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Submitted to:
Platte River Power Authority
Fort Collins, CO

Submitted by:
AECOM
Fort Collins, CO
60754415
January 31, 2026

2025 Annual Groundwater Monitoring and Corrective Action Report
Ash Monofill
Rawhide Station, Platte River Power Authority

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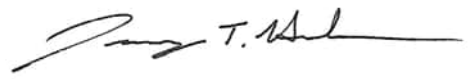
Prepared By
Kara Hoppes, P.G. (WY)
Geologist

Reviewed By
Dennis Connair, C.P.G.
Principal Hydrogeologist



Approved By
Jeremy Hurshman, P.G. (WY)
Project Manager

Acronyms and Abbreviations

95% LCL	95 percent lower confidence limit
ACM	Assessment of Corrective Measure
AECOM	AECOM Technical Services, Inc.
bgs	below ground surface
CCR	Coal Combustion Residuals
CCR units	CCR landfills and surface impoundments
CFR	Code of Federal Regulations
EROP	Engineering Report and Operational Plan
ft/day	foot/feet per day
ft/ft	feet per foot
GWPS	groundwater protection standard
mg/L	milligrams per liter
Platte River	Platte River Power Authority
Rawhide Station or Site	Rawhide Energy Station
SSI	statistically significant increase
SSL	statistically significant level
TDS	total dissolved solids
USEPA	United States Environmental Protection Agency
UPL	upper prediction limit

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Executive Summary

This report summarizes groundwater monitoring and corrective action activities completed between January 1 and December 31, 2025 at the Coal Combustion Residuals (CCR) Ash Monofill at the Platte River Power Authority (Platte River) Rawhide Energy Station (Rawhide Station or Site), as required by 40 Code of Federal Regulations (CFR) Section 257.90(e) of the United States Environmental Protection Agency (USEPA) CCR Rule. The location of the CCR unit and program monitoring network for the CCR unit, including supporting monitoring wells, are illustrated on **Figure 1**. No program monitoring wells were modified or abandoned during the reporting period.

At the start of the 2025 reporting period, Platte River was operating the Ash Monofill under the Assessment monitoring program outlined in 40 CFR Section 257.95. The Assessment monitoring program for the Ash Monofill was initiated on April 30, 2018, upon submittal of an Appendix III Constituents Alternate Source Demonstration which was unable to identify alternate sources for the statistically significant increases (SSIs) of Appendix III constituents downgradient of the Ash Monofill (AECOM 2018b). In the 2025 reporting period, monitoring data reported the detections of the following Appendix III constituents in downgradient monitoring wells at concentrations that represent verified SSIs over background:

- Boron in monitoring wells ASH-02, ASH-03, ASH-05, ASH-07, and ASH-08
- Calcium in monitoring wells ASH-03, ASH-04, ASH-05, ASH-07, and ASH-08
- Chloride in monitoring wells ASH-03, ASH-04, ASH-05, ASH-07, and ASH-08
- Sulfate in monitoring wells ASH-04 and ASH-07
- Total dissolved solids (TDS) in monitoring wells ASH-03, ASH-04, ASH-05, ASH-07, and ASH-08

Per CCR rule requirements, groundwater protection standards (GWPSs) were established for each Appendix IV constituent, and the data were tested for whether the downgradient concentrations represented statistically significant levels (SSLs) above their respective GWPSs. Downgradient wells with a constituent or constituents reported above GWPSs at an SSL are as follows:

- Selenium in monitoring wells ASH-03, ASH-04, and ASH-07.

Other salient points for the 2025 annual reporting period include:

- Semiannual Assessment-mode groundwater monitoring events were conducted in April/May and September/October. Monitoring involved sampling of background monitoring wells and downgradient monitoring wells.
- No program transitions (Detection to Assessment or vice versa) were triggered.
- New characterization wells were installed to enhance the conceptual site model in support of remedy selection for the Ash Monofill. Two characterization wells, ASH-10 and ASH-11, were successfully installed and developed in June 2025. Groundwater was not observed while drilling the third intended characterization well, ASH-12, and the boring was abandoned.

Anticipated activities for the 2026 annual reporting period include:

- Completion of two semi-annual Assessment-mode groundwater monitoring events.
- Statistical evaluation of groundwater data for Appendix III and Appendix IV constituents.
- Conduct a drilling investigation over closed Cell 1 and Cell 2A of the Ash Monofill to assess suitability for potential beneficial re-use.
- Continued evaluation of final remedy selection. Evaluation will include continued assessment of the mitigative effects of the lining of Cell 2B and collecting data to further assess the feasibility of potential supplemental corrective measures including upgrading to impermeable caps for the unlined Ash Monofill cells and mining ash for beneficial re-use.

1.0 Introduction

This is the 2025 Annual Groundwater Monitoring and Corrective Action Report for the Coal Combustion Residuals (CCR) Ash Monofill at the Platte River Power Authority (Platte River) Rawhide Energy Station (Rawhide Station or Site) in Larimer County, Colorado. This report was developed by AECOM Technical Services, Inc. (AECOM) at the request of Platte River. The purpose of this report is to provide a summary of the groundwater monitoring and corrective action activities performed at the Ash Monofill in 2025 to comply with the requirements of Title 40 of the Code of Federal Regulations (CFR) Part 257 Subpart D, known as the CCR Rule, which became effective on October 19, 2015. The Rule provides standards for the disposal of CCR in landfills and surface impoundments (CCR units) and establishes groundwater monitoring requirements in 40 CFR §§ 257.90 through 257.94. In accordance with 40 CFR § 257.90(e), an annual report must document the status of the groundwater monitoring and correction action program (as applicable) for the CCR unit, summarize the key actions completed the previous year, describe any problems encountered, discuss actions taken to resolve the problems, and project key activities for the upcoming year. The annual report will be considered complete when it is placed in the facility operating record by January 31, 2026.

1.1 Report Organization

This Annual Report is divided into eight sections as outlined below and includes text, tables, figures, and appendices. The sections include:

- Section 1.0 includes this introduction and report organization.
- Section 2.0 provides a facility description that includes the facility location and operational history, a description of the CCR unit and a summary of the area and Site hydrogeology.
- Section 3.0 summarizes the groundwater monitoring and corrective action activities performed in 2025, and references appendices to this report that contain detailed documentation of those activities.
- Section 4.0 summarizes the groundwater sampling, analyses and results.
- Section 5.0 provides the statistical evaluation and results.
- Section 6.0 provides a projection of the key activities anticipated in 2026.
- Section 7.0 provides a summary of findings.
- Section 8.0 provides a list of references cited in the report.

The report also includes four appendices that provide supporting documentation of the groundwater monitoring and related activities conducted in 2025:

- Appendix A – Well Installation Records
- Appendix B – Groundwater Sampling Forms
- Appendix C – Laboratory Analytical Reports and Data Validation Reports
- Appendix D – Groundwater Velocity Calculation Sheet
- Appendix E – Statistical Analysis Results and Input/Output Files

2.0 Facility Description

2.1 Facility Location and Operational History

The Rawhide Station encompasses approximately 4,560 acres north of Wellington in Larimer County, Colorado. In addition to the plant buildings, the major feature of the facility is an approximately 500-acre dry-land constructed reservoir of reclaimed wastewater from the City of Fort Collins, also known as Hamilton Reservoir, which contains approximately 15,000 acre-feet of water and is used for cooling processes. The power block area contains the boiler and turbine buildings, the air quality control equipment, and the administrative offices. A rail spur along the northern edge of the Site connects the Rawhide Facility with the mainline of the Burlington Northern Santa Fe Railway Company and is used to deliver coal and construction materials for plant operations. Six generating units are located at the Rawhide Station. Units A, B, C, D, and F are fueled by natural gas, and Unit 1 is fueled by coal mined from the Powder River Basin in Wyoming.

2.2 Ash Monofill Description

The Ash Monofill is located northwest of the main plant and north of Hamilton Reservoir. CCR solid waste from Unit 1 operations is disposed of in the Ash Monofill which is comprised of two cells, Cell 1 and Cell 2, as shown on **Figure 1**. Cell 1 was operated from approximately 1980 to 2007 and is no longer in use. It is capped with native cover soils and has been vegetated but has not undergone final closure. Cell 2 is active, lies to the west of Cell 1, and is progressively advancing northwards as further ash material is placed within the cell. In 2023, a lined Cell 2B was completed, which contains a leachate collection system. CCR waste generated post completion of liner is placed in the lined portion of the cell. The footprint of the lined Cell 2B is presented in **Figure 1**.

2.3 Rawhide Station Hydrogeology

The hydrogeology of the Rawhide Station is discussed in the Engineering Report and Operational Plan (EROP) for the Solid Waste Disposal Facility (Platte River 1980), and in the Final Report, Investigation of the Groundwater Monitoring Program for the Bottom Ash Disposal Site conducted by Lidstone and Anderson Inc. (1989). According to the 1980 EROP, hydrogeology of the Rawhide Station was originally investigated by drilling and installing 23 piezometers in conjunction with the original geotechnical investigation of the Site prior to construction of the facility. Data from the piezometers indicated that a groundwater table exists within the weathered and fractured Pierre Shale bedrock beneath the Site, and in alluvial deposits along Coal Creek. The report indicated that the depth to groundwater varied across the Site from 11 to 67 feet below ground surface (bgs), with groundwater generally flowing to the south-southeast. The shallow water table, as explained in the 1980 EROP, was reported to be directly recharged by infiltration from precipitation and surface runoff.

Following construction and operation of the Rawhide Station, Lidstone and Anderson (1989) concluded that sufficient groundwater data were collected to determine whether a mound had formed in the shallow, weathered, and fractured Pierre Shale in the vicinity of Hamilton Reservoir. After a review of available groundwater level information for Rawhide Station, AECOM concluded that the CCR units present at the Site are located hydraulically upgradient of any groundwater mound created by Hamilton Reservoir.

2.4 Ash Monofill Hydrogeology

The Ash Monofill is constructed within a narrow south-sloping valley with bedrock highs along both sides. The uppermost water-bearing stratum at the Ash Monofill was identified during groundwater monitoring well installation as the weathered and fractured Pierre Shale. Groundwater at the Ash Monofill is under water table conditions and, in 2025, was present at depths from approximately 23 to 37 feet bgs in piezometers PZ-3 through PZ-5, located within the footprint of Cell 2. Groundwater flow is generally from northwest to southeast, from the Ash Monofill towards Hamilton Reservoir, generally

following the topographic slope of the valley. Characterization well ASH-09 was installed in 2023 to inform groundwater flow directly adjacent to Hamilton Reservoir. New characterization wells ASH-10 and ASH-11 were installed in 2025 to verify groundwater flow direction along the margins of the valley occupied by the Ash Monofill. Data collected from ASH-11 helped to verify that the groundwater flow direction to the east/southeast of the Ash Monofill is towards existing monitoring well ASH-08 and Hamilton Reservoir, and not around the western perimeter of the reservoir to the south.

3.0 Groundwater Monitoring Activities in 2025

This section summarizes groundwater monitoring activities conducted in 2025 to comply with the CCR Rule. Groundwater monitoring activities included:

- Measuring groundwater levels at each monitoring well prior to purging and sampling to provide potentiometric (groundwater) surface elevation data.
- Groundwater sampling and analysis of Appendix III and Appendix IV constituents to identify potential releases from the Ash Monofill and to collect supplemental data to update the background statistics. Semi-annual Assessment monitoring sampling events were conducted in April/May and September/October 2025.
- Statistical analysis of the 2025 Appendix III and Appendix IV data to determine if there were any statistically significant increases (SSIs) over background and whether any of the SSIs were above GWPS at a statistically significant level (SSL).
- Installation of new characterization wells to further enhance the conceptual site model. Two of the planned characterization wells, ASH-10 and ASH-11, were successfully installed southeast of the Ash Monofill at a distance of approximately 150 meters from its toe. One of the planned wells, ASH-12, located east of Ash Monofill Cell 1 was drilled but not installed due to the absence of water at its location.

3.1 Water Level Measurements

During each monitoring event, groundwater levels were measured at Ash Monofill network monitoring wells using an electronic water level meter. **Table 1** presents monitoring well survey locations and well construction details including surveyed top of casing results. Groundwater level measurements were recorded to the nearest hundredth (0.01) of a foot. The water level meter cable and sensor were decontaminated at the start of field activities and after use at each well to limit the potential for cross-contamination between wells. Water level measurements were recorded on groundwater sampling forms, provided in **Appendix B**, and are tabulated in **Table 2** for the April/May and September/October 2025 monitoring events.

3.2 Groundwater Sample Collection

Two rounds of semi-annual Appendix III and Appendix IV groundwater samples were collected at the Ash Monofill monitoring network wells (ASH-01, ASH-02, ASH-03, ASH-04, ASH-05, ASH-06, ASH-07, and ASH-08) on April 30 to May 14, 2025, and October 1 to October 2, 2025. The difference in sampling duration between these two monitoring events was due to switching from a single sampling setup in April/May to two sampling setups in October as well as the order in which wells were sampled between the two events. Additional non-Ash Monofill network wells were also sampled during the two monitoring events. ASH-10 and ASH-11 were considered characterization wells during the 2025 monitoring year and were not sampled for incorporation into the statistically evaluated monitoring well network.

Groundwater samples were collected in general accordance with the CCR Ash Monofill Groundwater Detection Monitoring Plan (AECOM 2017). Each well was initially purged using a submersible bladder pump and dedicated polyethylene bonded tubing. Disposable bladder liners were replaced before sampling each monitoring well and the pump casing was decontaminated prior to purging and sampling each monitoring well to avoid cross contamination between wells. The bladder pump and tubing were lowered into the well to a depth within the screen interval that was at least 1 to 2 feet off the bottom of the well to avoid disturbing accumulated sediment in the lower part of the well screen. Monitoring wells were purged using low flow sampling techniques until field parameter measurements of pH, temperature, dissolved oxygen, oxidation reduction potential, turbidity, and conductivity stabilized within ±10 percent and water level drawdown was observed to be less than 0.33 feet for three consecutive readings. If the

well did not stabilize after approximately 45 to 60 minutes of purging, notes were made regarding stabilization of the well and samples were collected. Purge water volumes were also recorded on groundwater sampling forms (**Appendix B**).

After purging, the samples were collected from the bladder pump discharge tubing directly into laboratory-supplied sample containers. Sample water was slowly pumped into each laboratory sample container until the containers were appropriately filled, taking care not to spill the laboratory preservative contained in sample bottles. The sample containers were then labeled and placed on ice in a sample cooler. At the conclusion of the field day, the samples were shipped by overnight carrier to Pace Analytical in Greensburg, Pennsylvania (radium samples only) and Lenexa, Kansas (April/May samples only) or Minneapolis, Minnesota (October samples only) for analysis.

3.3 Analytical Program

Groundwater samples collected from the Ash Monofill wells were analyzed using U.S. Environmental Protection Agency (USEPA) SW-846 methods for Appendix III and Appendix IV constituents. All analytical results are reported as totals (unfiltered). **Table 3** summarizes the 2025 groundwater analytical results for each sampling event. The laboratory analytical reports are provided in **Appendix C**. Analytical methods switched from 6020 to 6010 in 2024 as the laboratory had equipment interference affecting reporting limits for metals results for method 6020. As laboratories were switched from Pace Kansas to Pace Minneapolis in 2025 after the August 2025 monitoring event, laboratory interference issues with method 6020 were resolved and metals analysis returned to method 6020 for the October monitoring event.

Appendix III constituents include:

Chemical Name	Analytical Method
Boron	6010C[1] / 6020B[2]
Chloride	9056A[1] / 300.0[2]
Calcium	6010C[1] / 6020B[2]
Fluoride	9056A[1] / 300.0[2]
pH	Field measurement
Sulfate	9056A[1] / 300.0[2]
TDS	TDS (American Public Health Association et al. [1998] Standard Method 2540C)

TDS = total dissolved solids.

[1] = analytical method used during April/May event only

[2] = analytical method used during October event only

Appendix IV constituents include:

Chemical Name	Analytical Method
Antimony	6020B
Arsenic	6010C[1] / 6020B[2]
Barium	6010C[1] / 6020B[2]
Beryllium	6010C[1] / 6020B[2]
Cadmium	6010C[1] / 6020B[2]
Chromium	6010C[1] / 6020B[2]
Cobalt	6010C[1] / 6020B[2]
Fluoride	9056A[1] / 300.0[2]
Lead	6010C[1] / 6020B[2]
Lithium	6010C[1] / 6020B[2]
Mercury	7470A
Molybdenum	6010C[1] / 6020B[2]
Selenium	6010C[1] / 6020B[2]
Thallium	6020B
Radium 226 and 228, combined	total radium calculation

[1] = analytical method used during April/May event only

[2] = analytical method used during October event only

Total radium calculation is based on radium-226 (Method 903.1) and radium-228 (Method 904.0) results.

3.4 Quality Control/Quality Assurance

Quality assurance and quality control samples collected during sampling activities included one field duplicate for each round of Assessment monitoring, one equipment rinse blank, and one matrix spike/matrix spike duplicate sample. The field duplicate samples were collected by alternating filling sample bottles between the primary and duplicate sample. The equipment rinse blank samples were collected after decontaminating the bladder pump casing or water level meter using procedures outlined in the Groundwater Monitoring Plan (AECOM 2017).

3.5 Data Validation

The laboratory data were validated by AECOM chemists using USEPA guidance. Data validation reports are provided in **Appendix C**.

4.0 Monitoring Results and Evaluation

This section discusses potentiometric surface elevations, groundwater flow rates and directions, and groundwater analytical results for the samples collected during the Assessment monitoring events conducted in April/May and September/October 2025 at the Ash Monofill.

4.1 Groundwater Potentiometric Surface

Groundwater elevations from the Ash Monofill network wells, piezometers located near Cell 2, and characterizations wells ASH-9, ASH-10, and ASH-11 were used to prepare potentiometric surface maps for the 2025 sampling events (**Figure 2** and **Figure 3**). These maps were used to determine that groundwater in the uppermost aquifer beneath the Ash Monofill flows from northwest to southeast towards Hamilton Reservoir at an average hydraulic gradient of 0.0149 feet per foot (ft/ft) between monitoring wells ASH-01 and ASH-02 in 2025. This is similar to the hydraulic gradient of 0.0145 ft/ft between ASH-01 and ASH-02 calculated in 2024 and is consistent with the average gradients previously reported in past annual reports (AECOM 2018a, 2019, 2020, 2021, 2022, 2023, 2024a, 2025).The addition of the lined Cell 2B in the Ash Monofill has changed the surface water interaction with groundwater within the footprint of the unit. Surface water is controlled on the footprint of Cell 2B by the liner system inhibiting infiltration directly upgradient of the former active face of the unlined portion of Cell 2. Because of this control, groundwater elevations have decreased in the downgradient Ash Monofill network wells between 2023 and 2025, post liner construction, as shown on hydrographs presented on **Figure 4**. New characterization wells ASH-10 and ASH-11 help refine the groundwater flow direction south of the Ash Monofill. The flow direction near Ash-11 is east/southeast towards ASH-08 and Hamilton Reservoir and is not flowing around the western perimeter of Hamilton Reservoir to the south.

4.2 Groundwater Flow Rate

An average flow rate was calculated for groundwater in the uppermost aquifer beneath the Ash Monofill using the minimum (0.085 foot per day (ft/day]); maximum (1.44 ft/day); and geometric mean (0.935 [ft/day) hydraulic conductivities determined from slug tests; the average hydraulic gradient of (0.0149 ft/ft) determined between monitoring wells ASH-01 and ASH-02; and an assumed effective porosity of 15 percent for fractured Pierre Shale. The results indicate that groundwater in the uppermost aquifer beneath the Ash Monofill flows at a rate ranging from approximately 0.008419 to 0.1426 ft/day, with a geometric mean of 0.09261 ft/day. The groundwater velocity calculation sheet is attached in **Appendix D**.

4.3 Groundwater Analytical Results

Groundwater samples were collected from network monitoring wells and analyzed for Appendix III and IV parameters as specified in Section 3.3 during the April/May and September/October 2025 sampling events. The samples were analyzed by Pace Analytical in Greensburg, Pennsylvania (radium only) and Lenexa, Kansas (April/May samples only) or Minneapolis, Minnesota (September/October samples only). The laboratory analytical reports are provided in **Appendix C** for inclusion into the facility operating record. The laboratory results were reviewed for completeness against the project-required analytical methods and the chain-of-custody forms and subsequently validated by AECOM. The data were found to be valid and useable with qualification as outlined in the data validation reports provided in **Appendix C**. However, upon further review, laboratory reporting limits for several constituents including those for arsenic, cadmium, and lead were elevated above upper prediction limits (UPLs) for both the September/October 2024 and April/May 2025 sampling events. The decision was made to switch laboratories from Pace Analytical in Lenexa, Kansas to Pace Analytical in Minneapolis, Minnesota after the April/May 2025 sampling event in an effort to achieve reporting limits consistent with project needs.

Table 3 summarizes the groundwater analytical results for each sampling event. Monitoring wells ASH-01, ASH-02, ASH-03, ASH-04, ASH-05, ASH-06, ASH-07, and ASH-08 were sampled during the

2025 events to comply with Assessment monitoring requirements. Final field parameter measurements prior to sample collection are presented on **Table 3**. Field forms are presented in **Appendix B** and present all field parameter measurements collected during the well purging process.

4.4 Groundwater Monitoring System Evaluation

Monitoring wells comprising the Ash Monofill groundwater monitoring network were inspected during each sampling event and were found to be in good condition and capable of supplying a representative groundwater sample. However, historically, wells within the Ash Monofill groundwater monitoring network have had increased turbidity due to the fine-grained composition of the Pierre Shale and may require further well development into the future if turbidity levels return to elevated levels. Ash Monofill network wells in 2025 did not show elevated turbidity field measurements.

Analysis of the 2025 potentiometric surface maps constructed using the depth to groundwater measurements obtained during each sampling event confirm that monitoring wells ASH-01 and ASH-06 are located upgradient of the Ash Monofill and represent background groundwater quality. Monitoring wells ASH-02, ASH-03, ASH-04, ASH-05, ASH-07, and ASH-08 are located downgradient of the Ash Monofill and represent downgradient groundwater quality. New characterization wells ASH-10 and ASH-11 are also downgradient of the Ash Monofill and will contribute to further characterization of groundwater flow trends beyond the footprint of the Ash Monofill.

4.5 Problems Encountered and Actions Taken

No new problems were encountered or actions taken during 2025 aside from the elevated laboratory reporting limits which persisted between the September/October 2024 and April/May 2025 sampling events. A summary of this issue and the mitigative action taken in 2025 is as follows:

- Based on further review of groundwater data, the laboratory reporting limits for several metals including those for arsenic, cadmium, and lead were elevated above UPLs for both the September/October 2024 and April/May 2025 sampling events. In an effort to achieve lower reporting limits consistent with project needs, the decision was made to switch laboratories from Pace Analytical in Lenexa, Kansas to Pace Analytical in Minneapolis, Minnesota. All laboratory reporting limits for the September/October 2025 sampling event were below UPLs and GWPSs and thus considered satisfactory for the assessment of SSIs and SSLs. Reporting limits will continue to be evaluated for project suitability as laboratory data is received from future events.

5.0 Statistical Analysis Results

The Ash Monofill groundwater quality data were evaluated using the certified statistical approach presented in the CCR Ash Monofill Groundwater Detection Monitoring Plan (AECOM 2017). Groundwater quality data were evaluated using an interwell approach that statistically compared constituent concentrations at downgradient monitoring wells to those present at background monitoring wells. For the Ash Monofill, monitoring wells ASH-01 and ASH-06 are designated as the background wells because they are located upgradient of the northern landfill boundary, whereas monitoring wells ASH-02, ASH-03, ASH-04, ASH-05, ASH-07, and ASH-08 are designated as compliance wells because they are located downgradient of the southern Ash Monofill boundary. ASH-10 and ASH-11 were considered groundwater flow characterization wells during the 2025 monitoring year and were not sampled for incorporation into the statistically evaluated monitoring well network.

The statistical analyses were performed in accordance with 40 CFR §§ 257.93(f), 257.93(g), and 257.93(h) and the Statistical Method Certification (AECOM 2017). Using ProUCL Version 5.1, prediction limits (i.e., parametric or nonparametric) with retesting were developed for each constituent based on the frequency of non-detect values and whether the background data for that constituent exhibited a normal, lognormal, or nonparametric distribution. For the statistical analysis, non-detect values were represented as one-half the detection limit. No outliers were identified in the data. Analytical data from the background monitoring wells collected between March 2016 and October 2021 were used to develop a UPL for the background data at 95 percent confidence with the exception of the sulfate UPL which was updated to include data through October 2024. The sulfate UPL was recalculated in 2024 due to an observed increase in sulfate concentrations in Ash Monofill monitoring wells, including in background wells. The updated sulfate UPL of 3,294 milligrams per liter (mg/L) is higher than the UPL of 2,408 mg/L reported previously (AECOM 2022, 2023, 2024a).

Data from the downgradient monitoring wells for the reporting period were compared to the UPL to identify SSIs over background. The results of the statistical analyses, including the Appendix III and IV UPLs, are provided in **Table 4** and **Table 5**, respectively. The ProUCL statistical analysis input files and output files are provided in **Appendix E**.

5.1 Appendix III SSI Determination

The Appendix III results were compared against their respective background UPLs to determine if they exhibited SSIs above background. This comparison indicates that some of the boron, calcium, chloride, sulfate, and TDS concentrations at monitoring wells ASH-02, ASH-03, ASH-04, ASH-05, ASH-07, and ASH-08 have verified SSIs above the background UPLs as shown in the table below. Boron in ASH-04, which exhibited an SSI in 2024, is no longer a verified SSI in 2025 due to results below the background UPL for a minimum of two consecutive events. Sulfate in ASH-05 exceeded its UPL in October 2025 but has not been verified as an SSI by subsequent sampling events to date (**Table 3**). Sampling in 2026 will verify if sulfate is in fact an SSI in ASH-05. Fluoride and pH did not have any verified Appendix III SSIs over background. Appendix III SSIs found during 2025 are generally consistent with those identified during 2024 and prior years. These results confirm that Assessment monitoring is required at the Ash Monofill. Specific events where exceedances were observed, and analytical concentrations of detections can be found in **Table 3**.

Well	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS
ASH-02	SSI	-----	-----	-----	-----	-----	-----
ASH-03	SSI	SSI	SSI	-----	-----	-----	SSI
ASH-04	-----	SSI	SSI	-----	-----	SSI	SSI
ASH-05	SSI	SSI	SSI	-----	-----	-----	SSI
ASH-07	SSI	SSI	SSI	-----	-----	SSI	SSI
ASH-08	SSI	SSI	SSI	-----	-----	-----	SSI

Notes:
----- = concentration below UPL.
SSI = statistically significant increase (Indicating concentrations above the background UPL).

5.2 Appendix IV SSI Determination

The Appendix IV Assessment monitoring results were compared against their respective background UPLs to determine if they exhibited SSIs above background. This comparison indicates that selenium at monitoring wells ASH-03, ASH-04, and ASH-07 exhibit verified SSIs over the background UPL as shown in the table below and in **Table 3**. No other Appendix IV constituents exhibited verified SSIs over background. SSLs were calculated for select constituents and are described in Section 5.4 below.

Well	Sb	As	Ba	Be	Cd	Cr	Co	F	Pb	Li	Hg	Mo	Ra	Se	Th
ASH-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ASH-03	----	----	----	----	----	----	----	----	----	----	----	----	----	SSI	----
ASH-04	----	----	----	----	----	----	----	----	----	----	----	----	----	SSI	----
ASH-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ASH-07	----	----	----	----	----	----	----	----	----	----	----	----	----	SSI	----
ASH-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Notes:
----- = concentration below UPL.
SSI = statistically significant increase (Indicating concentrations above the background UPL).

5.3 Establishment of Groundwater Protection Standards

GWPSs were selected for the Appendix IV constituents using the criteria specified in 40 CFR 257.95(h). The GWPSs listed on **Tables 3**, **4**, and **5** were selected from the USEPA drinking water maximum contaminant limits, groundwater standards provided in 40 CFR 257.95(h)(2), or the background UPLs where they exceeded either of the other standards.

5.4 Appendix IV SSL Determination

Constituents exhibiting an SSI over the background UPL were further evaluated to determine whether they are present at SSLs relative to GWPSs established under the CCR Rule (40 CFR 257.95(d)(2)). SSLs were identified by calculating the 95 percent lower confidence limit (95% LCL) at each well and comparing the 95% LCL to the GWPS. A constituent is present at an SSL over the GWPS if the 95% LCL is greater than the GWPS. Selenium concentrations at monitoring wells ASH-03, ASH-04, and ASH-07 were found at an SSL above the GWPS because their 95% LCLs were greater than the selenium GWPS (0.05 mg/L) as shown in the tables below. Appendix IV constituents that exceed the GWPS at an SSL require to either develop an alternate source demonstration or conduct an assessment of corrective measures (ACM). The ACM prepared by AECOM in 2018 will be updated to reflect current dynamics

discussed below (AECOM 2018b). No other Appendix IV constituents exhibited an SSL above the GWPS.

After the completion of Cell 2B in March 2023, selenium concentrations in monitoring wells ASH-03, ASH-04, and ASH-07 have exhibited a decreasing trend with concentrations observed in ASH-03 and ASH-04 dropping below the GWPS in October 2025. Selenium levels are expected to continue decreasing in wells downgradient of the Ash Monofill due to surface water infiltration upgradient of the former active face of Cell 2A having been reduced or eliminated by the Cell 2B liner. Concentrations will continue to be monitored closely to see how selenium attenuates over time. A trend plot showing selenium concentrations in ASH-03, ASH-04, and ASH-07 before and after completion of Cell 2B is presented as **Figure 5**.

Well	Sb	As	Ba	Be	Cd	Cr	Co	F	Pb	Li	Hg	Mo	Ra	Se	Th
ASH-02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ASH-03	----	----	----	----	----	----	----	----	----	----	----	----	----	SSL	----
ASH-04	----	----	----	----	----	----	----	----	----	----	----	----	----	SSL	----
ASH-05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
ASH-07	----	----	----	----	----	----	----	----	----	----	----	----	----	SSL	----
ASH-08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Notes:

---- = concentration below UPL.

SSL = statistically significant level (indicating 95% LCL exceeded GWPS).

Well No.	Parameter	95% LCL (mg/L)	GWPS (mg/L)
ASH-03	Selenium	0.08925	0.05
ASH-04	Selenium	0.06834	0.05
ASH-07	Selenium	0.06785	0.05

Notes:

constituent's 95% LCL exceeds the GWPS.

GWPS = groundwater protection standard.

95% LCL = 95 percent lower confidence limit.

mg/L = milligrams per liter.

6.0 Projected Activities in 2026

The following activities are anticipated to be performed at the Ash Monofill during calendar year 2026:

- Platte River will continue groundwater monitoring at the Ash Monofill on a semiannual basis for the Appendix III constituents and Appendix IV constituents that were detected as specified in 40 CFR 257.95(d)(1) or 40 CFR 257.95(f). The full list of Appendix IV constituents also will be sampled annually.
- An ACM was prepared in August 2019 to identify potential remedial alternatives for selenium in groundwater at the Ash Monofill. The ACM included a range of cleanup options that included monitored natural attenuation, groundwater pump and treat, and a permeable reactive barrier. The ACM options were presented at a public meeting in November 2019. The ACM is planned for an update in 2026 to include the addition of corrective measures implemented to date as well as updating the site conceptual model regarding groundwater flow direction towards Hamilton reservoir and not around the reservoir. Corrective action activities completed to date at the Ash Monofill include the 2023 construction of Cell 2B which includes a composite liner, leachate collection system, and improved stormwater diversion features (AECOM 2024b). No new ash placement will occur in the unlined Cell 1 or Cell 2A portions of the landfill. In support of final remedy selection and continued evaluation of corrective action completed to date, the following actions are planned for 2026:
    - Groundwater monitoring data from 2023 onwards will continue to be evaluated for the potential positive influence Cell 2B may have on potentiometric surface elevations, groundwater flow, and constituent concentrations to determine if additional corrective action needs to be taken.
    - A drilling investigation will be conducted over Cell 1 and Cell 2A of the Ash Monofill in which geotechnical samples and ash samples will be collected and analyzed to assess suitability for beneficial re-use. Mining for beneficial re-use would remove ash, thereby diminishing source volume for the protection of groundwater.
    - Upgrading the cap of unlined cells with impermeable material will be evaluated as a potential supplemental corrective measure. This upgrade would serve as source area hydraulic control by minimizing surface water contact with constituents in ash that may leach into groundwater.

7.0 Summary and Findings

AECOM, on behalf of Platte River, oversaw groundwater sampling and analysis of Assessment (Appendix III/IV) monitoring at the Ash Monofill. Monitoring data and analytical results collected as part of the semi-annual Detection and Assessment monitoring programs were evaluated to determine potentiometric surface elevations, groundwater flow directions and rates, and whether any constituents were present at an SSI above background UPLs or exceeded GWPSs at an SSL.

The Appendix III monitoring results indicate that some of the boron, calcium, chloride, sulfate, and TDS concentrations at monitoring wells ASH-02, ASH-03, ASH-04, ASH-05, ASH-07, and ASH-08 represent verified SSIs above the background UPLs. Boron in ASH-04, which exhibited an SSI in 2024, is no longer considered an SSI due to concentrations dropping below the UPL for a minimum of two consecutive sampling events. Selenium concentrations in groundwater at monitoring wells ASH-03, ASH-04, ASH-07 were found to represent verified SSIs above background UPLs. Additional statistical analysis found that selenium exceeds the GWPS at an SSL at wells ASH-03, ASH-04, and ASH-07. Though selenium concentrations at ASH-03, ASH-04, and ASH-07 exceeded the GWPS at an SSL in 2025, selenium levels in these wells have exhibited a decreasing trend following the March 2023 completion of Cell 2B and concentrations in wells ASH-03 and ASH-04 in October 2025 dropped below the GWPS. Selenium concentrations are expected to continue decreasing in wells downgradient of the Ash Monofill due to surface water infiltration being inhibited by the Cell 2B liner. Effects of lining Cell 2B including the decreasing trend in groundwater elevations and decreasing trend in selenium concentrations in wells downgradient of the Ash Monofill footprint are shown on **Figure 4** and **Figure 5**, respectively. Platte River will continue Assessment monitoring and evaluation of corrective action for selenium at the Ash Monofill.

