collected: 05/03/22 09:20

Matrix: Water

Date Received: 05/04/22 13:40

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			397958	05/06/22 11:11	HEK	TAL PIT
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	397818	05/05/22 17:26	JCR	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			994.05 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			569008	06/07/22 16:05	FLC	TAL SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			994.05 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568835	06/07/22 11:59	FLC	TAL SL
		Instrument ID: GFPCPURPLE								
Total/NA	Analysis	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL
		Instrument ID: NOEQUIP								

Client Sample ID: DUP-1

Lab Sample ID: 180-137587-11

Date Collected: 05/03/22 00:00

Matrix: Water

Date Received: 05/04/22 13:40

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			399469	05/21/22 03:45	LWM	TAL PIT
		Instrument ID: CHIC2100A								
Total Recoverable	Prep	3005A			25 mL	25 mL	398537	05/12/22 09:54	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399007	05/14/22 16:21	RSK	TAL PIT
		Instrument ID: A								
Total/NA	Prep	7470A			50 mL	50 mL	398860	05/16/22 07:49	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			398978	05/16/22 14:45	RJR	TAL PIT
		Instrument ID: HGY								
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 11:33	HEK	TAL PIT
		Instrument ID: PHTITRATOR								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	397818	05/05/22 17:26	JCR	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			996.29 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			568823	06/07/22 18:12	FLC	TAL SL
		Instrument ID: GFPCRED								
Total/NA	Prep	PrecSep_0			996.29 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568835	06/07/22 12:01	FLC	TAL SL
		Instrument ID: GFPCPURPLE								
Total/NA	Analysis	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL
		Instrument ID: NOEQUIP								

Client Sample ID: DUP-2

Lab Sample ID: 180-137587-12

Date Collected: 05/03/22 00:00

Matrix: Water

Date Received: 05/04/22 13:40

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			399469	05/21/22 04:13	LWM	TAL PIT
		Instrument ID: CHIC2100A								

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Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: DUP-2
Date Collected: 05/03/22 00:00
Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-12
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	398537	05/12/22 09:54	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399007	05/14/22 16:36	RSK	TAL PIT
		Instrument ID: A								
Total/NA	Prep	7470A			50 mL	50 mL	398860	05/16/22 07:49	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			398978	05/16/22 14:49	RJR	TAL PIT
		Instrument ID: HGY								
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 11:39	HEK	TAL PIT
		Instrument ID: PHTITRATOR								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	397818	05/05/22 17:26	JCR	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			999.76 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			568823	06/07/22 18:12	FLC	TAL SL
		Instrument ID: GFPCRED								
Total/NA	Prep	PrecSep_0			999.76 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568850	06/07/22 12:03	FLC	TAL SL
		Instrument ID: GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL
		Instrument ID: NOEQUIP								

Client Sample ID: FIELD BLANK
Date Collected: 05/03/22 10:10
Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-13
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			399469	05/21/22 04:27	LWM	TAL PIT
		Instrument ID: CHIC2100A								
Total Recoverable	Prep	3005A			25 mL	25 mL	398537	05/12/22 09:54	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399007	05/14/22 16:39	RSK	TAL PIT
		Instrument ID: A								
Total/NA	Prep	7470A			50 mL	50 mL	398860	05/16/22 07:49	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			398978	05/16/22 14:50	RJR	TAL PIT
		Instrument ID: HGY								
Total/NA	Analysis	EPA 9040C		1			398030	05/07/22 16:31	HEK	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	397818	05/05/22 17:26	JCR	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			1002.44 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			568823	06/07/22 18:12	FLC	TAL SL
		Instrument ID: GFPCRED								
Total/NA	Prep	PrecSep_0			1002.44 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568850	06/07/22 12:03	FLC	TAL SL
		Instrument ID: GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL
		Instrument ID: NOEQUIP								

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Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

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

KWP = Kenneth Peters

RJR = Ron Rosenbaum

Batch Type: Analysis

HEK = Hope Kiesling

JCR = Jessica Rodgers

LWM = Larry Matko

M1D = Maureen Donlin

RJR = Ron Rosenbaum

RSK = Robert Kurtz

Lab: TAL SL

Batch Type: Prep

MS = Matthew Swaringam

Batch Type: Analysis

FLC = Fernando Cruz

SCB = Sarah Bernsen

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Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-4S

Lab Sample ID: 180-137587-1

Date Collected: 05/03/22 11:45

Matrix: Water

Date Received: 05/04/22 13:40

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	150		1.0	0.71	mg/L			05/20/22 21:59	1
Fluoride	0.16		0.10	0.026	mg/L			05/20/22 21:59	1
Sulfate	450		1.0	0.76	mg/L			05/20/22 21:59	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		05/13/22 10:12	05/14/22 18:07	1
Arsenic	0.0061		0.0010	0.00028	mg/L		05/13/22 10:12	05/14/22 18:07	1
Barium	0.057		0.010	0.0031	mg/L		05/13/22 10:12	05/14/22 18:07	1
Beryllium	ND		0.0010	0.00027	mg/L		05/13/22 10:12	05/14/22 18:07	1
Boron	12		0.80	0.60	mg/L		05/13/22 10:12	05/17/22 12:30	10
Cadmium	ND		0.0010	0.00022	mg/L		05/13/22 10:12	05/14/22 18:07	1
Calcium	280		0.50	0.13	mg/L		05/13/22 10:12	05/14/22 18:07	1
Chromium	ND		0.0020	0.0015	mg/L		05/13/22 10:12	05/14/22 18:07	1
Cobalt	0.0017		0.00050	0.00026	mg/L		05/13/22 10:12	05/14/22 18:07	1
Lead	ND		0.0010	0.00017	mg/L		05/13/22 10:12	05/14/22 18:07	1
Lithium	0.0014	J	0.0050	0.00083	mg/L		05/13/22 10:12	05/14/22 18:07	1
Molybdenum	0.51		0.0050	0.00061	mg/L		05/13/22 10:12	05/14/22 18:07	1
Selenium	ND		0.0050	0.00074	mg/L		05/13/22 10:12	05/14/22 18:07	1
Thallium	ND		0.0010	0.00047	mg/L		05/13/22 10:12	05/14/22 18:07	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		05/17/22 04:57	05/17/22 15:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1300		10	10	mg/L			05/05/22 17:26	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1	0.1	SU			05/06/22 10:35	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.158	U	0.250	0.251	1.00	0.431	pCi/L	05/09/22 09:56	06/07/22 16:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.8		40 - 110					05/09/22 09:56	06/07/22 16:04	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.390	U	0.341	0.343	1.00	0.540	pCi/L	05/09/22 10:57	06/07/22 11:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.8		40 - 110					05/09/22 10:57	06/07/22 11:56	1
Y Carrier	86.0		40 - 110					05/09/22 10:57	06/07/22 11:56	1

Eurofins Pittsburgh

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-4S

Lab Sample ID: 180-137587-1

Date Collected: 05/03/22 11:45

Matrix: Water

Date Received: 05/04/22 13:40

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	0.547		0.423	0.425	5.00	0.540	pCi/L		06/08/22 12:54	1

Client Sample ID: WAP-4I

Lab Sample ID: 180-137587-2

Date Collected: 05/03/22 12:30

Matrix: Water

Date Received: 05/04/22 13:40

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	24		1.0	0.71	mg/L			05/20/22 23:28	1
Fluoride	0.059	J	0.10	0.026	mg/L			05/20/22 23:28	1
Sulfate	38		1.0	0.76	mg/L			05/20/22 23:28	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		05/13/22 10:12	05/14/22 18:21	1
Arsenic	0.012		0.0010	0.00028	mg/L		05/13/22 10:12	05/14/22 18:21	1
Barium	0.15		0.010	0.0031	mg/L		05/13/22 10:12	05/14/22 18:21	1
Beryllium	ND		0.0010	0.00027	mg/L		05/13/22 10:12	05/14/22 18:21	1
Boron	0.099		0.080	0.060	mg/L		05/13/22 10:12	05/17/22 12:34	1
Cadmium	ND		0.0010	0.00022	mg/L		05/13/22 10:12	05/14/22 18:21	1
Calcium	36		0.50	0.13	mg/L		05/13/22 10:12	05/14/22 18:21	1
Chromium	ND		0.0020	0.0015	mg/L		05/13/22 10:12	05/14/22 18:21	1
Cobalt	0.00042	J	0.00050	0.00026	mg/L		05/13/22 10:12	05/14/22 18:21	1
Lead	0.00025	J	0.0010	0.00017	mg/L		05/13/22 10:12	05/14/22 18:21	1
Lithium	0.0030	J	0.0050	0.00083	mg/L		05/13/22 10:12	05/14/22 18:21	1
Molybdenum	0.0017	J	0.0050	0.00061	mg/L		05/13/22 10:12	05/14/22 18:21	1
Selenium	ND		0.0050	0.00074	mg/L		05/13/22 10:12	05/14/22 18:21	1
Thallium	ND		0.0010	0.00047	mg/L		05/13/22 10:12	05/14/22 18:21	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		05/17/22 04:57	05/17/22 15:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	200		10	10	mg/L			05/05/22 17:26	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1	0.1	SU			05/06/22 10:40	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.485	U	0.371	0.373	1.00	0.548	pCi/L	05/09/22 09:56	06/07/22 16:04	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	91.0		40 - 110	05/09/22 09:56	06/07/22 16:04	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-4I

Lab Sample ID: 180-137587-2

Date Collected: 05/03/22 12:30

Matrix: Water

Date Received: 05/04/22 13:40

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.716		0.442	0.447	1.00	0.644	pCi/L	05/09/22 10:57	06/07/22 11:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.0		40 - 110					05/09/22 10:57	06/07/22 11:56	1
Y Carrier	84.1		40 - 110					05/09/22 10:57	06/07/22 11:56	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	1.20		0.577	0.582	5.00	0.644	pCi/L		06/08/22 12:54	1

Client Sample ID: WAP-4D

Lab Sample ID: 180-137587-3

Date Collected: 05/03/22 13:20

Matrix: Water

Date Received: 05/04/22 13:40

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	24		2.5	1.8	mg/L			05/20/22 22:28	2.5
Fluoride	0.10	J	0.25	0.065	mg/L			05/20/22 22:28	2.5
Sulfate	31		2.5	1.9	mg/L			05/20/22 22:28	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		05/13/22 10:12	05/14/22 18:25	1
Arsenic	0.0098		0.0010	0.00028	mg/L		05/13/22 10:12	05/14/22 18:25	1
Barium	0.28		0.010	0.0031	mg/L		05/13/22 10:12	05/14/22 18:25	1
Beryllium	ND		0.0010	0.00027	mg/L		05/13/22 10:12	05/14/22 18:25	1
Boron	ND		0.080	0.060	mg/L		05/13/22 10:12	05/17/22 12:56	1
Cadmium	ND		0.0010	0.00022	mg/L		05/13/22 10:12	05/14/22 18:25	1
Calcium	48		0.50	0.13	mg/L		05/13/22 10:12	05/14/22 18:25	1
Chromium	ND		0.0020	0.0015	mg/L		05/13/22 10:12	05/14/22 18:25	1
Cobalt	ND		0.00050	0.00026	mg/L		05/13/22 10:12	05/14/22 18:25	1
Lead	ND		0.0010	0.00017	mg/L		05/13/22 10:12	05/14/22 18:25	1
Lithium	0.0020	J	0.0050	0.00083	mg/L		05/13/22 10:12	05/14/22 18:25	1
Molybdenum	0.0055		0.0050	0.00061	mg/L		05/13/22 10:12	05/14/22 18:25	1
Selenium	ND		0.0050	0.00074	mg/L		05/13/22 10:12	05/14/22 18:25	1
Thallium	ND		0.0010	0.00047	mg/L		05/13/22 10:12	05/14/22 18:25	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		05/17/22 04:57	05/17/22 15:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	240		10	10	mg/L			05/05/22 17:26	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1	0.1	SU			05/06/22 10:46	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-4D

Date Collected: 05/03/22 13:20

Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-3

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.464	U	0.342	0.345	1.00	0.505	pCi/L	05/09/22 09:56	06/07/22 16:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	74.6		40 - 110					05/09/22 09:56	06/07/22 16:04	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.547	U	0.380	0.383	1.00	0.568	pCi/L	05/09/22 10:57	06/07/22 11:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	74.6		40 - 110					05/09/22 10:57	06/07/22 11:56	1
Y Carrier	84.9		40 - 110					05/09/22 10:57	06/07/22 11:56	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	1.01		0.511	0.515	5.00	0.568	pCi/L		06/08/22 12:54	1

Client Sample ID: WAP-5S

Date Collected: 05/03/22 08:25

Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-4

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	120		1.0	0.71	mg/L			05/21/22 00:57	1
Fluoride	0.030	J	0.10	0.026	mg/L			05/21/22 00:57	1
Sulfate	400		1.0	0.76	mg/L			05/21/22 00:57	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		05/13/22 10:12	05/14/22 18:29	1
Arsenic	0.00039	J	0.0010	0.00028	mg/L		05/13/22 10:12	05/14/22 18:29	1
Barium	0.048		0.010	0.0031	mg/L		05/13/22 10:12	05/14/22 18:29	1
Beryllium	ND		0.0010	0.00027	mg/L		05/13/22 10:12	05/14/22 18:29	1
Boron	4.9		0.080	0.060	mg/L		05/13/22 10:12	05/17/22 12:59	1
Cadmium	ND		0.0010	0.00022	mg/L		05/13/22 10:12	05/14/22 18:29	1
Calcium	230		0.50	0.13	mg/L		05/13/22 10:12	05/14/22 18:29	1
Chromium	ND		0.0020	0.0015	mg/L		05/13/22 10:12	05/14/22 18:29	1
Cobalt	0.0060		0.00050	0.00026	mg/L		05/13/22 10:12	05/14/22 18:29	1
Lead	ND		0.0010	0.00017	mg/L		05/13/22 10:12	05/14/22 18:29	1
Lithium	0.0014	J	0.0050	0.00083	mg/L		05/13/22 10:12	05/14/22 18:29	1
Molybdenum	ND		0.0050	0.00061	mg/L		05/13/22 10:12	05/14/22 18:29	1
Selenium	ND		0.0050	0.00074	mg/L		05/13/22 10:12	05/14/22 18:29	1
Thallium	ND		0.0010	0.00047	mg/L		05/13/22 10:12	05/14/22 18:29	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-5S

Lab Sample ID: 180-137587-4

Date Collected: 05/03/22 08:25

Matrix: Water

Date Received: 05/04/22 13:40

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		05/17/22 04:57	05/17/22 15:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1200		10	10	mg/L			05/05/22 17:26	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.3	HF	0.1	0.1	SU			05/06/22 10:52	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.287	U	0.300	0.301	1.00	0.482	pCi/L	05/09/22 09:56	06/07/22 16:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.0		40 - 110					05/09/22 09:56	06/07/22 16:04	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.501	U	0.366	0.369	1.00	0.556	pCi/L	05/09/22 10:57	06/07/22 11:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.0		40 - 110					05/09/22 10:57	06/07/22 11:57	1
Y Carrier	84.9		40 - 110					05/09/22 10:57	06/07/22 11:57	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	0.789		0.473	0.476	5.00	0.556	pCi/L		06/08/22 12:54	1

Client Sample ID: WAP-5I

Lab Sample ID: 180-137587-5

Date Collected: 05/03/22 09:20

Matrix: Water

Date Received: 05/04/22 13:40

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23		1.0	0.71	mg/L			05/24/22 00:52	1
Fluoride	0.22		0.10	0.026	mg/L			05/24/22 00:52	1
Sulfate	41		1.0	0.76	mg/L			05/24/22 00:52	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		05/13/22 10:12	05/14/22 18:50	1
Arsenic	0.0043		0.0010	0.00028	mg/L		05/13/22 10:12	05/14/22 18:50	1
Barium	0.10		0.010	0.0031	mg/L		05/13/22 10:12	05/14/22 18:50	1
Beryllium	ND		0.0010	0.00027	mg/L		05/13/22 10:12	05/14/22 18:50	1
Boron	ND		0.080	0.060	mg/L		05/13/22 10:12	05/17/22 13:14	1
Cadmium	ND		0.0010	0.00022	mg/L		05/13/22 10:12	05/14/22 18:50	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-5I
 Date Collected: 05/03/22 09:20
 Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-5
 Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	38		0.50	0.13	mg/L		05/13/22 10:12	05/14/22 18:50	1
Chromium	ND		0.0020	0.0015	mg/L		05/13/22 10:12	05/14/22 18:50	1
Cobalt	0.00030	J	0.00050	0.00026	mg/L		05/13/22 10:12	05/14/22 18:50	1
Lead	ND		0.0010	0.00017	mg/L		05/13/22 10:12	05/14/22 18:50	1
Lithium	0.0031	J	0.0050	0.00083	mg/L		05/13/22 10:12	05/14/22 18:50	1
Molybdenum	0.0017	J	0.0050	0.00061	mg/L		05/13/22 10:12	05/14/22 18:50	1
Selenium	ND		0.0050	0.00074	mg/L		05/13/22 10:12	05/14/22 18:50	1
Thallium	ND		0.0010	0.00047	mg/L		05/13/22 10:12	05/14/22 18:50	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		05/17/22 04:57	05/17/22 15:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	200		10	10	mg/L			05/05/22 17:26	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1	0.1	SU			05/06/22 10:13	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.195	U	0.201	0.202	1.00	0.315	pCi/L	05/09/22 09:56	06/07/22 16:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.3		40 - 110					05/09/22 09:56	06/07/22 16:04	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.289	U	0.305	0.307	1.00	0.495	pCi/L	05/09/22 10:57	06/07/22 11:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.3		40 - 110					05/09/22 10:57	06/07/22 11:57	1
Y Carrier	85.6		40 - 110					05/09/22 10:57	06/07/22 11:57	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	0.484	U	0.365	0.367	5.00	0.495	pCi/L		06/08/22 12:54	1

Client Sample ID: WAP-5D
 Date Collected: 05/03/22 10:23
 Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-6
 Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21		1.0	0.71	mg/L			05/21/22 01:40	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-5D

Lab Sample ID: 180-137587-6

Date Collected: 05/03/22 10:23

Matrix: Water

Date Received: 05/04/22 13:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.14		0.10	0.026	mg/L			05/21/22 01:40	1
Sulfate	42		1.0	0.76	mg/L			05/21/22 01:40	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		05/13/22 10:12	05/14/22 19:08	1
Arsenic	0.011		0.0010	0.00028	mg/L		05/13/22 10:12	05/14/22 19:08	1
Barium	0.21		0.010	0.0031	mg/L		05/13/22 10:12	05/14/22 19:08	1
Beryllium	ND		0.0010	0.00027	mg/L		05/13/22 10:12	05/14/22 19:08	1
Boron	0.12		0.080	0.060	mg/L		05/13/22 10:12	05/17/22 13:32	1
Cadmium	0.00024	J	0.0010	0.00022	mg/L		05/13/22 10:12	05/14/22 19:08	1
Calcium	47		0.50	0.13	mg/L		05/13/22 10:12	05/14/22 19:08	1
Chromium	ND		0.0020	0.0015	mg/L		05/13/22 10:12	05/14/22 19:08	1
Cobalt	ND		0.00050	0.00026	mg/L		05/13/22 10:12	05/14/22 19:08	1
Lead	ND		0.0010	0.00017	mg/L		05/13/22 10:12	05/14/22 19:08	1
Lithium	0.0016	J	0.0050	0.00083	mg/L		05/13/22 10:12	05/14/22 19:08	1
Molybdenum	0.0045	J	0.0050	0.00061	mg/L		05/13/22 10:12	05/14/22 19:08	1
Selenium	ND		0.0050	0.00074	mg/L		05/13/22 10:12	05/14/22 19:08	1
Thallium	ND		0.0010	0.00047	mg/L		05/13/22 10:12	05/14/22 19:08	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		05/17/22 04:57	05/17/22 15:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	230		10	10	mg/L			05/05/22 17:26	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1	0.1	SU			05/06/22 10:57	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.470		0.257	0.261	1.00	0.318	pCi/L	05/09/22 09:56	06/07/22 16:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.3		40 - 110					05/09/22 09:56	06/07/22 16:05	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.367	U	0.319	0.321	1.00	0.501	pCi/L	05/09/22 10:57	06/07/22 11:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.3		40 - 110					05/09/22 10:57	06/07/22 11:59	1
Y Carrier	81.9		40 - 110					05/09/22 10:57	06/07/22 11:59	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-5D

Lab Sample ID: 180-137587-6

Date Collected: 05/03/22 10:23

Matrix: Water

Date Received: 05/04/22 13:40

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

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Combined Radium 226 + 228	0.836		0.410	0.414	5.00	0.501	pCi/L		06/08/22 12:54	1

Client Sample ID: WAP-6S

Lab Sample ID: 180-137587-7

Date Collected: 05/03/22 13:50

Matrix: Water

Date Received: 05/04/22 13:40

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	39		1.0	0.71	mg/L			05/21/22 02:36	1
Fluoride	0.37		0.10	0.026	mg/L			05/21/22 02:36	1
Sulfate	130		1.0	0.76	mg/L			05/21/22 02:36	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		05/13/22 10:12	05/14/22 19:12	1
Arsenic	0.0024		0.0010	0.00028	mg/L		05/13/22 10:12	05/14/22 19:12	1
Barium	0.074		0.010	0.0031	mg/L		05/13/22 10:12	05/14/22 19:12	1
Beryllium	ND		0.0010	0.00027	mg/L		05/13/22 10:12	05/14/22 19:12	1
Boron	2.4		0.080	0.060	mg/L		05/13/22 10:12	05/17/22 13:43	1
Cadmium	ND		0.0010	0.00022	mg/L		05/13/22 10:12	05/14/22 19:12	1
Calcium	110		0.50	0.13	mg/L		05/13/22 10:12	05/14/22 19:12	1
Chromium	ND		0.0020	0.0015	mg/L		05/13/22 10:12	05/14/22 19:12	1
Cobalt	0.0014		0.00050	0.00026	mg/L		05/13/22 10:12	05/14/22 19:12	1
Lead	0.00044	J	0.0010	0.00017	mg/L		05/13/22 10:12	05/14/22 19:12	1
Lithium	0.0031	J	0.0050	0.00083	mg/L		05/13/22 10:12	05/14/22 19:12	1
Molybdenum	0.11		0.0050	0.00061	mg/L		05/13/22 10:12	05/14/22 19:12	1
Selenium	ND		0.0050	0.00074	mg/L		05/13/22 10:12	05/14/22 19:12	1
Thallium	ND		0.0010	0.00047	mg/L		05/13/22 10:12	05/14/22 19:12	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		05/17/22 04:57	05/17/22 15:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	570		10	10	mg/L			05/05/22 17:26	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1	0.1	SU			05/06/22 11:03	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	0.0252	U	0.211	0.211	1.00	0.413	pCi/L	05/09/22 09:56	06/07/22 16:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.0		40 - 110					05/09/22 09:56	06/07/22 16:05	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-6S