Two characterization wells (ASH-10 and ASH-11) and one soil boring (ASH-12) were installed in June 2025 to further enhance the Site conceptual model. Groundwater elevation data collected from ASH-10 and ASH-11 are consistent with data collected at the rest of the Ash Monofill monitoring wells showing groundwater flow towards Hamilton Reservoir.

An ACM was prepared in August 2019 to identify potential remedial alternatives for selenium in groundwater at the Ash Monofill. The ACM included a range of cleanup options that included monitored natural attenuation, groundwater pump and treat, and a permeable reactive barrier. The ACM options were presented at a public meeting in November 2019. The ACM is planned for update in 2026 to include the addition of corrective measures implemented to date as discussed in Section 6.0 as well as updating the site conceptual model regarding groundwater flow direction towards Hamilton Reservoir and not around the reservoir. Constituent concentrations and groundwater elevations around the Ash Monofill will continue to be monitored to evaluate if additional corrective action needs to be taken which include but are not limited to upgrading the cap of completed cells to have better hydraulic control of the closed cells and beneficial re-use of ash which would reduce the CCR source volume available.

8.0 References

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Lidstone and Anderson, Inc. 1989. Investigation of the Ground-Water Monitoring Program for the Bottom Ash Disposal Site. March 1989.

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Tables

Table 1
Ash Monofill Monitoring Well and Piezometer Construction Details
PRPA Ash Monofill Annual Report for 2025
PRPA Rawhide Facility, Colorado

Well Name	Well Classification	Location Relative to Waste Unit	Easting (ft)	Northing (ft)	Ground Surface Elevation (ft amsl)	Top of Casing Elevation (ft amsl)	Total Depth (ft bgs)	Well Screen Interval (ft bgs)	Well Screen Lithology
ASH-01	Network Well	Upgradient Well	3124781.307	1562659.296	5759.29	5760.15	31	26-29	Shale
ASH-02	Network Well	Downgradient Well	3127250.213	1558450.627	5679.25	5679.87	55	51-54	Shale
ASH-03	Network Well	Downgradient Well	3126904.393	1558820.854	5714.21	5717.18	49	39-49	Shale
ASH-04	Network Well	Downgradient Well	3126544.377	1558803.996	5689.58	5692.57	29	19-29	Shale
ASH-05	Network Well	Downgradient Well	3126255.648	1558603.939	5696.68	5698.71	29	19-29	Shale
ASH-06	Network Well	Upgradient Well	3126039.957	1562657.603	5783.23	5786.41	65	50-65	Shale
ASH-07	Network Well	Downgradient Well	3127068.621	1558643.688	5687.58	5690.56	25	15-25	Shale
ASH-08	Network Well	Downgradient Well	3126672.477	1558046.977	5681.22	5684.41	29	19-29	Shale
ASH-09	Characterization Well	Downgradient Well	3127135.72	1558074.37	5674.98	5677.57	24	9-24	Shale
ASH-10	Characterization Well	Downgradient Well	3126583.98	1558395.52	5685.47	5688.21	29	17-27	Shale
ASH-11	Characterization Well	Downgradient Well	3126275.63	1558210.17	5700.27	5703.39	49	39-49	Shale
ASH-12	Characterization Boring	Crossgradient/ Downgradient Soil Boring	3127320.50	1560677.36	5748.30	NA	69	NA	Shale
PZ-3	Characterization Well	Piezometer Within Monofill Footprint	3125767.342	1561418.307	5733.89	5736.97	40	30-40	Shale
PZ-4	Characterization Well	Piezometer Within Monofill Footprint	3124972.680	1561715.131	5740.87	5744.09	40	30-40	Shale
PZ-5	Characterization Well	Piezometer Within Monofill Footprint	3125210.921	1560836.957	5742.25	5745.26	39	29-39	Shale

Notes:

ft amsl = feet above mean sea level; ft bgs = feet below ground surface

NA = not applicable

ASH-01 was installed in December 1980 as MW-1 by Black & Veatch.

ASH-02 was installed in December 1980 as MW-2 by Black & Veatch.

Wells and soil boring surveyed in North American Datum 1983 (NAD83)

Table 2
Ash Monofill Groundwater Level Measurements 2025
PRPA Ash Monofill Annual Report for 2025
PRPA Rawhide Facility, Colorado

Well ID	Sampling Event	Measurement Date	Measuring Point Elevation (ft amsl)	Depth To Water (ft btoc)	Groundwater Elevation (ft amsl)
ASH-01	April/May 2025	4/30/2025	5760.15	14.29	5745.86
ASH-01	Sept./Oct. 2025	10/1/2025	5760.15	14.08	5746.07
ASH-02	April/May 2025	4/28/2025	5679.87	4.71	5675.16
ASH-02	Sept./Oct. 2025	9/29/2025	5679.87	7.21	5672.66
ASH-03	April/May 2025	4/28/2025	5717.18	40.48	5676.70
ASH-03	Sept./Oct. 2025	9/29/2025	5717.18	41.10	5676.08
ASH-04	April/May 2025	4/28/2025	5692.57	15.96	5676.61
ASH-04	Sept./Oct. 2025	9/29/2025	5692.57	17.02	5675.55
ASH-05	April/May 2025	4/28/2025	5698.71	22.87	5675.84
ASH-05	Sept./Oct. 2025	9/29/2025	5698.71	23.66	5675.05
ASH-06	April/May 2025	4/28/2025	5786.41	62.69	5723.72
ASH-06	Sept./Oct. 2025	9/29/2025	5786.41	62.77	5723.64
ASH-07	April/May 2025	4/28/2025	5690.56	15.85	5674.71
ASH-07	Sept./Oct. 2025	9/29/2025	5690.56	18.29	5672.27
ASH-08	April/May 2025	4/28/2025	5684.41	10.49	5673.92
ASH-08	Sept./Oct. 2025	9/29/2025	5684.41	12.46	5671.95
ASH-09	April/May 2025	4/28/2025	5677.57	4.19	5673.38
ASH-09	Sept./Oct. 2025	9/29/2025	5677.57	6.63	5670.94
ASH-10	Sept./Oct. 2025	9/29/2025	5688.21	14.79	5673.42
ASH-11	Sept./Oct. 2025	9/29/2025	5703.39	28.18	5675.21
PZ-3	April/May 2025	4/28/2025	5736.97	32.82	5704.15
PZ-3	Sept./Oct. 2025	9/29/2025	5736.97	33.15	5703.82
PZ-4	April/May 2025	4/28/2025	5744.09	23.36	5720.73
PZ-4	Sept./Oct. 2025	9/29/2025	5744.09	23.75	5720.34
PZ-5	April/May 2025	4/28/2025	5745.26	36.19	5709.07
PZ-5	Sept./Oct. 2025	9/29/2025	5745.26	37.22	5708.04

Notes:
ft = feet
ft amsl = feet above mean sea level
ft btoc = feet below top of casing
ID = identification

Table 3
Ash Monofill Analytical Results and Statistical Summary 2025
PRPA Ash Monofill Annual Report for 2025
PRPA Rawhide Facility, Colorado

				Sample Location	ASH-01	ASH-01	ASH-02	ASH-02	ASH-03	ASH-03	ASH-03	ASH-04	ASH-04	ASH-05	ASH-05	ASH-05	ASH-06	ASH-06	ASH-07	ASH-07	ASH-08	ASH-08
				Sample Type	N	N	N	N	N	FD	N	N	N	N	N	FD	N	N	N	N	N	N
				Sample Date	4/30/2025	10/1/2025	5/14/2025	10/2/2025	5/12/2025	5/12/2025	10/1/2025	5/13/2025	10/2/2025	5/13/2025	10/2/2025	10/2/2025	5/12/2025	10/1/2025	5/13/2025	10/2/2025	5/13/2025	10/1/2025
Chemical Name	**Analytical Method**	**Background Upper Prediciton Limit (UPL)**	**Groundwater Protection Standard (GWPS)**	**Unit**																		
Appendix III Parameters																						
Boron	SW6010[1] / SW6020[2]	0.608	--	mg/L	**0.452**	**0.879**	**1.74**	**2**	**0.78**	**0.757**	**0.711**	**0.602**	**0.264**	**0.833**	**0.737**	**0.742**	**0.304**	**0.425**	**0.622**	**0.603**	**0.803**	**0.8**
Calcium	SW6010[1] / SW6020[2]	380.55	--	mg/L	**368**	**395**	**150**	**165**	**454**	**446**	**415**	**414**	**129**	**462**	**399**	**361**	**25.8**	**374**	**400**	**485**	**412**	**447**
Chloride	EPA9056[1] / EPA300.0[2]	27.74	--	mg/L	**18.9**	**17.3**	**50.9**	**22.3**	**102**	**106**	**96.0**	**170**	**136**	**253**	**245**	**244**	**8.7**	**9.1**	**211**	**117**	**35.5**	**37.2**
Fluoride	EPA9056[1] / EPA300.0[2]	1.49	--	mg/L	< 0.20	**0.12**	< 0.20	**0.17**	< 0.20	< 0.20	**0.10**	**0.32**	**0.17**	< 0.20	**0.14**	**0.14**	**0.54**	**0.70**	< 0.20	**0.11**	< 0.20 UJ	**0.10**
Sulfate	EPA9056[1] / EPA300.0[2]	3294	--	mg/L	**2170**	**1950**	**2720 J-**	**2200**	**3250**	**2490**	**2940**	**4030**	**4030**	**2750**	**3360**	**3660**	**77.8**	**73.1**	**3420**	**4210 J+**	**3690 J-**	**2490**
Total Dissolved Solids	SM2540C	3900	--	mg/L	**3270**	**3680**	**3400**	**3370**	**5470**	**5430**	**5110 J**	**5970**	**5210 J**	**5000**	**4440 J**	**4650 J**	**471**	**422**	**6200**	**5430 J**	**4610**	**4410 J**
Appendix IV Parameters																						
Antimony	SW6020	0.004	0.006	mg/L	<0.001	<0.001	<0.003	<0.001	<0.003	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001
Arsenic	SW6010[1] / SW6020[2]	0.004	0.01	mg/L	<0.01	<0.001	<0.01	<0.001	<0.01	<0.01	<0.001	<0.01	**0.0018**	<0.01	<0.001	<0.001	<0.01	<0.001	<0.01	<0.001	<0.01	<0.001
Barium	SW6010[1] / SW6020[2]	0.070	2.0	mg/L	**0.0103**	**0.015**	**0.0175**	**0.0177**	**0.0122**	**0.011**	**0.0099**	**0.0096**	**0.0478**	**0.0132**	**0.0071**	**0.0071**	**0.0333**	**0.0095**	**0.0098**	**0.0108**	**0.0106**	**0.014**
Beryllium	SW6010[1] / SW6020[2]	0.002	0.004	mg/L	<0.001	<0.0004	<0.001	<0.0004	<0.001	<0.001	<0.0004	<0.001	<0.0004	<0.001	<0.0004	<0.0004	<0.001	<0.0004	<0.001	<0.0004	<0.001	<0.0004
Cadmium	SW6010[1] / SW6020[2]	0.002	0.005	mg/L	<0.005	<0.00016	<0.005	<0.00016	<0.005	<0.005	<0.00016	<0.005	<0.00016	<0.005	<0.00016	<0.00016	<0.005	<0.00016	<0.005	<0.00016	<0.005	<0.00016
Chromium	SW6010[1] / SW6020[2]	0.033	0.10	mg/L	<0.005	<0.004	<0.005	<0.004	<0.005	<0.005	<0.004	<0.005	**0.0042**	<0.005	<0.004	<0.004	<0.005	<0.004	<0.005	<0.004	<0.005	<0.004
Cobalt	SW6010[1] / SW6020[2]	0.042	0.042 (0.006)	mg/L	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	**0.0013**	<0.005	**0.0017**	<0.005	<0.001	<0.001	<0.005	<0.001	<0.005	<0.001	<0.005	<0.001
Fluoride	EPA9056[1] / EPA300.0[2]	1.49	4.0	mg/L	< 0.20	**0.12**	< 0.20	**0.17**	< 0.20	< 0.20	**0.10**	**0.32**	**0.17**	< 0.20	**0.14**	**0.14**	**0.54**	**0.70**	< 0.20	**0.11**	< 0.20 UJ	**0.10**
Lead	SW6010[1] / SW6020[2]	0.004	0.015	mg/L	<0.01	<0.001	<0.01	<0.001	<0.01	<0.01	<0.001	<0.01	**0.0025**	<0.01	<0.001	<0.001	<0.01	<0.001	<0.01	<0.001	<0.01	<0.001
Lithium	SW6010[1] / SW6020[2]	0.549	0.549 (0.040)	mg/L	**0.411**	**0.311**	**0.251**	**0.255**	**0.38**	**0.364**	**0.317**	**0.331**	**0.065**	**0.285**	**0.3**	**0.302**	**0.0551**	**0.36**	**0.447**	**0.479**	**0.264**	**0.27**
Mercury	EPA7470	0.0002	0.002	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	SW6010[1] / SW6020[2]	0.052	0.10	mg/L	<0.02	<0.001	<0.02	**0.0065**	<0.02	<0.02	**0.0014**	<0.02	**0.0032**	<0.02	**0.001**	**0.001**	<0.02	<0.001	<0.02	**0.0011**	<0.02	<0.001
Radium, total	TRC	6.18	6.18 (5.0)	pCi/L	**1.29**	**0.484**	**0.840**	**0.864**	**0.459**	**1.12**	**1.19**	**0.804**	**2.21**	**0.816**	**1.02**	**1.50**	**0.917**	**1.13**	**1.17**	**2.09**	**1.48**	**1.000**
Radium-226	E903.1	3.09	5.0	pCi/L	**0.350 J**	**-0.0490 J**	**-0.568**	**0.383**	**0.200**	**0.218**	**0.107 J**	**0.117**	**0.960 J**	**0.367**	**0.112 J**	**0.725 J**	**0.356**	**0.355 J**	**0.230**	0 J	**0.590**	**-0.256 J**
Radium-228	E904.0	3.09	5.0	pCi/L	**0.939**	**0.484**	**0.840**	**0.481 J**	**0.259**	**0.906**	**1.08**	**0.687**	**1.25**	**0.449**	**0.912**	**0.770**	**0.561**	**0.771**	**0.942**	**2.09**	**0.888**	**1.00**
Selenium	SW6010[1] / SW6020[2]	0.039	0.05	mg/L	<0.015	**0.0086**	<0.015	<0.001	**0.113**	**0.122**	**0.0469**	**0.0709**	**0.0147**	<0.015	<0.001	<0.001	**0.0306**	<0.001	**0.0618**	**0.0703**	<0.015	**0.008**
Thallium	SW6020	0.004	0.004 (0.002)	mg/L	<0.001	<0.0002	<0.003	<0.0002	<0.003	<0.001	<0.0002	<0.003	<0.0002	<0.001	<0.0002	<0.0002	<0.001	<0.0002	<0.003	<0.0002	<0.001	<0.0002
Field Parameters																						
Temperature	Field Measure	--	--	Degrees C	**11.7**	**12.6**	**15.2**	**13.2**	**13.5**	**13.5**	**13.1**	**13.6**	**12.7**	**14.9**	**13.7**	**13.7**	**16.3**	**15.0**	**13.1**	**14.1**	**12.7**	**12.5**
pH	Field Measure	8.84	--	SU	**7.13**	**7.08**	**7.70**	**7.66**	**6.96**	**6.96**	**7.04**	**7.23**	**7.41**	**6.89**	**7.13**	**7.13**	**7.83**	**8.16**	**6.86**	**7.04**	**6.80**	**7.01**
Specific Conductivity	Field Measure	--	--	µs/cm	**3441**	**3550**	**2713**	**3862**	**3878**	**3878**	**5098**	**3530**	**5030**	**3053**	**4672**	**4672**	**499.8**	**627**	**3625**	**5125**	**2800**	**4304**
ORP	Field Measure	--	--	mV	**123.7**	**163.3**	**127.1**	**133.9**	**106.8**	**106.8**	**100.4**	**66.1**	**210.9**	**113.8**	**178.9**	**178.9**	**115.4**	**68.3**	**115.3**	**112.0**	**93.7**	**-10.8**
Dissolved Oxygen	Field Measure	--	--	mg/L	**3.71**	**0.41**	**5.38**	**1.32**	**0.24**	**0.24**	**0.42**	**0.43**	**1.21**	**0.58**	**0.34**	**0.34**	**5.29**	**8.56**	**1.57**	**0.22**	**0.33**	**0.75**
Turbidity	Field Measure	--	--	NTU	**5.20**	**4.24**	**3.93**	**3.93**	**34.7**	**34.7**	**30.9**	**3.90**	**7.76**	**8.55**	**10.1**	**10.1**	**0.85**	**2.37**	**2.99**	**21.3**	**4.30**	**2.69**

Notes:
C = Celsius
µs/cm = microSiemens per centimeter
mg/L = milligrams per liter
mV = millivolts
NTU = nephelometric turbidity units
pCi/L = picoCuries per liter
SU = standard units
FD = field duplicate
N = primary sample
< = less than reporting limit
-- = not analyzed
J = estimated concentration (+ = biased high, - = biased low)
U = not detected
ORP = oxidation reduction potential
[1] = analytical method used during April/May event only
[2] = analytical method used during October event only
Bold **black** value is detected result
Bold **red** value exceeds groundwater protection standard (GWPS)
SSI = statistically significant increase over background upper prediction limit (UPL)
SSL = statistically significant level above the GWPS

The GWPS represents the maximum contaminant limits (MCLs) outlined by 40 CFR 257.95 (h), unless the background UPL exceeds the MCL, in which case the GWPS will be represented by the UPL. For GWPSs represented by the UPL, the MCL is presented next to it in parentheses.

Table 4
Ash Monofill Appendix III Background Upper Prediction Limits
PRPA Ash Monofill Annual Report for 2025
PRPA Rawhide Facility, Colorado

Parameter (Units)	Number of Samples	Percent Non-detects	Normal or Lognormal Distribution?	Statistical Test	Background UPL
Boron (mg/L)	28	0	No/No	Nonparametric	0.608
Calcium (mg/L)	28	0	No/No	Nonparametric	380.55
Chloride (mg/L)	26	0	No/No	Nonparametric	27.74
Fluoride (mg/L)	28	25	Yes/Yes	Parametric	1.49
pH (standard units)	26	0	No/Yes	Parametric	8.84
Sulfate (mg/L)	38	2.6	No/No	Nonparametric	3,294
Total Dissolved Solids (mg/L)	28	0	No/No	Nonparametric	3,900

Notes:

mg/L = milligrams per liter

UPL = upper prediction limit

UPLs calculated using data from September 2016 through October 2021 except for sulfate whose UPL was recalculated using data from September 2016 through October 2024.

Table 5
Ash Monofill Appendix IV Background Upper Prediction Limits
PRPA Ash Monofill Annual Report for 2025
PRPA Rawhide Facility, Colorado

Parameter (Units)	Number of Samples	Percent Non-detects	Normal or Lognormal Distribution?	Statistical Test	Background UPL	GWPS
Antimony (mg/L)	28	100	No/No	MDL	0.004	0.006
Arsenic (mg/L)	28	85	No/No	MDL	0.004	0.01
Barium (mg/L)	28	0	No/No	Nonparametric	0.070	2.0
Beryllium (mg/L)	28	100	No/No	MDL	0.002	0.004
Cadmium (mg/L)	28	100	No/No	MDL	0.002	0.005
Chromium (mg/L)	28	68	Yes/Yes	Nonparametric	0.033	0.1
Cobalt (mg/L)	28	100	No/No	MDL	0.042	0.042 (0.006)
Fluoride (mg/L)	28	25	Yes/Yes	Parametric	1.49	4.0
Lead (mg/L)	28	93	No/No	MDL	0.004	0.015
Lithium (mg/L)	28	0	No/No	Nonparametric	0.549	0.549 (0.040)
Mercury (mg/L)	28	100	No/No	MDL	0.0002	0.002
Molybdenum (mg/L)	28	57	Yes/Yes	Nonparametric	0.052	0.1
Selenium (mg/L)	28	36	No/No	Nonparametric	0.039	0.05
Thallium (mg/L)	28	100	No/No	MDL	0.004	0.004 (0.002)
Radium-226+228 Combined (pCi//L)	24	8	No/Yes	Parametric	3.09	6.18 (5.0)

Notes:
GWPS = groundwater protection standard
mg/L = milligrams per liter
pCi/L = picoCuries per liter
MDL = background limit set at maximum detection or reporting limit
Upper Prediction limits calculated using data from September 2016 through October 2021

All of the antimony, beryllium, cadmium, chromium, cobalt, mercury, molybdenum, and thallium results in the background monitoring wells were reported as not detected or detected less than 5 percent. For these constituents, the maximum detection or reporting limit was selected as the UPL per the double quantification rule in the U.S. Environmental Protection Agency's Unified Statistical Guidance (2009).

The GWPS represents the maximum contaminant limits (MCLs) outlined by 40 CFR 257.95 (h), unless the background UPL exceeds the MCL, in which case the GWPS will be represented by the UPL. For GWPSs represented by the UPL, the MCL is presented below it in parentheses.

Figures

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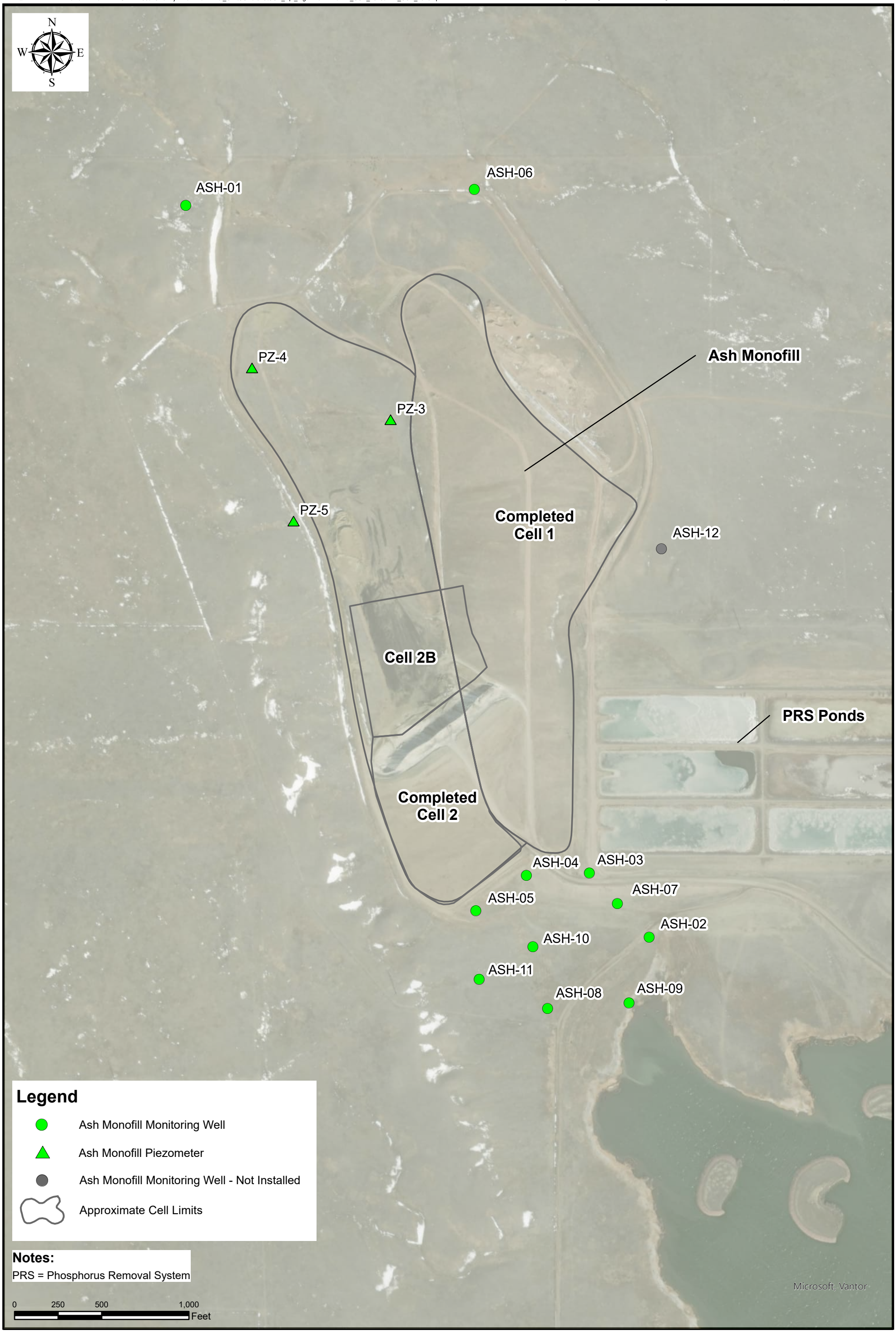

CCR 2025 Annual Groundwater Report
Platte River Power Authority Wellington, CO
Project No.: 60754415 Date: 2026-01-26

Rawhide Energy Station
Ash Monitoring Well Network

AECOM

Figure 1

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N
W E
S

ASH-01
5745.86

ASH-06
5723.72

5745
5740
5735
5730
5725
5720
5715
5710
5705
5700
5695
5690
5685
5680
5675

PZ-4
5720.73

PZ-3
5704.15

PZ-5
5709.07

Ash Monofill

PRS Ponds

ASH-04
5676.61

ASH-03
5676.70

ASH-07
5674.71

ASH-05
5675.84

ASH-02
5675.16

ASH-08
5673.92

ASH-09
5673.38

Legend

- Approximate Cell Limits
- Ash Monofill Monitoring Well
- Ash Monofill Piezometer
- Groundwater Contours
- Groundwater Flow Direction

Notes:
PRS = Phosphorus Removal System

0 250 500 1,000 Feet

CCR 2025 Annual Groundwater Report
Platte River Power Authority Wellington, CO
Project No.: 60754415 Date: 2026-01-26

Rawhide Energy Station
Ash Monitoring Well Network
April 2025 Potentiometric Surface Map

AECOM

Figure 2

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Project Management Initials: Design RLH Drawn AGS Checked JH Approved VK ANSI B 11" x 17"

N
W E
S

ASH-01
5746.07

ASH-06
5723.64

5745
5740
5735
5730
5725
5720
5715
5710
5705
5700
5695
5690
5685
5680
5675

PZ-4
5720.34

PZ-3
5703.82

PZ-5
5708.04

Ash Monofill

ASH-12

PRS Ponds

ASH-04
5675.55

ASH-03
5676.08

ASH-07
5672.27

ASH-05
5675.05

ASH-10
5673.42

ASH-02
5672.66

ASH-11
5675.21

ASH-08
5671.95

ASH-09
5670.94

Legend

- Approximate Cell Limits
- Ash Monofill Monitoring Well
- Ash Monofill Piezometer
- Ash Monofill Monitoring Well - Not Installed
- Groundwater Contours
- Groundwater Flow Direction

Notes:
PRS = Phosphorus Removal System

0 250 500 1,000 Feet

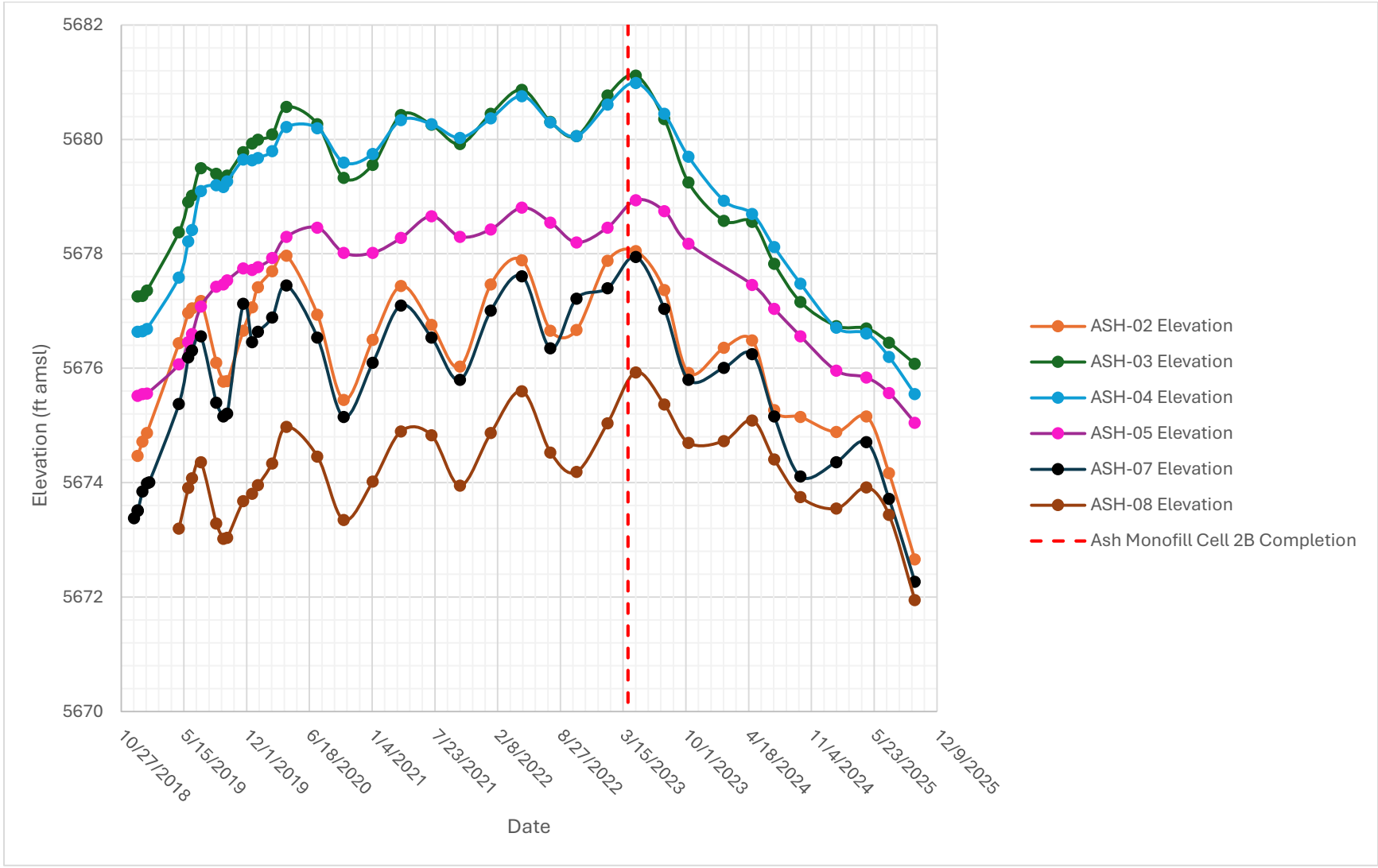
CCR 2025 Annual Groundwater Report
Platte River Power Authority Wellington, CO
Project No.: 60754415 Date: 2026-01-26

Rawhide Energy Station
Ash Monitoring Well Network
September/October 2025 Potentiometric Surface Map

AECOM

Figure 3

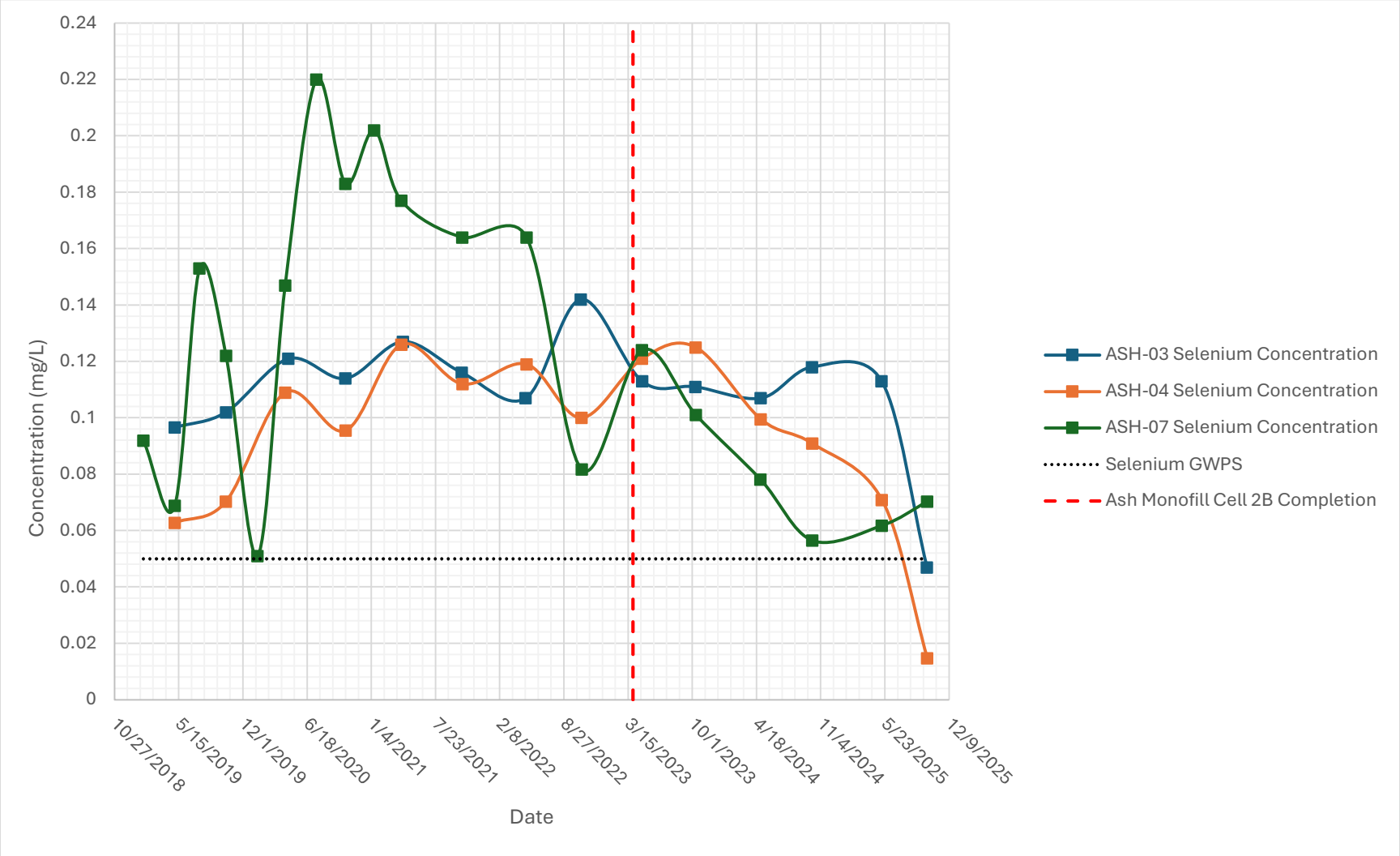
Figure 4: Ash Monofill Downgradient Groundwater Elevations Following Cell 2B Completion



Notes:

ft amsl = feet above mean sea level

Figure 5: Ash Monofill Selenium Concentrations Following Cell 2B Completion



Notes:

GWPS = groundwater protection standard
mg/L = milligrams per liter

Appendix A

Well Installation Records

AECOM

Boring Log

Project Name:	Rawhide Energy Station
Client:	Platte River Power Authority
Project Number:	60754422

Boring ID: ASH-10

Page 1 of 2

Date(s) Drilled	6/3/2025	**Logged By**	Chris Ahrendt	**Checked By**	M. Swift
Drilling Method	Hollow Stem Auger	**Diameter of Borehole (in)**	8 1/4 inch outer diameter		
Drill Rig Type	CME 75	**Drilling Company**	Terracon		
Driller's Name	Albert and Alex B.	**Sampler Type**	Continuous core barrel		
Description of Boring Location					

Total Depth of Borehole (ft)	29
Depth to Water (bgs)	19
Ground Surface Elevation (ft-msl)	5685.47
Groundwater Elevation (ft-msl)	
Measuring Point Elevation (ft-msl)	
Northing	1558395.52
Easting	3126583.98

Depth (ft-bgs)	SAMPLES: Run Number	SAMPLES: Recovery (%)	SAMPLES: Sample ID	USCS Symbol	PID (ppm)	MATERIAL DESCRIPTION
1–4	1	NA	No samples collected	NA	NA	**0-5ft** Potholed.
5–9	2	0%				**5-9ft -** no recovery
10–14	3	100%		CL		**9-14ft** Brown, medium stiff, clay, moist, nonplastic, noncohesive, thinly bedded mottled brown and orange.
15–19	4	30%				**14-19ft** Stiff, brown, clay, moist, nonplastic, noncohesive, blocky.
19–20	5	100%				**19-23ft** Same as above, wet 19-19.5 ft.