Date Collected: 05/03/22 13:50

Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-7

Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.269	U	0.320	0.321	1.00	0.527	pCi/L	05/09/22 10:57	06/07/22 11:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.0		40 - 110					05/09/22 10:57	06/07/22 11:58	1
Y Carrier	84.1		40 - 110					05/09/22 10:57	06/07/22 11:58	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	0.295	U	0.383	0.384	5.00	0.527	pCi/L		06/08/22 12:54	1

Client Sample ID: WAP-6I

Date Collected: 05/03/22 13:00

Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-8

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19		1.0	0.71	mg/L			05/21/22 03:03	1
Fluoride	0.077	J	0.10	0.026	mg/L			05/21/22 03:03	1
Sulfate	35		1.0	0.76	mg/L			05/21/22 03:03	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		05/13/22 10:12	05/14/22 19:27	1
Arsenic	0.0038		0.0010	0.00028	mg/L		05/13/22 10:12	05/14/22 19:27	1
Barium	0.12		0.010	0.0031	mg/L		05/13/22 10:12	05/14/22 19:27	1
Beryllium	ND		0.0010	0.00027	mg/L		05/13/22 10:12	05/14/22 19:27	1
Boron	0.083		0.080	0.060	mg/L		05/13/22 10:12	05/17/22 13:58	1
Cadmium	ND		0.0010	0.00022	mg/L		05/13/22 10:12	05/14/22 19:27	1
Calcium	37		0.50	0.13	mg/L		05/13/22 10:12	05/14/22 19:27	1
Chromium	ND		0.0020	0.0015	mg/L		05/13/22 10:12	05/14/22 19:27	1
Cobalt	0.00030	J	0.00050	0.00026	mg/L		05/13/22 10:12	05/14/22 19:27	1
Lead	ND		0.0010	0.00017	mg/L		05/13/22 10:12	05/14/22 19:27	1
Lithium	0.0036	J	0.0050	0.00083	mg/L		05/13/22 10:12	05/14/22 19:27	1
Molybdenum	0.0065		0.0050	0.00061	mg/L		05/13/22 10:12	05/14/22 19:27	1
Selenium	ND		0.0050	0.00074	mg/L		05/13/22 10:12	05/14/22 19:27	1
Thallium	ND		0.0010	0.00047	mg/L		05/13/22 10:12	05/14/22 19:27	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		05/16/22 07:49	05/16/22 14:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	230		10	10	mg/L			05/05/22 17:26	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1	0.1	SU			05/06/22 11:22	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-6I

Lab Sample ID: 180-137587-8

Date Collected: 05/03/22 13:00

Matrix: Water

Date Received: 05/04/22 13:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0335	U	0.201	0.201	1.00	0.405	pCi/L	05/09/22 09:56	06/07/22 16:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	66.8		40 - 110					05/09/22 09:56	06/07/22 16:05	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.322	U	0.370	0.371	1.00	0.607	pCi/L	05/09/22 10:57	06/07/22 11:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	66.8		40 - 110					05/09/22 10:57	06/07/22 11:58	1
Y Carrier	86.7		40 - 110					05/09/22 10:57	06/07/22 11:58	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	0.356	U	0.421	0.422	5.00	0.607	pCi/L		06/08/22 12:54	1

Client Sample ID: WAP-6D

Lab Sample ID: 180-137587-9

Date Collected: 05/03/22 15:00

Matrix: Water

Date Received: 05/04/22 13:40

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23		1.0	0.71	mg/L			05/21/22 05:09	1
Fluoride	0.16		0.10	0.026	mg/L			05/21/22 05:09	1
Sulfate	36		1.0	0.76	mg/L			05/21/22 05:09	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		05/13/22 10:12	05/14/22 19:30	1
Arsenic	0.0058		0.0010	0.00028	mg/L		05/13/22 10:12	05/14/22 19:30	1
Barium	0.19		0.010	0.0031	mg/L		05/13/22 10:12	05/14/22 19:30	1
Beryllium	ND		0.0010	0.00027	mg/L		05/13/22 10:12	05/14/22 19:30	1
Boron	0.066	J	0.080	0.060	mg/L		05/13/22 10:12	05/17/22 14:01	1
Cadmium	ND		0.0010	0.00022	mg/L		05/13/22 10:12	05/14/22 19:30	1
Calcium	41		0.50	0.13	mg/L		05/13/22 10:12	05/14/22 19:30	1
Chromium	ND		0.0020	0.0015	mg/L		05/13/22 10:12	05/14/22 19:30	1
Cobalt	ND		0.00050	0.00026	mg/L		05/13/22 10:12	05/14/22 19:30	1
Lead	ND		0.0010	0.00017	mg/L		05/13/22 10:12	05/14/22 19:30	1
Lithium	0.0026	J	0.0050	0.00083	mg/L		05/13/22 10:12	05/14/22 19:30	1
Molybdenum	0.0020	J	0.0050	0.00061	mg/L		05/13/22 10:12	05/14/22 19:30	1
Selenium	ND		0.0050	0.00074	mg/L		05/13/22 10:12	05/14/22 19:30	1
Thallium	ND		0.0010	0.00047	mg/L		05/13/22 10:12	05/14/22 19:30	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: WAP-6D

Lab Sample ID: 180-137587-9

Date Collected: 05/03/22 15:00

Matrix: Water

Date Received: 05/04/22 13:40

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		05/16/22 07:49	05/16/22 14:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	340		10	10	mg/L			05/05/22 17:26	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.0	HF	0.1	0.1	SU			05/06/22 11:28	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.378	U	0.267	0.269	1.00	0.379	pCi/L	05/09/22 09:56	06/07/22 16:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.5		40 - 110					05/09/22 09:56	06/07/22 16:05	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.628		0.341	0.345	1.00	0.481	pCi/L	05/09/22 10:57	06/07/22 11:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.5		40 - 110					05/09/22 10:57	06/07/22 11:59	1
Y Carrier	88.6		40 - 110					05/09/22 10:57	06/07/22 11:59	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	1.01		0.433	0.437	5.00	0.481	pCi/L		06/08/22 12:54	1

Client Sample ID: CCR-AP-7

Lab Sample ID: 180-137587-10

Date Collected: 05/03/22 09:20

Matrix: Water

Date Received: 05/04/22 13:40

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	22		1.0	0.71	mg/L			05/24/22 01:37	1
Fluoride	0.72		0.10	0.026	mg/L			05/24/22 01:37	1
Sulfate	86		1.0	0.76	mg/L			05/24/22 01:37	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		05/12/22 09:54	05/14/22 15:56	1
Arsenic	0.00066	J	0.0010	0.00028	mg/L		05/12/22 09:54	05/14/22 15:56	1
Barium	0.076		0.010	0.0031	mg/L		05/12/22 09:54	05/14/22 15:56	1
Beryllium	ND		0.0010	0.00027	mg/L		05/12/22 09:54	05/14/22 15:56	1
Boron	0.066	J	0.080	0.060	mg/L		05/12/22 09:54	05/14/22 15:56	1
Cadmium	ND		0.0010	0.00022	mg/L		05/12/22 09:54	05/14/22 15:56	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: CCR-AP-7

Lab Sample ID: 180-137587-10

Date Collected: 05/03/22 09:20

Matrix: Water

Date Received: 05/04/22 13:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	94		0.50	0.13	mg/L		05/12/22 09:54	05/14/22 15:56	1
Chromium	ND		0.0020	0.0015	mg/L		05/12/22 09:54	05/14/22 15:56	1
Cobalt	ND		0.00050	0.00026	mg/L		05/12/22 09:54	05/14/22 15:56	1
Lead	ND		0.0010	0.00017	mg/L		05/12/22 09:54	05/14/22 15:56	1
Lithium	0.0072		0.0050	0.00083	mg/L		05/12/22 09:54	05/14/22 15:56	1
Molybdenum	0.0014	J	0.0050	0.00061	mg/L		05/12/22 09:54	05/14/22 15:56	1
Selenium	ND		0.0050	0.00074	mg/L		05/12/22 09:54	05/14/22 15:56	1
Thallium	ND		0.0010	0.00047	mg/L		05/12/22 09:54	05/14/22 15:56	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		05/16/22 07:49	05/16/22 14:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	510		10	10	mg/L			05/05/22 17:26	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.6	HF	0.1	0.1	SU			05/06/22 11:11	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.227	U	0.275	0.276	1.00	0.454	pCi/L	05/09/22 09:56	06/07/22 16:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		40 - 110					05/09/22 09:56	06/07/22 16:05	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.219	U	0.285	0.286	1.00	0.475	pCi/L	05/09/22 10:57	06/07/22 11:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		40 - 110					05/09/22 10:57	06/07/22 11:59	1
Y Carrier	87.5		40 - 110					05/09/22 10:57	06/07/22 11:59	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	0.447	U	0.396	0.397	5.00	0.475	pCi/L		06/08/22 12:54	1

Client Sample ID: DUP-1

Lab Sample ID: 180-137587-11

Date Collected: 05/03/22 00:00

Matrix: Water

Date Received: 05/04/22 13:40

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	140		1.0	0.71	mg/L			05/21/22 03:45	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: DUP-1

Lab Sample ID: 180-137587-11

Date Collected: 05/03/22 00:00

Matrix: Water

Date Received: 05/04/22 13:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.048	J	0.10	0.026	mg/L			05/21/22 03:45	1
Sulfate	460		1.0	0.76	mg/L			05/21/22 03:45	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		05/12/22 09:54	05/14/22 16:21	1
Arsenic	0.00066	J	0.0010	0.00028	mg/L		05/12/22 09:54	05/14/22 16:21	1
Barium	0.045		0.010	0.0031	mg/L		05/12/22 09:54	05/14/22 16:21	1
Beryllium	ND		0.0010	0.00027	mg/L		05/12/22 09:54	05/14/22 16:21	1
Boron	5.0		0.080	0.060	mg/L		05/12/22 09:54	05/14/22 16:21	1
Cadmium	ND		0.0010	0.00022	mg/L		05/12/22 09:54	05/14/22 16:21	1
Calcium	230		0.50	0.13	mg/L		05/12/22 09:54	05/14/22 16:21	1
Chromium	ND		0.0020	0.0015	mg/L		05/12/22 09:54	05/14/22 16:21	1
Cobalt	0.0059		0.00050	0.00026	mg/L		05/12/22 09:54	05/14/22 16:21	1
Lead	ND		0.0010	0.00017	mg/L		05/12/22 09:54	05/14/22 16:21	1
Lithium	0.0015	J	0.0050	0.00083	mg/L		05/12/22 09:54	05/14/22 16:21	1
Molybdenum	0.00097	J	0.0050	0.00061	mg/L		05/12/22 09:54	05/14/22 16:21	1
Selenium	ND		0.0050	0.00074	mg/L		05/12/22 09:54	05/14/22 16:21	1
Thallium	ND		0.0010	0.00047	mg/L		05/12/22 09:54	05/14/22 16:21	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		05/16/22 07:49	05/16/22 14:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1200		10	10	mg/L			05/05/22 17:26	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.3	HF	0.1	0.1	SU			05/06/22 11:33	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0719	U	0.154	0.154	1.00	0.284	pCi/L	05/09/22 09:56	06/07/22 18:12	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.3		40 - 110	05/09/22 09:56	06/07/22 18:12	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.127	U	0.279	0.279	1.00	0.489	pCi/L	05/09/22 10:57	06/07/22 12:01	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.3		40 - 110	05/09/22 10:57	06/07/22 12:01	1
Y Carrier	86.7		40 - 110	05/09/22 10:57	06/07/22 12:01	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: DUP-1

Lab Sample ID: 180-137587-11

Date Collected: 05/03/22 00:00

Matrix: Water

Date Received: 05/04/22 13:40

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	0.199	U	0.319	0.319	5.00	0.489	pCi/L		06/08/22 12:54	1

Client Sample ID: DUP-2

Lab Sample ID: 180-137587-12

Date Collected: 05/03/22 00:00

Matrix: Water

Date Received: 05/04/22 13:40

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26		1.0	0.71	mg/L			05/21/22 04:13	1
Fluoride	0.079	J	0.10	0.026	mg/L			05/21/22 04:13	1
Sulfate	43		1.0	0.76	mg/L			05/21/22 04:13	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		05/12/22 09:54	05/14/22 16:36	1
Arsenic	0.0068		0.0010	0.00028	mg/L		05/12/22 09:54	05/14/22 16:36	1
Barium	0.14		0.010	0.0031	mg/L		05/12/22 09:54	05/14/22 16:36	1
Beryllium	ND		0.0010	0.00027	mg/L		05/12/22 09:54	05/14/22 16:36	1
Boron	0.085		0.080	0.060	mg/L		05/12/22 09:54	05/14/22 16:36	1
Cadmium	ND		0.0010	0.00022	mg/L		05/12/22 09:54	05/14/22 16:36	1
Calcium	35		0.50	0.13	mg/L		05/12/22 09:54	05/14/22 16:36	1
Chromium	ND		0.0020	0.0015	mg/L		05/12/22 09:54	05/14/22 16:36	1
Cobalt	0.00037	J	0.00050	0.00026	mg/L		05/12/22 09:54	05/14/22 16:36	1
Lead	ND		0.0010	0.00017	mg/L		05/12/22 09:54	05/14/22 16:36	1
Lithium	0.0032	J	0.0050	0.00083	mg/L		05/12/22 09:54	05/14/22 16:36	1
Molybdenum	0.0019	J	0.0050	0.00061	mg/L		05/12/22 09:54	05/14/22 16:36	1
Selenium	ND		0.0050	0.00074	mg/L		05/12/22 09:54	05/14/22 16:36	1
Thallium	ND		0.0010	0.00047	mg/L		05/12/22 09:54	05/14/22 16:36	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		05/16/22 07:49	05/16/22 14:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	190		10	10	mg/L			05/05/22 17:26	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1	0.1	SU			05/06/22 11:39	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0397	U	0.206	0.206	1.00	0.415	pCi/L	05/09/22 09:56	06/07/22 18:12	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.3		40 - 110					05/09/22 09:56	06/07/22 18:12	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: DUP-2
 Date Collected: 05/03/22 00:00
 Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-12
 Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.381	U	0.305	0.307	1.00	0.473	pCi/L	05/09/22 10:57	06/07/22 12:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.3		40 - 110					05/09/22 10:57	06/07/22 12:03	1
Y Carrier	83.7		40 - 110					05/09/22 10:57	06/07/22 12:03	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	0.342	U	0.368	0.370	5.00	0.473	pCi/L		06/08/22 12:54	1

Client Sample ID: FIELD BLANK
 Date Collected: 05/03/22 10:10
 Date Received: 05/04/22 13:40

Lab Sample ID: 180-137587-13
 Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.81	J	1.0	0.71	mg/L			05/21/22 04:27	1
Fluoride	ND		0.10	0.026	mg/L			05/21/22 04:27	1
Sulfate	ND		1.0	0.76	mg/L			05/21/22 04:27	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		05/12/22 09:54	05/14/22 16:39	1
Arsenic	ND		0.0010	0.00028	mg/L		05/12/22 09:54	05/14/22 16:39	1
Barium	ND		0.010	0.0031	mg/L		05/12/22 09:54	05/14/22 16:39	1
Beryllium	ND		0.0010	0.00027	mg/L		05/12/22 09:54	05/14/22 16:39	1
Boron	ND		0.080	0.060	mg/L		05/12/22 09:54	05/14/22 16:39	1
Cadmium	ND		0.0010	0.00022	mg/L		05/12/22 09:54	05/14/22 16:39	1
Calcium	ND		0.50	0.13	mg/L		05/12/22 09:54	05/14/22 16:39	1
Chromium	ND		0.0020	0.0015	mg/L		05/12/22 09:54	05/14/22 16:39	1
Cobalt	ND		0.00050	0.00026	mg/L		05/12/22 09:54	05/14/22 16:39	1
Lead	ND		0.0010	0.00017	mg/L		05/12/22 09:54	05/14/22 16:39	1
Lithium	ND		0.0050	0.00083	mg/L		05/12/22 09:54	05/14/22 16:39	1
Molybdenum	ND		0.0050	0.00061	mg/L		05/12/22 09:54	05/14/22 16:39	1
Selenium	ND		0.0050	0.00074	mg/L		05/12/22 09:54	05/14/22 16:39	1
Thallium	ND		0.0010	0.00047	mg/L		05/12/22 09:54	05/14/22 16:39	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		05/16/22 07:49	05/16/22 14:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			05/05/22 17:26	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	5.9	HF	0.1	0.1	SU			05/07/22 16:31	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Client Sample ID: FIELD BLANK

Lab Sample ID: 180-137587-13

Date Collected: 05/03/22 10:10

Matrix: Water

Date Received: 05/04/22 13:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0534	U	0.184	0.184	1.00	0.393	pCi/L	05/09/22 09:56	06/07/22 18:12	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.0		40 - 110					05/09/22 09:56	06/07/22 18:12	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.149	U	0.269	0.270	1.00	0.466	pCi/L	05/09/22 10:57	06/07/22 12:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.0		40 - 110					05/09/22 10:57	06/07/22 12:03	1
Y Carrier	91.2		40 - 110					05/09/22 10:57	06/07/22 12:03	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	0.0958	U	0.326	0.327	5.00	0.466	pCi/L		06/08/22 12:54	1

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-399469/44
Matrix: Water
Analysis Batch: 399469

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			05/20/22 23:58	1
Fluoride	ND		0.10	0.026	mg/L			05/20/22 23:58	1
Sulfate	ND		1.0	0.76	mg/L			05/20/22 23:58	1

Lab Sample ID: MB 180-399469/7
Matrix: Water
Analysis Batch: 399469

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			05/20/22 12:27	1
Fluoride	ND		0.10	0.026	mg/L			05/20/22 12:27	1
Sulfate	ND		1.0	0.76	mg/L			05/20/22 12:27	1

Lab Sample ID: LCS 180-399469/43
Matrix: Water
Analysis Batch: 399469

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	50.3		mg/L		101	80 - 120
Fluoride	2.50	2.46		mg/L		98	80 - 120
Sulfate	50.0	50.8		mg/L		102	80 - 120

Lab Sample ID: LCS 180-399469/5
Matrix: Water
Analysis Batch: 399469

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	53.4		mg/L		107	80 - 120
Fluoride	2.50	2.62		mg/L		105	80 - 120
Sulfate	50.0	54.3		mg/L		109	80 - 120

Lab Sample ID: 180-137587-9 MS
Matrix: Water
Analysis Batch: 399469

Client Sample ID: WAP-6D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	23		50.0	78.8		mg/L		111	80 - 120
Fluoride	0.16		2.50	2.77		mg/L		104	80 - 120
Sulfate	36		50.0	92.5		mg/L		114	80 - 120

Lab Sample ID: 180-137587-9 MSD
Matrix: Water
Analysis Batch: 399469

Client Sample ID: WAP-6D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	23		50.0	71.0		mg/L		96	80 - 120	10	15
Fluoride	0.16		2.50	2.47		mg/L		92	80 - 120	11	15
Sulfate	36		50.0	82.2		mg/L		93	80 - 120	12	15

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QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

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

Lab Sample ID: MB 180-399666/46
Matrix: Water
Analysis Batch: 399666

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			05/24/22 00:37	1
Fluoride	ND		0.10	0.026	mg/L			05/24/22 00:37	1
Sulfate	ND		1.0	0.76	mg/L			05/24/22 00:37	1

Lab Sample ID: LCS 180-399666/45
Matrix: Water
Analysis Batch: 399666

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	46.1		mg/L		92	80 - 120
Fluoride	2.50	2.34		mg/L		94	80 - 120
Sulfate	50.0	46.1		mg/L		92	80 - 120

Lab Sample ID: 180-137587-5 MS
Matrix: Water
Analysis Batch: 399666

Client Sample ID: WAP-5I
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	23		50.0	68.8		mg/L		91	80 - 120
Fluoride	0.22		2.50	2.60		mg/L		95	80 - 120
Sulfate	41		50.0	85.5		mg/L		90	80 - 120

Lab Sample ID: 180-137587-5 MSD
Matrix: Water
Analysis Batch: 399666

Client Sample ID: WAP-5I
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	23		50.0	69.8		mg/L		93	80 - 120	1	15
Fluoride	0.22		2.50	2.56		mg/L		94	80 - 120	1	15
Sulfate	41		50.0	86.3		mg/L		91	80 - 120	1	15

Lab Sample ID: 180-137587-10 MS
Matrix: Water
Analysis Batch: 399666

Client Sample ID: CCR-AP-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	22		50.0	69.6		mg/L		96	80 - 120
Fluoride	0.72		2.50	3.10		mg/L		95	80 - 120
Sulfate	86		50.0	134		mg/L		96	80 - 120

Lab Sample ID: 180-137587-10 MSD
Matrix: Water
Analysis Batch: 399666

Client Sample ID: CCR-AP-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	22		50.0	67.9		mg/L		93	80 - 120	2	15
Fluoride	0.72		2.50	2.99		mg/L		91	80 - 120	4	15
Sulfate	86		50.0	129		mg/L		87	80 - 120	4	15

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QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

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

Lab Sample ID: MB 180-398537/1-A
Matrix: Water
Analysis Batch: 399007

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 398537

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00051	mg/L		05/12/22 09:54	05/14/22 15:12	1
Arsenic	ND		0.0010	0.00028	mg/L		05/12/22 09:54	05/14/22 15:12	1
Barium	ND		0.010	0.0031	mg/L		05/12/22 09:54	05/14/22 15:12	1
Beryllium	ND		0.0010	0.00027	mg/L		05/12/22 09:54	05/14/22 15:12	1
Boron	ND		0.080	0.060	mg/L		05/12/22 09:54	05/14/22 15:12	1
Cadmium	0.000255	J	0.0010	0.00022	mg/L		05/12/22 09:54	05/14/22 15:12	1
Calcium	ND		0.50	0.13	mg/L		05/12/22 09:54	05/14/22 15:12	1
Chromium	ND		0.0020	0.0015	mg/L		05/12/22 09:54	05/14/22 15:12	1
Cobalt	ND		0.00050	0.00026	mg/L		05/12/22 09:54	05/14/22 15:12	1
Lead	ND		0.0010	0.00017	mg/L		05/12/22 09:54	05/14/22 15:12	1
Lithium	ND		0.0050	0.00083	mg/L		05/12/22 09:54	05/14/22 15:12	1
Molybdenum	ND		0.0050	0.00061	mg/L		05/12/22 09:54	05/14/22 15:12	1
Selenium	ND		0.0050	0.00074	mg/L		05/12/22 09:54	05/14/22 15:12	1
Thallium	ND		0.0010	0.00047	mg/L		05/12/22 09:54	05/14/22 15:12	1

Lab Sample ID: LCS 180-398537/2-A
Matrix: Water
Analysis Batch: 399007

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 398537

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.250	0.264		mg/L		105	80 - 120
Arsenic	1.00	1.01		mg/L		101	80 - 120
Barium	1.00	0.979		mg/L		98	80 - 120
Beryllium	0.500	0.506		mg/L		101	80 - 120
Boron	1.25	1.22		mg/L		97	80 - 120
Cadmium	0.500	0.511		mg/L		102	80 - 120
Calcium	25.0	25.4		mg/L		102	80 - 120
Chromium	0.500	0.499		mg/L		100	80 - 120
Cobalt	0.500	0.488		mg/L		98	80 - 120
Lead	0.500	0.508		mg/L		102	80 - 120
Lithium	0.500	0.460		mg/L		92	80 - 120
Molybdenum	0.500	0.510		mg/L		102	80 - 120
Selenium	1.00	0.987		mg/L		99	80 - 120
Thallium	1.00	1.02		mg/L		102	80 - 120

Lab Sample ID: 180-137587-10 MS
Matrix: Water
Analysis Batch: 399007

Client Sample ID: CCR-AP-7
Prep Type: Total Recoverable
Prep Batch: 398537

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		0.250	0.246		mg/L		98	75 - 125
Arsenic	0.00066	J	1.00	1.03		mg/L		103	75 - 125
Barium	0.076		1.00	1.04		mg/L		96	75 - 125
Beryllium	ND		0.500	0.507		mg/L		101	75 - 125
Boron	0.066	J	1.25	1.18		mg/L		90	75 - 125
Cadmium	ND		0.500	0.497		mg/L		99	75 - 125
Calcium	94		25.0	121		mg/L		108	75 - 125
Chromium	ND		0.500	0.495		mg/L		99	75 - 125
Cobalt	ND		0.500	0.478		mg/L		96	75 - 125

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QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

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

Lab Sample ID: 180-137587-10 MS

Matrix: Water

Analysis Batch: 399007

Client Sample ID: CCR-AP-7

Prep Type: Total Recoverable

Prep Batch: 398537

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	ND		0.500	0.505		mg/L		101	75 - 125
Lithium	0.0072		0.500	0.463		mg/L		91	75 - 125
Molybdenum	0.0014	J	0.500	0.512		mg/L		102	75 - 125
Selenium	ND		1.00	0.955		mg/L		96	75 - 125
Thallium	ND		1.00	1.01		mg/L		101	75 - 125

Lab Sample ID: 180-137587-10 MSD

Matrix: Water

Analysis Batch: 399007

Client Sample ID: CCR-AP-7

Prep Type: Total Recoverable

Prep Batch: 398537

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		0.250	0.244		mg/L		97	75 - 125	1	20
Arsenic	0.00066	J	1.00	1.02		mg/L		102	75 - 125	1	20
Barium	0.076		1.00	1.02		mg/L		94	75 - 125	2	20
Beryllium	ND		0.500	0.507		mg/L		101	75 - 125	0	20
Boron	0.066	J	1.25	1.22		mg/L		92	75 - 125	3	20
Cadmium	ND		0.500	0.493		mg/L		99	75 - 125	1	20
Calcium	94		25.0	119		mg/L		97	75 - 125	2	20
Chromium	ND		0.500	0.488		mg/L		98	75 - 125	2	20
Cobalt	ND		0.500	0.472		mg/L		94	75 - 125	1	20
Lead	ND		0.500	0.499		mg/L		100	75 - 125	1	20
Lithium	0.0072		0.500	0.464		mg/L		91	75 - 125	0	20
Molybdenum	0.0014	J	0.500	0.507		mg/L		101	75 - 125	1	20
Selenium	ND		1.00	0.965		mg/L		96	75 - 125	1	20
Thallium	ND		1.00	1.01		mg/L		101	75 - 125	0	20

Lab Sample ID: MB 180-398676/1-A

Matrix: Water

Analysis Batch: 399007

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 398676

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00051	mg/L		05/13/22 10:12	05/14/22 17:30	1
Arsenic	ND		0.0010	0.00028	mg/L		05/13/22 10:12	05/14/22 17:30	1
Barium	ND		0.010	0.0031	mg/L		05/13/22 10:12	05/14/22 17:30	1
Beryllium	ND		0.0010	0.00027	mg/L		05/13/22 10:12	05/14/22 17:30	1
Boron	ND		0.080	0.060	mg/L		05/13/22 10:12	05/14/22 17:30	1
Cadmium	ND		0.0010	0.00022	mg/L		05/13/22 10:12	05/14/22 17:30	1
Calcium	ND		0.50	0.13	mg/L		05/13/22 10:12	05/14/22 17:30	1
Chromium	ND		0.0020	0.0015	mg/L		05/13/22 10:12	05/14/22 17:30	1
Cobalt	ND		0.00050	0.00026	mg/L		05/13/22 10:12	05/14/22 17:30	1
Lead	ND		0.0010	0.00017	mg/L		05/13/22 10:12	05/14/22 17:30	1
Lithium	ND		0.0050	0.00083	mg/L		05/13/22 10:12	05/14/22 17:30	1
Molybdenum	ND		0.0050	0.00061	mg/L		05/13/22 10:12	05/14/22 17:30	1
Selenium	ND		0.0050	0.00074	mg/L		05/13/22 10:12	05/14/22 17:30	1
Thallium	ND		0.0010	0.00047	mg/L		05/13/22 10:12	05/14/22 17:30	1

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QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

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

Lab Sample ID: MB 180-398676/1-A
Matrix: Water
Analysis Batch: 399192

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 398676

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.080	0.060	mg/L		05/13/22 10:12	05/17/22 12:23	1

Lab Sample ID: LCS 180-398676/2-A
Matrix: Water
Analysis Batch: 399007

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 398676

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.250	0.258		mg/L		103	80 - 120
Arsenic	1.00	0.965		mg/L		97	80 - 120
Barium	1.00	0.928		mg/L		93	80 - 120
Beryllium	0.500	0.477		mg/L		95	80 - 120
Cadmium	0.500	0.480		mg/L		96	80 - 120
Calcium	25.0	25.3		mg/L		101	80 - 120
Chromium	0.500	0.466		mg/L		93	80 - 120
Cobalt	0.500	0.457		mg/L		91	80 - 120
Lead	0.500	0.479		mg/L		96	80 - 120
Lithium	0.500	0.439		mg/L		88	80 - 120
Molybdenum	0.500	0.482		mg/L		96	80 - 120
Selenium	1.00	0.924		mg/L		92	80 - 120
Thallium	1.00	0.957		mg/L		96	80 - 120

Lab Sample ID: LCS 180-398676/2-A
Matrix: Water
Analysis Batch: 399192

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 398676

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1.25	1.11		mg/L		89	80 - 120

Lab Sample ID: 180-137587-5 MS
Matrix: Water
Analysis Batch: 399007

Client Sample ID: WAP-51
Prep Type: Total Recoverable
Prep Batch: 398676

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		0.250	0.258		mg/L		103	75 - 125
Arsenic	0.0043		1.00	0.973		mg/L		97	75 - 125
Barium	0.10		1.00	1.00		mg/L		90	75 - 125
Beryllium	ND		0.500	0.475		mg/L		95	75 - 125
Cadmium	ND		0.500	0.467		mg/L		93	75 - 125
Calcium	38		25.0	62.1		mg/L		98	75 - 125
Chromium	ND		0.500	0.458		mg/L		92	75 - 125
Cobalt	0.00030	J	0.500	0.444		mg/L		89	75 - 125
Lead	ND		0.500	0.469		mg/L		94	75 - 125
Lithium	0.0031	J	0.500	0.428		mg/L		85	75 - 125
Molybdenum	0.0017	J	0.500	0.476		mg/L		95	75 - 125
Selenium	ND		1.00	0.891		mg/L		89	75 - 125
Thallium	ND		1.00	0.943		mg/L		94	75 - 125

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QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

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

Lab Sample ID: 180-137587-5 MS
Matrix: Water
Analysis Batch: 399192

Client Sample ID: WAP-5I
Prep Type: Total Recoverable
Prep Batch: 398676

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	ND		1.25	1.16		mg/L		93	75 - 125

Lab Sample ID: 180-137587-5 MSD
Matrix: Water
Analysis Batch: 399007

Client Sample ID: WAP-5I
Prep Type: Total Recoverable
Prep Batch: 398676

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		0.250	0.247		mg/L		99	75 - 125	4	20
Arsenic	0.0043		1.00	0.934		mg/L		93	75 - 125	4	20
Barium	0.10		1.00	0.960		mg/L		86	75 - 125	4	20
Beryllium	ND		0.500	0.464		mg/L		93	75 - 125	2	20
Cadmium	ND		0.500	0.453		mg/L		91	75 - 125	3	20
Calcium	38		25.0	58.3		mg/L		82	75 - 125	6	20
Chromium	ND		0.500	0.432		mg/L		86	75 - 125	6	20
Cobalt	0.00030	J	0.500	0.420		mg/L		84	75 - 125	5	20
Lead	ND		0.500	0.449		mg/L		90	75 - 125	4	20
Lithium	0.0031	J	0.500	0.414		mg/L		82	75 - 125	3	20
Molybdenum	0.0017	J	0.500	0.457		mg/L		91	75 - 125	4	20
Selenium	ND		1.00	0.860		mg/L		86	75 - 125	4	20
Thallium	ND		1.00	0.902		mg/L		90	75 - 125	4	20

Lab Sample ID: 180-137587-5 MSD
Matrix: Water
Analysis Batch: 399192

Client Sample ID: WAP-5I
Prep Type: Total Recoverable
Prep Batch: 398676

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	ND		1.25	1.14		mg/L		91	75 - 125	2	20

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-398860/1-A
Matrix: Water
Analysis Batch: 398978

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 398860

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		05/16/22 07:49	05/16/22 14:35	1

Lab Sample ID: LCS 180-398860/2-A
Matrix: Water
Analysis Batch: 398978

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 398860

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00250	0.00228		mg/L		91	80 - 120

Lab Sample ID: 180-137587-10 MS
Matrix: Water
Analysis Batch: 398978

Client Sample ID: CCR-AP-7
Prep Type: Total/NA
Prep Batch: 398860

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.00100	0.000924		mg/L		92	75 - 125

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QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: 180-137587-10 MSD
Matrix: Water
Analysis Batch: 398978

Client Sample ID: CCR-AP-7
Prep Type: Total/NA
Prep Batch: 398860

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.00100	0.000886		mg/L		89	75 - 125	4	20

Lab Sample ID: MB 180-399000/1-A
Matrix: Water
Analysis Batch: 399123

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 399000

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		05/17/22 04:57	05/17/22 15:00	1

Lab Sample ID: LCS 180-399000/2-A
Matrix: Water
Analysis Batch: 399123

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 399000

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00250	0.00253		mg/L		101	80 - 120

Lab Sample ID: 180-137587-5 MS
Matrix: Water
Analysis Batch: 399123

Client Sample ID: WAP-5I
Prep Type: Total/NA
Prep Batch: 399000

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.00100	0.000971		mg/L		97	75 - 125

Lab Sample ID: 180-137587-5 MSD
Matrix: Water
Analysis Batch: 399123

Client Sample ID: WAP-5I
Prep Type: Total/NA
Prep Batch: 399000

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.00100	0.000973		mg/L		97	75 - 125	0	20

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-397958/3
Matrix: Water
Analysis Batch: 397958

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: 180-137587-5 DU
Matrix: Water
Analysis Batch: 397958

Client Sample ID: WAP-5I
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.7	HF	7.7	HF	SU		0.6	2

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QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Method: EPA 9040C - pH (Continued)

Lab Sample ID: 180-137587-10 DU
 Matrix: Water
 Analysis Batch: 397958

Client Sample ID: CCR-AP-7
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.6	HF	7.7	HF	SU		0.4	2

Lab Sample ID: LCS 180-398030/1
 Matrix: Water
 Analysis Batch: 398030

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 180-397818/2
 Matrix: Water
 Analysis Batch: 397818

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			05/05/22 17:26	1

Lab Sample ID: LCS 180-397818/1
 Matrix: Water
 Analysis Batch: 397818

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	254		mg/L		101	85 - 115

Lab Sample ID: 180-137587-5 DU
 Matrix: Water
 Analysis Batch: 397818

Client Sample ID: WAP-51
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	200		199		mg/L		3	10

Lab Sample ID: 180-137587-10 DU
 Matrix: Water
 Analysis Batch: 397818

Client Sample ID: CCR-AP-7
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	510		558		mg/L		10	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-564511/24-A
 Matrix: Water
 Analysis Batch: 568823

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 564511

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1833	U	0.211	0.212	1.00	0.343	pCi/L	05/09/22 10:23	06/07/22 18:13	1

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QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

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

Lab Sample ID: MB 160-564511/24-A
Matrix: Water
Analysis Batch: 568823

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564511

		MB MB				
Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	87.8		40 - 110	05/09/22 10:23	06/07/22 18:13	1

Lab Sample ID: LCS 160-564511/1-A
Matrix: Water
Analysis Batch: 569008

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564511

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits			
Radium-226	11.3	9.113		1.24	1.00	0.405	pCi/L	80	75 - 125			
Carrier		LCS LCS										
%Yield	Qualifier	Limits										
Ba Carrier	94.8		40 - 110									

Lab Sample ID: 180-137587-5 MS
Matrix: Water
Analysis Batch: 569008

Client Sample ID: WAP-5I
Prep Type: Total/NA
Prep Batch: 564511

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226	0.195	U	11.4	9.846		1.32	1.00	0.344	pCi/L	85	60 - 140		
Carrier		MS MS											
%Yield	Qualifier	Limits											
Ba Carrier	91.8		40 - 110										

Lab Sample ID: 180-137587-5 MSD
Matrix: Water
Analysis Batch: 569008

Client Sample ID: WAP-5I
Prep Type: Total/NA
Prep Batch: 564511

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		RER	Limit	
Radium-226	0.195	U	11.3	8.637		1.20	1.00	0.349	pCi/L	75	60 - 140	0.48	1		
Carrier		MSD MSD													
%Yield	Qualifier	Limits													
Ba Carrier	92.3		40 - 110												

Lab Sample ID: 180-137587-10 MS
Matrix: Water
Analysis Batch: 568835

Client Sample ID: CCR-AP-7
Prep Type: Total/NA
Prep Batch: 564511

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226	0.227	U	11.4	11.08		1.78	1.00	0.799	pCi/L	95	60 - 140		
Carrier		MS MS											
%Yield	Qualifier	Limits											
Ba Carrier	41.4		40 - 110										

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QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

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

Lab Sample ID: 180-137587-10 MSD
Matrix: Water
Analysis Batch: 568823

Client Sample ID: CCR-AP-7
Prep Type: Total/NA
Prep Batch: 564511

Analyte	Sample	Sample	Spike	MSD	MSD	Total	RL	MDC	Unit	%Rec	%Rec	RER	RER
	Result	Qual		Result	Qual								
Radium-226	0.227	U	11.4	10.84		1.40	1.00	0.306	pCi/L	93	60 - 140	0.08	1
Carrier	MSD	MSD	Limits										
Ba Carrier	90.5		40 - 110										

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-564514/24-A
Matrix: Water
Analysis Batch: 568850

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564514

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier								
Radium-228	0.02418	U	0.253	0.253	1.00	0.471	pCi/L	05/09/22 10:57	06/07/22 12:04	1
Carrier	MB	MB	Limits							
Ba Carrier	87.8		40 - 110							
Y Carrier	91.6		40 - 110							
	Prepared	Analyzed	Dil Fac							
	05/09/22 10:57	06/07/22 12:04	1							
	05/09/22 10:57	06/07/22 12:04	1							

Lab Sample ID: LCS 160-564514/1-A
Matrix: Water
Analysis Batch: 568835

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564514

Analyte	Spike	LCS	LCS	Total	RL	MDC	Unit	%Rec	%Rec
		Added	Result						
Radium-228	8.55	9.254		1.24	1.00	0.525	pCi/L	108	75 - 125
Carrier	LCS	LCS	Limits						
Ba Carrier	94.8		40 - 110						
Y Carrier	84.1		40 - 110						

Lab Sample ID: 180-137587-5 MS
Matrix: Water
Analysis Batch: 568835

Client Sample ID: WAP-5I
Prep Type: Total/NA
Prep Batch: 564514

Analyte	Sample	Sample	Spike	MS	MS	Total	RL	MDC	Unit	%Rec	%Rec
	Result	Qual		Result	Qual						
Radium-228	0.289	U	8.60	9.885		1.32	1.00	0.551	pCi/L	112	60 - 140
Carrier	MS	MS	Limits								
Ba Carrier	91.8		40 - 110								
Y Carrier	83.4		40 - 110								

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

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

Lab Sample ID: 180-137587-5 MSD
Matrix: Water
Analysis Batch: 568835

Client Sample ID: WAP-5I
Prep Type: Total/NA
Prep Batch: 564514

Analyte	Sample	Sample	Spike	MSD	MSD	Total	RL	MDC	Unit	%Rec	%Rec	RER	RER
	Result	Qual		Result	Qual								
Radium-228	0.289	U	8.53	9.002		1.23	1.00	0.530	pCi/L	102	60 - 140	0.35	1
				<i>MSD</i>	<i>MSD</i>								
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>										
Ba Carrier	92.3		40 - 110										
Y Carrier	81.9		40 - 110										

Lab Sample ID: 180-137587-10 MS
Matrix: Water
Analysis Batch: 568835

Client Sample ID: CCR-AP-7
Prep Type: Total/NA
Prep Batch: 564514

Analyte	Sample	Sample	Spike	MS	MS	Total	RL	MDC	Unit	%Rec	%Rec	RER	RER
	Result	Qual		Result	Qual								
Radium-228	0.219	U	8.61	6.112		1.26	1.00	0.877	pCi/L	68	60 - 140		
				<i>MS</i>	<i>MS</i>								
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>										
Ba Carrier	41.4		40 - 110										
Y Carrier	87.9		40 - 110										

Lab Sample ID: 180-137587-10 MSD
Matrix: Water
Analysis Batch: 568835

Client Sample ID: CCR-AP-7
Prep Type: Total/NA
Prep Batch: 564514

Analyte	Sample	Sample	Spike	MSD	MSD	Total	RL	MDC	Unit	%Rec	%Rec	RER	RER
	Result	Qual		Result	Qual								
Radium-228	0.219	U	8.62	6.954		1.01	1.00	0.399	pCi/L	78	60 - 140	0.37	1
				<i>MSD</i>	<i>MSD</i>								
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>										
Ba Carrier	90.5		40 - 110										
Y Carrier	88.2		40 - 110										

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

HPLC/IC

Analysis Batch: 399469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-1	WAP-4S	Total/NA	Water	EPA 9056A	
180-137587-2	WAP-4I	Total/NA	Water	EPA 9056A	
180-137587-3	WAP-4D	Total/NA	Water	EPA 9056A	
180-137587-4	WAP-5S	Total/NA	Water	EPA 9056A	
180-137587-6	WAP-5D	Total/NA	Water	EPA 9056A	
180-137587-7	WAP-6S	Total/NA	Water	EPA 9056A	
180-137587-8	WAP-6I	Total/NA	Water	EPA 9056A	
180-137587-9	WAP-6D	Total/NA	Water	EPA 9056A	
180-137587-11	DUP-1	Total/NA	Water	EPA 9056A	
180-137587-12	DUP-2	Total/NA	Water	EPA 9056A	
180-137587-13	FIELD BLANK	Total/NA	Water	EPA 9056A	
MB 180-399469/44	Method Blank	Total/NA	Water	EPA 9056A	
MB 180-399469/7	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-399469/43	Lab Control Sample	Total/NA	Water	EPA 9056A	
LCS 180-399469/5	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-137587-9 MS	WAP-6D	Total/NA	Water	EPA 9056A	
180-137587-9 MSD	WAP-6D	Total/NA	Water	EPA 9056A	

Analysis Batch: 399666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-5	WAP-5I	Total/NA	Water	EPA 9056A	
180-137587-10	CCR-AP-7	Total/NA	Water	EPA 9056A	
MB 180-399666/46	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-399666/45	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-137587-5 MS	WAP-5I	Total/NA	Water	EPA 9056A	
180-137587-5 MSD	WAP-5I	Total/NA	Water	EPA 9056A	
180-137587-10 MS	CCR-AP-7	Total/NA	Water	EPA 9056A	
180-137587-10 MSD	CCR-AP-7	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 398537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-10	CCR-AP-7	Total Recoverable	Water	3005A	
180-137587-11	DUP-1	Total Recoverable	Water	3005A	
180-137587-12	DUP-2	Total Recoverable	Water	3005A	
180-137587-13	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-398537/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-398537/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-137587-10 MS	CCR-AP-7	Total Recoverable	Water	3005A	
180-137587-10 MSD	CCR-AP-7	Total Recoverable	Water	3005A	

Prep Batch: 398676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-1	WAP-4S	Total Recoverable	Water	3005A	
180-137587-2	WAP-4I	Total Recoverable	Water	3005A	
180-137587-3	WAP-4D	Total Recoverable	Water	3005A	
180-137587-4	WAP-5S	Total Recoverable	Water	3005A	
180-137587-5	WAP-5I	Total Recoverable	Water	3005A	
180-137587-6	WAP-5D	Total Recoverable	Water	3005A	
180-137587-7	WAP-6S	Total Recoverable	Water	3005A	