Well Construction

- Portland Cement
- 3/8" bentonite chips
- 10/20 silica sand
- PVC Riser, Schedule 40 (0-17 ft bgs)
- Portland Cement
- 3/8" bentonite chips
- 10/20 silica sand

AECOM
Boring Log

Project Name:	**Rawhide Energy Station**
Client:	**Platte River Power Authority**
Project Number:	**60754422**

Boring ID: ASH-10

Date(s) Drilled	6/3/2025	**Logged By**	Chris Ahrendt	**Checked By**	M. Swift	**Total Depth of Borehole (ft)**	29
Drilling Method	Hollow Stem Auger	**Diameter of Borehole (in)**	8 1/4 inch outer diameter			**Ground Surface Elevation (ft-msl)**	5685.47
Drill Rig Type	CME 75	**Drilling Company**	Terracon			**Groundwater Elevation (ft-msl)**	
Driller's Name	Albert and Alex B.	**Sampler Type**	Continuous core barrel			**Measuring Point Elevation (ft-msl)**	
Description of Boring Location						**Northing**	1558395.52
						Easting	3126583.98

Depth Drilled (ft-bgs): 19

Depth to Water (bgs): 19

Depth (ft-bgs)	SAMPLES: Run Number	SAMPLES: Recovery (%)	SAMPLES: Sample ID	USCS Symbol	PID (ppm)	MATERIAL DESCRIPTION	Well Construction
21						**19-23ft**	
22	5	100%	No samples collected	CL		Same as above.	
23						**23-24ft**	
24						Same as above, increasing grey color.	
25					NA	**24-29ft**	**10/20 silica sand**
26	Shale	100%		Shale		Hard, grey and brown, weathered shale, moist, thin bedded.	
27							
28							
29						**Total Depth = 29 ft bgs**	
30						Casing --> SCH 40 PVC Screen --> 0.010 slotted SCH 40 PVC	
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

10/20 silica sand

AECOM
Boring Log

Project Name:	Rawhide Energy Station
Client:	Platte River Power Authority
Project Number:	60754422

Boring ID: ASH-11

Date(s) Drilled	6/3/2025	**Logged By**	Chris Ahrendt	**Checked By**	M. Swift	**Total Depth of Borehole (ft)**	49
Drilling Method	Hollow Stem Auger	**Diameter of Borehole (in)**	8 1/4 inch outer diameter			**Ground Surface Elevation (ft-msl)**	5700.27
Drill Rig Type	CME 75	**Drilling Company**	Terracon			**Groundwater Elevation (ft-msl)**	
Driller's Name	Albert and Alex B.	**Sampler Type**	Continuous core barrel			**Measuring Point Elevation (ft-msl)**	
Description of Boring Location						**Northing**	1558210.17
						Easting	3126275.63

Depth (ft-bgs) | **SAMPLES: Run Number** | **Recovery (%)** | **Sample ID** | **USCS Symbol** | **PID (ppm)** | **MATERIAL DESCRIPTION** | **Well Construction**

Depth (ft-bgs)	Run Number	Recovery (%)	Sample ID	USCS Symbol	PID (ppm)	MATERIAL DESCRIPTION	Well Construction
1–4	1	NA	No samples collected	NA		**0-5ft** Potholed.	Portland grout
5–6						**5-6.5ft** Not recovered	
6–9	2	10%				**6.5-9ft** Very stiff, grayish brown, silt, moist, nonplastic, noncohesive, trace fine sand and gravel, blocky, mottled grayish brown and light orange.	
9–14	3	8%		ML	NA	**9-14ft** Same as above.	
14–19	4	100%		Shale		**14-19ft** Very stiff, grayish brown, weathered shale, moist, nonplastic, noncohesive, blocky, mottled grayish brown and light orange.	
19–20	5	100%				**19-23.5ft** Same as above.	Portland grout

AECOM
Boring Log

Project Name:	**Rawhide Energy Station**
Client:	**Platte River Power Authority**
Project Number:	**60754422**

Boring ID: ASH-11

Date(s) Drilled	6/3/2025	**Logged By**	Chris Ahrendt	**Checked By**	M. Swift
Drilling Method	Hollow Stem Auger	**Diameter of Borehole (in)**	8 1/4 inch outer diameter		
Drill Rig Type	CME 75	**Drilling Company**	Terracon		
Driller's Name	Albert and Alex B.	**Sampler Type**	Continuous core barrel		
Description of Boring Location					

Total Depth of Borehole (ft)	49
Depth to Water (bgs)	NA
Ground Surface Elevation (ft-msl)	5700.27
Groundwater Elevation (ft-msl)	
Measuring Point Elevation (ft-msl)	
Northing	1558210.17
Easting	3126275.63

Depth (ft-bgs)	SAMPLES: Run Number	SAMPLES: Recovery (%)	SAMPLES: Sample ID	USCS Symbol	PID (ppm)	MATERIAL DESCRIPTION	Well Construction
21						**19-23.5ft** Same as above.	Portland Cement
22	5	100%					
23							
24						**23.5-24ft** Same as above; Trace gypsum,	
25					NA	**24-28.5ft**	
26							
27	6	100%				Same as above.	
28							
29			No samples collected			**28.5-29ft** Hard, gray.	
30				Shale		**29-34ft**	
31							
32	7	100%				Same as above, platy.	
33							
34							
35						**34-39ft**	3/8" bentonite chips
36							
37	8	100%				Same as above.	
38							
39							
40	9	100%				**39-44ft** Same as above.	10/20 silica sand

AECOM
Boring Log

Project Name:	**Rawhide Energy Station**
Client:	**Platte River Power Authority**
Project Number:	**60754422**

Boring ID: **ASH-11**

Date(s) Drilled	6/3/2025	**Logged By**	Chris Ahrendt	**Checked By**	M. Swift	**Total Depth of Borehole (ft)**	49
Drilling Method	Hollow Stem Auger	**Diameter of Borehole (in)**	8 1/4 inch outer diameter			**Ground Surface Elevation (ft-msl)**	5700.27
Drill Rig Type	CME 75	**Drilling Company**	Terracon			**Groundwater Elevation (ft-msl)**	
Driller's Name	Albert and Alex B.	**Sampler Type**	Continuous core barrel			**Measuring Point Elevation (ft-msl)**	
Description of Boring Location						**Northing**	1558210.17
						Easting	3126275.63

Depth (ft-bgs) | **SAMPLES: Run Number** | **Recovery (%)** | **Sample ID** | **USCS Symbol** | **PID (ppm)** | **MATERIAL DESCRIPTION** | **Well Construction**

Depth (ft-bgs)	Run Number	Recovery (%)	Sample ID	USCS Symbol	PID (ppm)	MATERIAL DESCRIPTION	Well Construction
41						**40-44ft**	
42	9	100%	No samples collected			Hard gray, weathered shale, moist, platy, thinly bedded, no oxidation.	**10/20 silica sand**
43							
44							
45				Shale	NA	**44-49ft**	
46							
47	10	100%				Same as above.	
48							
49							
50						**Total Depth = 49 ft bgs** Casing --> SCH 40 PVC Screen --> 0.010 slotted SCH 40 PVC	**10/20 silica sand**
51							
52							
53							
54							
55							
56							
57							
58							
59							
60							

AECOM

Boring Log

Project Name:	**Rawhide Energy Station**
Client:	**Platte River Power Authority**
Project Number:	**60754422**

Boring ID: **ASH-12**

Date(s) Drilled	6/10/2025	**Logged By**	Mackensie Swift	**Checked By**		**Total Depth of Borehole (ft)**	69	**Depth to Water (bgs)**	NA
Drilling Method	Hollow Stem Auger	**Diameter of Borehole (in)**	8 1/4 inch outer diameter			**Ground Surface Elevation (ft-msl)**	5748.3		
Drill Rig Type	CME 75	**Drilling Company**	Terracon			**Groundwater Elevation (ft-msl)**			
Driller's Name	Alex B.	**Sampler Type**	Continuous core barrel			**Measuring Point Elevation (ft-msl)**			
Description of Sample Location						**Northing**	1560677.36		
						Easting	3127320.5		

Depth (ft-bgs)	SAMPLES: Run Number	SAMPLES: Recovery (%)	SAMPLES: Sample ID	USCS Symbol	PID (ppm)	MATERIAL DESCRIPTION	Well Construction
1–4	1	50%	No samples collected	ML	NA	**0-4ft** Light tan, dry, sandy silt, occasional gravels, very fine-fine, well sorted, very loose.	**3/8" bentonite chips**
5–6	2	50%		ML		**4-6.5ft** Same as above, increasing gravel.	
7				SM		**6.5-7.5ft** Gravelly, sandy, silt, poorly sorted, dry, light tan, very fine-course grained, subangular, loose.	
8–9				ML		**7.5-9ft** Sandy silt, well sorted, very fine-fine, occasional gravel, dry, light tan, soft.	
10				ML		**9-11ft** Same as above.	
11–14	3	40%		CL		**11-14ft** Light brown, dry, silty clay, soft, low plasticity.	
15–18	4	100%		CL		**14-19ft** Silty clay, light brown, dry, medium stiff, occasional sands, low plasticity. Silt lens at 16.5 ft, approximately 2 inches thick orange/tan.	
19–20	5	75%		CL		**19-24ft** Same as above.	

AECOM
Boring Log

Project Name:	**Rawhide Energy Station**
Client:	**Platte River Power Authority**
Project Number:	**60754422**

Boring ID: **ASH-12**

Date(s) Drilled	6/10/2025	**Logged By**	Mackensie Swift	**Checked By**		**Total Depth of Borehole (ft)**	69	**Depth to Water (bgs)**	NA
Drilling Method	Hollow Stem Auger	**Diameter of Borehole (in)**	8 1/4 inch outer diameter			**Ground Surface Elevation (ft-msl)**	5748.3		
Drill Rig Type	CME 75	**Drilling Company**	Terracon			**Groundwater Elevation (ft-msl)**			
Driller's Name	Alex B.	**Sampler Type**	Continuous core barrel			**Measuring Point Elevation (ft-msl)**			
Description of Sample Location						**Northing**	1560677.36		
						Easting	3127320.5		

Depth (ft-bgs)	SAMPLES: Run Number	SAMPLES: Recovery (%)	SAMPLES: Sample ID	USCS Symbol	PID (ppm)	MATERIAL DESCRIPTION	Well Construction
21				CL		**19-24ft**	
22	5	75%				Heavy gravel layer approximately 2 inches thick at 20.5ft mixed with clay.	
23						Grades to weathered shale at 22ft, crumbles, orange-ish light brown, dry.	
24						**24-29ft**	
25							
26	6	95%				Same as above, orange oxidization in fractures, becomes stiff to hard with depth; platy.	
27						Approximately 1/2 inch pink/white lens at 25.5ft.	
28							
29						**29-34ft**	
30			No samples collected		NA		**3/8" bentonite chips**
31				Shale			
32	7	75%				Weathered shale; blocky; dry, black/gray/brown, orange oxidizations in fractures.	
33							
34						**34-39ft**	
35						Weathered shale; black/brown/gray; dry; transitions from crumbly to solid/blocky.	
36							
37	8	100%					
38						Approximately 1 inch layer of orange clay; moderately plastic at 38.2 ft.	
39						**39-44ft**	
40	9					Black shale; more competent, dry, platy, shell fossils.	

AECOM
Boring Log

Project Name:	**Rawhide Energy Station**
Client:	**Platte River Power Authority**
Project Number:	**60754422**

Boring ID: ASH-12

Date(s) Drilled	6/10/2025	**Logged By**	Mackensie Swift	**Checked By**		**Total Depth of Borehole (ft)**	69	**Depth to Water (bgs)**	NA
Drilling Method	Hollow Stem Auger	**Diameter of Borehole (in)**	8 1/4 inch outer diameter			**Ground Surface Elevation (ft-msl)**	5748.3		
Drill Rig Type	CME 75	**Drilling Company**	Terracon			**Groundwater Elevation (ft-msl)**			
Driller's Name	Alex B.	**Sampler Type**	Continuous core barrel			**Measuring Point Elevation (ft-msl)**			
Description of Sample Location						**Northing**	1560677.36		
						Easting	3127320.5		

Depth (ft-bgs)	SAMPLES: Run Number	SAMPLES: Recovery (%)	SAMPLES: Sample ID	USCS Symbol	PID (ppm)	MATERIAL DESCRIPTION	Well Construction
41						**39-44ft**	
42	9	100%				Black shale; more competent, dry, platy, shell fossils.	
43							
44							
45	10	100%			NA	**44-46.5ft** Same as above.	
46							
47	11	100%				**46.5-49ft** Same as above.	
48							
49							
50	12	100%	No samples collected	Shale		**49-51.5ft** Same as above.	**3/8" bentonite chips**
51							
52	13	100%				**51.5-54ft** Same as above.	
53							
54							
55	14	100%				**54-56.5ft** Same as above.	
56							
57	15	100%				**56.5-59ft** Same as above.	
58							
59							
60	16	100%				**59-61.5ft** Same as above.	

AECOM
Boring Log

Project Name:	**Rawhide Energy Station**
Client:	**Platte River Power Authority**
Project Number:	**60754422**

Boring ID: **ASH-12**

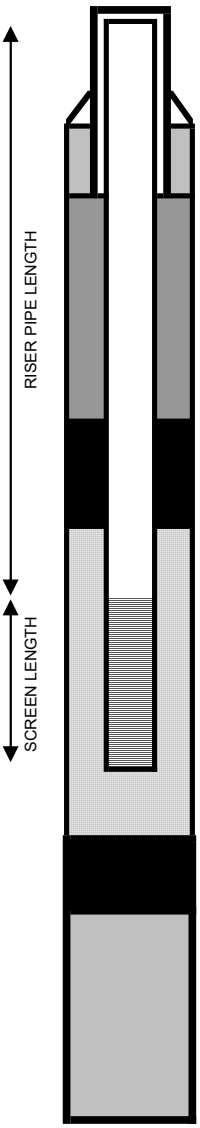
Date(s) Drilled	6/10/2025	**Logged By**	Mackensie Swift	**Checked By**		**Total Depth of Borehole (ft)**	69	**Depth to Water (bgs)**	NA
Drilling Method	Hollow Stem Auger	**Diameter of Borehole (in)**	8 1/4 inch outer diameter			**Ground Surface Elevation (ft-msl)**	5748.3		
Drill Rig Type	CME 75	**Drilling Company**	Terracon			**Groundwater Elevation (ft-msl)**			
Driller's Name	Alex B.	**Sampler Type**	Continuous core barrel			**Measuring Point Elevation (ft-msl)**			
Description of Sample Location						**Northing**	1560677.36		
						Easting	3127320.5		

Depth (ft-bgs)	SAMPLES: Run Number	SAMPLES: Recovery (%)	SAMPLES: Sample ID	USCS Symbol	PID (ppm)	MATERIAL DESCRIPTION	Well Construction
61	16	100%	No samples collected	Shale	NA	**59-61.5ft** Same as above.	**3/8" bentonite chips**
62						**61.5-64ft**	
63	17	100%				Same as above.	
64							
65						**64-66.5ft**	
66	18	100%				Same as above.	
67						**66.5-69ft**	
68	19	100%				Same as above.	
69						**Total Depth: 69 ft**	
70						Abandoned well with bentonite chips on 6/11/25 due to lack of water.	
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							

WELL CONSTRUCTION DATA

PROJECT NAME:	PRPA Rawhide Energy Station			WELL ID:	ASH-10
PROJECT NO:	60754422	DATE INSTALLED:	6/3/2025	INSTALLED BY:	C. Ahrendt CHECKED BY: OH/MS

ELEVATION (BENCHMARK: USGS)	DEPTH BELOW OR ABOVE GROUND SURFACE (FEET)
	2.7 TOP OF CASING
	0 GROUND SURFACE
	NA CEMENT SURFACE PLUG
	GROUT/BACKFILL MATERIAL: Portland Cement
	GROUT/BACKFILL METHOD: NA
	12 GROUT
	BENTONITE SEAL MATERIAL: 3/8" bentonite chips
	14 BENTONITE SEAL
	17 TOP OF SCREEN
	FILTER PACK MATERIAL: 10/20 silica sand
	27 BOTTOM OF SCREEN
	27 BOTTOM OF FILTER PACK
	NA BENTONITE PLUG
	BACKFILL MATERIAL: 10/20 silica sand
	29 HOLE BOTTOM



NOTES:

CASING AND SCREEN DETAILS

TYPE OF RISER:	Solid PVC
PIPE SCHEDULE:	Schedule 40
PIPE JOINTS:	Schedule 40 PVC
SOLVENT USED:	NA
SCREEN TYPE:	Slotted
SCR. SLOT SIZE:	0.01 INCH
BOREHOLE DIAMETER	8.25 IN. FROM 0 TO 29 FT.
	IN. FROM TO FT.
SURF. CASING DIAMETER	2 IN. FROM 0 TO 2.7 FT.
	IN. FROM TO FT.

WELL DEVELOPMENT

DEVELOPMENT METHOD:	Surged with bailer/pump and pumpec
TIME DEVELOPING:	1 HOURS
WATER REMOVED:	53.5 GALLONS
WATER ADDED:	0 GALLONS

WATER CLARITY BEFORE / AFTER DEVELOPMENT

CLARITY BEFORE:	NA
COLOR BEFORE:	Brown
CLARITY AFTER:	NA
COLOR AFTER:	Clear
ODOR (IF PRESENT):	NA

WATER LEVEL SUMMARY

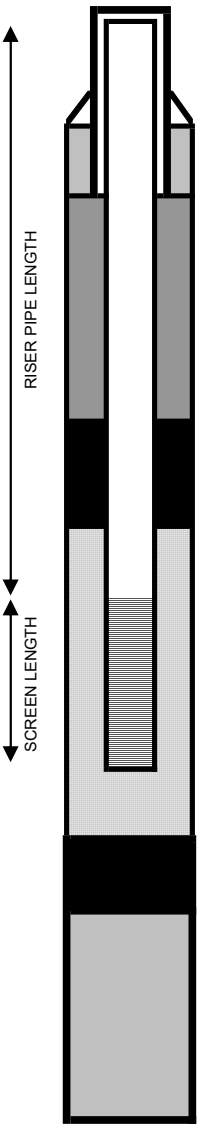
SWE MEASUREMENT		DATE	TIME
BEFORE DEVELOPING	13.43 T/PVC	6/11/2025	1205
AFTER DEVELOPING:	20.46 T/PVC	6/13/2025	1150
OTHER	T/PVC		
OTHER	T/PVC		

PROTECTIVE COVER AND LOCK INSTALLED?	☑ YES ☐ NO
PERMANENT, LEGIBLE WELL LABEL ADDED?	☐ YES ☑ NO

WELL CONSTRUCTION DATA

PROJECT NAME:	PRPA Rawhide Energy Station			WELL ID:	ASH-11
PROJECT NO:	60754422	DATE INSTALLED:	6/3/2025	INSTALLED BY: C. Ahrendt	CHECKED BY: OH/MS

ELEVATION (BENCHMARK: USGS)	DEPTH BELOW OR ABOVE GROUND SURFACE (FEET)
	3.1 TOP OF CASING
	0 GROUND SURFACE
	6 CEMENT SURFACE PLUG
	GROUT/BACKFILL MATERIAL: Portland Cement
	GROUT/BACKFILL METHOD: NA
	34 GROUT
	BENTONITE SEAL MATERIAL: 3/8" bentonite chips
	36 BENTONITE SEAL
	39 TOP OF SCREEN
	FILTER PACK MATERIAL: 10/20 silica sand
	49 BOTTOM OF SCREEN
	49 BOTTOM OF FILTER PACK
	NA BENTONITE PLUG
	BACKFILL MATERIAL: 10/20 silica sand
	49 HOLE BOTTOM



NOTES:

CASING AND SCREEN DETAILS

TYPE OF RISER:	Solid PVC
PIPE SCHEDULE:	Schedule 40
PIPE JOINTS:	Schedule 40 PVC
SOLVENT USED:	NA
SCREEN TYPE:	Slotted
SCR. SLOT SIZE:	0.01 INCH
BOREHOLE DIAMETER	8.25 IN. FROM 0 TO 49 FT.
	IN. FROM TO FT.
SURF. CASING DIAMETER	2 IN. FROM 0 TO 3 FT.
	IN. FROM TO FT.

WELL DEVELOPMENT

DEVELOPMENT METHOD:	Surged with bailer/pump and pumpec
TIME DEVELOPING:	2.5 HOURS
WATER REMOVED:	23 GALLONS
WATER ADDED:	0 GALLONS

WATER CLARITY BEFORE / AFTER DEVELOPMENT

CLARITY BEFORE:	NA
COLOR BEFORE:	Brownish grey
CLARITY AFTER:	NA
COLOR AFTER:	Light grey
ODOR (IF PRESENT):	NA

WATER LEVEL SUMMARY

SWE MEASUREMENT		DATE	TIME
BEFORE DEVELOPING	28.06 T/PVC	6/11/2025	1356
AFTER DEVELOPING:	Dry T/PVC	6/13/2025	1305
OTHER	T/PVC		
OTHER	T/PVC		

PROTECTIVE COVER AND LOCK INSTALLED?	☑ YES ☐ NO
PERMANENT, LEGIBLE WELL LABEL ADDED?	☐ YES ☑ NO

AECOM

WELL DEVELOPMENT LOG

PROJECT NAME:	PRPA 6/2025 Well Installations	PREPARED		CHECKED	
PROJECT NUMBER:	60754422	BY: M. Swift	DATE: 6-11-25	BY: OH	DATE: 6-24-25

SAMPLE ID: ASH-10	WELL DIAMETER: 2"
WELL MATERIAL: PVC	

PUMPING	Time: 1230	DATE: 6/11/25
WELL VOLUME: 2.73 Gallons	TIME SPENT DEVELOPING WELL:	48 MINUTES
VOLUME REMOVED: 27 Gallons	VOLUME OF WATER IN WELL CASING:	NA GALLONS
CAN THIS WELL BE PUMPED DRY? Yes		
WELL DEVELOPMENT: Surged with bailer and pumped	VOLUME OF WATER ADDED (IF ANY): NA	
DEPTH TO BOTTOM: 30.15 T/PVC	SOURCE OF WATER ADDED: NA	
SEDIMENT IN WELL BOTTOM: 0	DEPTH TO WATER (START OF DEVELOPMENT): 13.43 T/PVC	
	DEPTH TO WATER (END OF DEVELOPMENT): dry	

TIME	PUMP RATE (gal/min)	PH (SU)	TURBIDITY (NTU)	CONDUCTIVITY (mS/cm)	TEMPERATURE (°C)	CUMULATIVE PUMP VOLUME (gallons)

COMMENTS Parameters not measured, purged dry around 15 gallons, allowed to recharge and pumped at a lower rate. Purged dry again at 27 gallons.

POROSITY OF MATERIAL	
MATERIAL	POROSITY(%)
WELL-SORTED SAND OR GRAVEL	25-50
SAND AND GRAVEL MIXED	20-35

WATER VOLUME / FT OF CASING	
CASING DIAMETER	VOLUME (GALLONS/FOOT)
2"	0.16
4"	0.65
6"	1.47
8"	2.62
10"	4.09
12"	5.89

AECOM

WELL DEVELOPMENT LOG

PROJECT NAME:	PRPA 6/2025 Well Installations	PREPARED		CHECKED	
PROJECT NUMBER:	60754422 / 60754415	BY: D.Buhl	DATE: 6-13-25	BY: OH	DATE: 6-24-25

SAMPLE ID: ASH-10	WELL DIAMETER: 2"
WELL MATERIAL: PVC	

PUMPING		Time: 1043	DATE: 6-13-2025
TIME SPENT DEVELOPING WELL:	70 MIN	VOLUME OF WATER IN WELL CASING:	2.68 GALLONS
VOLUME REMOVED:	20.5 Gallons		
CAN THIS WELL BE PUMPED DRY?	Yes	VOLUME OF WATER ADDED (IF ANY):	NA
WELL DEVELOPMENT: Surged with pump and pumped		SOURCE OF WATER ADDED:	NA
DEPTH TO BOTTOM:	30.15 T/PVC	DEPTH TO WATER (START OF DEVELOPMENT):	13.43 T/PVC
SEDIMENT IN WELL BOTTOM:		DEPTH TO WATER (END OF DEVELOPMENT):	20.46 T/PVC

TIME	PUMP RATE (gal/min)	PH (SU)	TURBIDITY (NTU)	CONDUCTIVITY (mS/cm)	TEMPERATURE (°C)	CUMULATIVE PUMP VOLUME (gallons)
1043	--	--	brown	--	--	
1050	--	--	clear	--	--	5
1056	--	--	clear	--	--	8
Stop to recharge			clear	--	--	10
1125	--	--	clear	--	--	11
1138	--	--	clear	--	--	--
1150	--	--	clear	--	--	15
Purged dry	--	--	--	--	--	20.5

COMMENTS Clears up quickly after surging. After 15 gal, pump to max.

POROSITY OF MATERIAL	
MATERIAL	POROSITY(%)
WELL-SORTED SAND OR GRAVEL	25-50
SAND AND GRAVEL MIXED	20-35

WATER VOLUME / FT OF CASING	
CASING DIAMETER	VOLUME (GALLONS/FOOT)
2"	0.16
4"	0.65
6"	1.47
8"	2.62
10"	4.09
12"	5.89

AECOM

WELL DEVELOPMENT LOG

PROJECT NAME:	PRPA 6/2025 Well Installations	PREPARED		CHECKED	
PROJECT NUMBER:	60754422 / 60754415	BY: M. Swift	DATE: 6-11-25	BY: OH	DATE: 6-24-25

SAMPLE ID: ASH-11	WELL DIAMETER: 2"
WELL MATERIAL: PVC	

PUMPING	Time: 1356	DATE: 6-11-25
TIME SPENT DEVELOPING WELL: 90 MIN	VOLUME OF WATER IN WELL CASING: 3.85 GALLONS	
VOLUME REMOVED: 15 Gallons		
CAN THIS WELL BE PUMPED DRY? Yes	VOLUME OF WATER ADDED (IF ANY): NA	
WELL DEVELOPMENT: Surged with bailer and pumped	SOURCE OF WATER ADDED: NA	
DEPTH TO BOTTOM: 52.10 T/PVC	DEPTH TO WATER (START OF DEVELOPMENT): 28.06 T/PVC	
SEDIMENT IN WELL BOTTOM:	DEPTH TO WATER (END OF DEVELOPMENT): NA	

TIME	PUMP RATE (gal/min)	PH (SU)	TURBIDITY (NTU)	CONDUCTIVITY (mS/cm)	TEMPERATURE (°C)	CUMULATIVE PUMP VOLUME (gallons)

COMMENTS Parameters not measured; pumped dry at 10 gallons, pausing to allow recharge; resumed after 1 hour, purged dry again at 15 gallons.

POROSITY OF MATERIAL	
MATERIAL	POROSITY(%)
WELL-SORTED SAND OR GRAVEL	25-50
SAND AND GRAVEL MIXED	20-35

WATER VOLUME / FT OF CASING	
CASING DIAMETER	VOLUME (GALLONS/FOOT)
2"	0.16
4"	0.65
6"	1.47
8"	2.62
10"	4.09
12"	5.89

AECOM

WELL DEVELOPMENT LOG

PROJECT NAME:	PRPA 6/2025 Well Installations	PREPARED		CHECKED	
PROJECT NUMBER:	60754422 / 60754415	BY: D. Buhl	DATE: 6-13-25	BY: OH	DATE: 6-24-25

SAMPLE ID: ASH-11	WELL DIAMETER: 2"
WELL MATERIAL: PVC	

PUMPING	Time: 1205	DATE: 6-13-25
TIME SPENT DEVELOPING WELL: 60 MIN	VOLUME OF WATER IN WELL CASING: 1.47 GALLONS	
VOLUME REMOVED: 8 Gallons		
CAN THIS WELL BE PUMPED DRY? Yes	VOLUME OF WATER ADDED (IF ANY): NA	
WELL DEVELOPMENT: Surged with pump and pumped	SOURCE OF WATER ADDED: NA	
DEPTH TO BOTTOM: 52.10 T/PVC	DEPTH TO WATER (START OF DEVELOPMENT): 42.93 T/PVC	
SEDIMENT IN WELL BOTTOM:	DEPTH TO WATER (END OF DEVELOPMENT): NA	

TIME	PUMP RATE (gal/min)	PH (SU)	TURBIDITY (NTU)	CONDUCTIVITY (mS/cm)	TEMPERATURE (°C)	CUMULATIVE PUMP VOLUME (gallons)
1205	--	--	Brownish grey	--	--	
1210	--	--	Clear	--	--	3
1218	--	--	Clear	--	--	5.5
Stopped for recharge - pumped dry						
1256	Begin pumping - 48.27'					
1259	Max rate	--	Light grey	--	--	6
1300	--	--	Clearing	--	--	7
1305	Dry	--	Light grey	--	--	8

COMMENTS Pumped.

POROSITY OF MATERIAL	
MATERIAL	POROSITY(%)
WELL-SORTED SAND OR GRAVEL	25-50
SAND AND GRAVEL MIXED	20-35

WATER VOLUME / FT OF CASING	
CASING DIAMETER	VOLUME (GALLONS/FOOT)
2"	0.16
4"	0.65
6"	1.47
8"	2.62
10"	4.09
12"	5.89

Appendix B

Groundwater Sampling Forms

April/May 2025

Event: 2025 Groundwater Sampling
MP: Top of Casing

Date: 4/28 - 5/12/25
Recorder: O. Helinski & D. Buhl

Location	Group	DTW	TD	Notes
*PZ-3	Piezometer	32.82	NM	*
*PZ-4	Piezometer	23.36		*
*PZ-5	Piezometer	36.19		*
4/30 ASH-01	ASH	14.29		Buffalo Area - Need Escort *
ASH-02	ASH	4.71		*
ASH-03	ASH	40.48		*
ASH-04	ASH	15.96		*
ASH-05	ASH	22.87		*
ASH-06	ASH	62.69		*
ASH-07	ASH	15.55		*
ASH-08	ASH	10.49		*
ASH-09	ASH	4.19		*
BAT-01	BAT	14.00		missing 1 bolt
BAT-02	BAT	18.56		* broken bolt tab
BAT-03	BAT	12.78		broken bolt tabs (2)
BAT-04R	BAT	16.03		*
BAT-05	BAT	20.94		2 missing bolts; one bolt tab broken
BAT-06	BAT	14.76		*
BAT-09	BAT	20.70		*
BAT-10	BAT	12.38		*
BAT-11	BAT	28.35		*
BAT-12	BAT	31.75		*
BAT-13	BAT	35.73		*
PRS-01	PRS	30.94		*
PRS-03	PRS	48.92		*
PRS-02	PRS	28.33		*
PRS-04	PRS	29.91		*
PRS-05	PRS	29.93		*
5/12 PRS-06	PRS	22.64		*
PRS-07	PRS	25.81		*
MW-3	Sitewide	25.33		*
MW-4	Sitewide	20.07		*
4/30 4/29 MW-5	Sitewide	21.69		Buffalo Area - Need Escort no lock
5/12 MW-6	Sitewide	1.75		~~Cross Barbed Wire Fence and Access by Foot~~ STUCK 4/28
MW-7	Sitewide	2.31		~~Cross Barbed Wire Fence and Access by Foot~~ *
MW-8	Sitewide	10.71		*
FTP-1	FTP	30.33		*
FTP-2	FTP	8.66		no lock
FTP-3	FTP	27.16		no lock
FTP-4	FTP	18.50		no lock
FTP-5	FTP	11.71		no lock

could not release cap but were able to dislodge it to sample. Do not use for PS wells until resurveyed.