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QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Metals (Continued)

Prep Batch: 398676 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-8	WAP-6I	Total Recoverable	Water	3005A	
180-137587-9	WAP-6D	Total Recoverable	Water	3005A	
MB 180-398676/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-398676/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-137587-5 MS	WAP-5I	Total Recoverable	Water	3005A	
180-137587-5 MSD	WAP-5I	Total Recoverable	Water	3005A	

Prep Batch: 398860

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-8	WAP-6I	Total/NA	Water	7470A	
180-137587-9	WAP-6D	Total/NA	Water	7470A	
180-137587-10	CCR-AP-7	Total/NA	Water	7470A	
180-137587-11	DUP-1	Total/NA	Water	7470A	
180-137587-12	DUP-2	Total/NA	Water	7470A	
180-137587-13	FIELD BLANK	Total/NA	Water	7470A	
MB 180-398860/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-398860/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-137587-10 MS	CCR-AP-7	Total/NA	Water	7470A	
180-137587-10 MSD	CCR-AP-7	Total/NA	Water	7470A	

Analysis Batch: 398978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-8	WAP-6I	Total/NA	Water	EPA 7470A	398860
180-137587-9	WAP-6D	Total/NA	Water	EPA 7470A	398860
180-137587-10	CCR-AP-7	Total/NA	Water	EPA 7470A	398860
180-137587-11	DUP-1	Total/NA	Water	EPA 7470A	398860
180-137587-12	DUP-2	Total/NA	Water	EPA 7470A	398860
180-137587-13	FIELD BLANK	Total/NA	Water	EPA 7470A	398860
MB 180-398860/1-A	Method Blank	Total/NA	Water	EPA 7470A	398860
LCS 180-398860/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	398860
180-137587-10 MS	CCR-AP-7	Total/NA	Water	EPA 7470A	398860
180-137587-10 MSD	CCR-AP-7	Total/NA	Water	EPA 7470A	398860

Prep Batch: 399000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-1	WAP-4S	Total/NA	Water	7470A	
180-137587-2	WAP-4I	Total/NA	Water	7470A	
180-137587-3	WAP-4D	Total/NA	Water	7470A	
180-137587-4	WAP-5S	Total/NA	Water	7470A	
180-137587-5	WAP-5I	Total/NA	Water	7470A	
180-137587-6	WAP-5D	Total/NA	Water	7470A	
180-137587-7	WAP-6S	Total/NA	Water	7470A	
MB 180-399000/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-399000/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-137587-5 MS	WAP-5I	Total/NA	Water	7470A	
180-137587-5 MSD	WAP-5I	Total/NA	Water	7470A	

Analysis Batch: 399007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-1	WAP-4S	Total Recoverable	Water	EPA 6020A	398676
180-137587-2	WAP-4I	Total Recoverable	Water	EPA 6020A	398676

Eurofins Pittsburgh

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Metals (Continued)

Analysis Batch: 399007 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-3	WAP-4D	Total Recoverable	Water	EPA 6020A	398676
180-137587-4	WAP-5S	Total Recoverable	Water	EPA 6020A	398676
180-137587-5	WAP-5I	Total Recoverable	Water	EPA 6020A	398676
180-137587-6	WAP-5D	Total Recoverable	Water	EPA 6020A	398676
180-137587-7	WAP-6S	Total Recoverable	Water	EPA 6020A	398676
180-137587-8	WAP-6I	Total Recoverable	Water	EPA 6020A	398676
180-137587-9	WAP-6D	Total Recoverable	Water	EPA 6020A	398676
180-137587-10	CCR-AP-7	Total Recoverable	Water	EPA 6020A	398537
180-137587-11	DUP-1	Total Recoverable	Water	EPA 6020A	398537
180-137587-12	DUP-2	Total Recoverable	Water	EPA 6020A	398537
180-137587-13	FIELD BLANK	Total Recoverable	Water	EPA 6020A	398537
MB 180-398537/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	398537
MB 180-398676/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	398676
LCS 180-398537/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	398537
LCS 180-398676/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	398676
180-137587-5 MS	WAP-5I	Total Recoverable	Water	EPA 6020A	398676
180-137587-5 MSD	WAP-5I	Total Recoverable	Water	EPA 6020A	398676
180-137587-10 MS	CCR-AP-7	Total Recoverable	Water	EPA 6020A	398537
180-137587-10 MSD	CCR-AP-7	Total Recoverable	Water	EPA 6020A	398537

Analysis Batch: 399123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-1	WAP-4S	Total/NA	Water	EPA 7470A	399000
180-137587-2	WAP-4I	Total/NA	Water	EPA 7470A	399000
180-137587-3	WAP-4D	Total/NA	Water	EPA 7470A	399000
180-137587-4	WAP-5S	Total/NA	Water	EPA 7470A	399000
180-137587-5	WAP-5I	Total/NA	Water	EPA 7470A	399000
180-137587-6	WAP-5D	Total/NA	Water	EPA 7470A	399000
180-137587-7	WAP-6S	Total/NA	Water	EPA 7470A	399000
MB 180-399000/1-A	Method Blank	Total/NA	Water	EPA 7470A	399000
LCS 180-399000/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	399000
180-137587-5 MS	WAP-5I	Total/NA	Water	EPA 7470A	399000
180-137587-5 MSD	WAP-5I	Total/NA	Water	EPA 7470A	399000

Analysis Batch: 399192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-1	WAP-4S	Total Recoverable	Water	EPA 6020A	398676
180-137587-2	WAP-4I	Total Recoverable	Water	EPA 6020A	398676
180-137587-3	WAP-4D	Total Recoverable	Water	EPA 6020A	398676
180-137587-4	WAP-5S	Total Recoverable	Water	EPA 6020A	398676
180-137587-5	WAP-5I	Total Recoverable	Water	EPA 6020A	398676
180-137587-6	WAP-5D	Total Recoverable	Water	EPA 6020A	398676
180-137587-7	WAP-6S	Total Recoverable	Water	EPA 6020A	398676
180-137587-8	WAP-6I	Total Recoverable	Water	EPA 6020A	398676
180-137587-9	WAP-6D	Total Recoverable	Water	EPA 6020A	398676
MB 180-398676/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	398676
LCS 180-398676/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	398676
180-137587-5 MS	WAP-5I	Total Recoverable	Water	EPA 6020A	398676
180-137587-5 MSD	WAP-5I	Total Recoverable	Water	EPA 6020A	398676

Eurofins Pittsburgh

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

General Chemistry

Analysis Batch: 397818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-1	WAP-4S	Total/NA	Water	SM 2540C	
180-137587-2	WAP-4I	Total/NA	Water	SM 2540C	
180-137587-3	WAP-4D	Total/NA	Water	SM 2540C	
180-137587-4	WAP-5S	Total/NA	Water	SM 2540C	
180-137587-5	WAP-5I	Total/NA	Water	SM 2540C	
180-137587-6	WAP-5D	Total/NA	Water	SM 2540C	
180-137587-7	WAP-6S	Total/NA	Water	SM 2540C	
180-137587-8	WAP-6I	Total/NA	Water	SM 2540C	
180-137587-9	WAP-6D	Total/NA	Water	SM 2540C	
180-137587-10	CCR-AP-7	Total/NA	Water	SM 2540C	
180-137587-11	DUP-1	Total/NA	Water	SM 2540C	
180-137587-12	DUP-2	Total/NA	Water	SM 2540C	
180-137587-13	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 180-397818/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-397818/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-137587-5 DU	WAP-5I	Total/NA	Water	SM 2540C	
180-137587-10 DU	CCR-AP-7	Total/NA	Water	SM 2540C	

Analysis Batch: 397958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-1	WAP-4S	Total/NA	Water	EPA 9040C	
180-137587-2	WAP-4I	Total/NA	Water	EPA 9040C	
180-137587-3	WAP-4D	Total/NA	Water	EPA 9040C	
180-137587-4	WAP-5S	Total/NA	Water	EPA 9040C	
180-137587-5	WAP-5I	Total/NA	Water	EPA 9040C	
180-137587-6	WAP-5D	Total/NA	Water	EPA 9040C	
180-137587-7	WAP-6S	Total/NA	Water	EPA 9040C	
180-137587-8	WAP-6I	Total/NA	Water	EPA 9040C	
180-137587-9	WAP-6D	Total/NA	Water	EPA 9040C	
180-137587-10	CCR-AP-7	Total/NA	Water	EPA 9040C	
180-137587-11	DUP-1	Total/NA	Water	EPA 9040C	
180-137587-12	DUP-2	Total/NA	Water	EPA 9040C	
LCS 180-397958/3	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-137587-5 DU	WAP-5I	Total/NA	Water	EPA 9040C	
180-137587-10 DU	CCR-AP-7	Total/NA	Water	EPA 9040C	

Analysis Batch: 398030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-13	FIELD BLANK	Total/NA	Water	EPA 9040C	
LCS 180-398030/1	Lab Control Sample	Total/NA	Water	EPA 9040C	

Rad

Prep Batch: 564511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-1	WAP-4S	Total/NA	Water	PrecSep-21	
180-137587-2	WAP-4I	Total/NA	Water	PrecSep-21	
180-137587-3	WAP-4D	Total/NA	Water	PrecSep-21	
180-137587-4	WAP-5S	Total/NA	Water	PrecSep-21	
180-137587-5	WAP-5I	Total/NA	Water	PrecSep-21	
180-137587-6	WAP-5D	Total/NA	Water	PrecSep-21	

Eurofins Pittsburgh

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137587-1

Rad (Continued)

Prep Batch: 564511 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-7	WAP-6S	Total/NA	Water	PrecSep-21	
180-137587-8	WAP-6I	Total/NA	Water	PrecSep-21	
180-137587-9	WAP-6D	Total/NA	Water	PrecSep-21	
180-137587-10	CCR-AP-7	Total/NA	Water	PrecSep-21	
180-137587-11	DUP-1	Total/NA	Water	PrecSep-21	
180-137587-12	DUP-2	Total/NA	Water	PrecSep-21	
180-137587-13	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-564511/24-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-564511/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
180-137587-5 MS	WAP-5I	Total/NA	Water	PrecSep-21	
180-137587-5 MSD	WAP-5I	Total/NA	Water	PrecSep-21	
180-137587-10 MS	CCR-AP-7	Total/NA	Water	PrecSep-21	
180-137587-10 MSD	CCR-AP-7	Total/NA	Water	PrecSep-21	

Prep Batch: 564514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137587-1	WAP-4S	Total/NA	Water	PrecSep_0	
180-137587-2	WAP-4I	Total/NA	Water	PrecSep_0	
180-137587-3	WAP-4D	Total/NA	Water	PrecSep_0	
180-137587-4	WAP-5S	Total/NA	Water	PrecSep_0	
180-137587-5	WAP-5I	Total/NA	Water	PrecSep_0	
180-137587-6	WAP-5D	Total/NA	Water	PrecSep_0	
180-137587-7	WAP-6S	Total/NA	Water	PrecSep_0	
180-137587-8	WAP-6I	Total/NA	Water	PrecSep_0	
180-137587-9	WAP-6D	Total/NA	Water	PrecSep_0	
180-137587-10	CCR-AP-7	Total/NA	Water	PrecSep_0	
180-137587-11	DUP-1	Total/NA	Water	PrecSep_0	
180-137587-12	DUP-2	Total/NA	Water	PrecSep_0	
180-137587-13	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-564514/24-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-564514/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
180-137587-5 MS	WAP-5I	Total/NA	Water	PrecSep_0	
180-137587-5 MSD	WAP-5I	Total/NA	Water	PrecSep_0	
180-137587-10 MS	CCR-AP-7	Total/NA	Water	PrecSep_0	
180-137587-10 MSD	CCR-AP-7	Total/NA	Water	PrecSep_0	

Eurofins Pittsburgh

301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

Client Information		Sampler: <u>Jon Hill</u>		Lab PM: Hayes, Ken		Carrier Tracking No(s):		COC No: 180-80665-14503.1	
Client Contact: Mark Breting		Phone: <u>317-473-1325</u>		E-Mail: Ken.Hayes@et.eurofins.com		State of Origin: <u>IN</u>		Page: Page 1 of 2	
Company: Atlas Technical Consultants LLC				PWSID:		Analysis Requested			
Address: 7988 Centerpoint Drive Suite 100		Due Date Requested:		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers	
City: Indianapolis		TAT Requested (days):							
State, Zip: IN, 46256		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No							
Phone: 864-214-8750(Tel)		PO #: FB-242026, AB-241410							
Email: mark.breting@atcassociates.com		WO #:		9040C, 9066A_ORGFPM_282		6020A, 7470A		2840C_Calcd - TDS	
Project Name: CCR GW Monitoring FB Culley West		Project #: 18016014		9315_Ra228, 9320_Ra228		180-137587 Chain of Custody		Preservation Codes:	
Site:		SSOW#:						A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)	
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=wastelok, BT=Tissue, A=Air)	
		Preservation Code:							
<u>WAP-4S</u>		<u>5-3-22</u>		<u>1145</u>		<u>G</u>		<u>W</u>	
<u>WAP-4I</u>				<u>1230</u>					
<u>WAP-4D</u>				<u>1320</u>					
<u>WAP-5S</u>				<u>825</u>					
<u>WAP-5I</u>				<u>920</u>					
<u>WAP-5D</u>				<u>1023</u>					
<u>WAP-6S</u>				<u>1350</u>					
<u>WAP-6I</u>		<u>1300</u>		<u>1300</u>					
<u>WAP-6D</u>				<u>1500</u>					
<u>WAP CCR-AP-7</u>				<u>8920</u>					
Possible Hazard Identification					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological					<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> 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: <u>J Hill</u>		Date/Time: <u>5-3-22 1600 CST</u>		Company: <u>Atlas</u>		Received by: <u>[Signature]</u>		Date/Time: <u>5/4/22 9305</u>	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:					



#202

Virginia Beach

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-137587-1

Login Number: 137587

List Source: Eurofins Pittsburgh

List Number: 1

Creator: Abernathy, Eric L

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: 180-137587-1

Login Number: 137587

List Number: 2

Creator: Worthington, Sierra M

List Source: Eurofins St. Louis

List Creation: 05/06/22 01:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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.	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

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

Laboratory Job ID: 180-137625-1

Client Project/Site: CCR GW Monitoring FB Culley West

For:

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

Attn: Mark Miesfeldt



Authorized for release by:
6/8/2022 2:26:57 PM

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

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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

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	5
Certification Summary	6
Sample Summary	8
Method Summary	9
Lab Chronicle	10
Client Sample Results	18
QC Sample Results	32
QC Association Summary	40
Chain of Custody	44
Receipt Checklists	45

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Job ID: 180-137625-1

Laboratory: Eurofins Pittsburgh

Narrative

Job Narrative 180-137625-1

Comments

No additional comments.

Receipt

The samples were received on 5/5/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.1° C, 3.3° C and 3.7° C

GC Semi VOA

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

RAD

Methods 903.0, 9315: Radium-226 batch 564517

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.

WAP-8S (180-137625-6), WAP-8I (180-137625-7), WAP-8D (180-137625-8), WAP-9S (180-137625-9), WAP-9I (180-137625-10), WAP-9D (180-137625-11), (LCS 160-564517/1-A), (LCSD 160-564517/2-A) and (MB 160-564517/12-A)

Method 9315: Radium-226 batch 564511

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.

WAP-2R (180-137625-1), WAP-3S (180-137625-2), WAP-3D (180-137625-3), WAP-7S (180-137625-4), WAP-7D (180-137625-5), (LCS 160-564511/1-A), (MB 160-564511/24-A), (180-137587-A-5-B), (180-137587-A-5-C MS), (180-137587-A-5-D MSD), (180-137587-A-10-A), (180-137587-A-10-B MS) and (180-137587-A-10-C MSD)

Methods 904.0, 9320: Radium 228 batch 564520

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

WAP-8S (180-137625-6), WAP-8I (180-137625-7), WAP-8D (180-137625-8), WAP-9S (180-137625-9), WAP-9I (180-137625-10), WAP-9D (180-137625-11), (LCS 160-564520/1-A), (LCSD 160-564520/2-A) and (MB 160-564520/12-A)

Method 9320: Radium-228 batch 564514

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.: WAP-2R (180-137625-1), WAP-3S (180-137625-2), WAP-3D (180-137625-3), WAP-7S (180-137625-4), WAP-7D (180-137625-5), (LCS 160-564514/1-A), (MB 160-564514/24-A), (180-137587-A-5-E), (180-137587-A-5-F MS) and (180-137587-A-5-G MSD)

Method PrecSep_0: Radium-228 Prep Batch 160-564520

The following sample was prepared at a reduced aliquot due to Matrix: WAP-9S (180-137625-9). 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 160-564517

The following sample was prepared at a reduced aliquot due to Matrix: WAP-9S (180-137625-9). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Job ID: 180-137625-1 (Continued)

Laboratory: Eurofins Pittsburgh (Continued)

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

Metals

Method 6020A: The ICB recovered above the MDL for nickel but less than the RL ;therefore the data has been reported. (ICB 180-399007/6)

Method 6020A: The following samples were diluted due to the nature of the sample matrix: WAP-2R (180-137625-1), WAP-3S (180-137625-2) and WAP-3D (180-137625-3). Elevated reporting limits (RLs) are provided.

Method 6020A: The following sample was diluted to bring the concentration of target analytes within the calibration range: WAP-7S (180-137625-4). Elevated reporting limits (RLs) are provided.

Method 6020A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 180-399052 and analytical batch 180-399443 were outside control limits for barium copper and lithium. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 6020A: The serial dilution performed for the following sample associated with batch 180-399443 was outside control limit for multiple analytes: WAP-7D (180-137625-5) Multiple units being reported.

Method 6020A: The following samples were diluted to bring the concentration of target analytes within the calibration range: WAP-7D (180-137625-5), (180-137625-E-5-C MS ^10), (180-137625-E-5-D MSD ^10), (180-137625-E-5-B PDS ^10) and (180-137625-E-5-B SD ^50). 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.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Qualifiers

HPLC/IC

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.

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.
B	Compound was found in the blank and sample.
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
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

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	05-29-22
California	State	2891	04-30-22 *
Connecticut	State	PH-0688	05-29-22
Florida	NELAP	E871008	05-29-22
Georgia	State	PA 02-00416	05-29-22
Illinois	NELAP	004375	05-29-22
Kansas	NELAP	E-10350	05-29-22
Kentucky (UST)	State	162013	04-30-22 *
Kentucky (WW)	State	KY98043	05-29-22
Louisiana	NELAP	04041	05-29-22
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	05-29-22
Nevada	State	PA00164	08-31-22
New Hampshire	NELAP	2030	05-29-22
New Jersey	NELAP	PA005	05-29-22
New York	NELAP	11182	05-29-22
North Carolina (WW/SW)	State	434	05-29-22
North Dakota	State	R-227	04-30-22 *
Oregon	NELAP	PA-2151	02-07-23
Pennsylvania	NELAP	02-00416	05-29-22
Rhode Island	State	LAO00362	12-31-21 *
South Carolina	State	89014	05-29-22
Texas	NELAP	T104704528	05-29-22
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	05-25-22
West Virginia DEP	State	142	05-29-22
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.