Acronyms:
DTW - Depth to Water
MP - Measuring Point
TD - Total Depth
** Fluid levels only, no sample*
* = well in good condition

AECOM

Well/Piezo ID	ASH-01

Ground Water Sample Collection Record

Client:	Platte River Power Authority	Date:	4/30/2025
Project No:	60754422 (CDPHE) , 60754415 (CCR)	Time: Start	0855
Site Location:	Rawhide Generating Station	Finish	1000
Weather Conds:	Sunny, warm, light breeze Collector(s)	O. Helinski	

WATER LEVEL DATA: (measured from Top of Casing) Well ■ Piezometer ☐

a. Total Well Length -- c. Casing Material PVC e. Length of Water Column -- (a-b)

b. Water Table Depth 14.29 d. Casing Diameter 4" f. Calculated Well Volume (see back) --

WELL PURGING DATA

a. Purge Method low flow bladder pump

c. Field Testing Equipment Used:

Make	Model	Serial Number
HACH	2100Q	23L100379
YSI	ProDSS	21070D000185

c. Field Testing Equipment Calibration Documentation Found in Project Folder

Time	Volume emoved (L)	T° (C)	pH	Spec. Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Color	DTW (ft)
Stabilization	--	+/- 3%	+/- 0.1	+/- 3%	+/- 10	+/- 10%	+/-5 , 10%		0.33 ft
0912	0.0	12.0	7.19	3435	118.9	5.39	38.1	clear	14.29
0917	2.3	11.8	7.16	3422	121.5	4.82	11	clear	14.90
0920	3.8	11.7	7.15	3427	122.6	4.34	6.46	clear	14.97
0923	5.0	11.8	7.14	3434	123.1	4.07	5.22	clear	15.08
0926	6.5	11.7	7.13	3441	123.7	3.71	5.20	clear	15.14

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	■
Has required turbidity been reached	■	☐	☐
Have parameters stabilized	■	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
ASH-01-CDPHE	see CoC	7	see CoC	see CoC	0930
ASH-01-CCR	see CoC	5	see CoC	see CoC	0930

Comments:

Signature  Date 4/30/2025

AECOM

Well/Piezo ID	ASH-02

Ground Water Sample Collection Record

Client:	Platte River Power Authority	Date:	5/14/2025
Project No:	60754422 (CDPHE), 60754415 (CCR)	Time: Start	1030
Site Location:	Rawhide Generating Station	Finish	1230
Weather Conds:	Windy, sunny, 61 degrees Collector(s)	K. Hoppes, M. Swift	

WATER LEVEL DATA: (measured from Top of Casing) Well ■ Piezometer ☐

a. Total Well Length -- c. Casing Material PVC e. Length of Water Column -- (a-b)

b. Water Table Depth 4.71 d. Casing Diameter 4" f. Calculated Well Volume (see back) --

WELL PURGING DATA

a. Purge Method low flow bladder pump

c. Field Testing Equipment Used:

Make	Model	Serial Number
HACH	2100Q	21070D000185
YSI	ProDSS	23400379

c. Field Testing Equipment Calibration Documentation Found in Project Folder

Time	Volume Removed (L)	T° (C)	pH	Spec. Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Color	DTW (ft)
Stabilization	--	+/- 3%	+/- 0.1	+/- 3%	+/- 10	+/- 10%	+/-5 , 10%		0.33 ft
1035	0.25	15.3	7.83	2718	115.5	6.67	27.1	clear	4.83
1040	1.0	15.1	7.73	2700	119.2	5.76	11.3	clear	5.15
1045	2.0	14.8	7.72	2710	121.2	5.65	10.6	clear	5.65
1050	3.0	14.8	7.72	2708	122.0	5.60	7.85	clear	6.00
1055	4.0	15.0	7.71	2709	123.0	5.54	8.19	clear	6.40
1100	5.0	15.2	7.70	2710	123.8	5.51	6.50	clear	6.77
1105	6.0	15.1	7.70	2710	124.6	5.48	5.29	clear	7.15
1110	7.0	15.1	7.70	2708	125.3	5.46	5.32	clear	7.55
1115	8.0	15.2	7.70	2709	126.0	5.43	4.76	clear	7.97
1120	9.0	15.2	7.70	2705	126.7	5.41	5.23	clear	8.37
1125	10.0	15.2	7.70	2708	127.1	5.39	3.67	clear	8.67
1130	11.0	15.2	7.70	2713	127.1	5.38	3.93	clear	9.10

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	■
Has required turbidity been reached	■	☐	☐
Have parameters stabilized	☐	■	☐

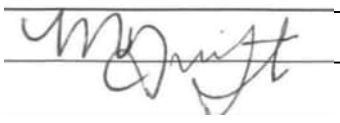
If no or N/A - Explain below.

DTW did not stabilize within a reasonable amount of time

SAMPLE COLLECTION: Method: low flow bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
ASH-02-CDPHE	See CoC	7	See CoC	See CoC	1135
ASH-02-CCR	See CoC	5	See CoC	See CoC	1135

Comments:

Signature  Date 5/13/2025

AECOM

Well/Piezo ID	ASH-03

Ground Water Sample Collection Record

Client:	Platte River Power Authority	Date:	5/12/2025
Project No:	60754422 (CDPHE), 60754415 (CCR)	Time: Start	1318
Site Location:	Rawhide Generating Station	Finish	1530
Weather Conds:	85 degrees, sunny	Collector(s)	K. Hoppes, M. Swift

WATER LEVEL DATA: (measured from Top of Casing) Well ■ Piezometer ☐

a. Total Well Length -- c. Casing Material PVC e. Length of Water Column -- (a-b)

b. Water Table Depth 40.48 d. Casing Diameter 2" f. Calculated Well Volume (see back) --

WELL PURGING DATA

a. Purge Method low flow bladder pump

c. Field Testing Equipment Used:

Make	Model	Serial Number
HACH	2100Q	21070D000185
YSI	ProDSS	23400379

c. Field Testing Equipment Calibration Documentation Found in Project Folder

Time	Volume Removed (L)	T° (C)	pH	Spec. Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Color	DTW (ft)
Stabilization	--	+/- 3%	+/- 0.1	+/- 3%	+/- 10	+/- 10%	+/-5 , 10%		0.33 ft
1319	0.0	14.5	7.40	4056	44.9	1.82	36.4	clear	41.31
1324	3.5	13.1	6.92	3885	106.8	0.56	55.5	clearish	42.14
1329	5.0	13.3	6.91	3861	108.2	0.45	41.3	clearish	42.49
1334	6.8	13.1	6.92	3850	109.0	0.47	25.2	clear	42.91
1339	8.1	13.2	6.92	3860	109.2	0.43	16.9	clear	43.26
1344	9.5	13.8	6.91	3861	109.1	0.38	24.6	clear	43.48
1349	11.0	13.7	6.92	3864	108.8	0.34	110	sl. cloudy	43.67
1354	12.0	13.8	6.92	3869	108.5	0.32	116	sl. cloudy	43.93
1359	12.2	16.1	6.91	3757	108.1	0.30	105	sl. cloudy	43.67
1404	12.6	14.7	6.94	3892	107.2	0.35	105	clearish	43.73
1407	13.3	14.0	6.94	3898	107.5	0.34	82.1	clearish	43.97
1410	14.3	13.4	6.95	3885	107.5	0.28	59.1	clearish	44.20
1413	15.8	13.3	6.96	3878	107.2	0.26	45.8	clear	44.18
1416	16.2	13.5	6.96	3878	106.8	0.24	34.7	clearish	44.35

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	■
Has required turbidity been reached	☐	■	☐
Have parameters stabilized	☐	■	☐

If no or N/A - Explain below.

Turbidity would not stabilize in reasonable amount of time

SAMPLE COLLECTION: Method: low flow bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
ASH-03-CCR	See CoC	5	See CoC	See CoC	1420
ASH-03-CDPHE	See CoC	7	See CoC	See CoC	1420
DUP-02-CCR	See CoC	5	See CoC	See CoC	--

Comments:

Signature  Date 5/12/2025

AECOM

Well/Piezo ID	ASH-04

Ground Water Sample Collection Record

Client:	Platte River Power Authority	Date:	5/13/2025
Project No:	60754422 (CDPHE), 60754415 (CCR)	Time: Start	1249
Site Location:	Rawhide Generating Station	Finish	1400
Weather Conds:	Sunny, 89 degrees, slight breeze	Collector(s)	K. Hoppes, M. Swift

WATER LEVEL DATA: (measured from Top of Casing) Well ■ Piezometer ☐

a. Total Well Length -- c. Casing Material PVC e. Length of Water Column -- (a-b)

b. Water Table Depth 15.96 d. Casing Diameter 2" f. Calculated Well Volume (see back) --

WELL PURGING DATA

a. Purge Method low flow bladder pump

c. Field Testing Equipment Used:

Make	Model	Serial Number
HACH	2100Q	21070D000185
YSI	ProDSS	23400379

c. Field Testing Equipment Calibration Documentation Found on Designated Calibration Log

Time	Volume Removed (L)	T° (C)	pH	Spec. Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Color	DTW (ft)
Stabilization	--	+/- 3%	+/- 0.1	+/- 3%	+/- 10	+/- 10%	+/-5 , 10%		0.33 ft
1250	0.0	14.4	7.55	3592	38.4	1.79	22.3	clear	16.43
1255	1.7	13.8	7.32	3562	48.5	1.78	23.9	clear	16.60
1300	2.9	14.3	7.22	3590	57.4	1.02	16.2	clear	16.40
1305	4.1	13.7	7.25	3562	61.4	0.73	11.1	clear	16.74
1310	5.6	13.7	7.24	3556	63.6	0.60	6.57	clear	16.78
1315	6.4	13.6	7.24	3555	64.6	0.55	7.33	clear	16.76
1318	7.2	13.7	7.23	3547	65.4	0.49	5.09	clear	16.81
1321	8.0	13.4	7.23	3541	65.7	0.46	3.77	clear	16.81
1324	8.8	13.6	7.23	3530	66.1	0.43	3.9	clear	16.80

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	■
Has required turbidity been reached	■	☐	☐
Have parameters stabilized	■	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
ASH-04-CDPHE	See CoC	7	See CoC	See CoC	1330
ASH-04-CCR	See CoC	5	See CoC	See CoC	1330

Comments:

Signature  Date 5/13/2025

AECOM

Well/Piezo ID: ASH-05

Ground Water Sample Collection Record

Client: Platte River Power Authority
Project No: 60754422 (CDPHE), 60754415 (CCR)
Site Location: Rawhide Generating Station
Weather Conds: 89 degrees sunny Collector(s) K. Hoppes, M. Swift

Date: 5/13/2025
Time: Start 1410
Finish 1520

WATER LEVEL DATA: (measured from Top of Casing) Well ■ Piezometer ☐

a. Total Well Length -- c. Casing Material PVC e. Length of Water Column -- (a-b)

b. Water Table Depth 22.87 d. Casing Diameter 2" f. Calculated Well Volume (see back) --

WELL PURGING DATA

a. Purge Method low flow bladder pump

c. Field Testing Equipment Used:

Make	Model	Serial Number
HACH	2100Q	21070D000185
YSI	ProDSS	23400379

c. Field Testing Equipment Calibration Documentation Found in Project Folder

Time	Volume Removed (L)	T° (C)	pH	Spec. Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Color	DTW (ft)
Stabilization	--	+/- 3%	+/- 0.1	+/- 3%	+/- 10	+/- 10%	+/-5 , 10%		0.33 ft
1415	1.5	15.4	6.90	3079	125.9	1.79	29.6	clear	23.10
1420	2.8	15.6	6.88	3065	124.9	1.30	18.9	clear	23.10
1425	3.9	15.4	6.88	3053	122.2	1.05	14.8	clear	23.16
1430	5.2	15.1	6.89	3040	199.8	0.81	13.7	clear	23.16
1435	7.0	14.8	6.89	3058	117.4	0.68	10.9	clear	23.17
1440	8.1	14.8	6.89	3064	115.9	0.66	8.55	clear	23.16
1445	9.3	14.9	6.89	3053	113.8	0.58			

e. Acceptance criteria pass/fail

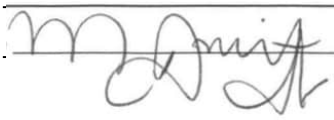
	Yes	No	N/A
Has required volume been removed	☐	☐	■
Has required turbidity been reached	■	☐	☐
Have parameters stabilized	■	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
ASH-05-CDPHE	See CoC	7	see CoC	See CoC	1450
ASH-05-CCR	See CoC	5	see CoC	See CoC	1450

Comments:

Signature  Date 5/13/2025

AECOM

Well/Piezo ID	ASH-06

Ground Water Sample Collection Record

Client:	Platte River Power Authority	Date:	5/12/2025
Project No:	60754422 (CDPHE), 60754415 (CCR)	Time: Start	1117
Site Location:	Rawhide Generating Station	Finish	0840 on 5/13/25
Weather Conds:	sunny, 80s	Collector(s)	M. Swift, K. Hoppes

WATER LEVEL DATA: (measured from Top of Casing) Well ■ Piezometer ☐

a. Total Well Length -- c. Casing Material PVC e. Length of Water Column -- (a-b)

b. Water Table Depth 62.69 d. Casing Diameter 2" f. Calculated Well Volume (see back) --

WELL PURGING DATA

a. Purge Method low flow bladder pump

c. Field Testing Equipment Used:

Make	Model	Serial Number
HACH	2100Q	21070D000185
YSI	ProDSS	23400379

c. Field Testing Equipment Calibration Documentation Found in Project Folder

Time	Volume Removed (L)	T° (C)	pH	Spec. Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Color	DTW (ft)
Stabilization	--	+/- 3%	+/- 0.1	+/- 3%	+/- 10	+/- 10%	+/-5 , 10%		0.33 ft
1122	0.5	15.6	7.89	612	106.9	1.26	2.23	clear	63.29
1127	2.0	14.9	7.88	550	107.9	1.97	1.98	clear	63.51
1132	3.1	14.5	7.90	491.2	108.2	4.88	3.36	clear	64.15
1137	4.5	14.5	7.90	484.6	109.5	5.96	2.38	clear	64.45
1142	5.5	14.4	7.89	482	110.5	6.24	1.86	clear	64.82
1147	6.8	14.4	7.87	482	111.9	6.27	1.89	clear	65.29
1152	7.3	15.9	7.83	482	112.9	6.05	1.64	clear	65.55
1157	8.0	16.2	7.83	485.7	113.3	5.99	1.07	clear	65.74
1202	9.0	16.2	7.82	488.3	114.0	5.94	1.16	clear	65.90
1207	9.5	16.2	7.82	492	114.8	5.85	0.83	clear	66.15
1212	10.0	16.4	7.82	495.8	115.1	5.74	0.95	clear	66.29
1217	10.5	16.3	7.83	499.8	115.4	5.29	0.85	clear	66.42

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	■
Has required turbidity been reached	■	☐	☐
Have parameters stabilized	■	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time	
ASH-06-CDPHE	See CoC	5	See CoC	See CoC	1220	5/12/2025
ASH-06-CCR	See CoC	5	See CoC	See CoC	1220	
ASH-06-CDPHE	1L UNPRESERVED	1	none	diss metals	835	5/13/2025

Comments: Not enough water for TDS

Signature M. Swift Date 5/12/25 - 5/13/25

AECOM

Well/Piezo ID	ASH-07

Ground Water Sample Collection Record

Client:	Platte River Power Authority	Date:	5/13/2025
Project No:	60754422 (CDPHE), 60754415 (CCR)	Time: Start	1117
Site Location:	Rawhide Generating Station	Finish	1245
Weather Conds:	Sunny, 77 degrees, breezy Collector(s)	K. Hoppes, M. Swift	

WATER LEVEL DATA: (measured from Top of Casing) Well ■ Piezometer ☐

a. Total Well Length -- c. Casing Material PVC e. Length of Water Column -- (a-b)

b. Water Table Depth 15.85 d. Casing Diameter 2" f. Calculated Well Volume (see back) --

WELL PURGING DATA

a. Purge Method low flow bladder pump

c. Field Testing Equipment Used:

Make	Model	Serial Number
HACH	2100Q	21070D000185
YSI	ProDSS	23400379

c. Field Testing Equipment Calibration Documentation Found in Project Folder

Time	Volume Removed (L)	T° (C)	pH	Spec. Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Color	DTW (ft)
Stabilization	--	+/- 3%	+/- 0.1	+/- 3%	+/- 10	+/- 10%	+/-5 , 10%		0.33 ft
1117	0.0	14.2	7.02	3746	107.6	3.01	46	clearish	16.05
1122	2.0	13.6	6.83	3719	114.5	2.47	32.2	clearish	16.02
1127	3.8	13.4	6.80	3686	117.2	2.08	20	clearish	16.12
1132	5.4	13.4	6.83	3636	117.1	1.80	13.1	clear	16.11
1137	6.5	13.3	6.85	3613	116.3	1.73	7.95	clear	16.05
1140	7.7	13.0	6.86	3622	115.8	1.64	3.85	clear	16.13
1143	8.6	13.1	6.86	3625	115.3	1.57	2.99	clear	16.07

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	■
Has required turbidity been reached	■	☐	☐
Have parameters stabilized	■	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
ASH-07-CDPHE	See CoC	7	See CoC	See CoC	1145
ASH-07-CCR	See CoC	5	See CoC	See CoC	1145
ERB-02-CCR	See CoC	5	See CoC	See CoC	1200

Comments: ERB-02-CCR collected here w lab provided DI water and dipping in deconned fluid level meter

Signature Deconned fluid level meter Date 5/13/2025

AECOM

Well/Piezo ID	ASH-08

Ground Water Sample Collection Record

Client:	Platte River Power Authority	Date:	5/13/2025
Project No:	60754422 (CDPHE), 60754415 (CCR)	Time: Start	906
Site Location:	Rawhide Generating Station	Finish	1035
Weather Conds:	72 degrees, cloudy	Collector(s)	M. Swift, K. Hoppes

WATER LEVEL DATA: (measured from Top of Casing) Well ■ Piezometer ☐

a. Total Well Length -- c. Casing Material PVC e. Length of Water Column -- (a-b)

b. Water Table Depth 10.49 d. Casing Diameter 2" f. Calculated Well Volume (see back) --

WELL PURGING DATA

a. Purge Method low flow bladder pump

c. Field Testing Equipment Used:

Make	Model	Serial Number
HACH	2100Q	21070D000185
YSI	ProDSS	23400379

c. Field Testing Equipment Calibration Documentation Found in Project Folder

Time	Volume Removed (L)	T° (C)	pH	Spec. Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Color	DTW (ft)
Stabilization	--	+/- 3%	+/- 0.1	+/- 3%	+/- 10	+/- 10%	+/-5 , 10%		0.33 ft
0910	2.0	11.9	6.82	2804	122.5	1.56	14.7	clear	13.01
0915	4.0	11.7	6.81	2798	121.0	0.89	7.25	clear	14.73
0920	6.0	11.6	6.80	2790	119.3	0.79	8.87	clear	16.10
0925	8.0	11.7	6.80	2802	116.4	0.50	7.67	clear	17.70
0930	10.5	11.7	6.80	2800	113.5	0.41	8.64	clear	19.01
0953	12.1	12.1	6.80	2791	111.8	0.41	7.4	clear	19.23
0940	13.0	12.3	6.79	2788	109.0	0.38	5.64	clear	19.48
0945	14.0	12.6	6.79	2774	103.6	0.33	4.74	clear	19.75
0950	15.5	12.6	6.80	2804	98.7	0.29	3.92	clear	19.98
0955	17.5	12.7	6.80	2798	95.8	0.29	4.39	clear	20.02
1000	18.5	12.7	6.80	2800	93.7	0.33	4.3	clear	20.15

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	■
Has required turbidity been reached	■	☐	☐
Have parameters stabilized	■	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
ASH-08-CDPHE	See CoC	7	See CoC	See CoC	1005
ASH-08-CCR	See CoC	15	See CoC	See CoC	1005

Comments: CCR MSMSD here

Signature  Date 5/13/2025

September/October 2025

Event: 4Q GW Sampling
MP: Top of Casing

Date: 9/29/25 - 9/30/25 10/2/25
Recorder: M. Swift, ~~E. Brannan~~ O. Helinski E. Yonker,

Switch PZ values 10/1

Location	Group	DTW	TD	Notes
*PZ-3	Piezometer	23.75	NM	
*PZ-4	Piezometer	33.15		PZ-4 cap labeled as PZ-3
*PZ-5	Piezometer	37.22		
ASH-01	ASH	14.08		Buffalo Area - Need Escort ✓
ASH-02	ASH	7.21		
ASH-03	ASH	41.10		
ASH-04	ASH	17.02		
ASH-05	ASH	23.66		
ASH-06	ASH	62.77		
ASH-07	ASH	18.29		
ASH-08	ASH	12.46		
ASH-09	ASH	6.63		
ASH-10	ASH	14.79		
ASH-11	ASH	28.18		
9/30 BAT-01	BAT	11.96		
BAT-02	BAT	16.66		
BAT-03	BAT	13.13		
BAT-04R	BAT	16.39		
BAT-05	BAT	21.16		
BAT-06	BAT	16.76		
BAT-09	BAT	19.79		
BAT-10	BAT	12.39		
BAT-11	BAT	28.36		
BAT-12	BAT	32.25		
BAT-13	BAT	33.73		
BAT-14	BAT	34.68		
BAT-15	BAT	10.42		
PRS-01	PRS	32.55		
9/30 PRS-02	PRS	29.73		* replaced lock
PRS-03	PRS	49.50		
PRS-04	PRS	30.26		
PRS-05	PRS	31.82		
PRS-06	PRS	23.91		
PRS-07	PRS	27.34		
MW-3	Sitewide	24.88578		
MW-4	Sitewide	20.18		
10/2 MW-5	Sitewide	22.75		Buffalo Area - Need Escort
MW-6	Sitewide	2.74		Access by Foot ; needs new lid + to be resurveyed
MW-7	Sitewide	5.64		
MW-8	Sitewide	10.81		
FTP-1	FTP	29.18		
FTP-2	FTP	8.68		
FTP-3	FTP	27.26		
FTP-4	FTP	18.99		
FTP-5	FTP	12.47		

Acronyms:
DTW - Depth to Water
MP - Measuring Point
TD - Total Depth
** Fluid levels only, no sample*

AECOM

Well/Piezo ID: ASH-01

Ground Water Sample Collection Record

Client: Platte River Power Authority
Project No: 60754422 (CDPHE), 60754415 (CCR)
Site Location: Rawhide Generating Station
Weather Conds: Windy, warm
Collector(s) O. Helinski
Date: 10/1/2025
Time: Start 1330
Finish 1425

WATER LEVEL DATA: (measured from Top of Casing) Well ■ Piezometer ☐

a. Total Well Length -- c. Casing Material PVC e. Length of Water Column -- (a-b)

b. Water Table Depth 14.08 d. Casing Diameter 4" f. Calculated Well Volume (see back) --

WELL PURGING DATA

a. Purge Method low flow bladder pump

c. Field Testing Equipment Used:

Make	Model	Serial Number
HACH	2100Q	44145
YSI	ProQuatro	37379

c. Field Testing Equipment Calibration Documentation Found in Project Folder

Time	Volume Removed (L)	T° (C)	pH	Spec. Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Color	DTW (ft)
Stabilization	--	+/- 3%	+/- 0.1	+/- 3%	+/- 10	+/- 10%	+/-5 , 10%		0.3 ft
1345	0.0	14.1	7.07	3628	174.0	1.92	9.77	clear	14.31
1350	2.0	12.8	7.07	3538	168.2	0.49	4.07	clear	14.74
1353	3.8	12.6	7.02	3549	165.9	0.44	3.29	clear	14.87
1356	4.8	12.6	7.08	3550	163.3	0.41	4.24	clear	14.98

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	■
Has required turbidity been reached	■	☐	☐
Have parameters stabilized	■	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
ASH-01-CDPHE	See CoC	7	See CoC	See CoC	1400
ASH-01-CCR	See CoC	4	See CoC	See CoC	1400

Comments:

Signature  Date 10/1/2025

AECOM

Well/Piezo ID: ASH-02

Ground Water Sample Collection Record

Client: Platte River Power Authority
Project No: 60754422 (CDPHE), 60754415 (CCR)
Site Location: Rawhide Generating Station
Weather Conds: Warm, 74 F Collector(s) O. Helinski

Date: 10/2/2025
Time: Start 1115
Finish 1300

WATER LEVEL DATA: (measured from Top of Casing) Well ■ Piezometer ☐

a. Total Well Length -- c. Casing Material PVC e. Length of Water Column -- (a-b)

b. Water Table Depth 7.21 d. Casing Diameter 4" f. Calculated Well Volume (see back) --

WELL PURGING DATA

a. Purge Method low flow bladder pump

c. Field Testing Equipment Used:

Make	Model	Serial Number
HACH	2100Q	44134
YSI	ProQuatro	37379

c. Field Testing Equipment Calibration Documentation Found in Project Folder

Time	Volume Removed (L)	T° (C)	pH	Spec. Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Color	DTW (ft)
Stabilization	--	+/- 3%	+/- 0.1	+/- 3%	+/- 10	+/- 10%	+/-5 , 10%		0.3 ft
1126	0.0	16.8	7.72	3949	157.0	3.63	7.42	Clear	7.12
1131	1.0	13.8	7.67	3874	157.0	1.68	6.85	Clear	7.48
1134	1.3	13.7	7.66	3865	155.3	1.53	4.90	Clear	7.57
1137	1.8	13.6	7.66	3870	153.6	1.45	4.98	Clear	7.81
1140	2.1	13.6	7.66	3867	151.9	1.42	5.22	Clear	8.00
1143	2.4	13.4	7.65	3869	150.2	1.38	5.19	Clear	8.17
1146	2.9	13.3	7.65	3863	148.6	1.40	4.86	Clear	8.37
1149	3.5	13.3	7.65	3861	146.7	1.37	4.95	Clear	8.67
1154	4.4	13.3	7.66	3857	144.5	1.37	4.30	Clear	9.08
1159	5.4	13.3	7.65	3862	142.3	1.35	6.04	Clear	9.46
1204	6.1	13.3	7.65	3865	139.9	1.33	3.55	Clear	9.80
1209	7.3	13.4	7.66	3855	137.6	1.31	4.73	Clear	10.18
1214	8.0	13.4	7.66	3865	135.9	1.32	3.45	Clear	10.60
1219	8.9	13.1	7.66	3862	133.9	1.32	3.93	Clear	10.99

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	■
Has required turbidity been reached	■	☐	☐
Have parameters stabilized	☐	■	☐

If no or N/A - Explain below.

DTW did not stabilze within reasonable amount of time

SAMPLE COLLECTION: Method: low flow bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
ASH-02-CDPHE	See CoC	7	See Coc	See CoC	1220
ASH-02-CCR	See CoC	4	See Coc	See CoC	1220

Comments:

Signature Date 10/2/2025

AECOM

Well/Piezo ID: ASH-03

Ground Water Sample Collection Record

Client:	Platte River Power Authority	Date:	10/1/2025
Project No:	60754422 (CDPHE), 60754415 (CCR)	Time: Start	1145
Site Location:	Rawhide Generating Station	Finish	1300
Weather Conds:	Windy, warm, 73 F	Collector(s)	O. Helinski

WATER LEVEL DATA: (measured from Top of Casing) Well ■ Piezometer ☐

a. Total Well Length _____ c. Casing Material PVC e. Length of Water Column -- (a-b)

b. Water Table Depth 41.10 d. Casing Diameter 2" f. Calculated Well Volume (see back) --

WELL PURGING DATA

a. Purge Method: low flow bladder pump

c. Field Testing Equipment Used:

Make	Model	Serial Number
HACH	2100Q	44134
YSI	ProQuatro	37379

c. Field Testing Equipment Calibration Documentation Found in Project Folder

Time	Volume Removed (L)	T° (C)	pH	Spec. Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Color	DTW (ft)
Stabilization	--	+/- 3%	+/- 0.1	+/- 3%	+/- 10	+/- 10%	+/-5 , 10%		0.3 ft
1152	0.0	15.2	6.97	5236	97.5	2.04	86.4	Cloudy	41.48
1157	1.9	13.2	6.96	5259	91.7	0.41	28.6	Clear	41.96
1202	2.9	13.0	7.05	5140	99.9	0.33	25.3	Clear	42.39
1205	4.0	12.9	7.05	5103	101.0	0.38	19.0	Clear	42.67
1208	4.9	12.9	7.08	5099	101.6	0.48	18.9	Clear	42.83
1211	5.8	12.9	7.05	5103	101.9	0.62	21.6	Clear	43.03
1214	7.4	12.9	7.06	5099	102.4	0.60	18.7	Clear	43.23
1217	7.6	13.3	7.05	5058	102.4	0.55	17.3	Clear	43.53
1220	7.7	14.5	7.03	5076	102.8	0.63	16.0	Clear	43.45
1223	7.8	14.5	7.06	5133	102.4	0.58	20.7	Clear	43.57
1226	8.1	13.1	7.09	5110	102.1	0.53	25.6	Clear	43.85
1229	9.2	13.2	7.04	5102	101.6	0.44	33.0	Clear	43.98
1232	9.8	13.0	7.07	5100	101.1	0.41	31.0	Clear	44.19
1235	10.3	13.1	7.04	5098	100.4	0.42	30.9	Clear	44.30

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	■
Has required turbidity been reached	■	☐	☐
Have parameters stabilized	■	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
ASH-03-CDHPE	See CoC	7	See CoC	See CoC	1240
ASH-03-CCR	See CoC	4	See CoC	See CoC	1240

Comments: _____

Signature _____ Date 10/1/2025

AECOM

Well/Piezo ID: ASH-04

Ground Water Sample Collection Record

Client:	Platte River Power Authority	Date:	10/2/2025
Project No:	60754422 (CDPHE), 60754415 (CCR)	Time: Start	0855
Site Location:	Rawhide Generating Station	Finish	0947
Weather Conds:	Warm, 61 F Collector(s) O. Helinski		

WATER LEVEL DATA: (measured from Top of Casing) Well ■ Piezometer ☐

a. Total Well Length -- c. Casing Material PVC e. Length of Water Column -- (a-b)

b. Water Table Depth 17.02 d. Casing Diameter 2" f. Calculated Well Volume (see back) --

WELL PURGING DATA

a. Purge Method low flow bladder pump

c. Field Testing Equipment Used:

Make	Model	Serial Number
HACH	2100Q	44143
YSI	ProQuatro	37379

c. Field Testing Equipment Calibration Documentation Found in Project Folder

Time	Volume Removed (L)	T° (C)	pH	Spec. Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Color	DTW (ft)
Stabilization	--	+/- 3%	+/- 0.1	+/- 3%	+/- 10	+/- 10%	+/-5 , 10%		0.3 ft
0903	0.0	13.1	7.39	5030	235.3	1.31	17.9	Clear	17.71
0908	2.0	12.5	7.34	4965	226.0	0.46	15.6	Clear	18.27
0913	5.2	12.7	7.41	4960	222.0	0.70	9.84	Clear	18.18
0916	6.4	12.8	7.39	4974	218.7	0.97	10.1	Clear	18.17
0919	7.4	12.7	7.42	4998	216.0	1.13	8.62	Clear	18.27
0922	8.6	12.6	7.36	5007	213.8	1.23	6.44	Clear	18.27
0925	9.8	12.7	7.41	5030	210.9	1.21	7.76	Clear	18.30

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	■
Has required turbidity been reached	■	☐	☐
Have parameters stabilized	■	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
ASH-04-CDPHE	See CoC	7	See CoC	See CoC	0930
ASH-04-CCR	See CoC	4	See CoC	See CoC	0930

Comments:

Signature  Date 10/2/2025

AECOM

Well/Piezo ID: ASH-05

Ground Water Sample Collection Record

Client:	Platte River Power Authority	Date:	10/2/2025
Project No:	60754422 (CDPHE), 60754415 (CCR)	Time: Start	0950
Site Location:	Rawhide Generating Station	Finish	1050
Weather Conds:	Warm, 69 F	Collector(s)	O. Helinski

WATER LEVEL DATA: (measured from Top of Casing) Well ■ Piezometer ☐

a. Total Well Length -- c. Casing Material PVC e. Length of Water Column -- (a-b)

b. Water Table Depth 23.66 d. Casing Diameter 2" f. Calculated Well Volume (see back) --

WELL PURGING DATA

a. Purge Method: low flow bladder pump

c. Field Testing Equipment Used:

Make	Model	Serial Number
HACH	2100Q	44143
YSI	ProQuatro	37379

c. Field Testing Equipment Calibration Documentation Found in Project Folder

Time	Volume Removed (L)	T° (C)	pH	Spec. Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Color	DTW (ft)
Stabilization	--	+/- 3%	+/- 0.1	+/- 3%	+/- 10	+/- 10%	+/-5 , 10%		0.3 ft
1002	0.0	15.1	7.07	4837	191.3	2.04	30.2	Clear	23.82
1007	1.9	13.7	7.10	4705	184.2	0.33	17.8	Clear	24.03
1010	2.9	13.7	7.12	4687	182.4	0.31	13.0	Clear	24.00
1013	4.0	13.6	7.13	4677	181.0	0.31	10.7	Clear	24.12
1016	5.0	13.7	7.13	4672	178.9	0.34	10.1	Clear	24.10

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	■
Has required turbidity been reached	■	☐	☐
Have parameters stabilized	■	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
ASH-05-CDPHE	See CoC	7	See CoC	See CoC	1020
ASH-05-CCR	See CoC	4	See CoC	See CoC	1020
FD-01-CCR	See CoC	4	See CoC	See CoC	--

Comments:

Signature  Date 10/2/2025

AECOM

Well/Piezo ID: ASH-06

Ground Water Sample Collection Record

Client:	Platte River Power Authority	Date:	10/1/2025
Project No:	60754422 (CDPHE), 60754415 (CCR)	Time: Start	1030
Site Location:	Rawhide Generating Station	Finish	1140
Weather Conds:	Windy, warm	Collector(s)	O. Helinksi

WATER LEVEL DATA: (measured from Top of Casing) Well ■ Piezometer ☐

a. Total Well Length _____ c. Casing Material PVC e. Length of Water Column -- (a-b)

b. Water Table Depth 62.77 d. Casing Diameter 2" f. Calculated Well Volume (see back) --

WELL PURGING DATA

a. Purge Method: low flow bladder pump

c. Field Testing Equipment Used:

Make	Model	Serial Number
HACH	2100Q	44143
YSI	ProQuatro	37379

c. Field Testing Equipment Calibration Documentation Found in Project Folder

Time	Volume Removed (L)	T° (C)	pH	Spec. Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Color	DTW (ft)
Stabilization	--	+/- 3%	+/- 0.1	+/- 3%	+/- 10	+/- 10%	+/-5 , 10%		0.3 ft
1037	0.0	14.4	8.07	730	61.6	5.36	15.0	Clear	63.12
1042	2.0	13.6	8.17	641	62.6	8.39	5.36	Clear	63.73
1045	3.0	14.3	8.17	633	63.8	8.71	3.83	Clear	63.98
1048	3.9	14.4	8.21	630	65.2	8.78	4.33	Clear	64.17
1051	4.4	15.0	8.18	627	66.5	8.54	3.01	Clear	64.42
1054	5.0	15.1	8.16	628	67.6	8.78	3.36	Clear	64.52
1057	5.4	15.0	8.16	627	68.3	8.56	2.37	Clear	64.74

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	■
Has required turbidity been reached	■	☐	☐
Have parameters stabilized	■	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
ASH-06-CDPHE	See CoC	7	See CoC	See CoC	1100
ASH-06-CCR	See CoC	4	See CoC	See CoC	1100

Comments: _____

Signature _____ Date 10/1/2025

AECOM

Well/Piezo ID: ASH-07

Ground Water Sample Collection Record

Client:	Platte River Power Authority	Date:	10/2/2025
Project No:	60754422 (CDPHE), 60709371 (CCR)	Time: Start	0901
Site Location:	Rawhide Generating Station	Finish	1040
Weather Conds:	warm, sunny Collector(s)	M. Swift	

WATER LEVEL DATA: (measured from Top of Casing) Well ■ Piezometer ☐

a. Total Well Length -- c. Casing Material PVC e. Length of Water Column -- (a-b)

b. Water Table Depth 18.29 d. Casing Diameter 2" f. Calculated Well Volume (see back) --

WELL PURGING DATA

a. Purge Method low flow bladder pump

c. Field Testing Equipment Used:

Make	Model	Serial Number
HACH	2100Q	8525
YSI	ProQuatro	47156

c. Field Testing Equipment Calibration Documentation Found in Project Folder

Time	Volume Removed (gal)	T° (C)	pH	Spec. Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Color	DTW (ft)
Stabilization	--	+/- 3%	+/- 0.1	+/- 3%	+/- 10	+/- 10%	+/-5 , 10%		0.3 ft
0905	1.0	13.2	7.11	5334	173.1	1.19	13.5	clear	19.12
0910	3.0	13.3	6.95	5306	163.9	0.85	11.1	clear	19.22
0915	5.1	13.4	7.07	5245	153.0	0.71	10.5	clear	19.60
0920	7.0	13.3	7.07	5217	154.5	0.66	14.3	clear	19.81
0925	9.5	13.2	7.08	5168	136.2	0.46	12.7	clear	20.20
0930	11.0	13.3	7.07	5132	128.2	0.62	13.3	clear	20.44
0935	13.0	13.3	7.06	5110	122.7	0.75	15.4	clear	20.70
0940	14.1	14.2	7.05	5102	118.6	0.33	17.5	clear	20.65
0945	15.0	14.2	7.04	5115	114.9	0.06	18.5	clear	20.61
0948	15.7	14.1	7.04	5125	112.0	0.22	21.3	clear	20.58

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	■
Has required turbidity been reached	■	☐	☐
Have parameters stabilized	■	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
ASH-07-CDPHE	See CoC	7	See CoC	See CoC	0950
ASH-07-CCR	See CoC	12	See CoC	See CoC	0950

Comments: MS/MSD here

Signature Mackensie Swift Date 10/2/2025

AECOM

Well/Piezo ID: ASH-08

Ground Water Sample Collection Record

Client:	Platte River Power Authority	Date:	10/1/2025
Project No:	60754422 (CDPHE), 60709371 (CCR)	Time: Start	1320
Site Location:	Rawhide Generating Station	Finish	1445
Weather Conds:	warm, sunny	Collector(s)	M. Swift

WATER LEVEL DATA: (measured from Top of Casing) Well ■ Piezometer ☐

a. Total Well Length -- c. Casing Material PVC e. Length of Water Column -- (a-b)

b. Water Table Depth 12.46 d. Casing Diameter 2" f. Calculated Well Volume (see back) --

WELL PURGING DATA

a. Purge Method low flow bladder pump

c. Field Testing Equipment Used:

Make	Model	Serial Number
HACH	2100Q	8525
YSI	ProQuatro	47156

c. Field Testing Equipment Calibration Documentation Found in Project Folder

Time	Volume Removed (gal)	T° (C)	pH	Spec. Cond (µs/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Color	DTW (ft)
Stabilization	--	+/- 3%	+/- 0.1	+/- 3%	+/- 10	+/- 10%	+/-5 , 10%		0.3 ft
1325	2.0	13.9	6.99	4264	-50.2	6.10	12.4	clear	15.20
1330	3.7	14.1	6.96	4266	-50.4	1.56	7.31	clear	16.21
1335	5.5	14.0	6.70	4268	-50.6	0.69	8.91	clear	18.12
1340	7.1	14.0	6.68	4278	-50.6	0.57	6.75	clear	18.80
1345	9.0	13.4	7.12	4280	-46.5	0.48	5.71	clear	19.90
1350	10.5	13.6	7.00	4269	-43.0	1.53	10.3	clear	20.12
1355	11.6	12.8	7.00	4280	-32.7	1.00	8.65	clear	20.72
1400	13.8	12.5	7.02	4283	-27.7	0.55	4.59	clear	22.00
1405	14.5	12.4	7.02	4293	-22.4	0.68	3.55	clear	22.25
1410	15.9	12.7	7.02	4303	-19.0	0.89	2.96	clear	22.51
1415		12.5	7.01	4304	-10.8	0.75	2.69	clear	22.77

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	■
Has required turbidity been reached	■	☐	☐
Have parameters stabilized	☐	■	☐

If no or N/A - Explain below.

ORP and DTW did not stabilize within a reasonable amount of time.

SAMPLE COLLECTION: Method: low flow bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
ASH-08-CDPHE	See CoC	7	See CoC	See CoC	1420
ASH-08-CCR	See CoC	4	See CoC	See CoC	1420

Comments:

Signature Mackensie Swift Date 10/1/2025

Appendix C

Laboratory Analytical Reports and Data Validation Reports

April/May 2025

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

July 09, 2025

Vasanta Kalluri
AECOM
6200 South Quebec Street
Greenwood Village, CO 80111

RE: Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60474180

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 01, 2025. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

Revised Report_rev.1 The AECOM project number was updated from 60754422 to 60754415 in the project name.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Heather M. Wilson

Heather Wilson
heather.wilson@pacelabs.com
1(913)563-1407
Project Manager

Enclosures

cc: Jamie Herman, AECOM
Kara Hoppes, AECOM
Sawyer Hunt, AECOM
Jeremy Hurshman, AECOM

Pace Analytical Services, LLC
2025.07.09 14:33:36 -07'00'
Document is certified

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60474180

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Arkansas Certification #: 88-00679
Illinois Certification #: 2000302023-6
Colorado Division of Oil and Public Safety
Iowa Certification #: 118
Kansas Field Laboratory Certification #: E-92587
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Missouri Inorganic Drinking Water Certification
Nevada Certification #: KS000212024-1
Oklahoma Certification #: 2023-073
Texas Certification #: T104704407-23-17
Utah Certification #: KS000212022-13

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60474180

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60474180001	**ASH-01-CCR**	Water	04/30/25 09:30	05/01/25 10:00

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SAMPLE ANALYTE COUNT

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60474180

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60474180001	**ASH-01-CCR**	EPA 6010	ARMN	12	PASI-K
		EPA 6020	MLD	2	PASI-K
		EPA 7470	MNG	1	PASI-K
		SM 2540C	CAR	1	PASI-K
		EPA 9056	MLD	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60474180

Sample: ASH-01-CCR **Lab ID: 60474180001** Collected: 04/30/25 09:30 Received: 05/01/25 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Arsenic	ND	ug/L	10.0	1	05/06/25 05:58	05/23/25 18:50	7440-38-2	
Barium	**10.3**	ug/L	5.0	1	05/06/25 05:58	05/23/25 18:50	7440-39-3	
Beryllium	ND	ug/L	1.0	1	05/06/25 05:58	05/23/25 18:50	7440-41-7	
Boron	**452**	ug/L	100	1	05/06/25 05:58	05/23/25 18:50	7440-42-8	
Cadmium	ND	ug/L	5.0	1	05/06/25 05:58	05/23/25 18:50	7440-43-9	
Calcium	**368000**	ug/L	200	1	05/06/25 05:58	05/23/25 18:50	7440-70-2	
Chromium	ND	ug/L	5.0	1	05/06/25 05:58	05/23/25 18:50	7440-47-3	
Cobalt	ND	ug/L	5.0	1	05/06/25 05:58	05/23/25 18:50	7440-48-4	
Lead	ND	ug/L	10.0	1	05/06/25 05:58	05/23/25 18:50	7439-92-1	
Lithium	**411**	ug/L	10.0	1	05/06/25 05:58	05/23/25 18:50	7439-93-2	
Molybdenum	ND	ug/L	20.0	1	05/06/25 05:58	05/23/25 18:50	7439-98-7	
Selenium	ND	ug/L	15.0	1	05/06/25 05:58	05/23/25 18:50	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Antimony	ND	ug/L	1.0	1	05/09/25 13:18	05/21/25 14:56	7440-36-0	
Thallium	ND	ug/L	1.0	1	05/09/25 13:18	05/21/25 14:56	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
	Pace Analytical Services - Kansas City							
Mercury	ND	ug/L	0.20	1	05/16/25 14:23	05/19/25 11:27	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Kansas City							
Total Dissolved Solids	**3270**	mg/L	100	1		05/07/25 15:12		
9056 IC Anions	Analytical Method: EPA 9056							
	Pace Analytical Services - Kansas City							
Chloride	**18.9**	mg/L	1.0	1		05/28/25 10:41	16887-00-6	
Fluoride	ND	mg/L	0.20	1		05/28/25 10:41	16984-48-8	
Sulfate	**2170**	mg/L	400	400		05/28/25 10:53	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60474180

QC Batch: 935430
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60474180001

METHOD BLANK: 3707831 Matrix: Water
Associated Lab Samples: 60474180001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	05/19/25 10:41	

LABORATORY CONTROL SAMPLE: 3707832

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3707833 3707834

Parameter	Units	60473874017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.096	5	5	4.9	4.8	98	96	75-125	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60474180

QC Batch: 933991
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60474180001

METHOD BLANK: 3700516 Matrix: Water
Associated Lab Samples: 60474180001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	10.0	05/23/25 18:37	
Barium	ug/L	ND	5.0	05/23/25 18:37	
Beryllium	ug/L	ND	1.0	05/23/25 18:37	
Boron	ug/L	ND	100	05/23/25 18:37	
Cadmium	ug/L	ND	5.0	05/23/25 18:37	
Calcium	ug/L	ND	200	05/23/25 18:37	
Chromium	ug/L	ND	5.0	05/23/25 18:37	
Cobalt	ug/L	ND	5.0	05/23/25 18:37	
Lead	ug/L	ND	10.0	05/23/25 18:37	
Lithium	ug/L	ND	10.0	05/23/25 18:37	
Molybdenum	ug/L	ND	20.0	05/23/25 18:37	
Selenium	ug/L	ND	15.0	05/23/25 18:37	

LABORATORY CONTROL SAMPLE: 3700517

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1000	874	87	80-120	
Barium	ug/L	1000	951	95	80-120	
Beryllium	ug/L	1000	979	98	80-120	
Boron	ug/L	1000	883	88	80-120	
Cadmium	ug/L	1000	956	96	80-120	
Calcium	ug/L	10000	9700	97	80-120	
Chromium	ug/L	1000	961	96	80-120	
Cobalt	ug/L	1000	983	98	80-120	
Lead	ug/L	1000	976	98	80-120	
Lithium	ug/L	1000	981	98	80-120	
Molybdenum	ug/L	1000	960	96	80-120	
Selenium	ug/L	1000	937	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3700518 3700519

Parameter	Units	60474170001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	ND	1000	1000	916	949	92	95	75-125	4	20	
Barium	ug/L	9.4	1000	1000	956	987	95	98	75-125	3	20	
Beryllium	ug/L	ND	1000	1000	967	1010	97	101	75-125	5	20	
Boron	ug/L	434	1000	1000	1320	1360	88	93	75-125	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60474180

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3700518 3700519

Parameter	Units	60474170001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	ug/L	ND	1000	1000	909	950	91	95	75-125	4	20	
Calcium	ug/L	353000	10000	10000	361000	380000	85	271	75-125	5	20	M1
Chromium	ug/L	ND	1000	1000	925	970	92	97	75-125	5	20	
Cobalt	ug/L	ND	1000	1000	932	975	93	97	75-125	5	20	
Lead	ug/L	ND	1000	1000	915	953	91	95	75-125	4	20	
Lithium	ug/L	393	1000	1000	1370	1420	98	103	75-125	4	20	
Molybdenum	ug/L	ND	1000	1000	961	1010	96	101	75-125	5	20	
Selenium	ug/L	ND	1000	1000	955	989	95	99	75-125	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60474180

QC Batch: 934607
QC Batch Method: EPA 3010
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60474180001

METHOD BLANK: 3703653 Matrix: Water
Associated Lab Samples: 60474180001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	05/21/25 14:52	
Thallium	ug/L	ND	1.0	05/21/25 14:52	

LABORATORY CONTROL SAMPLE: 3703654

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.4	98	80-120	
Thallium	ug/L	40	38.1	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3703655 3703656

Parameter	Units	60474180001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	40	40	37.8	37.5	94	93	75-125	1	20	
Thallium	ug/L	ND	40	40	41.3	41.3	103	103	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60474180

QC Batch: 934269
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60474180001

METHOD BLANK: 3701859 Matrix: Water
Associated Lab Samples: 60474180001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	05/07/25 15:10	

LABORATORY CONTROL SAMPLE: 3701860

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1030	103	80-120	

SAMPLE DUPLICATE: 3701861

Parameter	Units	60474170001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3270	3230	1	10	

SAMPLE DUPLICATE: 3701862

Parameter	Units	60473870005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	370	377	2	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60474180

QC Batch: 936559
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60474180001

METHOD BLANK: 3712718 Matrix: Water
Associated Lab Samples: 60474180001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	05/28/25 09:29	
Fluoride	mg/L	ND	0.20	05/28/25 09:29	
Sulfate	mg/L	ND	1.0	05/28/25 09:29	

LABORATORY CONTROL SAMPLE: 3712719

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.1	102	80-120	
Fluoride	mg/L	2.5	2.4	98	80-120	
Sulfate	mg/L	5	5.3	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3712720 3712721

Parameter	Units	60475025002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	69.8	5	5	75.4	71.6	112	36	80-120	5	15	E,M1
Fluoride	mg/L	0.49	2.5	2.5	2.7	1.1	88	25	80-120	82	15	M1,R1
Sulfate	mg/L	1.5	5	5	7.1	3.6	112	42	80-120	65	15	M1,R1

SAMPLE DUPLICATE: 3712722

Parameter	Units	60475025002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	69.8	69.8	0	15	E
Fluoride	mg/L	0.49	0.49	1	15	
Sulfate	mg/L	1.5	1.5	1	15	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60474180

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60474180

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60474180001	**ASH-01-CCR**	EPA 3010	933991	EPA 6010	934096
60474180001	**ASH-01-CCR**	EPA 3010	934607	EPA 6020	934624
60474180001	**ASH-01-CCR**	EPA 7470	935430	EPA 7470	935467
60474180001	**ASH-01-CCR**	SM 2540C	934269		
60474180001	**ASH-01-CCR**	EPA 9056	936559		

WO# : 60474180

60474180

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sampl		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Aecom

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 449368703143 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☐ No ☐ Seals intact: Yes ☐ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☐

Thermometer Used: T301 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 1.7 **Corr. Factor** +0.1 **Corrected** 1.8

Date and initials of person examining contents: AF 5/11

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:** 96886	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

CCR ASH KS

Pace. ytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is AL DOCUMENT. All relevant fields must be completed accurately.

60474180

Page: 1 of 1

Section A Required Client Information

Company:	AECOM
Address:	6200 South Quebec St
	Greenwood Village, CO 80111
Email To:	jamie.herman@aecom.com
Phone: (303) 740-2614	Fax:
Requested Due Date/TAT:	

Section B Required Project Information

Report To:	Vasanta Kalluri
Copy To:	Jamie Herman
Purchase Order No.:	NEED PO #
Project Name:	~~60709371~~ PRPA CCR 60754422
Project Number:	~~60709371~~ 60754422

Section C Invoice Information

Attention:	Accounts Payable
Company Name:	AECOM
Address:	Same as Section A
Pace Quote Reference:	42700
Pace Project Manager:	Heather Wilson
Pace Profile #:	11033, 3

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA X OTHER CCR

Site Location STATE: CO

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	9056 Cl, F, SO4	6020 Total Metals*	6010 Total Metals**	7470 Total Mercury	2540C TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	ASH-01-CCR	WT	G	—	—	4/30/25	0430		3	2	1							X	X	X	X	X	N	
2																							N	
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl	Olivia Helinski / AECOM	4/30/25	1700	Carmen Sure Pace	5/1	1000	1.8
**B, Ca, Li							

SAMPLER NAME AND SIGNATURE				
PRINT Name of SAMPLER:	Olivia Helinski			
SIGNATURE of SAMPLER:		DATE Signed (MM/DD/YY):	04/30/25	

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Client: Aecom Profile/EZ # 11037-3

Site: PRPA CCR 60754422 Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3B	BP3Z	WPDU	ZPLC	Other		
1	WT																		1		1	1										
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1B	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2B	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3B	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60474160

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

July 09, 2025

Vasanta Kalluri
AECOM
6200 South Quebec Street
Greenwood Village, CO 80111

RE: Project: 60754415 PRPA CCR
Pace Project No.: 60474663

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 07, 2025. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Heather M. Wilson

Heather Wilson
heather.wilson@pacelabs.com
1(913)563-1407
Project Manager

Enclosures

cc: Jamie Herman, AECOM
Kara Hoppes, AECOM
Sawyer Hunt, AECOM
Jeremy Hurshman, AECOM

Pace Analytical Services, LLC
2025.07.09 14:43:49 -07'00'
Document is certified

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: 60754415 PRPA CCR
Pace Project No.: 60474663

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
ANABISO/IEC 17025:2017 Rad Cert#: L24170
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 2950
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA010
Louisiana DEQ/TNI Certification #: 04086
Maine Certification #: 2023021
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572023-03
New Hampshire/TNI Certification #: 297622
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-015
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN02867
Texas/TNI Certification #: T104704188-22-18
Utah/TNI Certification #: PA014572223-14
USDA Soil Permit #: 525-23-67-77263
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad

Pace Analytical Services, LLC
9608 Loiret Blvd.
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(913)599-5665

SAMPLE SUMMARY

Project: 60754415 PRPA CCR
Pace Project No.: 60474663

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60474663001	**ASH-01-CCR**	Water	04/30/25 09:30	05/07/25 09:40

Pace Analytical Services, LLC
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SAMPLE ANALYTE COUNT

Project: 60754415 PRPA CCR
Pace Project No.: 60474663

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60474663001	**ASH-01-CCR**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 60474663

Sample: ASH-01-CCR **Lab ID: 60474663001** Collected: 04/30/25 09:30 Received: 05/07/25 09:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.350 ± 0.783 (1.23) C:NA T:79%**	pCi/L	05/24/25 13:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.939 ± 0.470 (0.827) C:80% T:82%**	pCi/L	05/23/25 11:04	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.29 ± 1.25 (2.06)**	pCi/L	05/27/25 13:53	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 60474663

QC Batch: 745050
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60474663001

METHOD BLANK: 3627280 Matrix: Water
Associated Lab Samples: 60474663001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.729 ± 0.497 (0.958) C:80% T:70%	pCi/L	05/23/25 11:04	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 60474663

QC Batch: 745049
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60474663001

METHOD BLANK: 3627279
Matrix: Water
Associated Lab Samples: 60474663001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0572 ± 0.231 (0.403) C:NA T:92%	pCi/L	05/24/25 13:38	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: 60754415 PRPA CCR
Pace Project No.: 60474663

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60754415 PRPA CCR
Pace Project No.: 60474663

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60474663001	**ASH-01-CCR**	EPA 903.1	745049		
60474663001	**ASH-01-CCR**	EPA 904.0	745050		
60474663001	**ASH-01-CCR**	Total Radium Calculation	748065		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company:	AECOM
Address:	6200 South Quebec St
	Greenwood Village, CO 80111
Email To:	jamie.herman@aecom.com
Phone: (303) 740-2614	Fax:
Requested Due Date/TAT:	15 Day TAT

Section B Required Project Information:

Report To:	Vasanta Kalluri
Copy To:	Jamie Herman
Purchase Order No.:	1599461 60754422
Project Name:	~~60705410~~ PRPA ~~60731909~~ CCR
Project Number:	~~60705410~~ ~~60731909~~ 60754422

Section C Invoice Information:

Attention:	Accounts Payable
Company Name:	AECOM
Address:	Same as Section A
Pace Quote Reference:	73141
Pace Project Manager:	Heather Wilson
Pace Profile #:	11033, 8

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER CCR

Site Location STATE: CO

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / , -) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Total Radium-226	Total Radium-228	Sum Radium-226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	ASH-01-CCR	WT	G	—	—	4/30/25	0930		2		2							N	X	X	X	N	
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Olivia Helinski / AECOM	4/30/25	1700				
	/ AECOM	5/6/25	1700		5/7/25	0940	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Olivia Helinski

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): ~~04/30/25~~ 05/06/25

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

updated COC received via email 5/8/25 -ps

Internal Transfer Chain of Custody

☐ Rush Multiplier____X
☐ Samples Pre-Logged into eCOC

State Of Origin: CO
Cert. Needed: ☐ Yes ☒ No
Owner Received Date: 5/7/2025 Results Requested By: 5/29/2025

Workorder: 60474663 **Workorder Name:** 60754422 PRPA CCR

Report To	Subcontract To
Heather Wilson Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 1(913)563-1407	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3						Requested Analysis: Total Radium-226, Total Sum Radium	Total Radium-228											LAB USE ONLY
1	ASH-01-CCR	PS	4/30/2025 09:30	60474663001	Water	2						X	X											001
2																								
3																								
4																								
5																								

Transfers	Released By	Date/Time	Received By	Date/Time
1			Matthew Smith	5/7/25 9:40
2				
3				

Comments: IR30- Radium QC Sheets Required

Cooler Temperature on Receipt — °C | **Custody Seal** Y or N | **Received on Ice** Y or (N) | **Samples Intact** (Y) or N

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

WO# : 30777563

30777563

DC#_Title: ENV-FRM-GBUR-0088 v07_Sample Condition Upon Receipt-Greensburg

Effective Date: 01/04/2024

WO# : 30777563

PM: CMC Due Date: 05/30/25

CLIENT: PACE_60_LEKS

Client Name: AECOM Proj

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Tracking Number: 4453 8930 3980

Examined By: MS 5/7/25

Labeled By: MS 5/8/25

Temped By: —

Custody Seal on Cooler/Box Present: ☑ Yes ☐ No Seals Intact: ☑ Yes ☐ No

Thermometer Used: — Type of Ice: Wet Blue (None)

Cooler Temperature: Observed Temp — °C Correction Factor: — °C Final Temp: — °C

Temp should be above freezing to 6°C

Comments:	Yes	No	NA	pH paper Lot# 10D3241 / D.P.D. Residual Chlorine Lot # —
Chain of Custody Present	✓			1.
Chain of Custody Filled Out:	✓			2.
-Were client corrections present on COC	✓	✓ MS 5/8/25		3.
Chain of Custody Relinquished	✓			4.
Sampler Name & Signature on COC:	✓			5.
Sample Labels match COC: -Includes date/time/ID Matrix: WT	✓			
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used:	✓			10.
-Pace Containers Used	✓			
Containers Intact:	✓			11.
Orthophosphate field filtered:			✓	12.
Hex Cr Aqueous samples field filtered:			✓	13.
Organic Samples checked for dichlorination			✓	14:
Filtered volume received for dissolved tests:			✓	15:
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	✓			16. pH < 2
All containers meet method preservation requirements:	✓			Initial when completed MS / Date/Time of Preservation / Lot# of added Preservative
8260C/D: Headspace in VOA Vials (> 6mm)			✓	17.
624.1: Headspace in VOA Vials (0mm)			✓	18.
Radon: Headspace in RAD Vials (0mm)			✓	19.
Trip Blank Present:			✓	Trip blank custody seal present? YES or NO
Rad Samples Screened <.05 mrem/hr.	✓			Initial when completed MS / Date: 5/7/25 / Survey Meter SN: 250143380

Comments:

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office.
PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.

Qualtrax ID: 55680

CCR PA ASH

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CHAIN-OF-CUSTODY / Analytical Request Documen

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

WO#: 30777563

PM: CMC Due Date: 05/30/25

CLIENT: PACE_60_LEKS

Page: 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	AECOM	Report To:	Vasanta Kalluri	Attention:	Accounts Payable
Address:	6200 South Quebec St	Copy To:	Jamie Herman	Company Name:	AECOM
	Greenwood Village, CO 80111			Address:	Same as Section A
Email To:	jamie.herman@aecom.com	Purchase Order No.:	1599461 60754422	Pace Quote Reference:	73141
Phone:	(303) 740-2614 Fax:	Project Name:	~~60709410~~ PRPA ~~60709410~~ CCR	Pace Project Manager:	Heather Wilson
Requested Due Date/TAT:	15 Day TAT	Project Number:	~~60709410~~ ~~60731303~~ 60754422	Pace Profile #:	11033, 8

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☒ OTHER CCR

Site Location STATE: CO

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test: Total Radium-226	Total Radium-228	Sum Radium-226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	ASH-01-CCR	WT	G	—	—	4/30/25	0930		2		2							N	X	X	X	N	001
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Olivia Helinski / AECOM	4/30/25	1700				—	N	N	Y
	/ AECOM	5/6/25	1700		5/7/25	0940				

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Olivia Helinski

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): ~~04/30/25~~ 05/06/25

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Test:	Ra-228
Analyst:	ZPC
Date:	5/15/2025
Worklist:	85077
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	3627280
MB concentration:	0.729
M/B 2 Sigma CSU:	0.497
MB MDC:	0.958
MB Numerical Performance Indicator:	2.88
MB Status vs Numerical Indicator:	Warning
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS85077	LCSD85077
Count Date:	5/23/2025	
Spike I.D.:	23-043	
Decay Corrected Spike Concentration (pCi/mL):	32.490	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.821	
Target Conc. (pCi/L, g, F):	3.957	
Uncertainty (Calculated):	0.194	
Result (pCi/L, g, F):	4.258	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.999	
Numerical Performance Indicator:	0.58	
Percent Recovery:	107.60%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	135%	
Lower % Recovery Limits:	60%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:	5/7/2025	5/7/2025
Sample I.D.	60474729003	60474728004
Sample MS I.D.	60474729004	60474728006
Sample MSD I.D.	60474729005	60474728007
Spike I.D.:	23-043	23-043
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	32.661	32.661
Spike Volume Used in MS (mL):	0.20	0.20
Spike Volume Used in MSD (mL):	0.20	0.20
MS Aliquot (L, g, F):	0.809	0.810
MS Target Conc.(pCi/L, g, F):	8.078	8.069
MSD Aliquot (L, g, F):	0.806	0.801
MSD Target Conc. (pCi/L, g, F):	8.103	8.151
MS Spike Uncertainty (calculated):	0.396	0.395
MSD Spike Uncertainty (calculated):	0.397	0.399
Sample Result:	0.567	0.674
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.351	0.367
Sample Matrix Spike Result:	9.566	7.822
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.916	1.615
Sample Matrix Spike Duplicate Result:	9.701	8.175
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.943	1.657
MS Numerical Performance Indicator:	0.909	-1.060
MSD Numerical Performance Indicator:	1.004	-0.730
MS Percent Recovery:	111.41%	88.59%
MSD Percent Recovery:	112.73%	92.03%
MS Status vs Numerical Indicator:	Pass	Pass
MSD Status vs Numerical Indicator:	Pass	Pass
MS Status vs Recovery:	Pass	Pass
MSD Status vs Recovery:	Pass	Pass
MS/MSD Upper % Recovery Limits:	135%	135%
MS/MSD Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment		
Sample I.D.:		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.		
Sample Result (pCi/L, g, F):		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Duplicate Result (pCi/L, g, F):		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:		
Duplicate RPD:		
Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD:		
% RPD Limit:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.	60474729003	60474728004
Sample MS I.D.	60474729004	60474728006
Sample MSD I.D.	60474729005	60474728007
Sample Matrix Spike Result:	9.566	7.822
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.916	1.615
Sample Matrix Spike Duplicate Result:	9.701	8.175
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.943	1.657
Duplicate Numerical Performance Indicator:	-0.097	-0.299
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	1.18%	3.81%
MS/ MSD Duplicate Status vs Numerical Indicator:	Pass	Pass
MS/ MSD Duplicate Status vs RPD:	Pass	Pass
% RPD Limit:	36%	36%

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

5/23/25

ET 5-27-25

Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Test:	Ra-226
Analyst:	LL1
Date:	5/14/2025
Batch ID:	85076
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	3627279
MB concentration:	0.057
M/B 2 Sigma CSU:	0.231
MB MDC:	0.403
MB Numerical Performance Indicator:	0.48
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	N/A

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS85076	LCSD85076
Count Date:	5/24/2025	
Spike I.D.:	24-046	
Spike Concentration (pCi/mL):	31.831	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.651	
Target Conc. (pCi/L, g, F):	4.892	
Uncertainty (Calculated):	0.230	
Result (pCi/L, g, F):	5.553	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.203	
Numerical Performance Indicator:	1.06	
Percent Recovery:	113.52%	
Status vs Numerical Indicator:	Pass	
Status vs Recovery:	N/A	
Upper % Recovery Limits:	133%	
Lower % Recovery Limits:	73%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:	5/7/2025	5/7/2025
Sample I.D.	60474729003	60474728004
Sample MS I.D.	60474729004	60474728006
Sample MSD I.D.	60474729005	60474728007
Spike I.D.:	24-046	24-046
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	31.831	31.831
Spike Volume Used in MS (mL):	0.20	0.20
Spike Volume Used in MSD (mL):	0.20	0.20
MS Aliquot (L, g, F):	0.652	0.657
MS Target Conc.(pCi/L, g, F):	9.765	9.694
MSD Aliquot (L, g, F):	0.655	0.654
MSD Target Conc. (pCi/L, g, F):	9.716	9.735
MS Spike Uncertainty (calculated):	0.459	0.456
MSD Spike Uncertainty (calculated):	0.457	0.458
Sample Result:	0.063	0.221
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.381	0.632
Sample Matrix Spike Result:	11.068	7.407
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.774	1.289
Sample Matrix Spike Duplicate Result:	10.074	8.666
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.628	1.397
MS Numerical Performance Indicator:	1.298	-3.263
MSD Numerical Performance Indicator:	0.334	-1.580
MS Percent Recovery:	112.69%	74.13%
MSD Percent Recovery:	103.04%	86.75%
MS Status vs Numerical Indicator:	Pass	Fail****
MSD Status vs Numerical Indicator:	Pass	Pass
MS Status vs Recovery:	N/A	N/A
MSD Status vs Recovery:	N/A	N/A
MS/MSD Upper % Recovery Limits:	136%	136%
MS/MSD Lower % Recovery Limits:	71%	71%

Duplicate Sample Assessment		
Sample I.D.:		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.		
Sample Result (pCi/L, g, F):		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Duplicate Result (pCi/L, g, F):		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:		
Duplicate RPD:		
Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD:		
% RPD Limit:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.	60474729003	60474728004
Sample MS I.D.	60474729004	60474728006
Sample MSD I.D.	60474729005	60474728007
Sample Matrix Spike Result:	11.068	7.407
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.774	1.289
Sample Matrix Spike Duplicate Result:	10.074	8.666
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.628	1.397
Duplicate Numerical Performance Indicator:	0.809	-1.298
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	8.95%	15.69%
MS/ MSD Duplicate Status vs Numerical Indicator:	Pass	Pass
MS/ MSD Duplicate Status vs RPD:	N/A	N/A
% RPD Limit:	32%	32%

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the RL.