Eurofins Pittsburgh

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

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	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-137625-1	WAP-2R	Water	05/04/22 13:42	05/05/22 10:00
180-137625-2	WAP-3S	Water	05/04/22 10:50	05/05/22 10:00
180-137625-3	WAP-3D	Water	05/04/22 11:30	05/05/22 10:00
180-137625-4	WAP-7S	Water	05/04/22 12:12	05/05/22 10:00
180-137625-5	WAP-7D	Water	05/04/22 12:47	05/05/22 10:00
180-137625-6	WAP-8S	Water	05/04/22 07:33	05/05/22 10:00
180-137625-7	WAP-8I	Water	05/04/22 08:29	05/05/22 10:00
180-137625-8	WAP-8D	Water	05/04/22 09:08	05/05/22 10:00
180-137625-9	WAP-9S	Water	05/04/22 09:10	05/05/22 10:00
180-137625-10	WAP-9I	Water	05/04/22 10:28	05/05/22 10:00
180-137625-11	WAP-9D	Water	05/04/22 11:50	05/05/22 10:00

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

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

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.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-2R

Lab Sample ID: 180-137625-1

Date Collected: 05/04/22 13:42

Matrix: Water

Date Received: 05/05/22 10:00

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			399074	05/17/22 23:12	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399007	05/14/22 19:41	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		5			399192	05/17/22 14:05	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:15	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 12:01	HEK	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	398139	05/09/22 13:01	JCR	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			994.74 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			568823	06/07/22 18:13	FLC	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			994.74 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568850	06/07/22 12:03	FLC	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-3S

Lab Sample ID: 180-137625-2

Date Collected: 05/04/22 10:50

Matrix: Water

Date Received: 05/05/22 10:00

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			399074	05/18/22 00:22	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399007	05/14/22 19:56	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		2			399192	05/17/22 14:09	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:16	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 11:50	HEK	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	398139	05/09/22 13:01	JCR	TAL PIT
Instrument ID: NOEQUIP										

Eurofins Pittsburgh

Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-3S

Lab Sample ID: 180-137625-2

Date Collected: 05/04/22 10:50

Matrix: Water

Date Received: 05/05/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1004.44 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			568823	06/07/22 18:13	FLC	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1004.44 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568850	06/07/22 12:03	FLC	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-3D

Lab Sample ID: 180-137625-3

Date Collected: 05/04/22 11:30

Matrix: Water

Date Received: 05/05/22 10:00

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			399074	05/18/22 00:50	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399007	05/14/22 20:10	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		2			399192	05/17/22 14:12	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:17	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 12:57	HEK	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	398139	05/09/22 13:01	JCR	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1004.11 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			568823	06/07/22 18:13	FLC	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1004.11 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568850	06/07/22 12:03	FLC	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-7S

Lab Sample ID: 180-137625-4

Date Collected: 05/04/22 12:12

Matrix: Water

Date Received: 05/05/22 10:00

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			399074	05/17/22 21:49	JRB	TAL PIT
Instrument ID: CHIC2100A										

Eurofins Pittsburgh

Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-7S
Date Collected: 05/04/22 12:12
Date Received: 05/05/22 10:00

Lab Sample ID: 180-137625-4
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	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399007	05/14/22 20:25	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			25 mL	25 mL	398676	05/13/22 10:12	KWP	TAL PIT
Total Recoverable	Analysis	EPA 6020A		10			399192	05/17/22 14:16	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:18	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 13:00	HEK	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	398139	05/09/22 13:01	JCR	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			997.57 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			568823	06/07/22 18:13	FLC	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			997.57 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568850	06/07/22 12:04	FLC	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-7D
Date Collected: 05/04/22 12:47
Date Received: 05/05/22 10:00

Lab Sample ID: 180-137625-5
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			399074	05/17/22 22:17	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			25 mL	25 mL	399052	05/17/22 09:57	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399443	05/19/22 14:06	RSK	TAL PIT
Instrument ID: NEMO										
Total Recoverable	Prep	3005A			25 mL	25 mL	399052	05/17/22 09:57	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		10			399556	05/20/22 12:06	RSK	TAL PIT
Instrument ID: NEMO										
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:19	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 13:20	HEK	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	398139	05/09/22 13:01	JCR	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1006.13 mL	1.0 g	564511	05/09/22 09:56	MS	TAL SL
Total/NA	Analysis	9315		1			568823	06/07/22 18:13	FLC	TAL SL
Instrument ID: GFPCRED										

Eurofins Pittsburgh

Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-7D

Lab Sample ID: 180-137625-5

Date Collected: 05/04/22 12:47

Matrix: Water

Date Received: 05/05/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep_0			1006.13 mL	1.0 g	564514	05/09/22 10:57	MS	TAL SL
Total/NA	Analysis	9320		1			568850	06/07/22 12:04	FLC	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			569036	06/08/22 12:54	SCB	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-8S

Lab Sample ID: 180-137625-6

Date Collected: 05/04/22 07:33

Matrix: Water

Date Received: 05/05/22 10:00

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			399074	05/17/22 22:45	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			25 mL	25 mL	399052	05/17/22 09:57	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399443	05/19/22 14:50	RSK	TAL PIT
Instrument ID: NEMO										
Total Recoverable	Prep	3005A			25 mL	25 mL	399052	05/17/22 09:57	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399556	05/20/22 12:19	RSK	TAL PIT
Instrument ID: NEMO										
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:20	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 13:25	HEK	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	398139	05/09/22 13:01	JCR	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			995.80 mL	1.0 g	564517	05/09/22 11:07	MS	TAL SL
Total/NA	Analysis	9315		1			568823	06/07/22 08:20	FLC	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			995.80 mL	1.0 g	564520	05/09/22 11:20	MS	TAL SL
Total/NA	Analysis	9320		1			568638	06/06/22 16:09	CLP	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			568864	06/07/22 15:48	SCB	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-8I

Lab Sample ID: 180-137625-7

Date Collected: 05/04/22 08:29

Matrix: Water

Date Received: 05/05/22 10:00

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			399074	05/18/22 01:18	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			25 mL	25 mL	399052	05/17/22 09:57	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399443	05/19/22 14:52	RSK	TAL PIT
Instrument ID: NEMO										

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Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-8I

Lab Sample ID: 180-137625-7

Date Collected: 05/04/22 08:29

Matrix: Water

Date Received: 05/05/22 10:00

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	399052	05/17/22 09:57	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399556	05/20/22 12:21	RSK	TAL PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:21	RJR	TAL PIT
		Instrument ID: HGY								
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 13:31	HEK	TAL PIT
		Instrument ID: PHTITRATOR								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	398139	05/09/22 13:01	JCR	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			1001.56 mL	1.0 g	564517	05/09/22 11:07	MS	TAL SL
Total/NA	Analysis	9315		1			568823	06/07/22 08:20	FLC	TAL SL
		Instrument ID: GFPCRED								
Total/NA	Prep	PrecSep_0			1001.56 mL	1.0 g	564520	05/09/22 11:20	MS	TAL SL
Total/NA	Analysis	9320		1			568638	06/06/22 16:09	CLP	TAL SL
		Instrument ID: GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228		1			568864	06/07/22 15:48	SCB	TAL SL
		Instrument ID: NOEQUIP								

Client Sample ID: WAP-8D

Lab Sample ID: 180-137625-8

Date Collected: 05/04/22 09:08

Matrix: Water

Date Received: 05/05/22 10:00

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			399074	05/18/22 01:32	JRB	TAL PIT
		Instrument ID: CHIC2100A								
Total Recoverable	Prep	3005A			25 mL	25 mL	399052	05/17/22 09:57	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399443	05/19/22 15:00	RSK	TAL PIT
		Instrument ID: NEMO								
Total Recoverable	Prep	3005A			25 mL	25 mL	399052	05/17/22 09:57	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399556	05/20/22 12:32	RSK	TAL PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:22	RJR	TAL PIT
		Instrument ID: HGY								
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 13:36	HEK	TAL PIT
		Instrument ID: PHTITRATOR								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	398139	05/09/22 13:01	JCR	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			992.82 mL	1.0 g	564517	05/09/22 11:07	MS	TAL SL
Total/NA	Analysis	9315		1			568823	06/07/22 08:20	FLC	TAL SL
		Instrument ID: GFPCRED								
Total/NA	Prep	PrecSep_0			992.82 mL	1.0 g	564520	05/09/22 11:20	MS	TAL SL
Total/NA	Analysis	9320		1			568638	06/06/22 16:09	CLP	TAL SL
		Instrument ID: GFPCORANGE								

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Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-8D

Lab Sample ID: 180-137625-8

Date Collected: 05/04/22 09:08

Matrix: Water

Date Received: 05/05/22 10:00

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			568864	06/07/22 15:48	SCB	TAL SL

Client Sample ID: WAP-9S

Lab Sample ID: 180-137625-9

Date Collected: 05/04/22 09:10

Matrix: Water

Date Received: 05/05/22 10:00

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 Instrument ID: CHIC2100A		1			399074	05/18/22 01:46	JRB	TAL PIT
Total Recoverable	Prep	3005A			25 mL	25 mL	399052	05/17/22 09:57	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A Instrument ID: NEMO		1			399443	05/19/22 15:03	RSK	TAL PIT
Total Recoverable	Prep	3005A			25 mL	25 mL	399052	05/17/22 09:57	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A Instrument ID: NEMO		1			399556	05/20/22 12:34	RSK	TAL PIT
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A Instrument ID: HGY		1			399123	05/17/22 15:23	RJR	TAL PIT
Total/NA	Analysis	EPA 9040C Instrument ID: PHTITRATOR		1			397958	05/06/22 13:42	HEK	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	398139	05/09/22 13:01	JCR	TAL PIT
Total/NA	Prep	PrecSep-21			751.15 mL	1.0 g	564517	05/09/22 11:07	MS	TAL SL
Total/NA	Analysis	9315 Instrument ID: GFPCRED		1			568823	06/07/22 08:20	FLC	TAL SL
Total/NA	Prep	PrecSep_0			751.15 mL	1.0 g	564520	05/09/22 11:20	MS	TAL SL
Total/NA	Analysis	9320 Instrument ID: GFPCRED		1			568747	06/06/22 16:10	JCB	TAL SL
Total/NA	Analysis	Ra226_Ra228 Instrument ID: NOEQUIP		1			568864	06/07/22 15:48	SCB	TAL SL

Client Sample ID: WAP-9I

Lab Sample ID: 180-137625-10

Date Collected: 05/04/22 10:28

Matrix: Water

Date Received: 05/05/22 10:00

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 Instrument ID: CHIC2100A		1			399074	05/18/22 02:00	JRB	TAL PIT
Total Recoverable	Prep	3005A			25 mL	25 mL	399052	05/17/22 09:57	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A Instrument ID: NEMO		1			399443	05/19/22 15:05	RSK	TAL PIT
Total Recoverable	Prep	3005A			25 mL	25 mL	399052	05/17/22 09:57	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A Instrument ID: NEMO		1			399556	05/20/22 12:37	RSK	TAL PIT

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Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-9I
Date Collected: 05/04/22 10:28
Date Received: 05/05/22 10:00

Lab Sample ID: 180-137625-10
Matrix: Water

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	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:27	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 13:47	HEK	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	398139	05/09/22 13:01	JCR	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			993.76 mL	1.0 g	564517	05/09/22 11:07	MS	TAL SL
Total/NA	Analysis	9315		1			568823	06/07/22 08:21	FLC	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			993.76 mL	1.0 g	564520	05/09/22 11:20	MS	TAL SL
Total/NA	Analysis	9320		1			568747	06/06/22 16:10	JCB	TAL SL
Instrument ID: GFPCRED										
Total/NA	Analysis	Ra226_Ra228		1			568864	06/07/22 15:48	SCB	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: WAP-9D
Date Collected: 05/04/22 11:50
Date Received: 05/05/22 10:00

Lab Sample ID: 180-137625-11
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			399074	05/18/22 02:42	JRB	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			25 mL	25 mL	399052	05/17/22 09:57	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399443	05/19/22 15:08	RSK	TAL PIT
Instrument ID: NEMO										
Total Recoverable	Prep	3005A			25 mL	25 mL	399052	05/17/22 09:57	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399556	05/20/22 12:40	RSK	TAL PIT
Instrument ID: NEMO										
Total/NA	Prep	7470A			50 mL	50 mL	399000	05/17/22 04:57	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399123	05/17/22 15:28	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			397958	05/06/22 13:53	HEK	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	398139	05/09/22 13:01	JCR	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			994.72 mL	1.0 g	564517	05/09/22 11:07	MS	TAL SL
Total/NA	Analysis	9315		1			568823	06/07/22 08:22	FLC	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			994.72 mL	1.0 g	564520	05/09/22 11:20	MS	TAL SL
Total/NA	Analysis	9320		1			568747	06/06/22 16:11	JCB	TAL SL
Instrument ID: GFPCRED										
Total/NA	Analysis	Ra226_Ra228		1			568864	06/07/22 15:48	SCB	TAL SL
Instrument ID: NOEQUIP										

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Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

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

KWP = Kenneth Peters

RJR = Ron Rosenbaum

Batch Type: Analysis

HEK = Hope Kiesling

JCR = Jessica Rodgers

JRB = James Burzio

RJR = Ron Rosenbaum

RSK = Robert Kurtz

Lab: TAL SL

Batch Type: Prep

MS = Matthew Swaringam

Batch Type: Analysis

CLP = Cassandra Park

FLC = Fernando Cruz

JCB = Jacob Boyd

SCB = Sarah Bernsen

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-2R

Lab Sample ID: 180-137625-1

Date Collected: 05/04/22 13:42

Matrix: Water

Date Received: 05/05/22 10:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	100		1.0	0.71	mg/L			05/17/22 23:12	1
Fluoride	0.40		0.10	0.026	mg/L			05/17/22 23:12	1
Sulfate	340		1.0	0.76	mg/L			05/17/22 23:12	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		05/13/22 10:12	05/14/22 19:41	1
Arsenic	0.0010		0.0010	0.00028	mg/L		05/13/22 10:12	05/14/22 19:41	1
Barium	0.025		0.010	0.0031	mg/L		05/13/22 10:12	05/14/22 19:41	1
Beryllium	ND		0.0010	0.00027	mg/L		05/13/22 10:12	05/14/22 19:41	1
Boron	8.0		0.40	0.30	mg/L		05/13/22 10:12	05/17/22 14:05	5
Cadmium	0.00046	J	0.0010	0.00022	mg/L		05/13/22 10:12	05/14/22 19:41	1
Calcium	160		0.50	0.13	mg/L		05/13/22 10:12	05/14/22 19:41	1
Chromium	ND		0.0020	0.0015	mg/L		05/13/22 10:12	05/14/22 19:41	1
Cobalt	0.0022		0.00050	0.00026	mg/L		05/13/22 10:12	05/14/22 19:41	1
Lead	ND		0.0010	0.00017	mg/L		05/13/22 10:12	05/14/22 19:41	1
Lithium	0.026		0.0050	0.00083	mg/L		05/13/22 10:12	05/14/22 19:41	1
Molybdenum	0.082		0.0050	0.00061	mg/L		05/13/22 10:12	05/14/22 19:41	1
Selenium	0.0024	J	0.0050	0.00074	mg/L		05/13/22 10:12	05/14/22 19:41	1
Thallium	ND		0.0010	0.00047	mg/L		05/13/22 10:12	05/14/22 19:41	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		05/17/22 04:57	05/17/22 15:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	870		10	10	mg/L			05/09/22 13:01	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1	0.1	SU			05/06/22 12:01	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.176	U	0.207	0.207	1.00	0.333	pCi/L	05/09/22 09:56	06/07/22 18:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.5		40 - 110					05/09/22 09:56	06/07/22 18:13	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.243	U	0.268	0.269	1.00	0.437	pCi/L	05/09/22 10:57	06/07/22 12:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.5		40 - 110					05/09/22 10:57	06/07/22 12:03	1
Y Carrier	91.6		40 - 110					05/09/22 10:57	06/07/22 12:03	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-2R

Date Collected: 05/04/22 13:42

Date Received: 05/05/22 10:00

Lab Sample ID: 180-137625-1

Matrix: Water

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	0.419	U	0.339	0.339	5.00	0.437	pCi/L		06/08/22 12:54	1

Client Sample ID: WAP-3S

Date Collected: 05/04/22 10:50

Date Received: 05/05/22 10:00

Lab Sample ID: 180-137625-2

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	43		1.0	0.71	mg/L			05/18/22 00:22	1
Fluoride	0.60		0.10	0.026	mg/L			05/18/22 00:22	1
Sulfate	140		1.0	0.76	mg/L			05/18/22 00:22	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		05/13/22 10:12	05/14/22 19:56	1
Arsenic	0.00031	J	0.0010	0.00028	mg/L		05/13/22 10:12	05/14/22 19:56	1
Barium	0.030		0.010	0.0031	mg/L		05/13/22 10:12	05/14/22 19:56	1
Beryllium	ND		0.0010	0.00027	mg/L		05/13/22 10:12	05/14/22 19:56	1
Boron	2.8		0.16	0.12	mg/L		05/13/22 10:12	05/17/22 14:09	2
Cadmium	ND		0.0010	0.00022	mg/L		05/13/22 10:12	05/14/22 19:56	1
Calcium	100		0.50	0.13	mg/L		05/13/22 10:12	05/14/22 19:56	1
Chromium	ND		0.0020	0.0015	mg/L		05/13/22 10:12	05/14/22 19:56	1
Cobalt	0.00069		0.00050	0.00026	mg/L		05/13/22 10:12	05/14/22 19:56	1
Lead	ND		0.0010	0.00017	mg/L		05/13/22 10:12	05/14/22 19:56	1
Lithium	0.079		0.0050	0.00083	mg/L		05/13/22 10:12	05/14/22 19:56	1
Molybdenum	0.75		0.0050	0.00061	mg/L		05/13/22 10:12	05/14/22 19:56	1
Selenium	ND		0.0050	0.00074	mg/L		05/13/22 10:12	05/14/22 19:56	1
Thallium	ND		0.0010	0.00047	mg/L		05/13/22 10:12	05/14/22 19:56	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		05/17/22 04:57	05/17/22 15:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	440		10	10	mg/L			05/09/22 13:01	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1	0.1	SU			05/06/22 11:50	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.197	U	0.194	0.195	1.00	0.298	pCi/L	05/09/22 09:56	06/07/22 18:13	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	82.8		40 - 110	05/09/22 09:56	06/07/22 18:13	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-3S
 Date Collected: 05/04/22 10:50
 Date Received: 05/05/22 10:00

Lab Sample ID: 180-137625-2
 Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.442		0.300	0.303	1.00	0.442	pCi/L	05/09/22 10:57	06/07/22 12:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.8		40 - 110					05/09/22 10:57	06/07/22 12:03	1
Y Carrier	92.3		40 - 110					05/09/22 10:57	06/07/22 12:03	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	0.639		0.357	0.360	5.00	0.442	pCi/L		06/08/22 12:54	1

Client Sample ID: WAP-3D
 Date Collected: 05/04/22 11:30
 Date Received: 05/05/22 10:00

Lab Sample ID: 180-137625-3
 Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	45		1.0	0.71	mg/L			05/18/22 00:50	1
Fluoride	0.36		0.10	0.026	mg/L			05/18/22 00:50	1
Sulfate	180		1.0	0.76	mg/L			05/18/22 00:50	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		05/13/22 10:12	05/14/22 20:10	1
Arsenic	ND		0.0010	0.00028	mg/L		05/13/22 10:12	05/14/22 20:10	1
Barium	0.012		0.010	0.0031	mg/L		05/13/22 10:12	05/14/22 20:10	1
Beryllium	ND		0.0010	0.00027	mg/L		05/13/22 10:12	05/14/22 20:10	1
Boron	3.4		0.16	0.12	mg/L		05/13/22 10:12	05/17/22 14:12	2
Cadmium	0.00022	J	0.0010	0.00022	mg/L		05/13/22 10:12	05/14/22 20:10	1
Calcium	110		0.50	0.13	mg/L		05/13/22 10:12	05/14/22 20:10	1
Chromium	ND		0.0020	0.0015	mg/L		05/13/22 10:12	05/14/22 20:10	1
Cobalt	0.00069		0.00050	0.00026	mg/L		05/13/22 10:12	05/14/22 20:10	1
Lead	ND		0.0010	0.00017	mg/L		05/13/22 10:12	05/14/22 20:10	1
Lithium	0.079		0.0050	0.00083	mg/L		05/13/22 10:12	05/14/22 20:10	1
Molybdenum	0.43		0.0050	0.00061	mg/L		05/13/22 10:12	05/14/22 20:10	1
Selenium	ND		0.0050	0.00074	mg/L		05/13/22 10:12	05/14/22 20:10	1
Thallium	ND		0.0010	0.00047	mg/L		05/13/22 10:12	05/14/22 20:10	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		05/17/22 04:57	05/17/22 15:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	530		10	10	mg/L			05/09/22 13:01	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.7	HF	0.1	0.1	SU			05/06/22 12:57	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-3D

Date Collected: 05/04/22 11:30

Date Received: 05/05/22 10:00

Lab Sample ID: 180-137625-3

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.149	U	0.169	0.170	1.00	0.271	pCi/L	05/09/22 09:56	06/07/22 18:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.0		40 - 110					05/09/22 09:56	06/07/22 18:13	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.112	U	0.252	0.252	1.00	0.443	pCi/L	05/09/22 10:57	06/07/22 12:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.0		40 - 110					05/09/22 10:57	06/07/22 12:03	1
Y Carrier	89.7		40 - 110					05/09/22 10:57	06/07/22 12:03	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	0.261	U	0.303	0.304	5.00	0.443	pCi/L		06/08/22 12:54	1

Client Sample ID: WAP-7S

Date Collected: 05/04/22 12:12

Date Received: 05/05/22 10:00

Lab Sample ID: 180-137625-4

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	73		1.0	0.71	mg/L			05/17/22 21:49	1
Fluoride	0.11		0.10	0.026	mg/L			05/17/22 21:49	1
Sulfate	350		1.0	0.76	mg/L			05/17/22 21:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0013	J	0.0020	0.00051	mg/L		05/13/22 10:12	05/14/22 20:25	1
Arsenic	0.0071		0.0010	0.00028	mg/L		05/13/22 10:12	05/14/22 20:25	1
Barium	0.046		0.010	0.0031	mg/L		05/13/22 10:12	05/14/22 20:25	1
Beryllium	ND		0.0010	0.00027	mg/L		05/13/22 10:12	05/14/22 20:25	1
Boron	13		0.80	0.60	mg/L		05/13/22 10:12	05/17/22 14:16	10
Cadmium	ND		0.0010	0.00022	mg/L		05/13/22 10:12	05/14/22 20:25	1
Calcium	180		0.50	0.13	mg/L		05/13/22 10:12	05/14/22 20:25	1
Chromium	ND		0.0020	0.0015	mg/L		05/13/22 10:12	05/14/22 20:25	1
Cobalt	ND		0.00050	0.00026	mg/L		05/13/22 10:12	05/14/22 20:25	1
Lead	ND		0.0010	0.00017	mg/L		05/13/22 10:12	05/14/22 20:25	1
Lithium	0.16		0.0050	0.00083	mg/L		05/13/22 10:12	05/14/22 20:25	1
Molybdenum	0.23		0.0050	0.00061	mg/L		05/13/22 10:12	05/14/22 20:25	1
Selenium	0.00074	J	0.0050	0.00074	mg/L		05/13/22 10:12	05/14/22 20:25	1
Thallium	ND		0.0010	0.00047	mg/L		05/13/22 10:12	05/14/22 20:25	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-7S

Lab Sample ID: 180-137625-4

Date Collected: 05/04/22 12:12

Matrix: Water

Date Received: 05/05/22 10:00

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		05/17/22 04:57	05/17/22 15:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	850		10	10	mg/L			05/09/22 13:01	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	9.8	HF	0.1	0.1	SU			05/06/22 13:00	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.168	U	0.200	0.200	1.00	0.325	pCi/L	05/09/22 09:56	06/07/22 18:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	79.6		40 - 110					05/09/22 09:56	06/07/22 18:13	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.391	U	0.328	0.330	1.00	0.510	pCi/L	05/09/22 10:57	06/07/22 12:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	79.6		40 - 110					05/09/22 10:57	06/07/22 12:04	1
Y Carrier	92.3		40 - 110					05/09/22 10:57	06/07/22 12:04	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	0.559		0.384	0.386	5.00	0.510	pCi/L		06/08/22 12:54	1

Client Sample ID: WAP-7D

Lab Sample ID: 180-137625-5

Date Collected: 05/04/22 12:47

Matrix: Water

Date Received: 05/05/22 10:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	150		1.0	0.71	mg/L			05/17/22 22:17	1
Fluoride	0.36		0.10	0.026	mg/L			05/17/22 22:17	1
Sulfate	890		1.0	0.76	mg/L			05/17/22 22:17	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		05/17/22 09:57	05/19/22 14:06	1
Arsenic	0.0014		0.0010	0.00028	mg/L		05/17/22 09:57	05/19/22 14:06	1
Barium	0.036		0.010	0.0031	mg/L		05/17/22 09:57	05/19/22 14:06	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:57	05/19/22 14:06	1
Boron	12		0.80	0.60	mg/L		05/17/22 09:57	05/20/22 12:06	10
Cadmium	ND		0.0010	0.00022	mg/L		05/17/22 09:57	05/19/22 14:06	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-7D