Comments:

5/25/25

CM 5/24/25

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

June 18, 2025

Vasanta Kalluri
AECOM
6200 South Quebec Street
Greenwood Village, CO 80111

Pace Analytical Services, LLC
2025.06.18 15:37:20 -05'00'
Document is certified

RE: Project: 60754422 PRPA CCR
Pace Project No.: 60475047

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 13, 2025. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Angie Brown for
Heather Wilson
heather.wilson@pacelabs.com
1(913)563-1407
Project Manager

Enclosures

cc: Jamie Herman, AECOM
Kara Hoppes, AECOM
Sawyer Hunt, AECOM
Jeremy Hurshman, AECOM

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: 60754422 PRPA CCR
Pace Project No.: 60475047

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Arkansas Certification #: 88-00679
Illinois Certification #: 2000302023-6
Colorado Division of Oil and Public Safety
Iowa Certification #: 118
Kansas Field Laboratory Certification #: E-92587
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Missouri Inorganic Drinking Water Certification
Nevada Certification #: KS000212024-1
Oklahoma Certification #: 2023-073
Texas Certification #: T104704407-23-17
Utah Certification #: KS000212022-13

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: 60754422 PRPA CCR
Pace Project No.: 60475047

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60475047001	**ASH-06-CCR**	Water	05/12/25 12:20	05/13/25 08:40
60475047002	**ASH-03-CCR**	Water	05/12/25 14:20	05/13/25 08:40
60475047003	**DUP-02-CCR**	Water	05/12/25 08:00	05/13/25 08:40

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: 60754422 PRPA CCR
Pace Project No.: 60475047

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60475047001	**ASH-06-CCR**	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JGP	2	PASI-K
		EPA 7470	MNG	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		EPA 9056	MLD	3	PASI-K
60475047002	**ASH-03-CCR**	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JGP	2	PASI-K
		EPA 7470	MNG	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		EPA 9056	MLD	3	PASI-K
60475047003	**DUP-02-CCR**	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JGP	2	PASI-K
		EPA 7470	MNG	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		EPA 9056	MLD	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

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ANALYTICAL RESULTS

Project: 60754422 PRPA CCR
Pace Project No.: 60475047

Sample: ASH-06-CCR **Lab ID: 60475047001** Collected: 05/12/25 12:20 Received: 05/13/25 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Arsenic	ND	ug/L	10.0	1	05/22/25 15:25	06/05/25 12:09	7440-38-2	
Barium	**33.3**	ug/L	5.0	1	05/22/25 15:25	06/05/25 12:09	7440-39-3	
Beryllium	ND	ug/L	1.0	1	05/22/25 15:25	06/05/25 12:09	7440-41-7	
Boron	**304**	ug/L	100	1	05/22/25 15:25	06/05/25 12:09	7440-42-8	
Cadmium	ND	ug/L	5.0	1	05/22/25 15:25	06/05/25 12:09	7440-43-9	
Calcium	**25800**	ug/L	200	1	05/22/25 15:25	06/05/25 12:09	7440-70-2	
Chromium	ND	ug/L	5.0	1	05/22/25 15:25	06/05/25 12:09	7440-47-3	
Cobalt	ND	ug/L	5.0	1	05/22/25 15:25	06/05/25 12:09	7440-48-4	
Lead	ND	ug/L	10.0	1	05/22/25 15:25	06/05/25 12:09	7439-92-1	
Lithium	**55.1**	ug/L	10.0	1	05/22/25 15:25	06/05/25 12:09	7439-93-2	
Molybdenum	ND	ug/L	20.0	1	05/22/25 15:25	06/05/25 12:09	7439-98-7	
Selenium	**30.6**	ug/L	15.0	1	05/22/25 15:25	06/05/25 12:09	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Antimony	ND	ug/L	1.0	1	05/22/25 11:08	06/16/25 13:21	7440-36-0	
Thallium	ND	ug/L	1.0	1	05/22/25 11:08	06/16/25 13:21	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
	Pace Analytical Services - Kansas City							
Mercury	ND	ug/L	0.20	1	05/27/25 14:41	05/28/25 12:36	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Kansas City							
Total Dissolved Solids	**471**	mg/L	10.0	1		05/16/25 16:17		
9056 IC Anions	Analytical Method: EPA 9056							
	Pace Analytical Services - Kansas City							
Chloride	**8.7**	mg/L	1.0	1		06/02/25 19:45	16887-00-6	
Fluoride	**0.54**	mg/L	0.20	1		06/02/25 19:45	16984-48-8	
Sulfate	**77.8**	mg/L	10.0	10		06/02/25 19:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 60754422 PRPA CCR
Pace Project No.: 60475047

Sample: ASH-03-CCR **Lab ID: 60475047002** Collected: 05/12/25 14:20 Received: 05/13/25 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Arsenic	ND	ug/L	10.0	1	05/22/25 15:25	06/05/25 12:14	7440-38-2	
Barium	**12.2**	ug/L	5.0	1	05/22/25 15:25	06/05/25 12:14	7440-39-3	
Beryllium	ND	ug/L	1.0	1	05/22/25 15:25	06/05/25 12:14	7440-41-7	
Boron	**780**	ug/L	100	1	05/22/25 15:25	06/05/25 12:14	7440-42-8	
Cadmium	ND	ug/L	5.0	1	05/22/25 15:25	06/05/25 12:14	7440-43-9	
Calcium	**454000**	ug/L	200	1	05/22/25 15:25	06/05/25 12:14	7440-70-2	
Chromium	ND	ug/L	5.0	1	05/22/25 15:25	06/05/25 12:14	7440-47-3	
Cobalt	ND	ug/L	5.0	1	05/22/25 15:25	06/05/25 12:14	7440-48-4	
Lead	ND	ug/L	10.0	1	05/22/25 15:25	06/05/25 12:14	7439-92-1	
Lithium	**380**	ug/L	10.0	1	05/22/25 15:25	06/05/25 12:14	7439-93-2	
Molybdenum	ND	ug/L	20.0	1	05/22/25 15:25	06/05/25 12:14	7439-98-7	
Selenium	**113**	ug/L	15.0	1	05/22/25 15:25	06/05/25 12:14	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Antimony	ND	ug/L	3.0	3	05/22/25 11:08	06/16/25 12:51	7440-36-0	D3
Thallium	ND	ug/L	3.0	3	05/22/25 11:08	06/16/25 12:51	7440-28-0	D3
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
	Pace Analytical Services - Kansas City							
Mercury	ND	ug/L	0.20	1	05/27/25 14:41	05/28/25 12:38	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Kansas City							
Total Dissolved Solids	**5470**	mg/L	143	1		05/16/25 16:17		
9056 IC Anions	Analytical Method: EPA 9056							
	Pace Analytical Services - Kansas City							
Chloride	**102**	mg/L	20.0	20		06/02/25 21:36	16887-00-6	
Fluoride	ND	mg/L	0.20	1		06/02/25 21:22	16984-48-8	
Sulfate	**3250**	mg/L	400	400		06/02/25 21:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 60754422 PRPA CCR
Pace Project No.: 60475047

Sample: DUP-02-CCR **Lab ID: 60475047003** Collected: 05/12/25 08:00 Received: 05/13/25 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Arsenic	ND	ug/L	10.0	1	05/22/25 15:25	06/05/25 12:16	7440-38-2	
Barium	**11.0**	ug/L	5.0	1	05/22/25 15:25	06/05/25 12:16	7440-39-3	
Beryllium	ND	ug/L	1.0	1	05/22/25 15:25	06/05/25 12:16	7440-41-7	
Boron	**757**	ug/L	100	1	05/22/25 15:25	06/05/25 12:16	7440-42-8	
Cadmium	ND	ug/L	5.0	1	05/22/25 15:25	06/05/25 12:16	7440-43-9	
Calcium	**446000**	ug/L	200	1	05/22/25 15:25	06/05/25 12:16	7440-70-2	
Chromium	ND	ug/L	5.0	1	05/22/25 15:25	06/05/25 12:16	7440-47-3	
Cobalt	ND	ug/L	5.0	1	05/22/25 15:25	06/05/25 12:16	7440-48-4	
Lead	ND	ug/L	10.0	1	05/22/25 15:25	06/05/25 12:16	7439-92-1	
Lithium	**364**	ug/L	10.0	1	05/22/25 15:25	06/05/25 12:16	7439-93-2	
Molybdenum	ND	ug/L	20.0	1	05/22/25 15:25	06/05/25 12:16	7439-98-7	
Selenium	**122**	ug/L	15.0	1	05/22/25 15:25	06/05/25 12:16	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Antimony	ND	ug/L	1.0	1	05/22/25 11:08	06/16/25 13:24	7440-36-0	
Thallium	ND	ug/L	1.0	1	05/22/25 11:08	06/16/25 13:24	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
	Pace Analytical Services - Kansas City							
Mercury	ND	ug/L	0.20	1	05/27/25 14:41	05/28/25 12:40	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Kansas City							
Total Dissolved Solids	**5430**	mg/L	143	1		05/16/25 16:17		
9056 IC Anions	Analytical Method: EPA 9056							
	Pace Analytical Services - Kansas City							
Chloride	**106**	mg/L	10.0	10		06/02/25 20:54	16887-00-6	
Fluoride	ND	mg/L	0.20	1		06/02/25 20:40	16984-48-8	
Sulfate	**2490**	mg/L	1000	1000		06/04/25 20:09	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754422 PRPA CCR
Pace Project No.: 60475047

QC Batch: 936500
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60475047001, 60475047002, 60475047003

METHOD BLANK: 3712559 Matrix: Water
Associated Lab Samples: 60475047001, 60475047002, 60475047003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	05/28/25 12:13	

LABORATORY CONTROL SAMPLE: 3712560

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3712561 3712562

Parameter	Units	60474802006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.096	5	5	4.9	5.1	98	101	75-125	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3712563 3712564

Parameter	Units	60474805012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.096	5	5	5.1	5.2	102	104	75-125	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3712565 3712566

Parameter	Units	60475407009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.2	4.3	85	85	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754422 PRPA CCR
Pace Project No.: 60475047

QC Batch: 936090
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60475047001, 60475047002, 60475047003

METHOD BLANK: 3710694 Matrix: Water
Associated Lab Samples: 60475047001, 60475047002, 60475047003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	10.0	06/05/25 12:05	
Barium	ug/L	ND	5.0	06/05/25 12:05	
Beryllium	ug/L	ND	1.0	06/05/25 12:05	
Boron	ug/L	ND	100	06/05/25 12:05	
Cadmium	ug/L	ND	5.0	06/05/25 12:05	
Calcium	ug/L	ND	200	06/05/25 12:05	
Chromium	ug/L	ND	5.0	06/05/25 12:05	
Cobalt	ug/L	ND	5.0	06/05/25 12:05	
Lead	ug/L	ND	10.0	06/05/25 12:05	
Lithium	ug/L	ND	10.0	06/05/25 12:05	
Molybdenum	ug/L	ND	20.0	06/05/25 12:05	
Selenium	ug/L	ND	15.0	06/05/25 12:05	

LABORATORY CONTROL SAMPLE: 3710695

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1000	999	100	80-120	
Barium	ug/L	1000	1060	106	80-120	
Beryllium	ug/L	1000	1070	107	80-120	
Boron	ug/L	1000	1010	101	80-120	
Cadmium	ug/L	1000	1060	106	80-120	
Calcium	ug/L	10000	10800	108	80-120	
Chromium	ug/L	1000	1060	106	80-120	
Cobalt	ug/L	1000	1100	110	80-120	
Lead	ug/L	1000	1070	107	80-120	
Lithium	ug/L	1000	1050	105	80-120	
Molybdenum	ug/L	1000	1090	109	80-120	
Selenium	ug/L	1000	1070	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3710696 3710697

Parameter	Units	60475047001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	ND	1000	1000	1000	1010	100	101	75-125	1	20	
Barium	ug/L	33.3	1000	1000	1060	1070	103	104	75-125	2	20	
Beryllium	ug/L	ND	1000	1000	1070	1070	107	107	75-125	0	20	
Boron	ug/L	304	1000	1000	1290	1300	99	100	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754422 PRPA CCR
Pace Project No.: 60475047

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3710696 3710697

Parameter	Units	60475047001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	ug/L	ND	1000	1000	1020	1030	102	103	75-125	1	20	
Calcium	ug/L	25800	10000	10000	36100	35500	103	97	75-125	1	20	
Chromium	ug/L	ND	1000	1000	1040	1030	103	103	75-125	0	20	
Cobalt	ug/L	ND	1000	1000	1060	1060	106	106	75-125	0	20	
Lead	ug/L	ND	1000	1000	1030	1030	103	103	75-125	1	20	
Lithium	ug/L	55.1	1000	1000	1050	1050	99	100	75-125	1	20	
Molybdenum	ug/L	ND	1000	1000	1100	1100	108	108	75-125	0	20	
Selenium	ug/L	30.6	1000	1000	1100	1110	107	108	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754422 PRPA CCR
Pace Project No.: 60475047

QC Batch: 935956
QC Batch Method: EPA 3010
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60475047001, 60475047002, 60475047003

METHOD BLANK: 3710027 Matrix: Water
Associated Lab Samples: 60475047001, 60475047002, 60475047003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	06/16/25 12:35	
Thallium	ug/L	ND	1.0	06/16/25 12:35	

LABORATORY CONTROL SAMPLE: 3710028

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	38.4	96	80-120	
Thallium	ug/L	40	38.4	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3710029 3710030

Parameter	Units	60475139001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	40	40	36.9	36.9	92	92	75-125	0	20	
Thallium	ug/L	ND	40	40	33.9	33.8	85	85	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754422 PRPA CCR
Pace Project No.: 60475047

QC Batch: 935355
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60475047001, 60475047002, 60475047003

METHOD BLANK: 3707327 Matrix: Water
Associated Lab Samples: 60475047001, 60475047002, 60475047003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	05/16/25 16:15	

LABORATORY CONTROL SAMPLE: 3707328

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	944	94	80-120	

SAMPLE DUPLICATE: 3707329

Parameter	Units	60475006001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5130	5230	2	10	

SAMPLE DUPLICATE: 3707330

Parameter	Units	60475047001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	471	470	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754422 PRPA CCR
Pace Project No.: 60475047

QC Batch: 937094
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60475047001, 60475047002, 60475047003

METHOD BLANK: 3715153 Matrix: Water
Associated Lab Samples: 60475047001, 60475047002, 60475047003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	06/02/25 09:20	
Fluoride	mg/L	ND	0.20	06/02/25 09:20	
Sulfate	mg/L	ND	1.0	06/02/25 09:20	

LABORATORY CONTROL SAMPLE: 3715154

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	80-120	
Fluoride	mg/L	2.5	2.6	104	80-120	
Sulfate	mg/L	5	4.8	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3715155 3715156

Parameter	Units	60474705003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	53.4	50	50	110	107	112	107	80-120	3	15	
Fluoride	mg/L	ND	2.5	2.5	2.4	2.4	95	98	80-120	2	15	
Sulfate	mg/L	1920	1000	1000	2820	2790	90	87	80-120	1	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3715158 3715159

Parameter	Units	60475296001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	237	5	5	238	239	30	36	80-120	0	15	E,M1
Fluoride	mg/L	0.33	2.5	2.5	3.0	2.1	105	71	80-120	34	15	M1,R1
Sulfate	mg/L	161	5	5	164	165	69	72	80-120	0	15	E,M1

SAMPLE DUPLICATE: 3715157

Parameter	Units	60474705003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	53.4	50.9	5	15	
Fluoride	mg/L	ND	ND		15	
Sulfate	mg/L	1920	1840	4	15	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754422 PRPA CCR
Pace Project No.: 60475047

SAMPLE DUPLICATE: 3715160

Parameter	Units	60475296001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	237	237	0	15	E
Fluoride	mg/L	0.33	0.32	3	15	
Sulfate	mg/L	161	161	0	15	E

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 60754422 PRPA CCR
Pace Project No.: 60475047

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60754422 PRPA CCR
Pace Project No.: 60475047

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60475047001	**ASH-06-CCR**	EPA 3010	936090	EPA 6010	936193
60475047002	**ASH-03-CCR**	EPA 3010	936090	EPA 6010	936193
60475047003	**DUP-02-CCR**	EPA 3010	936090	EPA 6010	936193
60475047001	**ASH-06-CCR**	EPA 3010	935956	EPA 6020	936123
60475047002	**ASH-03-CCR**	EPA 3010	935956	EPA 6020	936123
60475047003	**DUP-02-CCR**	EPA 3010	935956	EPA 6020	936123
60475047001	**ASH-06-CCR**	EPA 7470	936500	EPA 7470	936546
60475047002	**ASH-03-CCR**	EPA 7470	936500	EPA 7470	936546
60475047003	**DUP-02-CCR**	EPA 7470	936500	EPA 7470	936546
60475047001	**ASH-06-CCR**	SM 2540C	935355		
60475047002	**ASH-03-CCR**	SM 2540C	935355		
60475047003	**DUP-02-CCR**	SM 2540C	935355		
60475047001	**ASH-06-CCR**	EPA 9056	937094		
60475047002	**ASH-03-CCR**	EPA 9056	937094		
60475047003	**DUP-02-CCR**	EPA 9056	937094		

WO# : 60475047

60475047

DC#_Title: ENV-FRM-LENE-0009_Sample Cond		
Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: AECOM

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 449538930315 4 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: T301 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 0.3 **Corr. Factor** +0.1 **Corrected** 0.4

Date and initials of person examining contents: DF 5/13

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☐No ☑N/A	
Rush Turn Around Time requested:	☐Yes ☐No ☑N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:** 910888	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

CCR KS

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	AECOM	Report To:	Vasanta Kalluri	Attention:	Accounts Payable
Address:	6200 South Quebec St	Copy To:	Jamie Herman	Company Name:	AECOM
	Greenwood Village, CO 80111			Address:	Same as Section A
Email To:	jamie.herman@aecom.com	Purchase Order No.:	NEED PO #	Pace Quote Reference:	42700
Phone:	(303) 740-2614 Fax:	Project Name:	~~60709371~~ PRPA CCR 60754422	Pace Project Manager:	Heather Wilson
Requested Due Date/TAT:	Standard	Project Number:	~~60709371~~ 60754422	Pace Profile #:	11033, 3

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER EPA CCR

Site Location STATE: CO

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	9056 Cl, F, SO4	6020 Total Metals*	6010 Total Metals**	7470 Total Mercury	2540C TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N	N	N	N		
1	ASH-06-CCR	WT	G	—	—	5/12/25	1220		3	2		1							X	X	X	X	X	N	
2	ASH-03-CCR	WT	G	—	—	5/12/25	1420		3	2		1							X	X	X	X	X	N	
3	DUP-02-CCR	WT	G	—	—	5/12/25	—		3	2		1							X	X	X	X	X	N	
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
*Sb, Tl	[signature] / AECOM	5/12/25	1700	[signature] Courtney Boggum	5/13/25	08:40	0.3
**As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Mo, Se							

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Kara Hoppes & Mackenzie Swift

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 05/12/25

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Client: AECOM

Profile/EZ # 11033,3

Site: 60754422

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3B	BP3Z	WPDU	ZPLC	Other		
1	WT																															
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1B	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2B	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3B	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number:

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

July 09, 2025

Vasanta Kalluri
AECOM
6200 South Quebec Street
Greenwood Village, CO 80111

RE: Project: 60754415 PRPA CCR
Pace Project No.: 60475112

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 14, 2025. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Heather M. Wilson

Heather Wilson
heather.wilson@pacelabs.com
1(913)563-1407
Project Manager

Enclosures

cc: Jamie Herman, AECOM
Kara Hoppes, AECOM
Sawyer Hunt, AECOM
Jeremy Hurshman, AECOM

Pace Analytical Services, LLC
2025.07.09 15:13:47 -07'00'
Document is certified

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
ANABISO/IEC 17025:2017 Rad Cert#: L24170
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 2950
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA010
Louisiana DEQ/TNI Certification #: 04086
Maine Certification #: 2023021
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572023-03
New Hampshire/TNI Certification #: 297622
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-015
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN02867
Texas/TNI Certification #: T104704188-22-18
Utah/TNI Certification #: PA014572223-14
USDA Soil Permit #: 525-23-67-77263
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad

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SAMPLE SUMMARY

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60475112001	**ASH-06-CCR**	Water	05/12/25 12:20	05/14/25 09:40
60475112002	**ASH-03-CCR**	Water	05/12/25 14:20	05/14/25 09:40
60475112003	**DUP-02-CCR**	Water	05/12/25 00:00	05/14/25 09:40
60475112004	**ASH-08-CCR**	Water	05/13/25 10:05	05/14/25 09:40
60475112005	**ASH-08-CCR MS**	Water	05/13/25 10:05	05/14/25 09:40
60475112006	**ASH-08-CCR MSD**	Water	05/13/25 10:05	05/14/25 09:40
60475112007	**ASH-07-CCR**	Water	05/13/25 11:45	05/14/25 09:40
60475112008	**ERB-02-CCR**	Water	05/13/25 12:00	05/14/25 09:40
60475112009	**ASH-04-CCR**	Water	05/13/25 13:30	05/14/25 09:40
60475112010	**ASH-05-CCR**	Water	05/13/25 14:50	05/14/25 09:40

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60475112001	**ASH-06-CCR**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60475112002	**ASH-03-CCR**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60475112003	**DUP-02-CCR**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60475112004	**ASH-08-CCR**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60475112005	**ASH-08-CCR MS**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
60475112006	**ASH-08-CCR MSD**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
60475112007	**ASH-07-CCR**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60475112008	**ERB-02-CCR**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60475112009	**ASH-04-CCR**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60475112010	**ASH-05-CCR**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

Sample: ASH-06-CCR **Lab ID: 60475112001** Collected: 05/12/25 12:20 Received: 05/14/25 09:40 Matrix: Water
PWS: Site ID: Sample Type:

Comments: • The sampler's name and signature were not listed on the COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.356 ± 0.659 (1.15) C:NA T:88%**	pCi/L	06/05/25 14:49	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.561 ± 0.503 (1.03) C:77% T:85%**	pCi/L	06/04/25 14:24	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.917 ± 1.16 (2.18)**	pCi/L	06/10/25 18:38	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

Sample: ASH-03-CCR **Lab ID: 60475112002** Collected: 05/12/25 14:20 Received: 05/14/25 09:40 Matrix: Water
PWS: Site ID: Sample Type:
Comments: • The sampler's name and signature were not listed on the COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.200 ± 0.539 (0.976) C:NA T:96%**	pCi/L	06/05/25 14:49	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.259 ± 0.372 (0.799) C:78% T:84%**	pCi/L	06/04/25 14:24	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.459 ± 0.911 (1.78)**	pCi/L	06/10/25 18:38	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

Sample: DUP-02-CCR **Lab ID: 60475112003** Collected: 05/12/25 00:00 Received: 05/14/25 09:40 Matrix: Water
PWS: Site ID: Sample Type:

Comments: • Sample 003 does not have the collection time indicated on the sample bottle.
• The sampler's name and signature were not listed on the COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
		Pace Analytical Services - Greensburg				
Radium-226	EPA 903.1	**0.218 ± 0.770 (1.39) C:NA T:95%**	pCi/L	06/05/25 14:49	13982-63-3	
		Pace Analytical Services - Greensburg				
Radium-228	EPA 904.0	**0.906 ± 0.501 (0.911) C:73% T:82%**	pCi/L	06/04/25 14:24	15262-20-1	
		Pace Analytical Services - Greensburg				
Total Radium	Total Radium Calculation	**1.12 ± 1.27 (2.30)**	pCi/L	06/10/25 18:38	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

Sample: ASH-08-CCR **Lab ID: 60475112004** Collected: 05/13/25 10:05 Received: 05/14/25 09:40 Matrix: Water
PWS: Site ID: Sample Type:
Comments: • The sampler's name and signature were not listed on the COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.590 ± 0.533 (0.838) C:NA T:96%**	pCi/L	06/05/25 14:49	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.888 ± 0.446 (0.775) C:77% T:89%**	pCi/L	06/04/25 14:24	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.48 ± 0.979 (1.61)**	pCi/L	06/10/25 18:38	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

Sample: ASH-08-CCR MS **Lab ID: 60475112005** Collected: 05/13/25 10:05 Received: 05/14/25 09:40 Matrix: Water
PWS: Site ID: Sample Type:

Comments: • The sampler's name and signature were not listed on the COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**103.25 %REC ± NA (NA) C:NA T:NA**	pCi/L	06/05/25 14:49	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**72.35 %REC ± NA (NA) C:NA T:NA**	pCi/L	06/04/25 14:24	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

Sample: ASH-08-CCR MSD **Lab ID: 60475112006** Collected: 05/13/25 10:05 Received: 05/14/25 09:40 Matrix: Water
PWS: Site ID: Sample Type:

Comments: • The sampler's name and signature were not listed on the COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
		Pace Analytical Services - Greensburg				
Radium-226	EPA 903.1	**82.66 %REC 22.15RPD ± NA (NA) C:NA T:NA**	pCi/L	06/05/25 15:02	13982-63-3	
		Pace Analytical Services - Greensburg				
Radium-228	EPA 904.0	**85.93 %REC 17.16RPD ± NA (NA) C:NA T:NA**	pCi/L	06/04/25 14:25	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

Sample: ASH-07-CCR **Lab ID: 60475112007** Collected: 05/13/25 11:45 Received: 05/14/25 09:40 Matrix: Water
PWS: Site ID: Sample Type:

Comments: • The sampler's name and signature were not listed on the COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.230 ± 0.677 (1.23) C:NA T:96%**	pCi/L	06/05/25 15:02	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.942 ± 0.456 (0.773) C:76% T:85%**	pCi/L	06/04/25 14:25	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.17 ± 1.13 (2.00)**	pCi/L	06/10/25 18:38	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

Sample: ERB-02-CCR **Lab ID: 60475112008** Collected: 05/13/25 12:00 Received: 05/14/25 09:40 Matrix: Water
PWS: Site ID: Sample Type:
Comments: • The sampler's name and signature were not listed on the COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.509 ± 0.730 (1.24) C:NA T:94%**	pCi/L	06/05/25 15:02	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.583 ± 0.407 (0.777) C:75% T:86%**	pCi/L	06/04/25 14:25	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.09 ± 1.14 (2.02)**	pCi/L	06/10/25 18:38	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

Sample: ASH-04-CCR **Lab ID: 60475112009** Collected: 05/13/25 13:30 Received: 05/14/25 09:40 Matrix: Water
PWS: Site ID: Sample Type:
Comments: • The sampler's name and signature were not listed on the COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.117 ± 0.487 (0.928) C:NA T:92%**	pCi/L	06/05/25 15:02	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.687 ± 0.439 (0.827) C:76% T:84%**	pCi/L	06/04/25 14:25	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.804 ± 0.926 (1.76)**	pCi/L	06/10/25 18:38	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

Sample: ASH-05-CCR **Lab ID: 60475112010** Collected: 05/13/25 14:50 Received: 05/14/25 09:40 Matrix: Water
PWS: Site ID: Sample Type:

Comments: • The sampler's name and signature were not listed on the COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.367 ± 0.675 (1.18) C:NA T:97%**	pCi/L	06/05/25 15:02	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.449 ± 0.517 (1.09) C:77% T:80%**	pCi/L	06/04/25 14:25	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.816 ± 1.19 (2.27)**	pCi/L	06/10/25 18:38	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

QC Batch: 747619
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60475112001, 60475112002, 60475112003, 60475112004, 60475112005, 60475112006, 60475112007, 60475112008, 60475112009, 60475112010

METHOD BLANK: 3641282 Matrix: Water
Associated Lab Samples: 60475112001, 60475112002, 60475112003, 60475112004, 60475112005, 60475112006, 60475112007, 60475112008, 60475112009, 60475112010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0804 ± 0.223 (0.527) C:NA T:93%	pCi/L	06/05/25 14:49	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

QC Batch: 747618 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60475112001, 60475112002, 60475112003, 60475112004, 60475112005, 60475112006, 60475112007, 60475112008, 60475112009, 60475112010

METHOD BLANK: 3641281 Matrix: Water
Associated Lab Samples: 60475112001, 60475112002, 60475112003, 60475112004, 60475112005, 60475112006, 60475112007, 60475112008, 60475112009, 60475112010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0891 ± 0.334 (0.761) C:82% T:80%	pCi/L	06/04/25 14:23	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60754415 PRPA CCR
Pace Project No.: 60475112

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60475112001	**ASH-06-CCR**	EPA 903.1	747619		
60475112002	**ASH-03-CCR**	EPA 903.1	747619		
60475112003	**DUP-02-CCR**	EPA 903.1	747619		
60475112004	**ASH-08-CCR**	EPA 903.1	747619		
60475112005	**ASH-08-CCR MS**	EPA 903.1	747619		
60475112006	**ASH-08-CCR MSD**	EPA 903.1	747619		
60475112007	**ASH-07-CCR**	EPA 903.1	747619		
60475112008	**ERB-02-CCR**	EPA 903.1	747619		
60475112009	**ASH-04-CCR**	EPA 903.1	747619		
60475112010	**ASH-05-CCR**	EPA 903.1	747619		
60475112001	**ASH-06-CCR**	EPA 904.0	747618		
60475112002	**ASH-03-CCR**	EPA 904.0	747618		
60475112003	**DUP-02-CCR**	EPA 904.0	747618		
60475112004	**ASH-08-CCR**	EPA 904.0	747618		
60475112005	**ASH-08-CCR MS**	EPA 904.0	747618		
60475112006	**ASH-08-CCR MSD**	EPA 904.0	747618		
60475112007	**ASH-07-CCR**	EPA 904.0	747618		
60475112008	**ERB-02-CCR**	EPA 904.0	747618		
60475112009	**ASH-04-CCR**	EPA 904.0	747618		
60475112010	**ASH-05-CCR**	EPA 904.0	747618		
60475112001	**ASH-06-CCR**	Total Radium Calculation	751144		
60475112002	**ASH-03-CCR**	Total Radium Calculation	751144		
60475112003	**DUP-02-CCR**	Total Radium Calculation	751144		
60475112004	**ASH-08-CCR**	Total Radium Calculation	751144		
60475112007	**ASH-07-CCR**	Total Radium Calculation	751144		
60475112008	**ERB-02-CCR**	Total Radium Calculation	751144		
60475112009	**ASH-04-CCR**	Total Radium Calculation	751144		
60475112010	**ASH-05-CCR**	Total Radium Calculation	751144		

ASH CCR PA

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A — Required Client Information:

Company:	AECOM
Address:	6200 South Quebec St
	Greenwood Village, CO 80111
Email To:	jamie.herman@aecom.com
Phone: (303) 740-2614	Fax:
Requested Due Date/TAT:	Standard

Section B — Required Project Information:

Report To:	Vasanta Kalluri
Copy To:	Jamie Herman
Purchase Order No.:	NEED PO #
Project Name:	~~60709371~~ PRPA CCR 60754422
Project Number:	~~60709371~~ 60754422

Section C — Invoice Information:

Attention:	Accounts Payable
Company Name:	AECOM
Address:	Same as Section A
Pace Quote Reference:	42700
Pace Project Manager:	Heather Wilson
Pace Profile #:	11033, 3

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER EPA CCR

Site Location STATE: CO

Section D — Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Radium-226	Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																			N	N	N		
1	~~ASH~~ ASH-06-CCR	WT	G	—	—	5/12/25	1220		2			2							X	X	X	N	
2	ASH-03-CCR	WT	G	—	—	5/12/25	1420		2			2							X	X	X	N	
3	DUP-02-CCR	WT	G	—	—	5/12/25	—		2			2							X	X	X	N	
4	ASH-08-CCR	WT	G	—	—	5/13/25	1005		6			6							X	X	X	N	
5	ASH-07-CCR	WT	G	—	—	5/13/25	1145		2			2							X	X	X	N	
6	ERB-02-CCR	WT	G	—	—	5/13/25	1200		2			2							X	X	X	N	
7	ASH-04-CCR	WT	G	—	—	5/13/25	1330		2			2							X	X	X	N	
8	ASH-05-CCR	WT	G	—	—	5/13/25	1450		2			2							X	X	X	N	
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Perform MS/MSD on ASH-08-CCR.	AECOM	5/13/25	1700		5/14/25	940	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Kara Hoppes & Mackensie Swift

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 05/13/25

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Test:	Ra-226
Analyst:	LL1
Date:	5/27/2025
Batch ID:	85316
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	3641282
MB concentration:	-0.080
M/B 2 Sigma CSU:	0.223
MB MDC:	0.527
MB Numerical Performance Indicator:	-0.71
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	N/A

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS85316	LCSD85316
Count Date:	6/10/2025	
Spike I.D.:	24-046	
Spike Concentration (pCi/mL):	31.830	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.662	
Target Conc. (pCi/L, g, F):	4.805	
Uncertainty (Calculated):	0.226	
Result (pCi/L, g, F):	5.529	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.397	
Numerical Performance Indicator:	1.00	
Percent Recovery:	115.05%	
Status vs Numerical Indicator:	Pass	
Status vs Recovery:	N/A	
Upper % Recovery Limits:	133%	
Lower % Recovery Limits:	73%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:	5/13/2025	
Sample I.D.	60475112004	
Sample MS I.D.	60475112005	
Sample MSD I.D.	60475112006	
Spike I.D.:	24-046	
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	31.831	
Spike Volume Used in MS (mL):	0.20	
Spike Volume Used in MSD (mL):	0.20	
MS Aliquot (L, g, F):	0.656	
MS Target Conc.(pCi/L, g, F):	9.701	
MSD Aliquot (L, g, F):	0.657	
MSD Target Conc. (pCi/L, g, F):	9.689	
MS Spike Uncertainty (calculated):	0.456	
MSD Spike Uncertainty (calculated):	0.455	
Sample Result:	0.590	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.533	
Sample Matrix Spike Result:	10.606	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.881	
Sample Matrix Spike Duplicate Result:	8.599	
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.630	
MS Numerical Performance Indicator:	0.308	
MSD Numerical Performance Indicator:	-1.856	
MS Percent Recovery:	103.25%	
MSD Percent Recovery:	82.66%	
MS Status vs Numerical Indicator:	Pass	
MSD Status vs Numerical Indicator:	Pass	
MS Status vs Recovery:	N/A	
MSD Status vs Recovery:	N/A	
MS/MSD Upper % Recovery Limits:	136%	
MS/MSD Lower % Recovery Limits:	71%	

Duplicate Sample Assessment		
Sample I.D.:		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.		
Sample Result (pCi/L, g, F):		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Duplicate Result (pCi/L, g, F):		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:		
Duplicate RPD:		
Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD:		
% RPD Limit:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.	60475112004	
Sample MS I.D.	60475112005	
Sample MSD I.D.	60475112006	
Sample Matrix Spike Result:	10.606	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.881	
Sample Matrix Spike Duplicate Result:	8.599	
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.630	
Duplicate Numerical Performance Indicator:	1.581	
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	22.15%	
MS/ MSD Duplicate Status vs Numerical Indicator:	Pass	
MS/ MSD Duplicate Status vs RPD:	N/A	
% RPD Limit:	32%	

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the RL.