Lab Sample ID: 180-137625-5

Date Collected: 05/04/22 12:47

Matrix: Water

Date Received: 05/05/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	370		0.50	0.13	mg/L		05/17/22 09:57	05/19/22 14:06	1
Chromium	ND		0.0020	0.0015	mg/L		05/17/22 09:57	05/19/22 14:06	1
Cobalt	0.0046		0.00050	0.00026	mg/L		05/17/22 09:57	05/19/22 14:06	1
Lead	ND		0.0010	0.00017	mg/L		05/17/22 09:57	05/19/22 14:06	1
Lithium	0.057		0.0050	0.00083	mg/L		05/17/22 09:57	05/19/22 14:06	1
Molybdenum	0.24		0.0050	0.00061	mg/L		05/17/22 09:57	05/19/22 14:06	1
Selenium	0.0032	J	0.0050	0.00074	mg/L		05/17/22 09:57	05/19/22 14:06	1
Thallium	ND		0.0010	0.00047	mg/L		05/17/22 09:57	05/19/22 14:06	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		05/17/22 04:57	05/17/22 15:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3800		40	40	mg/L			05/09/22 13:01	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.8	HF	0.1	0.1	SU			05/06/22 13:20	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.396	U	0.341	0.343	1.00	0.512	pCi/L	05/09/22 09:56	06/07/22 18:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	53.4		40 - 110					05/09/22 09:56	06/07/22 18:13	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.540	U	0.493	0.495	1.00	0.780	pCi/L	05/09/22 10:57	06/07/22 12:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	53.4		40 - 110					05/09/22 10:57	06/07/22 12:04	1
Y Carrier	91.2		40 - 110					05/09/22 10:57	06/07/22 12:04	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	0.936		0.599	0.602	5.00	0.780	pCi/L		06/08/22 12:54	1

Client Sample ID: WAP-8S

Lab Sample ID: 180-137625-6

Date Collected: 05/04/22 07:33

Matrix: Water

Date Received: 05/05/22 10:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	56		1.0	0.71	mg/L			05/17/22 22:45	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-8S

Lab Sample ID: 180-137625-6

Date Collected: 05/04/22 07:33

Matrix: Water

Date Received: 05/05/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.10		0.10	0.026	mg/L			05/17/22 22:45	1
Sulfate	200		1.0	0.76	mg/L			05/17/22 22:45	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		05/17/22 09:57	05/19/22 14:50	1
Arsenic	0.015		0.0010	0.00028	mg/L		05/17/22 09:57	05/19/22 14:50	1
Barium	0.17		0.010	0.0031	mg/L		05/17/22 09:57	05/19/22 14:50	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:57	05/19/22 14:50	1
Boron	2.1		0.080	0.060	mg/L		05/17/22 09:57	05/20/22 12:19	1
Cadmium	ND		0.0010	0.00022	mg/L		05/17/22 09:57	05/19/22 14:50	1
Calcium	130		0.50	0.13	mg/L		05/17/22 09:57	05/19/22 14:50	1
Chromium	ND		0.0020	0.0015	mg/L		05/17/22 09:57	05/19/22 14:50	1
Cobalt	0.00069		0.00050	0.00026	mg/L		05/17/22 09:57	05/19/22 14:50	1
Lead	ND		0.0010	0.00017	mg/L		05/17/22 09:57	05/19/22 14:50	1
Lithium	0.035		0.0050	0.00083	mg/L		05/17/22 09:57	05/19/22 14:50	1
Molybdenum	0.26		0.0050	0.00061	mg/L		05/17/22 09:57	05/19/22 14:50	1
Selenium	ND		0.0050	0.00074	mg/L		05/17/22 09:57	05/19/22 14:50	1
Thallium	ND		0.0010	0.00047	mg/L		05/17/22 09:57	05/19/22 14:50	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		05/17/22 04:57	05/17/22 15:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	610		10	10	mg/L			05/09/22 13:01	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.1	HF	0.1	0.1	SU			05/06/22 13:25	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.402		0.210	0.213	1.00	0.252	pCi/L	05/09/22 11:07	06/07/22 08:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.5		40 - 110					05/09/22 11:07	06/07/22 08:20	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.695		0.339	0.345	1.00	0.461	pCi/L	05/09/22 11:20	06/06/22 16:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.5		40 - 110					05/09/22 11:20	06/06/22 16:09	1
Y Carrier	84.1		40 - 110					05/09/22 11:20	06/06/22 16:09	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-8S

Lab Sample ID: 180-137625-6

Date Collected: 05/04/22 07:33

Matrix: Water

Date Received: 05/05/22 10:00

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	1.10		0.399	0.405	5.00	0.461	pCi/L		06/07/22 15:48	1

Client Sample ID: WAP-8I

Lab Sample ID: 180-137625-7

Date Collected: 05/04/22 08:29

Matrix: Water

Date Received: 05/05/22 10:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26		1.0	0.71	mg/L			05/18/22 01:18	1
Fluoride	0.25		0.10	0.026	mg/L			05/18/22 01:18	1
Sulfate	55		1.0	0.76	mg/L			05/18/22 01:18	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		05/17/22 09:57	05/19/22 14:52	1
Arsenic	0.010		0.0010	0.00028	mg/L		05/17/22 09:57	05/19/22 14:52	1
Barium	0.056		0.010	0.0031	mg/L		05/17/22 09:57	05/19/22 14:52	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:57	05/19/22 14:52	1
Boron	0.13		0.080	0.060	mg/L		05/17/22 09:57	05/20/22 12:21	1
Cadmium	ND		0.0010	0.00022	mg/L		05/17/22 09:57	05/19/22 14:52	1
Calcium	44		0.50	0.13	mg/L		05/17/22 09:57	05/19/22 14:52	1
Chromium	ND		0.0020	0.0015	mg/L		05/17/22 09:57	05/19/22 14:52	1
Cobalt	0.00041	J	0.00050	0.00026	mg/L		05/17/22 09:57	05/19/22 14:52	1
Lead	ND		0.0010	0.00017	mg/L		05/17/22 09:57	05/19/22 14:52	1
Lithium	0.0033	J	0.0050	0.00083	mg/L		05/17/22 09:57	05/19/22 14:52	1
Molybdenum	0.035		0.0050	0.00061	mg/L		05/17/22 09:57	05/19/22 14:52	1
Selenium	ND		0.0050	0.00074	mg/L		05/17/22 09:57	05/19/22 14:52	1
Thallium	ND		0.0010	0.00047	mg/L		05/17/22 09:57	05/19/22 14:52	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		05/17/22 04:57	05/17/22 15:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	280		10	10	mg/L			05/09/22 13:01	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.0	HF	0.1	0.1	SU			05/06/22 13:31	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.354		0.201	0.204	1.00	0.245	pCi/L	05/09/22 11:07	06/07/22 08:20	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	86.0		40 - 110	05/09/22 11:07	06/07/22 08:20	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-8I

Lab Sample ID: 180-137625-7

Date Collected: 05/04/22 08:29

Matrix: Water

Date Received: 05/05/22 10:00

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.229	U	0.288	0.289	1.00	0.479	pCi/L	05/09/22 11:20	06/06/22 16:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.0		40 - 110					05/09/22 11:20	06/06/22 16:09	1
Y Carrier	86.4		40 - 110					05/09/22 11:20	06/06/22 16:09	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	0.583		0.351	0.354	5.00	0.479	pCi/L		06/07/22 15:48	1

Client Sample ID: WAP-8D

Lab Sample ID: 180-137625-8

Date Collected: 05/04/22 09:08

Matrix: Water

Date Received: 05/05/22 10:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	24		1.0	0.71	mg/L			05/18/22 01:32	1
Fluoride	0.14		0.10	0.026	mg/L			05/18/22 01:32	1
Sulfate	52		1.0	0.76	mg/L			05/18/22 01:32	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		05/17/22 09:57	05/19/22 15:00	1
Arsenic	0.0031		0.0010	0.00028	mg/L		05/17/22 09:57	05/19/22 15:00	1
Barium	0.080		0.010	0.0031	mg/L		05/17/22 09:57	05/19/22 15:00	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:57	05/19/22 15:00	1
Boron	0.084		0.080	0.060	mg/L		05/17/22 09:57	05/20/22 12:32	1
Cadmium	ND		0.0010	0.00022	mg/L		05/17/22 09:57	05/19/22 15:00	1
Calcium	50		0.50	0.13	mg/L		05/17/22 09:57	05/19/22 15:00	1
Chromium	ND		0.0020	0.0015	mg/L		05/17/22 09:57	05/19/22 15:00	1
Cobalt	ND		0.00050	0.00026	mg/L		05/17/22 09:57	05/19/22 15:00	1
Lead	ND		0.0010	0.00017	mg/L		05/17/22 09:57	05/19/22 15:00	1
Lithium	0.0027	J	0.0050	0.00083	mg/L		05/17/22 09:57	05/19/22 15:00	1
Molybdenum	0.0015	J	0.0050	0.00061	mg/L		05/17/22 09:57	05/19/22 15:00	1
Selenium	ND		0.0050	0.00074	mg/L		05/17/22 09:57	05/19/22 15:00	1
Thallium	ND		0.0010	0.00047	mg/L		05/17/22 09:57	05/19/22 15:00	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		05/17/22 04:57	05/17/22 15:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	220		10	10	mg/L			05/09/22 13:01	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.0	HF	0.1	0.1	SU			05/06/22 13:36	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-8D

Date Collected: 05/04/22 09:08

Date Received: 05/05/22 10:00

Lab Sample ID: 180-137625-8

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
Radium-226	0.115	U	(2σ+/-) 0.215	(2σ+/-) 0.216	1.00	0.376	pCi/L	05/09/22 11:07	06/07/22 08:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.5		40 - 110					05/09/22 11:07	06/07/22 08:20	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
Radium-228	0.396	U	(2σ+/-) 0.290	(2σ+/-) 0.292	1.00	0.438	pCi/L	05/09/22 11:20	06/06/22 16:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.5		40 - 110					05/09/22 11:20	06/06/22 16:09	1
Y Carrier	86.4		40 - 110					05/09/22 11:20	06/06/22 16:09	1

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

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
Combined Radium 226 + 228	0.512		(2σ+/-) 0.361	(2σ+/-) 0.363	5.00	0.438	pCi/L		06/07/22 15:48	1

Client Sample ID: WAP-9S

Date Collected: 05/04/22 09:10

Date Received: 05/05/22 10:00

Lab Sample ID: 180-137625-9

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26		1.0	0.71	mg/L			05/18/22 01:46	1
Fluoride	0.98		0.10	0.026	mg/L			05/18/22 01:46	1
Sulfate	61		1.0	0.76	mg/L			05/18/22 01:46	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		05/17/22 09:57	05/19/22 15:03	1
Arsenic	0.00079	J	0.0010	0.00028	mg/L		05/17/22 09:57	05/19/22 15:03	1
Barium	0.080		0.010	0.0031	mg/L		05/17/22 09:57	05/19/22 15:03	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:57	05/19/22 15:03	1
Boron	0.86		0.080	0.060	mg/L		05/17/22 09:57	05/20/22 12:34	1
Cadmium	ND		0.0010	0.00022	mg/L		05/17/22 09:57	05/19/22 15:03	1
Calcium	66		0.50	0.13	mg/L		05/17/22 09:57	05/19/22 15:03	1
Chromium	ND		0.0020	0.0015	mg/L		05/17/22 09:57	05/19/22 15:03	1
Cobalt	0.00060		0.00050	0.00026	mg/L		05/17/22 09:57	05/19/22 15:03	1
Lead	0.00029	J B	0.0010	0.00017	mg/L		05/17/22 09:57	05/19/22 15:03	1
Lithium	0.010		0.0050	0.00083	mg/L		05/17/22 09:57	05/19/22 15:03	1
Molybdenum	0.15		0.0050	0.00061	mg/L		05/17/22 09:57	05/19/22 15:03	1
Selenium	ND		0.0050	0.00074	mg/L		05/17/22 09:57	05/19/22 15:03	1
Thallium	ND		0.0010	0.00047	mg/L		05/17/22 09:57	05/19/22 15:03	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-9S

Lab Sample ID: 180-137625-9

Date Collected: 05/04/22 09:10

Matrix: Water

Date Received: 05/05/22 10:00

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		05/17/22 04:57	05/17/22 15:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	310		10	10	mg/L			05/09/22 13:01	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.0	HF	0.1	0.1	SU			05/06/22 13:42	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0300	U	0.188	0.188	1.00	0.391	pCi/L	05/09/22 11:07	06/07/22 08:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.0		40 - 110					05/09/22 11:07	06/07/22 08:20	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.515		0.347	0.351	1.00	0.510	pCi/L	05/09/22 11:20	06/06/22 16:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.0		40 - 110					05/09/22 11:20	06/06/22 16:10	1
Y Carrier	86.7		40 - 110					05/09/22 11:20	06/06/22 16:10	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	0.485	U	0.395	0.398	5.00	0.510	pCi/L		06/07/22 15:48	1

Client Sample ID: WAP-9I

Lab Sample ID: 180-137625-10

Date Collected: 05/04/22 10:28

Matrix: Water

Date Received: 05/05/22 10:00

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			05/18/22 02:00	1
Fluoride	0.14		0.10	0.026	mg/L			05/18/22 02:00	1
Sulfate	40		1.0	0.76	mg/L			05/18/22 02:00	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		05/17/22 09:57	05/19/22 15:05	1
Arsenic	0.0053		0.0010	0.00028	mg/L		05/17/22 09:57	05/19/22 15:05	1
Barium	0.10		0.010	0.0031	mg/L		05/17/22 09:57	05/19/22 15:05	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:57	05/19/22 15:05	1
Boron	0.35		0.080	0.060	mg/L		05/17/22 09:57	05/20/22 12:37	1
Cadmium	ND		0.0010	0.00022	mg/L		05/17/22 09:57	05/19/22 15:05	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-9I

Lab Sample ID: 180-137625-10

Date Collected: 05/04/22 10:28

Matrix: Water

Date Received: 05/05/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	48		0.50	0.13	mg/L		05/17/22 09:57	05/19/22 15:05	1
Chromium	ND		0.0020	0.0015	mg/L		05/17/22 09:57	05/19/22 15:05	1
Cobalt	0.00027	J	0.00050	0.00026	mg/L		05/17/22 09:57	05/19/22 15:05	1
Lead	ND		0.0010	0.00017	mg/L		05/17/22 09:57	05/19/22 15:05	1
Lithium	0.0042	J	0.0050	0.00083	mg/L		05/17/22 09:57	05/19/22 15:05	1
Molybdenum	0.018		0.0050	0.00061	mg/L		05/17/22 09:57	05/19/22 15:05	1
Selenium	ND		0.0050	0.00074	mg/L		05/17/22 09:57	05/19/22 15:05	1
Thallium	ND		0.0010	0.00047	mg/L		05/17/22 09:57	05/19/22 15:05	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		05/17/22 04:57	05/17/22 15:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	240		10	10	mg/L			05/09/22 13:01	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.0	HF	0.1	0.1	SU			05/06/22 13:47	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0958	U	0.152	0.153	1.00	0.266	pCi/L	05/09/22 11:07	06/07/22 08:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.8		40 - 110					05/09/22 11:07	06/07/22 08:21	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.633		0.304	0.309	1.00	0.409	pCi/L	05/09/22 11:20	06/06/22 16:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.8		40 - 110					05/09/22 11:20	06/06/22 16:10	1
Y Carrier	93.5		40 - 110					05/09/22 11:20	06/06/22 16:10	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	0.729		0.340	0.345	5.00	0.409	pCi/L		06/07/22 15:48	1

Client Sample ID: WAP-9D

Lab Sample ID: 180-137625-11

Date Collected: 05/04/22 11:50

Matrix: Water

Date Received: 05/05/22 10:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	24		1.0	0.71	mg/L			05/18/22 02:42	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-9D

Lab Sample ID: 180-137625-11

Date Collected: 05/04/22 11:50

Matrix: Water

Date Received: 05/05/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.12		0.10	0.026	mg/L			05/18/22 02:42	1
Sulfate	40		1.0	0.76	mg/L			05/18/22 02:42	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		05/17/22 09:57	05/19/22 15:08	1
Arsenic	0.0069		0.0010	0.00028	mg/L		05/17/22 09:57	05/19/22 15:08	1
Barium	0.22		0.010	0.0031	mg/L		05/17/22 09:57	05/19/22 15:08	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:57	05/19/22 15:08	1
Boron	0.072	J	0.080	0.060	mg/L		05/17/22 09:57	05/20/22 12:40	1
Cadmium	ND		0.0010	0.00022	mg/L		05/17/22 09:57	05/19/22 15:08	1
Calcium	44		0.50	0.13	mg/L		05/17/22 09:57	05/19/22 15:08	1
Chromium	ND		0.0020	0.0015	mg/L		05/17/22 09:57	05/19/22 15:08	1
Cobalt	ND		0.00050	0.00026	mg/L		05/17/22 09:57	05/19/22 15:08	1
Lead	ND		0.0010	0.00017	mg/L		05/17/22 09:57	05/19/22 15:08	1
Lithium	0.0025	J	0.0050	0.00083	mg/L		05/17/22 09:57	05/19/22 15:08	1
Molybdenum	0.0027	J	0.0050	0.00061	mg/L		05/17/22 09:57	05/19/22 15:08	1
Selenium	ND		0.0050	0.00074	mg/L		05/17/22 09:57	05/19/22 15:08	1
Thallium	ND		0.0010	0.00047	mg/L		05/17/22 09:57	05/19/22 15:08	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		05/17/22 04:57	05/17/22 15:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	210		10	10	mg/L			05/09/22 13:01	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1	0.1	SU			05/06/22 13:53	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.209	U	0.164	0.166	1.00	0.233	pCi/L	05/09/22 11:07	06/07/22 08:22	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	91.0		40 - 110	05/09/22 11:07	06/07/22 08:22	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.705		0.331	0.337	1.00	0.447	pCi/L	05/09/22 11:20	06/06/22 16:11	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	91.0		40 - 110	05/09/22 11:20	06/06/22 16:11	1
Y Carrier	90.1		40 - 110	05/09/22 11:20	06/06/22 16:11	1

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Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Client Sample ID: WAP-9D

Lab Sample ID: 180-137625-11

Date Collected: 05/04/22 11:50

Matrix: Water

Date Received: 05/05/22 10:00

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	0.914		0.369	0.376	5.00	0.447	pCi/L		06/07/22 15:48	1

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

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-399074/7
Matrix: Water
Analysis Batch: 399074

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			05/17/22 18:02	1
Fluoride	ND		0.10	0.026	mg/L			05/17/22 18:02	1
Sulfate	ND		1.0	0.76	mg/L			05/17/22 18:02	1

Lab Sample ID: LCS 180-399074/5
Matrix: Water
Analysis Batch: 399074

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	50.9		mg/L		102	80 - 120
Fluoride	2.50	2.52		mg/L		101	80 - 120
Sulfate	50.0	50.5		mg/L		101	80 - 120

Lab Sample ID: 180-137625-1 MS
Matrix: Water
Analysis Batch: 399074

Client Sample ID: WAP-2R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100		50.0	154		mg/L		102	80 - 120
Fluoride	0.40		2.50	2.89		mg/L		100	80 - 120
Sulfate	340		50.0	382	4	mg/L		81	80 - 120

Lab Sample ID: 180-137625-1 MSD
Matrix: Water
Analysis Batch: 399074

Client Sample ID: WAP-2R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100		50.0	143		mg/L		80	80 - 120	7	15
Fluoride	0.40		2.50	2.69		mg/L		91	80 - 120	7	15
Sulfate	340		50.0	355	4	mg/L		27	80 - 120	7	15

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

Lab Sample ID: MB 180-398676/1-A
Matrix: Water
Analysis Batch: 399007

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 398676

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00051	mg/L		05/13/22 10:12	05/14/22 17:30	1
Arsenic	ND		0.0010	0.00028	mg/L		05/13/22 10:12	05/14/22 17:30	1
Barium	ND		0.010	0.0031	mg/L		05/13/22 10:12	05/14/22 17:30	1
Beryllium	ND		0.0010	0.00027	mg/L		05/13/22 10:12	05/14/22 17:30	1
Boron	ND		0.080	0.060	mg/L		05/13/22 10:12	05/14/22 17:30	1
Cadmium	ND		0.0010	0.00022	mg/L		05/13/22 10:12	05/14/22 17:30	1
Calcium	ND		0.50	0.13	mg/L		05/13/22 10:12	05/14/22 17:30	1
Chromium	ND		0.0020	0.0015	mg/L		05/13/22 10:12	05/14/22 17:30	1
Cobalt	ND		0.00050	0.00026	mg/L		05/13/22 10:12	05/14/22 17:30	1
Lead	ND		0.0010	0.00017	mg/L		05/13/22 10:12	05/14/22 17:30	1
Lithium	ND		0.0050	0.00083	mg/L		05/13/22 10:12	05/14/22 17:30	1
Molybdenum	ND		0.0050	0.00061	mg/L		05/13/22 10:12	05/14/22 17:30	1

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QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

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

Lab Sample ID: MB 180-398676/1-A
Matrix: Water
Analysis Batch: 399007

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 398676

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.0050	0.00074	mg/L		05/13/22 10:12	05/14/22 17:30	1
Thallium	ND		0.0010	0.00047	mg/L		05/13/22 10:12	05/14/22 17:30	1

Lab Sample ID: MB 180-398676/1-A
Matrix: Water
Analysis Batch: 399192

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 398676

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.080	0.060	mg/L		05/13/22 10:12	05/17/22 12:23	1

Lab Sample ID: LCS 180-398676/2-A
Matrix: Water
Analysis Batch: 399007

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 398676

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.250	0.258		mg/L		103	80 - 120
Arsenic	1.00	0.965		mg/L		97	80 - 120
Barium	1.00	0.928		mg/L		93	80 - 120
Beryllium	0.500	0.477		mg/L		95	80 - 120
Cadmium	0.500	0.480		mg/L		96	80 - 120
Calcium	25.0	25.3		mg/L		101	80 - 120
Chromium	0.500	0.466		mg/L		93	80 - 120
Cobalt	0.500	0.457		mg/L		91	80 - 120
Lead	0.500	0.479		mg/L		96	80 - 120
Lithium	0.500	0.439		mg/L		88	80 - 120
Molybdenum	0.500	0.482		mg/L		96	80 - 120
Selenium	1.00	0.924		mg/L		92	80 - 120
Thallium	1.00	0.957		mg/L		96	80 - 120