Comments:

CLM 6/10/25

Ll 6/10/25

Quality Control Sample Performance Assessment

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Test:	Ra-228
Analyst:	ZPC
Date:	5/28/2025
Worklist:	85315
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	3641281
MB concentration:	0.089
M/B 2 Sigma CSU:	0.334
MB MDC:	0.761
MB Numerical Performance Indicator:	0.52
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS85315	LCSD85315
Count Date:	6/4/2025	
Spike I.D.:	23-043	
Decay Corrected Spike Concentration (pCi/mL):	32.360	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.819	
Target Conc. (pCi/L, g, F):	3.950	
Uncertainty (Calculated):	0.194	
Result (pCi/L, g, F):	3.515	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.875	
Numerical Performance Indicator:	-0.95	
Percent Recovery:	88.98%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	135%	
Lower % Recovery Limits:	60%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:	5/13/2025	
Sample I.D.	60475112004	
Sample MS I.D.	60475112005	
Sample MSD I.D.	60475112006	
Spike I.D.:	23-043	
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	32.598	
Spike Volume Used in MS (mL):	0.20	
Spike Volume Used in MSD (mL):	0.20	
MS Aliquot (L, g, F):	0.804	
MS Target Conc.(pCi/L, g, F):	8.109	
MSD Aliquot (L, g, F):	0.801	
MSD Target Conc. (pCi/L, g, F):	8.136	
MS Spike Uncertainty (calculated):	0.397	
MSD Spike Uncertainty (calculated):	0.399	
Sample Result:	0.888	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.446	
Sample Matrix Spike Result:	6.754	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.443	
Sample Matrix Spike Duplicate Result:	7.879	
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.671	
MS Numerical Performance Indicator:	-2.814	
MSD Numerical Performance Indicator:	-1.264	
MS Percent Recovery:	72.35%	
MSD Percent Recovery:	85.93%	
MS Status vs Numerical Indicator:	Warning	
MSD Status vs Numerical Indicator:	Pass	
MS Status vs Recovery:	Pass	
MSD Status vs Recovery:	Pass	
MS/MSD Upper % Recovery Limits:	135%	
MS/MSD Lower % Recovery Limits:	60%	

Duplicate Sample Assessment		
Sample I.D.:		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.		
Sample Result (pCi/L, g, F):		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Duplicate Result (pCi/L, g, F):		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:		
Duplicate RPD:		
Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD:		
% RPD Limit:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.	60475112004	
Sample MS I.D.	60475112005	
Sample MSD I.D.	60475112006	
Sample Matrix Spike Result:	6.754	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.443	
Sample Matrix Spike Duplicate Result:	7.879	
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.671	
Duplicate Numerical Performance Indicator:	-0.999	
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	17.16%	
MS/ MSD Duplicate Status vs Numerical Indicator:	Pass	
MS/ MSD Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Mul 5/25

6-6-25
SS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

July 09, 2025

Vasanta Kalluri
AECOM
6200 South Quebec Street
Greenwood Village, CO 80111

RE: Project: 60754415 PRPA CCR
Pace Project No.: 60475139

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 14, 2025. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Heather M. Wilson

Heather Wilson
heather.wilson@pacelabs.com
1(913)563-1407
Project Manager

Enclosures

cc: Jamie Herman, AECOM
Kara Hoppes, AECOM
Sawyer Hunt, AECOM
Jeremy Hurshman, AECOM

Pace Analytical Services, LLC
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(913)599-5665

CERTIFICATIONS

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Arkansas Certification #: 88-00679
Illinois Certification #: 2000302023-6
Colorado Division of Oil and Public Safety
Iowa Certification #: 118
Kansas Field Laboratory Certification #: E-92587
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Missouri Inorganic Drinking Water Certification
Nevada Certification #: KS000212024-1
Oklahoma Certification #: 2023-073
Texas Certification #: T104704407-23-17
Utah Certification #: KS000212022-13

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60475139001	**ASH-08-CCR**	Water	05/13/25 10:05	05/14/25 09:05
60475139002	**ASH-07-CCR**	Water	05/13/25 11:45	05/14/25 09:05
60475139003	**ERB-02-CCR**	Water	05/13/25 12:00	05/14/25 09:05
60475139004	**ASH-04-CCR**	Water	05/13/25 13:30	05/14/25 09:05
60475139005	**ASH-05-CCR**	Water	05/13/25 14:50	05/14/25 09:05

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60475139001	**ASH-08-CCR**	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JGP	2	PASI-K
		EPA 7470	MNG	1	PASI-K
		SM 2540C	BMT	1	PASI-K
		EPA 9056	MLD	3	PASI-K
60475139002	**ASH-07-CCR**	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JGP	2	PASI-K
		EPA 7470	MNG	1	PASI-K
		SM 2540C	BMT	1	PASI-K
		EPA 9056	MLD	3	PASI-K
60475139003	**ERB-02-CCR**	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JGP	2	PASI-K
		EPA 7470	MNG	1	PASI-K
		SM 2540C	BMT	1	PASI-K
		EPA 9056	MLD	3	PASI-K
60475139004	**ASH-04-CCR**	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JGP	2	PASI-K
		EPA 7470	MNG	1	PASI-K
		SM 2540C	BMT	1	PASI-K
		EPA 9056	MLD	3	PASI-K
60475139005	**ASH-05-CCR**	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JGP	2	PASI-K
		EPA 7470	MNG	1	PASI-K
		SM 2540C	BMT	1	PASI-K
		EPA 9056	MLD	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

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ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

Sample: ASH-08-CCR **Lab ID: 60475139001** Collected: 05/13/25 10:05 Received: 05/14/25 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Arsenic	ND	ug/L	10.0	1	05/23/25 12:15	06/07/25 09:25	7440-38-2	
Barium	**10.6**	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:25	7440-39-3	
Beryllium	ND	ug/L	1.0	1	05/23/25 12:15	06/07/25 09:25	7440-41-7	
Boron	**803**	ug/L	100	1	05/23/25 12:15	06/07/25 09:25	7440-42-8	
Cadmium	ND	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:25	7440-43-9	
Calcium	**412000**	ug/L	200	1	05/23/25 12:15	06/07/25 09:25	7440-70-2	M1,P6
Chromium	ND	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:25	7440-47-3	
Cobalt	ND	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:25	7440-48-4	
Lead	ND	ug/L	10.0	1	05/23/25 12:15	06/07/25 09:25	7439-92-1	
Lithium	**264**	ug/L	10.0	1	05/23/25 12:15	06/07/25 09:25	7439-93-2	
Molybdenum	ND	ug/L	20.0	1	05/23/25 12:15	06/07/25 09:25	7439-98-7	
Selenium	ND	ug/L	15.0	1	05/23/25 12:15	06/07/25 09:25	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Antimony	ND	ug/L	1.0	1	05/22/25 11:08	06/16/25 13:38	7440-36-0	
Thallium	ND	ug/L	1.0	1	05/22/25 11:08	06/16/25 13:38	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
	Pace Analytical Services - Kansas City							
Mercury	ND	ug/L	0.20	1	05/30/25 14:53	06/02/25 10:40	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Kansas City							
Total Dissolved Solids	**4610**	mg/L	125	1		05/20/25 15:36		
9056 IC Anions	Analytical Method: EPA 9056							
	Pace Analytical Services - Kansas City							
Chloride	**35.5**	mg/L	5.0	5		06/10/25 01:06	16887-00-6	
Fluoride	ND	mg/L	0.20	1		06/10/25 00:21	16984-48-8	M1
Sulfate	**3690**	mg/L	400	400		06/10/25 02:12	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

Sample: ASH-07-CCR **Lab ID: 60475139002** Collected: 05/13/25 11:45 Received: 05/14/25 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Arsenic	ND	ug/L	10.0	1	05/23/25 12:15	06/07/25 09:30	7440-38-2	
Barium	**9.8**	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:30	7440-39-3	
Beryllium	ND	ug/L	1.0	1	05/23/25 12:15	06/07/25 09:30	7440-41-7	
Boron	**622**	ug/L	100	1	05/23/25 12:15	06/07/25 09:30	7440-42-8	
Cadmium	ND	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:30	7440-43-9	
Calcium	**400000**	ug/L	200	1	05/23/25 12:15	06/07/25 09:30	7440-70-2	
Chromium	ND	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:30	7440-47-3	
Cobalt	ND	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:30	7440-48-4	
Lead	ND	ug/L	10.0	1	05/23/25 12:15	06/07/25 09:30	7439-92-1	
Lithium	**447**	ug/L	10.0	1	05/23/25 12:15	06/07/25 09:30	7439-93-2	
Molybdenum	ND	ug/L	20.0	1	05/23/25 12:15	06/07/25 09:30	7439-98-7	
Selenium	**61.8**	ug/L	15.0	1	05/23/25 12:15	06/07/25 09:30	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Antimony	ND	ug/L	3.0	3	05/22/25 11:08	06/16/25 13:09	7440-36-0	D3
Thallium	ND	ug/L	3.0	3	05/22/25 11:08	06/16/25 13:09	7440-28-0	D3
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
	Pace Analytical Services - Kansas City							
Mercury	ND	ug/L	0.20	1	05/30/25 14:53	06/02/25 10:51	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Kansas City							
Total Dissolved Solids	**6200**	mg/L	167	1		05/20/25 15:36		
9056 IC Anions	Analytical Method: EPA 9056							
	Pace Analytical Services - Kansas City							
Chloride	**211**	mg/L	200	200		06/10/25 03:07	16887-00-6	
Fluoride	ND	mg/L	0.20	1		06/10/25 02:56	16984-48-8	
Sulfate	**3420**	mg/L	200	200		06/10/25 03:07	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

Sample: ERB-02-CCR **Lab ID: 60475139003** Collected: 05/13/25 12:00 Received: 05/14/25 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Arsenic	ND	ug/L	10.0	1	05/23/25 12:15	06/07/25 09:32	7440-38-2	
Barium	ND	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:32	7440-39-3	
Beryllium	ND	ug/L	1.0	1	05/23/25 12:15	06/07/25 09:32	7440-41-7	
Boron	ND	ug/L	100	1	05/23/25 12:15	06/07/25 09:32	7440-42-8	
Cadmium	ND	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:32	7440-43-9	
Calcium	ND	ug/L	200	1	05/23/25 12:15	06/07/25 09:32	7440-70-2	
Chromium	ND	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:32	7440-47-3	
Cobalt	ND	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:32	7440-48-4	
Lead	ND	ug/L	10.0	1	05/23/25 12:15	06/07/25 09:32	7439-92-1	
Lithium	ND	ug/L	10.0	1	05/23/25 12:15	06/07/25 09:32	7439-93-2	
Molybdenum	ND	ug/L	20.0	1	05/23/25 12:15	06/07/25 09:32	7439-98-7	
Selenium	ND	ug/L	15.0	1	05/23/25 12:15	06/07/25 09:32	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Antimony	ND	ug/L	1.0	1	05/22/25 11:08	06/16/25 13:11	7440-36-0	
Thallium	ND	ug/L	1.0	1	05/22/25 11:08	06/16/25 13:11	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	ND	ug/L	0.20	1	05/30/25 14:53	06/02/25 10:53	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	ND	mg/L	5.0	1		05/20/25 15:36		
9056 IC Anions	Analytical Method: EPA 9056 Pace Analytical Services - Kansas City							
Chloride	ND	mg/L	1.0	1		06/10/25 03:30	16887-00-6	
Fluoride	ND	mg/L	0.20	1		06/10/25 03:30	16984-48-8	
Sulfate	ND	mg/L	1.0	1		06/10/25 03:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

Sample: ASH-04-CCR **Lab ID: 60475139004** Collected: 05/13/25 13:30 Received: 05/14/25 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Arsenic	ND	ug/L	10.0	1	05/23/25 12:15	06/07/25 09:34	7440-38-2	
Barium	**9.6**	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:34	7440-39-3	
Beryllium	ND	ug/L	1.0	1	05/23/25 12:15	06/07/25 09:34	7440-41-7	
Boron	**602**	ug/L	100	1	05/23/25 12:15	06/07/25 09:34	7440-42-8	
Cadmium	ND	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:34	7440-43-9	
Calcium	**414000**	ug/L	200	1	05/23/25 12:15	06/07/25 09:34	7440-70-2	
Chromium	ND	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:34	7440-47-3	
Cobalt	ND	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:34	7440-48-4	
Lead	ND	ug/L	10.0	1	05/23/25 12:15	06/07/25 09:34	7439-92-1	
Lithium	**331**	ug/L	10.0	1	05/23/25 12:15	06/07/25 09:34	7439-93-2	
Molybdenum	ND	ug/L	20.0	1	05/23/25 12:15	06/07/25 09:34	7439-98-7	
Selenium	**70.9**	ug/L	15.0	1	05/23/25 12:15	06/07/25 09:34	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Antimony	ND	ug/L	3.0	3	05/22/25 11:08	06/16/25 13:13	7440-36-0	D3
Thallium	ND	ug/L	3.0	3	05/22/25 11:08	06/16/25 13:13	7440-28-0	D3
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
	Pace Analytical Services - Kansas City							
Mercury	ND	ug/L	0.20	1	05/30/25 14:53	06/02/25 10:56	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Kansas City							
Total Dissolved Solids	**5970**	mg/L	167	1		05/20/25 15:37		
9056 IC Anions	Analytical Method: EPA 9056							
	Pace Analytical Services - Kansas City							
Chloride	**170**	mg/L	50.0	50		06/10/25 04:18	16887-00-6	
Fluoride	**0.32**	mg/L	0.20	1		06/10/25 03:42	16984-48-8	
Sulfate	**4030**	mg/L	500	500		06/10/25 04:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

Sample: ASH-05-CCR **Lab ID: 60475139005** Collected: 05/13/25 14:50 Received: 05/14/25 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Arsenic	ND	ug/L	10.0	1	05/23/25 12:15	06/07/25 09:35	7440-38-2	
Barium	**13.2**	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:35	7440-39-3	
Beryllium	ND	ug/L	1.0	1	05/23/25 12:15	06/07/25 09:35	7440-41-7	
Boron	**833**	ug/L	100	1	05/23/25 12:15	06/07/25 09:35	7440-42-8	
Cadmium	ND	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:35	7440-43-9	
Calcium	**462000**	ug/L	200	1	05/23/25 12:15	06/07/25 09:35	7440-70-2	
Chromium	ND	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:35	7440-47-3	
Cobalt	ND	ug/L	5.0	1	05/23/25 12:15	06/07/25 09:35	7440-48-4	
Lead	ND	ug/L	10.0	1	05/23/25 12:15	06/07/25 09:35	7439-92-1	
Lithium	**285**	ug/L	10.0	1	05/23/25 12:15	06/07/25 09:35	7439-93-2	
Molybdenum	ND	ug/L	20.0	1	05/23/25 12:15	06/07/25 09:35	7439-98-7	
Selenium	ND	ug/L	15.0	1	05/23/25 12:15	06/07/25 09:35	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Antimony	ND	ug/L	1.0	1	05/23/25 13:30	06/16/25 15:40	7440-36-0	
Thallium	ND	ug/L	1.0	1	05/23/25 13:30	06/16/25 15:40	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
	Pace Analytical Services - Kansas City							
Mercury	ND	ug/L	0.20	1	05/30/25 14:53	06/02/25 10:58	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Kansas City							
Total Dissolved Solids	**5000**	mg/L	143	1		05/20/25 15:37		
9056 IC Anions	Analytical Method: EPA 9056							
	Pace Analytical Services - Kansas City							
Chloride	**253**	mg/L	100	100		06/10/25 04:53	16887-00-6	
Fluoride	ND	mg/L	0.20	1		06/10/25 04:41	16984-48-8	
Sulfate	**2750**	mg/L	400	400		06/10/25 05:05	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

QC Batch: 936974
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60475139001, 60475139002, 60475139003, 60475139004, 60475139005

METHOD BLANK: 3714522 Matrix: Water
Associated Lab Samples: 60475139001, 60475139002, 60475139003, 60475139004, 60475139005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	06/02/25 10:08	

LABORATORY CONTROL SAMPLE: 3714523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.7	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3714524 3714525

Parameter	Units	60475975003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	3.6	3.6	72	71	75-125	2	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3714526 3714527

Parameter	Units	60475139001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.6	4.4	92	88	75-125	5	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

QC Batch: 936179
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60475139001, 60475139002, 60475139003, 60475139004, 60475139005

METHOD BLANK: 3711116 Matrix: Water
Associated Lab Samples: 60475139001, 60475139002, 60475139003, 60475139004, 60475139005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	10.0	06/07/25 09:21	
Barium	ug/L	ND	5.0	06/07/25 09:21	
Beryllium	ug/L	ND	1.0	06/07/25 09:21	
Boron	ug/L	ND	100	06/07/25 09:21	
Cadmium	ug/L	ND	5.0	06/07/25 09:21	
Calcium	ug/L	ND	200	06/07/25 09:21	
Chromium	ug/L	ND	5.0	06/07/25 09:21	
Cobalt	ug/L	ND	5.0	06/07/25 09:21	
Lead	ug/L	ND	10.0	06/07/25 09:21	
Lithium	ug/L	ND	10.0	06/07/25 09:21	
Molybdenum	ug/L	ND	20.0	06/07/25 09:21	
Selenium	ug/L	ND	15.0	06/07/25 09:21	

LABORATORY CONTROL SAMPLE: 3711117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1000	861	86	80-120	
Barium	ug/L	1000	936	94	80-120	
Beryllium	ug/L	1000	929	93	80-120	
Boron	ug/L	1000	892	89	80-120	
Cadmium	ug/L	1000	926	93	80-120	
Calcium	ug/L	10000	9530	95	80-120	
Chromium	ug/L	1000	925	92	80-120	
Cobalt	ug/L	1000	946	95	80-120	
Lead	ug/L	1000	940	94	80-120	
Lithium	ug/L	1000	917	92	80-120	
Molybdenum	ug/L	1000	942	94	80-120	
Selenium	ug/L	1000	938	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3711118 3711119

Parameter	Units	60475139001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	ND	1000	1000	937	939	94	94	75-125	0	20	
Barium	ug/L	10.6	1000	1000	948	926	94	92	75-125	2	20	
Beryllium	ug/L	ND	1000	1000	953	958	95	96	75-125	0	20	
Boron	ug/L	803	1000	1000	1750	1670	95	87	75-125	5	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3711118 3711119

Parameter	Units	60475139001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	ug/L	ND	1000	1000	905	892	91	89	75-125	1	20	
Calcium	ug/L	412000	10000	10000	441000	409000	292	-24	75-125	7	20	M1
Chromium	ug/L	ND	1000	1000	919	931	92	93	75-125	1	20	
Cobalt	ug/L	ND	1000	1000	922	934	92	93	75-125	1	20	
Lead	ug/L	ND	1000	1000	895	879	89	88	75-125	2	20	
Lithium	ug/L	264	1000	1000	1190	1170	92	90	75-125	2	20	
Molybdenum	ug/L	ND	1000	1000	975	987	97	98	75-125	1	20	
Selenium	ug/L	ND	1000	1000	1000	1010	100	101	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

QC Batch: 935956
QC Batch Method: EPA 3010
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60475139001, 60475139002, 60475139003, 60475139004

METHOD BLANK: 3710027 Matrix: Water
Associated Lab Samples: 60475139001, 60475139002, 60475139003, 60475139004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	06/16/25 12:35	
Thallium	ug/L	ND	1.0	06/16/25 12:35	

LABORATORY CONTROL SAMPLE: 3710028

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	38.4	96	80-120	
Thallium	ug/L	40	38.4	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3710029 3710030

Parameter	Units	60475139001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	40	40	36.9	36.9	92	92	75-125	0	20	
Thallium	ug/L	ND	40	40	33.9	33.8	85	85	75-125	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

QC Batch: 936177
QC Batch Method: EPA 3010
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60475139005

METHOD BLANK: 3711111 Matrix: Water
Associated Lab Samples: 60475139005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	06/16/25 15:04	
Thallium	ug/L	ND	1.0	06/16/25 15:04	

LABORATORY CONTROL SAMPLE: 3711112

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.0	102	80-120	
Thallium	ug/L	40	40.1	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3711113 3711114

Parameter	Units	60475139005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	40	40	38.5	38.3	96	96	75-125	0	20	
Thallium	ug/L	ND	40	40	34.8	34.5	87	86	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

QC Batch: 935682 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60475139001, 60475139002, 60475139003, 60475139004, 60475139005

METHOD BLANK: 3708829 Matrix: Water
Associated Lab Samples: 60475139001, 60475139002, 60475139003, 60475139004, 60475139005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	05/20/25 15:36	

LABORATORY CONTROL SAMPLE: 3708830

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	960	96	80-120	

SAMPLE DUPLICATE: 3708831

Parameter	Units	60475139001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	4610	4610	0	10	

SAMPLE DUPLICATE: 3708832

Parameter	Units	60475198003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	6280	5970	5	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

QC Batch: 937868
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60475139001, 60475139002, 60475139003, 60475139004, 60475139005

METHOD BLANK: 3718417 Matrix: Water
Associated Lab Samples: 60475139001, 60475139002, 60475139003, 60475139004, 60475139005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	06/09/25 23:59	
Fluoride	mg/L	ND	0.20	06/09/25 23:59	
Sulfate	mg/L	ND	1.0	06/09/25 23:59	

LABORATORY CONTROL SAMPLE: 3718418

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.2	103	80-120	
Fluoride	mg/L	2.5	2.5	99	80-120	
Sulfate	mg/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3718419 3718420

Parameter	Units	60475139001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	35.5	25	25	56.4	59.4	84	96	80-120	5	15	
Fluoride	mg/L	ND	2.5	2.5	2.0	2.0	78	80	80-120	3	15	M1
Sulfate	mg/L	3690	2000	2000	5430	5050	87	68	80-120	7	15	M1

SAMPLE DUPLICATE: 3718421

Parameter	Units	60475139001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	35.5	34.5	3	15	
Fluoride	mg/L	ND	ND		15	
Sulfate	mg/L	3690	3200	14	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60754415 PRPA CCR
Pace Project No.: 60475139

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60475139001	**ASH-08-CCR**	EPA 3010	936179	EPA 6010	936308
60475139002	**ASH-07-CCR**	EPA 3010	936179	EPA 6010	936308
60475139003	**ERB-02-CCR**	EPA 3010	936179	EPA 6010	936308
60475139004	**ASH-04-CCR**	EPA 3010	936179	EPA 6010	936308
60475139005	**ASH-05-CCR**	EPA 3010	936179	EPA 6010	936308
60475139001	**ASH-08-CCR**	EPA 3010	935956	EPA 6020	936123
60475139002	**ASH-07-CCR**	EPA 3010	935956	EPA 6020	936123
60475139003	**ERB-02-CCR**	EPA 3010	935956	EPA 6020	936123
60475139004	**ASH-04-CCR**	EPA 3010	935956	EPA 6020	936123
60475139005	**ASH-05-CCR**	EPA 3010	936177	EPA 6020	936383
60475139001	**ASH-08-CCR**	EPA 7470	936974	EPA 7470	936998
60475139002	**ASH-07-CCR**	EPA 7470	936974	EPA 7470	936998
60475139003	**ERB-02-CCR**	EPA 7470	936974	EPA 7470	936998
60475139004	**ASH-04-CCR**	EPA 7470	936974	EPA 7470	936998
60475139005	**ASH-05-CCR**	EPA 7470	936974	EPA 7470	936998
60475139001	**ASH-08-CCR**	SM 2540C	935682		
60475139002	**ASH-07-CCR**	SM 2540C	935682		
60475139003	**ERB-02-CCR**	SM 2540C	935682		
60475139004	**ASH-04-CCR**	SM 2540C	935682		
60475139005	**ASH-05-CCR**	SM 2540C	935682		
60475139001	**ASH-08-CCR**	EPA 9056	937868		
60475139002	**ASH-07-CCR**	EPA 9056	937868		
60475139003	**ERB-02-CCR**	EPA 9056	937868		
60475139004	**ASH-04-CCR**	EPA 9056	937868		
60475139005	**ASH-05-CCR**	EPA 9056	937868		

WO# : 60475139

60475139

	DC#_Title: ENV-FRM-LENE-0009_Sample C		
Pace ANALYTICAL SERVICES	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: AECOM

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☑ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T301 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 1.7 **Corr. Factor** +0.1 **Corrected** 1.8

Date and initials of person examining contents: DF 5/14

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☐No ☑N/A	
Rush Turn Around Time requested:	☐Yes ☐No ☑N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO$_3$, H$_2$SO$_4$, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:** 94888	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

CCR KS

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:
Company: AECOM
Address: 6200 South Quebec St
Greenwood Village, CO 80111
Email To: jamie.herman@aecom.com
Phone: (303) 740-2614 Fax:
Requested Due Date/TAT: ~~5 Business Days~~ Standard

Section B Required Project Information:
Report To: Vasanta Kalluri
Copy To: Jamie Herman
Purchase Order No.: NEED PO #
Project Name: ~~60709371~~ PRPA CCR 60754422
Project Number: ~~60709371~~ 60754422

Section C Invoice Information:
Attention: Accounts Payable
Company Name: AECOM
Address: Same as Section A
Pace Quote Reference: 42700
Pace Project Manager: Heather Wilson
Pace Profile #: 11033, 3

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER EPA CCR
Site Location STATE: CO

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	9056 Cl, F, SO4	6020 Total Metals*	6010 Total Metals**	7470 Total Mercury	2540C TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	ASH-08-CCR	WT	G	—	—	5/13/25	1005		7	4		3						N	N	N	N	N			N	
2	ASH-07-CCR	WT	G	—	—	5/13/25	1145		6	3	2	1						X	X	X	X	X			N	
3	EAB-02-CCR	WT	G	—	—	5/13/25	1200		3	2	1							X	X	X	X	X			N	
4	ASH-04-CCR	WT	G	—	—	5/13/25	1330		3	2	1							X	X	X	X	X			N	
5	ASH-05-CCR	WT	G	—	—	5/13/25	1450		3	2	1							X	X	X	X	X			N	
6																										
7																										
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
*Sb, Tl	AECOM	5/13/25	1200	Carmen June Pace	5/14	0905	1,7
**As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Mo, Se							
Perform MS/MSD on ASH-08-CCR							

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Kara Hoppes & Mackensie Swift
SIGNATURE of SAMPLER:
DATE Signed (MM/DD/YY): 05/13/25

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

DC#_Title: ENV-FRM-LENE-0001 v07_Sample Container Count
Effective Date: 7/12/2024

Client: AECOM Profile/EZ # 11033,3

Site: 60754422 Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3B	BP3Z	WPDU	ZPLC	Other		
1	WT																		1		3	3										
2																			1		1	1										
3																			1		1	1										
4																			1		1	1										
5																			1		1	1										
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1B	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2B	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3B	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Numbe

WO#: 60475139

PM: HMW Due Date: 06/05/25

CLIENT: AECOM CO

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

July 09, 2025

Vasanta Kalluri
AECOM
6200 South Quebec Street
Greenwood Village, CO 80111

RE: Project: 60754415 PRPA CCR
Pace Project No.: 60475325

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 15, 2025. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Heather M. Wilson

Heather Wilson
heather.wilson@pacelabs.com
1(913)563-1407
Project Manager

Enclosures

cc: Jamie Herman, AECOM
Kara Hoppes, AECOM
Sawyer Hunt, AECOM
Jeremy Hurshman, AECOM

Pace Analytical Services, LLC
2025.07.09 13:53:31 -07'00'
Document is certified

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: 60754415 PRPA CCR
Pace Project No.: 60475325

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Arkansas Certification #: 88-00679
Illinois Certification #: 2000302023-6
Colorado Division of Oil and Public Safety
Iowa Certification #: 118
Kansas Field Laboratory Certification #: E-92587
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Missouri Inorganic Drinking Water Certification
Nevada Certification #: KS000212024-1
Oklahoma Certification #: 2023-073
Texas Certification #: T104704407-23-17
Utah Certification #: KS000212022-13

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SAMPLE SUMMARY

Project: 60754415 PRPA CCR
Pace Project No.: 60475325

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60475325001	**ASH-02-CCR**	Water	05/14/25 11:35	05/15/25 09:05

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SAMPLE ANALYTE COUNT

Project: 60754415 PRPA CCR
Pace Project No.: 60475325

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60475325001	**ASH-02-CCR**	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JGP	2	PASI-K
		EPA 7470	MNG	1	PASI-K
		SM 2540C	CAR	1	PASI-K
		EPA 9056	MLD	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 60475325

Sample: ASH-02-CCR **Lab ID: 60475325001** Collected: 05/14/25 11:35 Received: 05/15/25 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Arsenic	ND	ug/L	10.0	1	05/27/25 08:59	06/07/25 15:07	7440-38-2	
Barium	**17.5**	ug/L	5.0	1	05/27/25 08:59	06/07/25 15:07	7440-39-3	
Beryllium	ND	ug/L	1.0	1	05/27/25 08:59	06/07/25 15:07	7440-41-7	
Boron	**1740**	ug/L	100	1	05/27/25 08:59	06/07/25 15:07	7440-42-8	
Cadmium	ND	ug/L	5.0	1	05/27/25 08:59	06/07/25 15:07	7440-43-9	
Calcium	**150000**	ug/L	200	1	05/27/25 08:59	06/07/25 15:07	7440-70-2	
Chromium	ND	ug/L	5.0	1	05/27/25 08:59	06/07/25 15:07	7440-47-3	
Cobalt	ND	ug/L	5.0	1	05/27/25 08:59	06/07/25 15:07	7440-48-4	
Lead	ND	ug/L	10.0	1	05/27/25 08:59	06/07/25 15:07	7439-92-1	
Lithium	**251**	ug/L	10.0	1	05/27/25 08:59	06/07/25 15:07	7439-93-2	
Molybdenum	ND	ug/L	20.0	1	05/27/25 08:59	06/07/25 15:07	7439-98-7	
Selenium	ND	ug/L	15.0	1	05/27/25 08:59	06/07/25 15:07	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Antimony	ND	ug/L	3.0	3	05/23/25 13:30	06/16/25 15:28	7440-36-0	D3
Thallium	ND	ug/L	3.0	3	05/23/25 13:30	06/16/25 15:28	7440-28-0	D3
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
	Pace Analytical Services - Kansas City							
Mercury	ND	ug/L	0.20	1	05/30/25 14:53	06/02/25 11:00	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Kansas City							
Total Dissolved Solids	**3400**	mg/L	125	1		05/21/25 17:40		
9056 IC Anions	Analytical Method: EPA 9056							
	Pace Analytical Services - Kansas City							
Chloride	**50.9**	mg/L	50.0	50		06/11/25 02:47	16887-00-6	
Fluoride	ND	mg/L	0.20	1		06/11/25 02:02	16984-48-8	
Sulfate	**2300**	mg/L	50.0	50		06/11/25 02:47	14808-79-8	E
Sulfate	**2720**	mg/L	400	400		06/17/25 06:58	14808-79-8	D6,H1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 60475325

QC Batch: 936974
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60475325001

METHOD BLANK: 3714522 Matrix: Water
Associated Lab Samples: 60475325001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	06/02/25 10:08	

LABORATORY CONTROL SAMPLE: 3714523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.7	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3714524 3714525

Parameter	Units	60475975003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	3.6	3.6	72	71	75-125	2	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3714526 3714527

Parameter	Units	60475139001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.6	4.4	92	88	75-125	5	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 60475325

QC Batch: 936392
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60475325001

METHOD BLANK: 3712116 Matrix: Water
Associated Lab Samples: 60475325001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	10.0	06/07/25 14:53	
Barium	ug/L	ND	5.0	06/07/25 14:53	
Beryllium	ug/L	ND	1.0	06/07/25 14:53	
Boron	ug/L	ND	100	06/07/25 14:53	
Cadmium	ug/L	ND	5.0	06/07/25 14:53	
Calcium	ug/L	ND	200	06/07/25 14:53	
Chromium	ug/L	ND	5.0	06/07/25 14:53	
Cobalt	ug/L	ND	5.0	06/07/25 14:53	
Lead	ug/L	ND	10.0	06/07/25 14:53	
Lithium	ug/L	ND	10.0	06/07/25 14:53	
Molybdenum	ug/L	ND	20.0	06/07/25 14:53	
Selenium	ug/L	ND	15.0	06/07/25 14:53	