Lab Sample ID: LCS 180-398676/2-A
Matrix: Water
Analysis Batch: 399192

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 398676

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1.25	1.11		mg/L		89	80 - 120

Lab Sample ID: MB 180-399052/1-A
Matrix: Water
Analysis Batch: 399443

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 399052

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00051	mg/L		05/17/22 09:57	05/19/22 15:44	1
Arsenic	ND		0.0010	0.00028	mg/L		05/17/22 09:57	05/19/22 15:44	1
Barium	ND		0.010	0.0031	mg/L		05/17/22 09:57	05/19/22 15:44	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:57	05/19/22 15:44	1
Cadmium	ND		0.0010	0.00022	mg/L		05/17/22 09:57	05/19/22 15:44	1
Calcium	ND		0.50	0.13	mg/L		05/17/22 09:57	05/19/22 15:44	1
Chromium	ND		0.0020	0.0015	mg/L		05/17/22 09:57	05/19/22 15:44	1
Cobalt	ND		0.00050	0.00026	mg/L		05/17/22 09:57	05/19/22 15:44	1
Lead	0.000288	J	0.0010	0.00017	mg/L		05/17/22 09:57	05/19/22 15:44	1

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QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

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

Lab Sample ID: MB 180-399052/1-A
Matrix: Water
Analysis Batch: 399443

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 399052

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0050	0.00083	mg/L		05/17/22 09:57	05/19/22 15:44	1
Molybdenum	ND		0.0050	0.00061	mg/L		05/17/22 09:57	05/19/22 15:44	1
Selenium	ND		0.0050	0.00074	mg/L		05/17/22 09:57	05/19/22 15:44	1
Thallium	ND		0.0010	0.00047	mg/L		05/17/22 09:57	05/19/22 15:44	1

Lab Sample ID: MB 180-399052/1-A
Matrix: Water
Analysis Batch: 399556

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 399052

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.080	0.060	mg/L		05/17/22 09:57	05/20/22 12:24	1

Lab Sample ID: LCS 180-399052/2-A
Matrix: Water
Analysis Batch: 399443

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 399052

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.250	0.243		mg/L		97	80 - 120
Arsenic	1.00	0.896		mg/L		90	80 - 120
Barium	1.00	0.945		mg/L		95	80 - 120
Beryllium	0.500	0.486		mg/L		97	80 - 120
Cadmium	0.500	0.481		mg/L		96	80 - 120
Calcium	25.0	26.8		mg/L		107	80 - 120
Chromium	0.500	0.468		mg/L		94	80 - 120
Cobalt	0.500	0.453		mg/L		91	80 - 120
Lead	0.500	0.482		mg/L		96	80 - 120
Lithium	0.500	0.461		mg/L		92	80 - 120
Molybdenum	0.500	0.489		mg/L		98	80 - 120
Selenium	1.00	0.941		mg/L		94	80 - 120
Thallium	1.00	0.956		mg/L		96	80 - 120

Lab Sample ID: LCS 180-399052/2-A
Matrix: Water
Analysis Batch: 399556

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 399052

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1.25	1.34		mg/L		107	80 - 120

Lab Sample ID: 180-137625-5 MS
Matrix: Water
Analysis Batch: 399443

Client Sample ID: WAP-7D
Prep Type: Total Recoverable
Prep Batch: 399052

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		0.250	0.243		mg/L		97	75 - 125
Arsenic	0.0014		1.00	0.916		mg/L		91	75 - 125
Barium	0.036		1.00	0.956		mg/L		92	75 - 125
Beryllium	ND		0.500	0.462		mg/L		92	75 - 125
Cadmium	ND		0.500	0.461		mg/L		92	75 - 125
Calcium	370		25.0	386	4	mg/L		84	75 - 125
Chromium	ND		0.500	0.449		mg/L		90	75 - 125

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QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

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

Lab Sample ID: 180-137625-5 MS
Matrix: Water
Analysis Batch: 399443

Client Sample ID: WAP-7D
Prep Type: Total Recoverable
Prep Batch: 399052

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	
	Result	Qualifier		Result	Qualifier				Limits	
Cobalt	0.0046		0.500	0.449		mg/L		89	75 - 125	
Lead	ND		0.500	0.476		mg/L		95	75 - 125	
Lithium	0.057		0.500	0.505		mg/L		90	75 - 125	
Molybdenum	0.24		0.500	0.717		mg/L		96	75 - 125	
Selenium	0.0032	J	1.00	0.890		mg/L		89	75 - 125	
Thallium	ND		1.00	0.958		mg/L		96	75 - 125	

Lab Sample ID: 180-137625-5 MS
Matrix: Water
Analysis Batch: 399556

Client Sample ID: WAP-7D
Prep Type: Total Recoverable
Prep Batch: 399052

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	
	Result	Qualifier		Result	Qualifier				Limits	
Boron	12		1.25	13.8	4	mg/L		120	75 - 125	

Lab Sample ID: 180-137625-5 MSD
Matrix: Water
Analysis Batch: 399443

Client Sample ID: WAP-7D
Prep Type: Total Recoverable
Prep Batch: 399052

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec		RPD	
	Result	Qualifier		Result	Qualifier				Limits	RPD	Limit	
Antimony	ND		0.250	0.251		mg/L		100	75 - 125		3	20
Arsenic	0.0014		1.00	0.982		mg/L		98	75 - 125		7	20
Barium	0.036		1.00	1.00		mg/L		97	75 - 125		5	20
Beryllium	ND		0.500	0.469		mg/L		94	75 - 125		1	20
Cadmium	ND		0.500	0.471		mg/L		94	75 - 125		2	20
Calcium	370		25.0	396	4	mg/L		121	75 - 125		2	20
Chromium	ND		0.500	0.466		mg/L		93	75 - 125		4	20
Cobalt	0.0046		0.500	0.474		mg/L		94	75 - 125		5	20
Lead	ND		0.500	0.487		mg/L		97	75 - 125		2	20
Lithium	0.057		0.500	0.511		mg/L		91	75 - 125		1	20
Molybdenum	0.24		0.500	0.735		mg/L		100	75 - 125		2	20
Selenium	0.0032	J	1.00	0.922		mg/L		92	75 - 125		4	20
Thallium	ND		1.00	0.979		mg/L		98	75 - 125		2	20

Lab Sample ID: 180-137625-5 MSD
Matrix: Water
Analysis Batch: 399556

Client Sample ID: WAP-7D
Prep Type: Total Recoverable
Prep Batch: 399052

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec		RPD	
	Result	Qualifier		Result	Qualifier				Limits	RPD	Limit	
Boron	12		1.25	13.8	4	mg/L		118	75 - 125		0	20

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-399000/1-A
Matrix: Water
Analysis Batch: 399123

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 399000

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.00020	0.00013	mg/L		05/17/22 04:57	05/17/22 15:00	1

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QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Method: EPA 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 180-399000/2-A
 Matrix: Water
 Analysis Batch: 399123

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 399000

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00250	0.00253		mg/L		101	80 - 120

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-397958/26
 Matrix: Water
 Analysis Batch: 397958

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 180-397958/3
 Matrix: Water
 Analysis Batch: 397958

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 180-398139/2
 Matrix: Water
 Analysis Batch: 398139

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			05/09/22 13:01	1

Lab Sample ID: LCS 180-398139/1
 Matrix: Water
 Analysis Batch: 398139

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	240		mg/L		96	85 - 115

Lab Sample ID: 180-137625-1 DU
 Matrix: Water
 Analysis Batch: 398139

Client Sample ID: WAP-2R
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	870		878		mg/L		0.5	10

Lab Sample ID: 180-137625-11 DU
 Matrix: Water
 Analysis Batch: 398139

Client Sample ID: WAP-9D
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	210		201		mg/L		3	10

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QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-564511/24-A
Matrix: Water
Analysis Batch: 568823

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564511

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.1833	U	0.211	0.212	1.00	0.343	pCi/L	05/09/22 10:23	06/07/22 18:13	1
Carrier	MB	MB	Limits				Prepared		Analyzed	
Ba Carrier	%Yield	Qualifier	40 - 110				05/09/22 10:23		06/07/22 18:13	
	87.8								1	

Lab Sample ID: LCS 160-564511/1-A
Matrix: Water
Analysis Batch: 569008

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564511

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium-226	11.3	9.113		1.24	1.00	0.405	pCi/L	80	75 - 125
Carrier	LCS	LCS	Limits						
Ba Carrier	%Yield	Qualifier	40 - 110						
	94.8								

Lab Sample ID: MB 160-564517/12-A
Matrix: Water
Analysis Batch: 568823

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564517

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.2084	U	0.169	0.170	1.00	0.242	pCi/L	05/09/22 11:07	06/07/22 08:22	1
Carrier	MB	MB	Limits				Prepared		Analyzed	
Ba Carrier	%Yield	Qualifier	40 - 110				05/09/22 11:07		06/07/22 08:22	
	86.3								1	

Lab Sample ID: LCS 160-564517/1-A
Matrix: Water
Analysis Batch: 568835

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564517

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium-226	11.3	9.367		1.21	1.00	0.343	pCi/L	83	75 - 125
Carrier	LCS	LCS	Limits						
Ba Carrier	%Yield	Qualifier	40 - 110						
	85.8								

Lab Sample ID: LCSD 160-564517/2-A
Matrix: Water
Analysis Batch: 568835

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 564517

Analyte	Spike Added	LCSD Result	LCSD Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER
				Uncert. (2σ+/-)							Limit
Radium-226	11.3	10.48		1.38	1.00	0.390	pCi/L	92	75 - 125	0.43	1

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QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

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

Lab Sample ID: LCSD 160-564517/2-A
 Matrix: Water
 Analysis Batch: 568835

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA
 Prep Batch: 564517

Carrier	LCS D %Yield	LCS D Qualifier	Limits
Ba Carrier	68.8		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-564514/24-A
 Matrix: Water
 Analysis Batch: 568850

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 564514

Analyte	MB MB		Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier								
Radium-228	0.02418	U	0.253	0.253	1.00	0.471	pCi/L	05/09/22 10:57	06/07/22 12:04	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	87.8		40 - 110	05/09/22 10:57	06/07/22 12:04	1
Y Carrier	91.6		40 - 110	05/09/22 10:57	06/07/22 12:04	1

Lab Sample ID: LCS 160-564514/1-A
 Matrix: Water
 Analysis Batch: 568835

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 564514

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	94.8		40 - 110
Y Carrier	84.1		40 - 110

Lab Sample ID: MB 160-564520/12-A
 Matrix: Water
 Analysis Batch: 568747

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 564520

Analyte	MB MB		Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier								
Radium-228	0.7881		0.359	0.367	1.00	0.487	pCi/L	05/09/22 11:20	06/06/22 16:11	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	86.3		40 - 110	05/09/22 11:20	06/06/22 16:11	1
Y Carrier	92.0		40 - 110	05/09/22 11:20	06/06/22 16:11	1

Lab Sample ID: LCS 160-564520/1-A
 Matrix: Water
 Analysis Batch: 568638

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 564520

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits

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QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

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

Lab Sample ID: LCS 160-564520/1-A
Matrix: Water
Analysis Batch: 568638

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564520

Carrier	LCS		Limits
	%Yield	Qualifier	
Ba Carrier	85.8		40 - 110
Y Carrier	84.1		40 - 110

Lab Sample ID: LCSD 160-564520/2-A
Matrix: Water
Analysis Batch: 568638

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 564520

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec		RER
									Limits	RER	Limit
Radium-228	8.56	9.968		1.39	1.00	0.535	pCi/L	116	75 - 125	0.27	1

Carrier	LCSD		Limits
	%Yield	Qualifier	
Ba Carrier	68.8		40 - 110
Y Carrier	86.4		40 - 110

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QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

HPLC/IC

Analysis Batch: 399074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137625-1	WAP-2R	Total/NA	Water	EPA 9056A	
180-137625-2	WAP-3S	Total/NA	Water	EPA 9056A	
180-137625-3	WAP-3D	Total/NA	Water	EPA 9056A	
180-137625-4	WAP-7S	Total/NA	Water	EPA 9056A	
180-137625-5	WAP-7D	Total/NA	Water	EPA 9056A	
180-137625-6	WAP-8S	Total/NA	Water	EPA 9056A	
180-137625-7	WAP-8I	Total/NA	Water	EPA 9056A	
180-137625-8	WAP-8D	Total/NA	Water	EPA 9056A	
180-137625-9	WAP-9S	Total/NA	Water	EPA 9056A	
180-137625-10	WAP-9I	Total/NA	Water	EPA 9056A	
180-137625-11	WAP-9D	Total/NA	Water	EPA 9056A	
MB 180-399074/7	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-399074/5	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-137625-1 MS	WAP-2R	Total/NA	Water	EPA 9056A	
180-137625-1 MSD	WAP-2R	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 398676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137625-1	WAP-2R	Total Recoverable	Water	3005A	
180-137625-2	WAP-3S	Total Recoverable	Water	3005A	
180-137625-3	WAP-3D	Total Recoverable	Water	3005A	
180-137625-4	WAP-7S	Total Recoverable	Water	3005A	
MB 180-398676/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-398676/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 399000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137625-1	WAP-2R	Total/NA	Water	7470A	
180-137625-2	WAP-3S	Total/NA	Water	7470A	
180-137625-3	WAP-3D	Total/NA	Water	7470A	
180-137625-4	WAP-7S	Total/NA	Water	7470A	
180-137625-5	WAP-7D	Total/NA	Water	7470A	
180-137625-6	WAP-8S	Total/NA	Water	7470A	
180-137625-7	WAP-8I	Total/NA	Water	7470A	
180-137625-8	WAP-8D	Total/NA	Water	7470A	
180-137625-9	WAP-9S	Total/NA	Water	7470A	
180-137625-10	WAP-9I	Total/NA	Water	7470A	
180-137625-11	WAP-9D	Total/NA	Water	7470A	
MB 180-399000/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-399000/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 399007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137625-1	WAP-2R	Total Recoverable	Water	EPA 6020A	398676
180-137625-2	WAP-3S	Total Recoverable	Water	EPA 6020A	398676
180-137625-3	WAP-3D	Total Recoverable	Water	EPA 6020A	398676
180-137625-4	WAP-7S	Total Recoverable	Water	EPA 6020A	398676
MB 180-398676/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	398676
LCS 180-398676/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	398676

Eurofins Pittsburgh

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Metals

Prep Batch: 399052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137625-5	WAP-7D	Total Recoverable	Water	3005A	
180-137625-6	WAP-8S	Total Recoverable	Water	3005A	
180-137625-7	WAP-8I	Total Recoverable	Water	3005A	
180-137625-8	WAP-8D	Total Recoverable	Water	3005A	
180-137625-9	WAP-9S	Total Recoverable	Water	3005A	
180-137625-10	WAP-9I	Total Recoverable	Water	3005A	
180-137625-11	WAP-9D	Total Recoverable	Water	3005A	
MB 180-399052/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-399052/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-137625-5 MS	WAP-7D	Total Recoverable	Water	3005A	
180-137625-5 MSD	WAP-7D	Total Recoverable	Water	3005A	

Analysis Batch: 399123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137625-1	WAP-2R	Total/NA	Water	EPA 7470A	399000
180-137625-2	WAP-3S	Total/NA	Water	EPA 7470A	399000
180-137625-3	WAP-3D	Total/NA	Water	EPA 7470A	399000
180-137625-4	WAP-7S	Total/NA	Water	EPA 7470A	399000
180-137625-5	WAP-7D	Total/NA	Water	EPA 7470A	399000
180-137625-6	WAP-8S	Total/NA	Water	EPA 7470A	399000
180-137625-7	WAP-8I	Total/NA	Water	EPA 7470A	399000
180-137625-8	WAP-8D	Total/NA	Water	EPA 7470A	399000
180-137625-9	WAP-9S	Total/NA	Water	EPA 7470A	399000
180-137625-10	WAP-9I	Total/NA	Water	EPA 7470A	399000
180-137625-11	WAP-9D	Total/NA	Water	EPA 7470A	399000
MB 180-399000/1-A	Method Blank	Total/NA	Water	EPA 7470A	399000
LCS 180-399000/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	399000

Analysis Batch: 399192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137625-1	WAP-2R	Total Recoverable	Water	EPA 6020A	398676
180-137625-2	WAP-3S	Total Recoverable	Water	EPA 6020A	398676
180-137625-3	WAP-3D	Total Recoverable	Water	EPA 6020A	398676
180-137625-4	WAP-7S	Total Recoverable	Water	EPA 6020A	398676
MB 180-398676/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	398676
LCS 180-398676/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	398676

Analysis Batch: 399443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137625-5	WAP-7D	Total Recoverable	Water	EPA 6020A	399052
180-137625-6	WAP-8S	Total Recoverable	Water	EPA 6020A	399052
180-137625-7	WAP-8I	Total Recoverable	Water	EPA 6020A	399052
180-137625-8	WAP-8D	Total Recoverable	Water	EPA 6020A	399052
180-137625-9	WAP-9S	Total Recoverable	Water	EPA 6020A	399052
180-137625-10	WAP-9I	Total Recoverable	Water	EPA 6020A	399052
180-137625-11	WAP-9D	Total Recoverable	Water	EPA 6020A	399052
MB 180-399052/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	399052
LCS 180-399052/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	399052
180-137625-5 MS	WAP-7D	Total Recoverable	Water	EPA 6020A	399052
180-137625-5 MSD	WAP-7D	Total Recoverable	Water	EPA 6020A	399052

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QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Metals

Analysis Batch: 399556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137625-5	WAP-7D	Total Recoverable	Water	EPA 6020A	399052
180-137625-6	WAP-8S	Total Recoverable	Water	EPA 6020A	399052
180-137625-7	WAP-8I	Total Recoverable	Water	EPA 6020A	399052
180-137625-8	WAP-8D	Total Recoverable	Water	EPA 6020A	399052
180-137625-9	WAP-9S	Total Recoverable	Water	EPA 6020A	399052
180-137625-10	WAP-9I	Total Recoverable	Water	EPA 6020A	399052
180-137625-11	WAP-9D	Total Recoverable	Water	EPA 6020A	399052
MB 180-399052/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	399052
LCS 180-399052/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	399052
180-137625-5 MS	WAP-7D	Total Recoverable	Water	EPA 6020A	399052
180-137625-5 MSD	WAP-7D	Total Recoverable	Water	EPA 6020A	399052

General Chemistry

Analysis Batch: 397958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137625-1	WAP-2R	Total/NA	Water	EPA 9040C	
180-137625-2	WAP-3S	Total/NA	Water	EPA 9040C	
180-137625-3	WAP-3D	Total/NA	Water	EPA 9040C	
180-137625-4	WAP-7S	Total/NA	Water	EPA 9040C	
180-137625-5	WAP-7D	Total/NA	Water	EPA 9040C	
180-137625-6	WAP-8S	Total/NA	Water	EPA 9040C	
180-137625-7	WAP-8I	Total/NA	Water	EPA 9040C	
180-137625-8	WAP-8D	Total/NA	Water	EPA 9040C	
180-137625-9	WAP-9S	Total/NA	Water	EPA 9040C	
180-137625-10	WAP-9I	Total/NA	Water	EPA 9040C	
180-137625-11	WAP-9D	Total/NA	Water	EPA 9040C	
LCS 180-397958/26	Lab Control Sample	Total/NA	Water	EPA 9040C	
LCS 180-397958/3	Lab Control Sample	Total/NA	Water	EPA 9040C	

Analysis Batch: 398139

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137625-1	WAP-2R	Total/NA	Water	SM 2540C	
180-137625-2	WAP-3S	Total/NA	Water	SM 2540C	
180-137625-3	WAP-3D	Total/NA	Water	SM 2540C	
180-137625-4	WAP-7S	Total/NA	Water	SM 2540C	
180-137625-5	WAP-7D	Total/NA	Water	SM 2540C	
180-137625-6	WAP-8S	Total/NA	Water	SM 2540C	
180-137625-7	WAP-8I	Total/NA	Water	SM 2540C	
180-137625-8	WAP-8D	Total/NA	Water	SM 2540C	
180-137625-9	WAP-9S	Total/NA	Water	SM 2540C	
180-137625-10	WAP-9I	Total/NA	Water	SM 2540C	
180-137625-11	WAP-9D	Total/NA	Water	SM 2540C	
MB 180-398139/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-398139/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-137625-1 DU	WAP-2R	Total/NA	Water	SM 2540C	
180-137625-11 DU	WAP-9D	Total/NA	Water	SM 2540C	

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QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137625-1

Rad

Prep Batch: 564511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137625-1	WAP-2R	Total/NA	Water	PrecSep-21	
180-137625-2	WAP-3S	Total/NA	Water	PrecSep-21	
180-137625-3	WAP-3D	Total/NA	Water	PrecSep-21	
180-137625-4	WAP-7S	Total/NA	Water	PrecSep-21	
180-137625-5	WAP-7D	Total/NA	Water	PrecSep-21	
MB 160-564511/24-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-564511/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 564514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137625-1	WAP-2R	Total/NA	Water	PrecSep_0	
180-137625-2	WAP-3S	Total/NA	Water	PrecSep_0	
180-137625-3	WAP-3D	Total/NA	Water	PrecSep_0	
180-137625-4	WAP-7S	Total/NA	Water	PrecSep_0	
180-137625-5	WAP-7D	Total/NA	Water	PrecSep_0	
MB 160-564514/24-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-564514/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 564517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137625-6	WAP-8S	Total/NA	Water	PrecSep-21	
180-137625-7	WAP-8I	Total/NA	Water	PrecSep-21	
180-137625-8	WAP-8D	Total/NA	Water	PrecSep-21	
180-137625-9	WAP-9S	Total/NA	Water	PrecSep-21	
180-137625-10	WAP-9I	Total/NA	Water	PrecSep-21	
180-137625-11	WAP-9D	Total/NA	Water	PrecSep-21	
MB 160-564517/12-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-564517/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-564517/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 564520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137625-6	WAP-8S	Total/NA	Water	PrecSep_0	
180-137625-7	WAP-8I	Total/NA	Water	PrecSep_0	
180-137625-8	WAP-8D	Total/NA	Water	PrecSep_0	
180-137625-9	WAP-9S	Total/NA	Water	PrecSep_0	
180-137625-10	WAP-9I	Total/NA	Water	PrecSep_0	
180-137625-11	WAP-9D	Total/NA	Water	PrecSep_0	
MB 160-564520/12-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-564520/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-564520/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Eurofins Pittsburgh

301 Alpha Drive RIDC Park
 Pittsburgh, PA 15238
 Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record



Environment Testing
 America

Client Information		Sampler: <u>Jon Hill</u>		Lab PM: Hayes, Ken		Carrier Tracking No(s):		COC No: 180-80665-14503.2											
Client Contact: Mark Breting		Phone: <u>317-473-1325</u>		E-Mail: Ken.Hayes@et.eurofinsus.com		State of Origin:		Page: Page 2 of 3											
Company: Atlas Technical Consultants LLC		PWSID:		Analysis Requested						Job #:									
Address: 7988 Centerpoint Drive Suite 100		Due Date Requested:		<table border="1"> <tr> <td>Field Filtered Sample (Yes/No)</td> <td>Perform MS/MSD (Yes/No)</td> <td>9040C, 9066A, ORGFM_28D</td> <td>6020A, 7470A</td> <td>2640C_Calcd - TDS</td> <td>9315_Ra226, 9320_Ra228</td> </tr> </table>						Field Filtered Sample (Yes/No)	Perform MS/MSD (Yes/No)	9040C, 9066A, ORGFM_28D	6020A, 7470A	2640C_Calcd - TDS	9315_Ra226, 9320_Ra228	Preservation Codes:		Other:	
Field Filtered Sample (Yes/No)	Perform MS/MSD (Yes/No)	9040C, 9066A, ORGFM_28D	6020A, 7470A							2640C_Calcd - TDS	9315_Ra226, 9320_Ra228								
City: Indianapolis		TAT Requested (days):								A - HCL		M - Hexane		B - NaOH		N - None			
State, Zip: IN, 46256		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No								C - Zn Acetate		O - AsNaO2		D - Nitric Acid		P - Na2O4S			
Phone: 864-214-8750(Tel)		PO #:								E - NaHSO4		Q - Na2SO3		F - MeOH		R - Na2S2O3			
Email: mark.breting@atcassociates.com		WO #:		G - Amchlor		S - H2SO4		H - Ascorbic Acid		T - TSP Dodecahydrate									
Project Name: CCR GW Monitoring FB Culley West		Project #: 18016014		I - Ice		U - Acetone		J - DI Water		V - MCAA									
Site:		SSOW#:		K - EDTA		W - pH 4-5		L - EDA		Z - other (specify)									
				Total Number of containers															
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)		Special Instructions/Note:									
						Preservation Code:		N D N D											
<u>WAP-2R</u>		<u>5.4.22</u>		<u>1342</u>		<u>G</u>		<u>W</u>											
<u>WAP 3S</u>				<u>1050</u>															
<u>WAP 3D</u>				<u>1130</u>															
<u>WAP-7S</u>				<u>1212</u>															
<u>WAP-7D</u>				<u>1247</u>															
<u>WAP-8S</u>				<u>733</u>															
<u>WAP-8I</u>				<u>829</u>															
<u>WAP-8D</u>				<u>908</u>															
<u>WAP-9S</u>				<u>910</u>															
<u>WAP-9I</u>				<u>1028</u>															
<u>WAP-9D</u>		<u>↓</u>		<u>1150</u>		<u>↓</u>		<u>↓</u>											
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)													
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> 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: <u>[Signature]</u>		Date/Time: <u>5.4.22 1700</u>		Company: <u>Atlas</u>		Received by: <u>[Signature]</u>		Date/Time: <u>5/5/22 1000</u>		Company: <u>[Signature]</u>									
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:									
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:									
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:															



#202

Virginia Beach

1
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Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-137625-1

Login Number: 137625

List Source: Eurofins Pittsburgh

List Number: 1

Creator: Abernathy, Eric L

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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 <math><6\text{mm}</math> (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: 180-137625-1

Login Number: 137625

List Number: 2

Creator: Worthington, Sierra M

List Source: Eurofins St. Louis

List Creation: 05/06/22 01:13 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.	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	



ANALYTICAL REPORT

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

Laboratory Job ID: 180-137837-1

Client Project/Site: CCR GW Monitoring FB Culley West
Revision: 1

For:

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

Attn: Mark Miesfeldt



Authorized for release by:
6/21/2022 12:14:38 PM

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

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results through



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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

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	5
Certification Summary	6
Sample Summary	8
Method Summary	9
Lab Chronicle	10
Client Sample Results	11
QC Sample Results	13
QC Association Summary	17
Chain of Custody	19
Receipt Checklists	21

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137837-1

Job ID: 180-137837-1

Laboratory: Eurofins Pittsburgh

Narrative

Job Narrative 180-137837-1

Comments

No additional comments.

Revision

The report being provided is a revision of the original report sent on 5/25/2022. The report (revision 1) is being revised due to: Client - To merge Job -2 samples into job -1.

Receipt

The samples were received on 5/10/2022 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 4.1° C.

GC Semi VOA

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

RAD

Methods 903.0, 9315: Radium-226 batch 565412

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. WAP-1 (180-137837-1), (LCS 160-565412/1-A), (LCSD 160-565412/2-A) and (MB 160-565412/16-A)

Method 9320: Radium 228 Batch 160-569652:

The following sample did not meet the requested limit (RL) due to the reduced sample volume attributed to the presence of matrix interference. During preparation the analyst visually noted matrix effects. The data have been reported with this narrative. WAP-1 (180-137837-1)

Methods 904.0, 9320: Radium-228 batch 569652:

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. WAP-1 (180-137837-1), (LCS 160-569652/2-A), (LCSD 160-569652/3-A) and (MB 160-569652/1-A)

Method PrecSep_0: Radium-228 Prep Batch 160-565413

The following sample was prepared at a reduced aliquot due to Matrix: WAP-1 (180-137837-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0: Radium-228 Prep Batch 160-569652

Insufficient sample volume was available to perform a sample duplicate for the following samples: WAP-1 (180-137837-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep_0: Radium-228 Prep Batch 160-569652

The following sample was prepared at a reduced aliquot due to Matrix: WAP-1 (180-137837-1). 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 160-565412

The following sample was prepared at a reduced aliquot due to Matrix: WAP-1 (180-137837-1). 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

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

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137837-1

Job ID: 180-137837-1 (Continued)

Laboratory: Eurofins Pittsburgh (Continued)

General Chemistry

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

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137837-1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
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.
α	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.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137837-1

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	05-29-22
California	State	2891	04-30-22 *
Connecticut	State	PH-0688	05-29-22
Florida	NELAP	E871008	05-29-22
Georgia	State	PA 02-00416	05-29-22
Illinois	NELAP	004375	05-29-22
Kansas	NELAP	E-10350	05-29-22
Kentucky (UST)	State	162013	04-30-22 *
Kentucky (WW)	State	KY98043	05-29-22
Louisiana	NELAP	04041	05-29-22
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	05-29-22
Nevada	State	PA00164	08-31-22
New Hampshire	NELAP	2030	05-29-22
New Jersey	NELAP	PA005	05-29-22
New York	NELAP	11182	05-29-22
North Carolina (WW/SW)	State	434	05-29-22
North Dakota	State	R-227	04-30-22 *
Oregon	NELAP	PA-2151	02-07-23
Pennsylvania	NELAP	02-00416	05-29-22
Rhode Island	State	LAO00362	12-31-21 *
South Carolina	State	89014	05-29-22
Texas	NELAP	T104704528	05-29-22
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	05-25-22
West Virginia DEP	State	142	05-29-22
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.

Eurofins Pittsburgh

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137837-1

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.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137837-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-137837-1	WAP-1	Water	05/06/22 08:35	05/10/22 09:00

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Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137837-1

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.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137837-1

Client Sample ID: WAP-1

Lab Sample ID: 180-137837-1

Date Collected: 05/06/22 08:35

Matrix: Water

Date Received: 05/10/22 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			399568	05/21/22 21:21	LWM	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			25 mL	25 mL	399200	05/18/22 11:08	EMR	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			399450	05/19/22 12:51	RSK	TAL PIT
Instrument ID: DORY										
Total/NA	Prep	7470A			50 mL	50 mL	399384	05/19/22 12:46	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			399476	05/20/22 10:00	RJR	TAL PIT
Instrument ID: HGY										
Total/NA	Analysis	EPA 9040C		1			398727	05/13/22 10:14	HEK	TAL PIT
Instrument ID: PHTITRATOR										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	398280	05/10/22 14:32	JCR	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			499.84 mL	1.0 g	565412	05/13/22 10:29	MS	TAL SL
Total/NA	Analysis	9315		1			569033	06/08/22 22:23	FLC	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			485.02 mL	1.0 g	569652	06/13/22 10:44	MS	TAL SL
Total/NA	Analysis	9320		1			570477	06/17/22 14:05	CLP	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			570889	06/20/22 19:41	EMH	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
 EMH = Elizabeth Hoerchler
 FLC = Fernando Cruz

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137837-1

Client Sample ID: WAP-1

Lab Sample ID: 180-137837-1

Date Collected: 05/06/22 08:35

Matrix: Water

Date Received: 05/10/22 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34		1.0	0.71	mg/L			05/21/22 21:21	1
Fluoride	1.0		0.10	0.026	mg/L			05/21/22 21:21	1
Sulfate	220		1.0	0.76	mg/L			05/21/22 21:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0020		0.0020	0.00051	mg/L		05/18/22 11:08	05/19/22 12:51	1
Arsenic	0.0088		0.0010	0.00028	mg/L		05/18/22 11:08	05/19/22 12:51	1
Barium	0.49		0.010	0.0031	mg/L		05/18/22 11:08	05/19/22 12:51	1
Beryllium	0.00028	J	0.0010	0.00027	mg/L		05/18/22 11:08	05/19/22 12:51	1
Boron	ND		0.080	0.060	mg/L		05/18/22 11:08	05/19/22 12:51	1
Cadmium	ND		0.0010	0.00022	mg/L		05/18/22 11:08	05/19/22 12:51	1
Calcium	160		0.50	0.13	mg/L		05/18/22 11:08	05/19/22 12:51	1
Chromium	0.010		0.0020	0.0015	mg/L		05/18/22 11:08	05/19/22 12:51	1
Cobalt	0.0037		0.00050	0.00026	mg/L		05/18/22 11:08	05/19/22 12:51	1
Lead	0.011	B	0.0010	0.00017	mg/L		05/18/22 11:08	05/19/22 12:51	1
Lithium	0.010	B	0.0050	0.00083	mg/L		05/18/22 11:08	05/19/22 12:51	1
Molybdenum	0.0012	J	0.0050	0.00061	mg/L		05/18/22 11:08	05/19/22 12:51	1
Selenium	ND		0.0050	0.00074	mg/L		05/18/22 11:08	05/19/22 12:51	1
Thallium	ND		0.0010	0.00047	mg/L		05/18/22 11:08	05/19/22 12:51	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		05/19/22 12:46	05/20/22 10:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	770		10	10	mg/L			05/10/22 14:32	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	HF	0.1	0.1	SU			05/13/22 10:14	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.543	U	0.503	0.505	1.00	0.771	pCi/L	05/13/22 10:29	06/08/22 22:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	69.8		40 - 110					05/13/22 10:29	06/08/22 22:23	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.692	U G	0.739	0.742	1.00	1.20	pCi/L	06/13/22 10:44	06/17/22 14:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	75.8		40 - 110					06/13/22 10:44	06/17/22 14:05	1
Y Carrier	83.4		40 - 110					06/13/22 10:44	06/17/22 14:05	1

Eurofins Pittsburgh

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137837-1

Client Sample ID: WAP-1
Date Collected: 05/06/22 08:35
Date Received: 05/10/22 09:00

Lab Sample ID: 180-137837-1
Matrix: Water

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	1.24		0.894	0.898	5.00	1.20	pCi/L		06/20/22 19:41	1

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QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137837-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-399568/7
Matrix: Water
Analysis Batch: 399568

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			05/21/22 12:03	1
Fluoride	ND		0.10	0.026	mg/L			05/21/22 12:03	1
Sulfate	ND		1.0	0.76	mg/L			05/21/22 12:03	1

Lab Sample ID: LCS 180-399568/5
Matrix: Water
Analysis Batch: 399568

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	48.5		mg/L		97	80 - 120
Fluoride	2.50	2.36		mg/L		94	80 - 120
Sulfate	50.0	48.9		mg/L		98	80 - 120

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

Lab Sample ID: MB 180-399200/1-A
Matrix: Water
Analysis Batch: 399450

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 399200

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00051	mg/L		05/18/22 11:08	05/19/22 19:15	1
Arsenic	ND		0.0010	0.00028	mg/L		05/18/22 11:08	05/19/22 19:15	1
Barium	ND		0.010	0.0031	mg/L		05/18/22 11:08	05/19/22 19:15	1
Beryllium	ND		0.0010	0.00027	mg/L		05/18/22 11:08	05/19/22 19:15	1
Boron	ND		0.080	0.060	mg/L		05/18/22 11:08	05/19/22 19:15	1
Cadmium	ND		0.0010	0.00022	mg/L		05/18/22 11:08	05/19/22 19:15	1
Calcium	ND		0.50	0.13	mg/L		05/18/22 11:08	05/19/22 19:15	1
Chromium	ND		0.0020	0.0015	mg/L		05/18/22 11:08	05/19/22 19:15	1
Cobalt	ND		0.00050	0.00026	mg/L		05/18/22 11:08	05/19/22 19:15	1
Lead	0.000178	J	0.0010	0.00017	mg/L		05/18/22 11:08	05/19/22 19:15	1
Lithium	0.00126	J	0.0050	0.00083	mg/L		05/18/22 11:08	05/19/22 19:15	1
Molybdenum	ND		0.0050	0.00061	mg/L		05/18/22 11:08	05/19/22 19:15	1
Selenium	ND		0.0050	0.00074	mg/L		05/18/22 11:08	05/19/22 19:15	1
Thallium	ND		0.0010	0.00047	mg/L		05/18/22 11:08	05/19/22 19:15	1

Lab Sample ID: LCS 180-399200/2-A
Matrix: Water
Analysis Batch: 399450

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 399200

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.250	0.246		mg/L		98	80 - 120
Arsenic	1.00	0.938		mg/L		94	80 - 120
Barium	1.00	0.919		mg/L		92	80 - 120
Beryllium	0.500	0.481		mg/L		96	80 - 120
Boron	1.25	1.21		mg/L		97	80 - 120
Cadmium	0.500	0.469		mg/L		94	80 - 120
Calcium	25.0	26.1		mg/L		105	80 - 120
Chromium	0.500	0.465		mg/L		93	80 - 120
Cobalt	0.500	0.477		mg/L		95	80 - 120

Eurofins Pittsburgh

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137837-1

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

Lab Sample ID: LCS 180-399200/2-A
 Matrix: Water
 Analysis Batch: 399450

Client Sample ID: Lab Control Sample
 Prep Type: Total Recoverable
 Prep Batch: 399200

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	0.500	0.476		mg/L		95	80 - 120
Lithium	0.500	0.472		mg/L		94	80 - 120
Molybdenum	0.500	0.478		mg/L		96	80 - 120
Selenium	1.00	0.915		mg/L		92	80 - 120
Thallium	1.00	0.945		mg/L		95	80 - 120

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-399384/1-A
 Matrix: Water
 Analysis Batch: 399476

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 399384

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		05/19/22 12:46	05/20/22 09:40	1

Lab Sample ID: LCS 180-399384/2-A
 Matrix: Water
 Analysis Batch: 399476

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 399384

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00250	0.00277		mg/L		111	80 - 120

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-398727/3
 Matrix: Water
 Analysis Batch: 398727

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 180-398280/2
 Matrix: Water
 Analysis Batch: 398280

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			05/10/22 14:32	1

Lab Sample ID: LCS 180-398280/1
 Matrix: Water
 Analysis Batch: 398280

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	234		mg/L		93	85 - 115

Eurofins Pittsburgh

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137837-1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-565412/16-A
Matrix: Water
Analysis Batch: 569033

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 565412

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.02927	U	0.122	0.122	1.00	0.243	pCi/L	05/13/22 10:29	06/08/22 22:24	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	99.5		40 - 110					05/13/22 10:29	06/08/22 22:24	1

Lab Sample ID: LCS 160-565412/1-A
Matrix: Water
Analysis Batch: 569033

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 565412

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium-226	11.3	9.666		1.24	1.00	0.253	pCi/L	85	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	96.8		40 - 110					05/13/22 10:29	06/08/22 22:24

Lab Sample ID: LCSD 160-565412/2-A
Matrix: Water
Analysis Batch: 569033

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 565412

Analyte	Spike Added	LCSD Result	LCSD Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER
				Uncert. (2σ+/-)							Limit
Radium-226	11.3	8.897		1.18	1.00	0.273	pCi/L	78	75 - 125	0.32	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits		Prepared	Analyzed	Dil Fac				
Ba Carrier	94.8		40 - 110					06/13/22 10:44	06/17/22 14:02	1	

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-569652/1-A
Matrix: Water
Analysis Batch: 570479

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 569652

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.2531	U	0.337	0.338	1.00	0.562	pCi/L	06/13/22 10:44	06/17/22 14:02	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	97.5		40 - 110					06/13/22 10:44	06/17/22 14:02	1
Y Carrier	86.7		40 - 110		06/13/22 10:44	06/17/22 14:02	1			

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QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137837-1

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

Lab Sample ID: LCS 160-569652/2-A
Matrix: Water
Analysis Batch: 570477

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 569652

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	8.53	7.595		1.08	1.00	0.523	pCi/L	89	75 - 125
LCS LCS									
Carrier	%Yield	Qualifier	Limits						
Ba Carrier	98.3		40 - 110						
Y Carrier	86.0		40 - 110						

Lab Sample ID: LCSD 160-569652/3-A
Matrix: Water
Analysis Batch: 570477

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 569652

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228	8.53	7.525		1.08	1.00	0.532	pCi/L	88	75 - 125	0.03	1
LCSD LCSD											
Carrier	%Yield	Qualifier	Limits								
Ba Carrier	96.3		40 - 110								
Y Carrier	85.2		40 - 110								

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137837-1

HPLC/IC

Analysis Batch: 399568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137837-1	WAP-1	Total/NA	Water	EPA 9056A	
MB 180-399568/7	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-399568/5	Lab Control Sample	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 399200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137837-1	WAP-1	Total Recoverable	Water	3005A	
MB 180-399200/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-399200/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 399384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137837-1	WAP-1	Total/NA	Water	7470A	
MB 180-399384/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-399384/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 399450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137837-1	WAP-1	Total Recoverable	Water	EPA 6020A	399200
MB 180-399200/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	399200
LCS 180-399200/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	399200

Analysis Batch: 399476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137837-1	WAP-1	Total/NA	Water	EPA 7470A	399384
MB 180-399384/1-A	Method Blank	Total/NA	Water	EPA 7470A	399384
LCS 180-399384/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	399384

General Chemistry

Analysis Batch: 398280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137837-1	WAP-1	Total/NA	Water	SM 2540C	
MB 180-398280/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-398280/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 398727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137837-1	WAP-1	Total/NA	Water	EPA 9040C	
LCS 180-398727/3	Lab Control Sample	Total/NA	Water	EPA 9040C	

Rad

Prep Batch: 565412

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137837-1	WAP-1	Total/NA	Water	PrecSep-21	
MB 160-565412/16-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-565412/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCS 160-565412/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

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QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR GW Monitoring FB Culley West

Job ID: 180-137837-1

Rad

Prep Batch: 569652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-137837-1	WAP-1	Total/NA	Water	PrecSep_0	
MB 160-569652/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-569652/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-569652/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

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

Chain of Custody Record

Client Information
 Client Contact: Mark Breiting
 Company: Atlas Technical Consultants LLC
 Address: 7988 Centerpoint Drive Suite 100
 City: Indianapolis
 State, Zip: IN, 46256
 Phone: 864-214-8750 (Tel)
 Email: mark.breiting@atcasociates.com
 Project Name: CCR Groundwater Monitoring FB Cullley
 Site:

Sampler: Hayley Torres
Phone: 812-455-0886
Lab P/N: Hayes, Ken
E-Mail: Ken.Hayes@et.eurofins.com

Carrier Tracking No(s):
State of Origin:

COC No: 180-80666-14505.1
Page: Page 1 of 2
Job #:

Analysis Requested

Due Date Requested:
 TAT Requested (days):
 Compliance Project: Yes No
 PO #: FB-242026, AB-241410
 WO #:
 Project #: 18016014
 SSOV#:

Preservation Codes:
 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
 X - EDTA
 L - EDA
 Other:

Special Instructions/Note:
 1 1-liter collected

Sample Identification

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste, A=air)	Field Filtered Sample (Yes or No)	Perform MRM/MSD (Yes or No)	9040C, 9068A, ORGM, 28P	6020A, 7470A	2640C, Calcd - TDS	9346, Ra226, 9320, Ra228	Total Number of Containers
WAP-1	5-6-22	8:35	G	W	✓	✓	✓	✓	✓		
CGS-AP-5I	5-6-22	11:05	G	W	✓	✓	✓	✓	✓		
CCR-AP-11	5-5-22	12:38	G	W	✓	✓	✓	✓	✓		
Field Blank	5-5-22	8:23	G	W	✓	✓	✓	✓	✓		

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

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

Empty Kit Relinquished by:
 Relinquished by: [Signature]
 Date/Time: 5-6-22 / 14:30
 Company: Atlas

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

Special Instructions/QC Requirements:

Method of Shipment:

Relinquished by:
 Relinquished by: [Signature]
 Date/Time: 5/6/22 9:14
 Company: [Signature]

Custody Seals Intact: Yes No
Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Barcode: 180-137837 Chain of Custody



Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-137837-1

Login Number: 137837

List Number: 1

Creator: Abernathy, Eric L

List Source: Eurofins Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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 <math><6\text{mm}</math> (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: 180-137837-1

Login Number: 137837

List Number: 2

Creator: Booker, Autumn R

List Source: Eurofins St. Louis

List Creation: 05/12/22 11:07 AM

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	