LABORATORY CONTROL SAMPLE: 3712117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1000	896	90	80-120	
Barium	ug/L	1000	983	98	80-120	
Beryllium	ug/L	1000	977	98	80-120	
Boron	ug/L	1000	931	93	80-120	
Cadmium	ug/L	1000	975	98	80-120	
Calcium	ug/L	10000	9960	100	80-120	
Chromium	ug/L	1000	977	98	80-120	
Cobalt	ug/L	1000	999	100	80-120	
Lead	ug/L	1000	989	99	80-120	
Lithium	ug/L	1000	946	95	80-120	
Molybdenum	ug/L	1000	984	98	80-120	
Selenium	ug/L	1000	962	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3712118 3712119

Parameter	Units	60475548003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	ND	1000	1000	1070	955	107	95	75-125	12	20	
Barium	ug/L	0.92 mg/L	1000	1000	2050	1860	113	94	75-125	10	20	
Beryllium	ug/L	ND	1000	1000	1140	1040	114	104	75-125	9	20	
Boron	ug/L	0.15 mg/L	1000	1000	1220	1090	107	94	75-125	11	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 60475325

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3712118 3712119

Parameter	Units	60475548003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	ug/L	ND	1000	1000	1080	963	108	96	75-125	11	20	
Calcium	ug/L	395 mg/L	10000	10000	456000	405000	616	106	75-125	12	20	M1
Chromium	ug/L	0.0093 mg/L	1000	1000	1100	1010	110	100	75-125	9	20	
Cobalt	ug/L	ND	1000	1000	1080	991	108	99	75-125	9	20	
Lead	ug/L	ND	1000	1000	1080	966	107	96	75-125	11	20	
Lithium	ug/L	0.075 mg/L	1000	1000	1130	1020	105	94	75-125	10	20	
Molybdenum	ug/L	ND	1000	1000	1120	1020	112	102	75-125	9	20	
Selenium	ug/L	ND	1000	1000	1110	994	110	99	75-125	11	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 60475325

QC Batch: 936177
QC Batch Method: EPA 3010
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60475325001

METHOD BLANK: 3711111 Matrix: Water
Associated Lab Samples: 60475325001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	06/16/25 15:04	
Thallium	ug/L	ND	1.0	06/16/25 15:04	

LABORATORY CONTROL SAMPLE: 3711112

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.0	102	80-120	
Thallium	ug/L	40	40.1	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3711113 3711114

Parameter	Units	60475139005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	40	40	38.5	38.3	96	96	75-125	0	20	
Thallium	ug/L	ND	40	40	34.8	34.5	87	86	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 60475325

QC Batch: 935858
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60475325001

METHOD BLANK: 3709507 Matrix: Water
Associated Lab Samples: 60475325001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	05/21/25 17:38	

LABORATORY CONTROL SAMPLE: 3709508

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	975	98	80-120	

SAMPLE DUPLICATE: 3709509

Parameter	Units	60475254003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	427	431	1	10	

SAMPLE DUPLICATE: 3709510

Parameter	Units	60475511001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1080	1070	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 60475325

QC Batch: 938087
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60475325001

METHOD BLANK: 3719040 Matrix: Water
Associated Lab Samples: 60475325001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	06/11/25 01:07	
Fluoride	mg/L	ND	0.20	06/11/25 01:07	
Sulfate	mg/L	ND	1.0	06/11/25 01:07	

LABORATORY CONTROL SAMPLE: 3719041

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	99	80-120	
Fluoride	mg/L	2.5	2.4	97	80-120	
Sulfate	mg/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3719042 3719043

Parameter	Units	60475272002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	117	25	25	142	142	98	97	80-120	0	15	E,H1
Fluoride	mg/L	ND	12.5	12.5	13.1	13.0	101	100	80-120	1	15	H1
Sulfate	mg/L	31.1	25	25	55.2	55.4	96	97	80-120	0	15	H1

SAMPLE DUPLICATE: 3719044

Parameter	Units	60475325001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	50.9	50.1	2	15	
Fluoride	mg/L	ND	ND		15	
Sulfate	mg/L	2720	2130	24	15	D6,H1
Sulfate	mg/L	2300	2300	0	15	E

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 60754415 PRPA CCR
Pace Project No.: 60475325

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H1	Analysis conducted outside the EPA method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60754415 PRPA CCR
Pace Project No.: 60475325

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60475325001	**ASH-02-CCR**	EPA 3010	936392	EPA 6010	936467
60475325001	**ASH-02-CCR**	EPA 3010	936177	EPA 6020	936383
60475325001	**ASH-02-CCR**	EPA 7470	936974	EPA 7470	936998
60475325001	**ASH-02-CCR**	SM 2540C	935858		
60475325001	**ASH-02-CCR**	EPA 9056	938087		

WO# : 60475325

60475325

Client Name: AECOM

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 609107997270 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T-301 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 4.1 **Corr. Factor** +0.1 **Corrected** 4.2

Date and initials of person examining contents: KH 5/13

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:** 96888	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

ASH CCR KS

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	AECOM	Report To:	Vasanta Kalluri	Attention:	Accounts Payable
Address:	6200 South Quebec St	Copy To:	Jamie Herman	Company Name:	AECOM
	Greenwood Village, CO 80111			Address:	Same as Section A
Email To:	jamie.herman@aecom.com	Purchase Order No.:	NEED PO #	Pace Quote Reference:	42700
Phone:	(303) 740-2614 Fax:	Project Name:	~~60709371~~ PRPA CCR 60754422	Pace Project Manager:	Heather Wilson
Requested Due Date/TAT:	Standard	Project Number:	~~60709371~~ 60754422	Pace Profile #:	11033, 3

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER EPA CCR

Site Location STATE: CO

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	Section D Required Client Information (SAMPLE ID)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	9056 Cl, F, SO4	6020 Total Metals*	6010 Total Metals**	7470 Total Mercury	2540C TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N	N	N	N		60475325
1	ASH-02-CCR	WT	G	←	—	5/14/25	1135		3	2		1						X	X	X	X	X	N	
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
*Sb, Tl	[signature] / AECOM	5/14/25	1700	Carmen Jure Pace	5/15	0905	4.2
**As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Mo, Se							

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Sara Hoppes & Mackenzie Smith

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 05/14/25

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Client: AECOM

Profile/EZ #: 11033-3

Site: PRPA CCR 60754422

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3B	BP3Z	WPDU	ZPLC	Other		
1	WT																		1		1	1										
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1B	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2B	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3B	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number:

WO#: 60475325

PM: HMW Due Date: 06/06/25

CLIENT: AECOM CO

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

September 03, 2025

Vasanta Kalluri
AECOM
6200 South Quebec Street
Greenwood Village, CO 80111

RE: Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60475533

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 19, 2025. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

Revised Report_rev.1 The Radium QC appendix has been added to the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Heather Wilson
heather.wilson@pacelabs.com
1(913)563-1407
Project Manager

Enclosures

cc: Jamie Herman, AECOM
Kara Hoppes, AECOM
Sawyer Hunt, AECOM
Jeremy Hurshman, AECOM

Pace Analytical Services, LLC
2025.09.03 11:15:09 -07'00'
Document is certified

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60475533

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
ANABISO/IEC 17025:2017 Rad Cert#: L24170
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 2950
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA010
Louisiana DEQ/TNI Certification #: 04086
Maine Certification #: 2023021
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572023-03
New Hampshire/TNI Certification #: 297622
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-015
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN02867
Texas/TNI Certification #: T104704188-22-18
Utah/TNI Certification #: PA014572223-14
USDA Soil Permit #: 525-23-67-77263
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60475533

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60475533001	**ASH-02-CCR**	Water	05/14/25 11:35	05/19/25 09:00

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(913)599-5665

SAMPLE ANALYTE COUNT

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60475533

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60475533001	**ASH-02-CCR**	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60475533

Sample: ASH-02-CCR **Lab ID: 60475533001** Collected: 05/14/25 11:35 Received: 05/19/25 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Comments: • The sampler's name and signature were not listed on the COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.568 ± 0.713 (1.51) C:NA T:88%**	pCi/L	06/16/25 15:32	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.840 ± 0.398 (0.660) C:82% T:85%**	pCi/L	06/13/25 14:14	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.840 ± 1.11 (2.17)**	pCi/L	06/16/25 17:10	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL - RADIOCHEMISTRY

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60475533

QC Batch: 748063
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60475533001

METHOD BLANK: 3643708 Matrix: Water
Associated Lab Samples: 60475533001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.182 ± 0.358 (0.642) C:NA T:92%	pCi/L	06/16/25 15:08	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL - RADIOCHEMISTRY

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60475533

QC Batch: 748064
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60475533001

METHOD BLANK: 3643709 Matrix: Water
Associated Lab Samples: 60475533001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.532 ± 0.320 (0.579) C:85% T:89%	pCi/L	06/13/25 14:12	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60475533

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60754415 PRPA CCR-Revised Report
Pace Project No.: 60475533

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60475533001	**ASH-02-CCR**	EPA 903.1	748063		
60475533001	**ASH-02-CCR**	EPA 904.0	748064		
60475533001	**ASH-02-CCR**	Total Radium Calculation	752312		

1150 CCR FA

Pace Analytical
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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A — **Required** Client Information:

Company:	AECOM
Address:	6200 South Quebec St
	Greenwood Village, CO 80111
Email To:	jamie.herman@aecom.com
Phone: (303) 740-2614	Fax:
Requested Due Date/TAT:	Standard

Section B — **Required** Project Information:

Report To:	Vasanta Kalluri
Copy To:	Jamie Herman
Purchase Order No.:	NEED PO #
Project Name:	~~60709371~~ PRPA CCR 60754422
Project Number:	~~60709371~~ 60754422

Section C — Invoice Information:

Attention:	Accounts Payable
Company Name:	AECOM
Address:	Same as Section A
Pace Quote Reference:	42700
Pace Project Manager:	Heather Wilson
Pace Profile #:	11033, 3

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER EPACCR

Site Location STATE: CO

Section D — **Required** Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Radium-226	Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Requested Analysis Filtered (Y/N)	N	N	N		
1	ASH-02-CCR	WT	G	—	—	5/14/25	1135		2			X							X	X	X	N	
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Mackensie Swift / AECOM	5/15/25	1700	[signature]	5/19/25	9:00	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Mackensie Swift / Kiara Hopkes
SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 5/14/25

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

updated IR30 received via email 5/20/25 - PS

Internal Transfer Chain of Custody

☐ Rush Multiplier____X

☐ Samples Pre-Logged into eCOC

State Of Origin: CO

Cert. Needed: ☐ Yes ☒ No

Workorder: 60475533 Workorder Name: 60754422 PRPA CCR

Owner Received Date: 5/19/2025 Results Requested By: 6/10/2025

Report To

Heather Wilson
Pace Analytical Kansas
9608 Loiret Blvd.
Lenexa, KS 66219
Phone 1(913)563-1407

Subcontract To

Pace Analytical Pittsburgh
1638 Roseytown Road
Suites 2,3, & 4
Greensburg, PA 15601
Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3						Requested Analysis: Total Radium-226, Total Sum Radium	Total Radium-228											LAB USE ONLY
1	ASH-02-CCR	PS	5/14/2025 11:35	60475533001	Water	2						X	X											001
2																								
3																								
4																								
5																								

Transfers	Released By	Date/Time	Received By	Date/Time
1			[signature]	5/19/25 9:00
2				
3				

Comments

IR30- Radium QC Sheets Required

Cooler Temperature on Receipt ____ °C | **Custody Seal** (Y) or N | **Received on Ice** Y or (N) | **Samples Intact** (Y) or N

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

WO# : 30780641

30780641

DC#_Title: ENV-FRM-GBUR-0088 v07_Sample Condition Upon Receipt-Greensburg

Effective Date: 01/04/2024

WO# : 30780641

PM: CMC Due Date: 06/18/25

CLIENT: PACE_60_LEKS

Client Name: AECOM

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Tracking Number: 6091 0798 5461

Initial / Date

Examined By: PS 5/19/25

Labeled By: PS 5/19/25 (PS 5/20/25) MS 5/20/25

Temped By: —

Custody Seal on Cooler/Box Present: ☑ Yes ☐ No Seals Intact: ☑ Yes ☐ No

Thermometer Used: — Type of Ice: Wet Blue (None)

Cooler Temperature: Observed Temp — °C Correction Factor: — °C Final Temp: — °C

Temp should be above freezing to 6°C

pH paper Lot# 10043241 D.P.D. Residual Chlorine Lot #

Comments:	Yes	No	NA	
Chain of Custody Present	✓			1.
Chain of Custody Filled Out:	✓			2.
-Were client corrections present on COC		✓		
Chain of Custody Relinquished	✓			3.
Sampler Name & Signature on COC:	✓			4.
Sample Labels match COC:	✓			5.
-Includes date/time/ID				
Matrix:	WT			
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used:	✓			10.
-Pace Containers Used	✓			
Containers Intact:	✓			11.
Orthophosphate field filtered:			✓	12.
Hex Cr Aqueous samples field filtered:			✓	13.
Organic Samples checked for dichlorination			✓	14:
Filtered volume received for dissolved tests:			✓	15:
All containers checked for preservation:	✓			16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix				pH<2
All containers meet method preservation requirements:	✓			Initial when completed PS Date/Time of Preservation
				Lot# of added Preservative
8260C/D: Headspace in VOA Vials (> 6mm)			✓	17.
624.1: Headspace in VOA Vials (0mm)			✓	18.
Radon: Headspace in RAD Vials (0mm)			✓	19.
Trip Blank Present:			✓	Trip blank custody seal present? YES or NO
Rad Samples Screened <.05 mrem/hr.	✓			Initial when completed PS Date: 5/19/25 Survey Meter SN: 2501438O

Comments:

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office.
PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.

Qualtrax ID: 55680

ASH CCR PA

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company:	AECOM
Address:	6200 South Quebec St
	Greenwood Village, CO 80111
Email To:	jamie.herman@aecom.com
Phone: (303) 740-2614	Fax:
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Vasanta Kalluri
Copy To:	Jamie Herman
Purchase Order No.:	NEED PO #
Project Name:	~~60709371~~ PRPA CCR 60754422
Project Number:	~~60709371~~ 60754422

Section C Invoice Information:

Attention:	Accounts Payable
Company Name:	AECOM
Address:	Same as Section A
Pace Quote Reference:	42700
Pace Project Manager:	Heather Wilson
Pace Profile #:	11033, 3

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER EPACCR

Site Location STATE: CO

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Radium-226	Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
				Requested Analysis Filtered (Y/N)														N	N	N			
1	ASH-02-CCR	WT	G	—	—	5/14/25	1135		2			X						X	X	X		N	001
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Mackensie Swift / AECOM	5/15/25	1700	[signature]	5/19/25	9:00	

WO#: 30780641

PM: CMC Due Date: 06/18/25

CLIENT: PACE_60_LEKS

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Mackensie Swift / Keara Hopkes

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 5/14/25

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

...nt terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Test:	Ra-226
Analyst:	CLM
Date:	6/4/2025
Batch ID:	85386
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	3643708
MB concentration:	0.182
M/B 2 Sigma CSU:	0.358
MB MDC:	0.642
MB Numerical Performance Indicator:	1.00
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	N/A

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS85386	LCSD85386
Count Date:	6/16/2025	
Spike I.D.:	24-046	
Spike Concentration (pCi/mL):	31.830	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.652	
Target Conc. (pCi/L, g, F):	4.885	
Uncertainty (Calculated):	0.230	
Result (pCi/L, g, F):	4.185	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.014	
Numerical Performance Indicator:	-1.32	
Percent Recovery:	85.67%	
Status vs Numerical Indicator:	Pass	
Status vs Recovery:	N/A	
Upper % Recovery Limits:	133%	
Lower % Recovery Limits:	73%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:	5/12/2025	
Sample I.D.	30780483001	
Sample MS I.D.	30780483003	
Sample MSD I.D.	30780483005	
Spike I.D.:	24-046	
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	31.831	
Spike Volume Used in MS (mL):	0.20	
Spike Volume Used in MSD (mL):	0.20	
MS Aliquot (L, g, F):	0.026	
MS Target Conc.(pCi/L, g, F):	244.949	
MSD Aliquot (L, g, F):	0.029	
MSD Target Conc. (pCi/L, g, F):	220.666	
MS Spike Uncertainty (calculated):	11.513	
MSD Spike Uncertainty (calculated):	10.371	
Sample Result:	28.662	
Sample Result 2 Sigma CSU (pCi/L, g, F):	13.906	
Sample Matrix Spike Result:	284.328	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	49.164	
Sample Matrix Spike Duplicate Result:	266.643	
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	46.326	
MS Numerical Performance Indicator:	0.401	
MSD Numerical Performance Indicator:	0.686	
MS Percent Recovery:	104.38%	
MSD Percent Recovery:	107.85%	
MS Status vs Numerical Indicator:	Pass	
MSD Status vs Numerical Indicator:	Pass	
MS Status vs Recovery:	N/A	
MSD Status vs Recovery:	N/A	
MS/MSD Upper % Recovery Limits:	136%	
MS/MSD Lower % Recovery Limits:	71%	

Duplicate Sample Assessment		
Sample I.D.:		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.		
Sample Result (pCi/L, g, F):		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Duplicate Result (pCi/L, g, F):		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:		
Duplicate RPD:		
Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD:		
% RPD Limit:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.	30780483001	
Sample MS I.D.	30780483003	
Sample MSD I.D.	30780483005	
Sample Matrix Spike Result:	284.328	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	49.164	
Sample Matrix Spike Duplicate Result:	266.643	
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	46.326	
Duplicate Numerical Performance Indicator:	0.513	
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	3.27%	
MS/ MSD Duplicate Status vs Numerical Indicator:	Pass	
MS/ MSD Duplicate Status vs RPD:	N/A	
% RPD Limit:	32%	

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the RL.

Comments:

TY 6-16-25

Quality Control Sample Performance Assessment

Pace Analytical
www.pacelabs.com

Test:	Ra-228
Analyst:	VAL
Date:	6/11/2025
Worklist:	85387
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	3643709
MB concentration:	0.532
M/B 2 Sigma CSU:	0.320
MB MDC:	0.579
MB Numerical Performance Indicator:	3.26
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS85387	LCSD85387
Count Date:	6/13/2025	
Spike I.D.:	23-043	
Decay Corrected Spike Concentration (pCi/mL):	32.264	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.822	
Target Conc. (pCi/L, g, F):	3.924	
Uncertainty (Calculated):	0.192	
Result (pCi/L, g, F):	3.782	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.871	
Numerical Performance Indicator:	-0.31	
Percent Recovery:	96.39%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	135%	
Lower % Recovery Limits:	60%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:	5/12/2025	
Sample I.D.	30780483001	
Sample MS I.D.	30780483003	
Sample MSD I.D.	30780483005	
Spike I.D.:	23-043	
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	32.609	
Spike Volume Used in MS (mL):	0.20	
Spike Volume Used in MSD (mL):	0.20	
MS Aliquot (L, g, F):	0.054	
MS Target Conc.(pCi/L, g, F):	121.450	
MSD Aliquot (L, g, F):	0.052	
MSD Target Conc. (pCi/L, g, F):	125.614	
MS Spike Uncertainty (calculated):	5.951	
MSD Spike Uncertainty (calculated):	6.155	
Sample Result:	37.560	
Sample Result 2 Sigma CSU (pCi/L, g, F):	9.726	
Sample Matrix Spike Result:	170.518	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	33.567	
Sample Matrix Spike Duplicate Result:	171.694	
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	33.756	
MS Numerical Performance Indicator:	0.636	
MSD Numerical Performance Indicator:	0.468	
MS Percent Recovery:	109.48%	
MSD Percent Recovery:	106.78%	
MS Status vs Numerical Indicator:	Pass	
MSD Status vs Numerical Indicator:	Pass	
MS Status vs Recovery:	Pass	
MSD Status vs Recovery:	Pass	
MS/MSD Upper % Recovery Limits:	135%	
MS/MSD Lower % Recovery Limits:	60%	

Duplicate Sample Assessment		
Sample I.D.:		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.		
Sample Result (pCi/L, g, F):		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Duplicate Result (pCi/L, g, F):		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:		
Duplicate RPD:		
Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD:		
% RPD Limit:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.	30780483001	
Sample MS I.D.	30780483003	
Sample MSD I.D.	30780483005	
Sample Matrix Spike Result:	170.518	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	33.567	
Sample Matrix Spike Duplicate Result:	171.694	
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	33.756	
Duplicate Numerical Performance Indicator:	-0.048	
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	2.49%	
MS/ MSD Duplicate Status vs Numerical Indicator:	Pass	
MS/ MSD Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

~~*If the lowest activity sample in this batch is greater than ten times the blank value, the blank is acceptable; otherwise this batch must be re-prepped.~~ MB activity < MDC, PASS

6/16/25

Data Validation Report

Project/Site: Platte River Power Authority/CCR Ash Wells
Validating Chemist: Kiranmayi G
Secondary Review Chemist: Jamie Herman

Event: 1SA Groundwater 2025
Date: 8/10/2025
Date: 9/3/2025

Introduction:

This validation report documents the data review process through the checklists below. Further identification and explanation of any anomalies are provided following each section of the checklist, as needed.

The field sample and laboratory identification associations are summarized in Table 1.

Qualified data are summarized and presented in Table 2.

Laboratory and Sample Delivery Groups (SDGs):

Pace Analytical Services in Lenexa, Kansas – 60474180, 60475047, 60475139 and 60475325

Pace Analytical Services in Greensburg, Pennsylvania – 60474663, 60475112 and 60475533

Analytical Methods Validated:

Anions (chloride, sulfate, fluoride) by EPA Method 9056, total metals (select list) by EPA Methods 6010 and 6020, total mercury by EPA Method 7070A, total dissolved solids (TDS) by SM2540C, radium-226 by EPA Method 903.1, radium-228 by EPA method 904.0, and total radium (calculation).

Validation:

Stage 2A Validation

Validation Guidance Documents:

The data review was conducted in accordance with *National Functional Guidelines for Inorganic Superfund Methods Data Review* (EPA November 2020), and evaluation of laboratory criteria, as applicable.

Overall Assessment of Data:

As no data were missing or qualified as unusable during the validation process, the overall assessment of data was acceptable at 100%. Qualified data are summarized and presented in Table 2.

Data Validation Report

Project/Site: Platte River Power Authority/CCR Ash Wells
Validating Chemist: Kiranmayi G
Secondary Review Chemist: Jamie Herman

Event: 1SA Groundwater 2025
Date: 8/10/2025
Date: 9/3/2025

1.0 Sample Documentation and Case Narrative

Sample Documentation Criteria	Yes	No	NA
Were all samples documented correctly on the chain-of-custody (COC) and container labels?	X		
Were sample analyses completed per the COC?	X		
Were samples extracted and analyzed within the method required holding times?		X[1]	
Laboratory Case Narrative	**Yes**	**No**	**NA**
Were there additional narrative clarifications made by the laboratory, not addressed within this validation?	X[2]		

1. **Data Package 60475325:** Sample ASH-02-CCR was re-analyzed outside the Method 9056 required holding time of 28 days due to an exceeded calibration during the initial analysis for sulfate. The result was qualified as estimated (J- h). Qualified data are summarized and presented in Table 2.

   Further discussion of additional qualifications and reporting of multiple results is included in Section 4.0.

2. **Data Package 60475533:** The laboratory revised and reissued the data package to include missing batch QC associated with Methods 903.1 and 904.0 for radiochemistry.

Data Validation Report

Project/Site: Platte River Power Authority/CCR Ash Wells
Validating Chemist: Kiranmayi G
Secondary Review Chemist: Jamie Herman

Event: 1SA Groundwater 2025
Date: 8/10/2025
Date: 9/3/2025

2.0 Quality Control and Performance Checks

Stage 2A Validation Criteria			
Method Blank Criteria	**Yes**	**No**	**NA**
Was a method blank analyzed for each batch, as applicable to the method?	X		
Were method blank concentrations reported as not detected or less than the MDC?	X		
Laboratory Control Sample Criteria	**Yes**	**No**	**NA**
Was an LCS reported with each preparation batch, as applicable to the method?	X		
Were LCS/LCSD recoveries and/or RPDs within acceptance criteria?	X		
Matrix Spike/Matrix Spike Duplicates Criteria	**Yes**	**No**	**NA**
Was an MS/MSD performed on a project specific sample?*	X		

Parent Sample	**Method**
ASH-01-CCR	6020
ASH-06-CCR	6010
ASH-08-CCR	903.1, 904.0
ASH-08-CCR	7470, 6010, 6020, 9056
ASH-05-CCR	6020

For concentrations <4x the spike concentration, were MS/MSD recoveries and RPDs within acceptance criteria?		X[1]	
Spike recovery limits and RPDs are not applicable when the parent sample concentration is ≥ 4x the spike added. The data is reported without qualification.			
Laboratory Duplicate Criteria – As applicable to the analytical method	**Yes**	**No**	**NA**
Was a laboratory duplicate performed on a project specific sample?	X		
If both the parent sample and duplicate values were >5xRL, was laboratory duplicate RPD within laboratory acceptance criteria?		X[2]	
If either the parent sample or duplicate value was <5xRL, was the absolute difference within acceptance criteria of <2xRL for waters, and <3.5xRL for solids?	X		
For radiological parameters, was the DER agreement between parent sample results and laboratory duplicate sample results ≤2?			X
Tracery/Carrier Recovery - Radiological	**Yes**	**No**	**NA**
The sample specific recoveries were within the laboratory limits (30-110%).	X		

* MS/MSD performed on project specific field samples were evaluated.

1. The following matrix spike samples were outside QC acceptance criteria.

Matrix Spike Identification	Method	Analyte	Recovery	Recovery Criteria	RPD	RPD Criteria
Data Package 60475139						
ASH-08-CCR	9056	Fluoride	**78**/80	80-120	3	15
	9056	Sulfate	87/**68**	80-120	7	15

In instances where the MS recovery was less than the lower acceptance limit but ≥30% for inorganics, the associated results were qualified as estimated (J-/UJ) to demonstrate the potential low bias. Qualified data are summarized and presented in Table 2.

Data Validation Report

Project/Site: Platte River Power Authority/CCR Ash Wells
Validating Chemist: Kiranmayi G
Secondary Review Chemist: Jamie Herman

Event: 1SA Groundwater 2025
Date: 8/10/2025
Date: 9/3/2025

2. The following method duplicates were outside the QC acceptance criteria:

Sample Identification	Method	Analyte	Criteria Not Met
Data Package 60475325			
ASH-02-CCR	9056	Sulfate	RPD

Where the RPD was greater than the acceptance criteria, the associated detected result was qualified as estimated (J ld). Qualified data are summarized and presented in Table 2.

Data Validation Report

Project/Site: Platte River Power Authority/CCR Ash Wells
Validating Chemist: Kiranmayi G
Secondary Review Chemist: Jamie Herman

Event: 1SA Groundwater 2025
Date: 8/10/2025
Date: 9/3/2025

3.0 Field Quality Control Samples

Field QC Blank Criteria		Yes	No	NA
Was a trip blank shipped with, and analyzed with the samples?				X
Were trip blank concentrations reported as non-detect for target analytes?				X
Were field and/or equipment blanks collected and analyzed with the samples?		X		
Were field QC blank concentrations reported as non-detect or less than the MDC for radiological parameters, for the target analytes?		X		
Field Duplicate Criteria		**Yes**	**No**	**NA**
Were field duplicate samples collected for this sampling event?		X		
Parent Sample	**Field Duplicate Sample**			
ASH-03-CCR	DUP-01-CCR			
If both the parent sample and/field duplicate sample results were >5xRL were the RPDs within the acceptance criteria of ≤30%?		X		
If either the parent sample or duplicate value was <5xRL, was the absolute difference within the acceptance criteria of <2xRL?		X		
For radiological parameters, was the DER agreement between parent sample results and field duplicate sample results ≤2?		X		

Data Validation Report

Project/Site: Platte River Power Authority/CCR Ash Wells
Validating Chemist: Kiranmayi G
Secondary Review Chemist: Jamie Herman

Event: 1SA Groundwater 2025
Date: 8/10/2025
Date: 9/3/2025

4.0 Sensitivity, Additional Qualification, and Completeness

Sensitivity Criteria	Yes	No	NA
Did all analytes meet sensitivity requirements?		X[1]	
For radiological parameters, if the associated uncertainty was greater than the reported result, the 2 sigma (σ) uncertainty multiplied by 1.65 was less than or equal to the MDC?		X[2]	
Additional Qualification Criteria	**Yes**	**No**	**NA**
Was professional judgment used to qualify data?	X[3]		
Were multiple results reported for a single analyte?	X[3]		
Total vs Dissolved Analyses	**Yes**	**No**	**NA**
Was the dissolved concentration greater than the total concentration?			X
If either sample result was >5xRL, were the RPDs within ≤30%?			X
If either sample result was <5xRL, was the absolute difference within 2xRL?			X
Completeness Criteria	**Yes**	**No**	**NA**
Were the reported results usable if qualified?	X		
Were the analyses requested performed, the correct analyte lists used, and correct sample preparation and analyses methods and units utilized?	X		

1. Several samples were reported as non-detect at elevated reporting limits. These non-detect results will need to be evaluated with respect to project objectives.

2. For radiological parameters, the following sample results did not meet the 2σ uncertainty evaluation.

Sample Identification	Method	Analyte	Result	2 Sigma (σ) Uncertainty	MDC	Units
Data Package 60474663						
ASH-04-CCR	903.1	Radium-226	0.350	0.783	1.230	pCi/L

As the 2σ uncertainty multiplied by 1.65 was greater than the reported minimum detectable concentration (MDC), the associated results were qualified as estimated (J v). The qualified data are presented in Table 2.

3. **Data package 60475325:** As mentioned in Section 1.0, sulfate by Method 9056 exceeded the instrument calibration range in the initial analysis for sample ASH-02-CCR. The associated sample result was qualified as estimated (J c). The qualified data are presented in Table 2.

   The sulfate by Method 9056 was reported using multiple dilutions due to calibration exceedance for sample ASH-02-CCR. The higher detected result was selected for reporting.

Table 1 – Sample Summary and Laboratory Association

Sample Identification	Collection Date	Laboratory Identification	Sample Type
Data Package 60474180			
ASH-01-CCR	04/30/2025	60474180001	Normal
Data Package 60474663			
ASH-01-CCR	04/30/2025	60474663001	Normal
Data Package 60475047			
ASH-06-CCR	05/12/2025	60475047001	Normal
ASH-03-CCR	05/12/2025	60475047001	Normal
DUP-02-CCR	05/12/2025	60475047001	Field Duplicate
Data Package 60475112			
ASH-06-CCR	05/12/2025	60475112001	Normal
ASH-03-CCR	05/12/2025	60475112002	Normal
DUP-02-CCR	05/12/2025	60475112003	Field Duplicate
ASH-08-CCR	05/13/2025	60475112004	Matrix Spike
ASH-07-CCR	05/13/2025	60475112007	Normal
ERB-02-CCR	05/13/2025	60475112008	Equipment Blank
ASH-04-CCR	05/13/2025	60475112009	Normal
ASH-05-CCR	05/13/2025	60475112010	Normal
Data Package 60475139			
ASH-08-CCR	05/13/2025	60475139001	Normal
ASH-07-CCR	05/13/2025	60475139002	Normal
ERB-02-CCR	05/13/2025	60475139003	Equipment Blank
ASH-04-CCR	05/13/2025	60475139004	Normal
ASH-05-CCR	05/13/2025	60475139005	Normal
Data Package 60475325			
ASH-02-CCR	05/14/2025	60475325001	Normal
Data Package 60475533			
ASH-02-CCR	05/14/2025	60475533001	Normal

Table 2 – Summary of Qualified Sample Results

Sample Identification	Laboratory Identification	Analytical Method	Analyte	Result	Unit	Reportable?	Qualifier	Reason
ASH-04-CCR	60474663001	903.1	Radium-	0.350	pCi/L	YES	J	v
ASH-08-CCR	60475139001	9056	Fluoride	ND	mg/L	YES	UJ	m
ASH-08-CCR	60475139001	9056	Sulfate	3690	mg/L	YES	J-	m
ASH-02-CCR	60475325001	9056	Sulfate	2720	mg/L	YES	J-	h,ld
ASH-02-CCR	60475325001	9056	Sulfate	2300	mg/L	NO	J	c

ATTACHMENT A
DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY

DATA QUALIFIER DEFINITIONS

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit, or the sample result was considered not-detected due to associated blank contamination.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

J+ The result is an estimated quantity, but the result may be biased high.

J- The result is an estimated quantity, but the result may be biased low.

UJ The analyte was analyzed for, but was not detected. The reported sample quantitation limit is approximate and may be inaccurate or imprecise.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control (QC) criteria. The analyte may or may not be present in the sample.

DATA QUALIFIER REASON CODE DEFINITIONS

be Equipment blank contamination
bf Field blank contamination
bl Laboratory blank contamination
bm Missing Blank Information
c Calibration issue
cl Clean-up standard recovery
cp Insufficient in growth (radiochemical data only)
cr Chromatographic resolution
d Reporting limit raised due to chromatographic interference
dt Dissolved result > total over limit
fd Field duplicate imprecision
g Chromatographic pattern match issue
h Holding times
i Internal standard areas
ii Injection internal standard area or retention time exceedance
k Estimated Maximum Possible Concentrations
l LCS recoveries
lc Labeled compound recovery
ld Laboratory duplicate imprecision (matrix duplicate, MSD, LCSD)
lq Level of quantitation/trace value
m Matrix spike recovery
nb Negative laboratory blank contamination
p Chemical preservation issue
pe Post Extraction Spike
pr Professional Judgement
q Quantitation issue
r Dual column RPD
rp Re-extraction precision issue [PAHs only]
rt SIM ions not within + 2 seconds
s Surrogate recovery
sp Sample preparation issue
su Evidence of ion suppression
t Temperature Preservation Issue
u High combined sample result uncertainty (radiochemical data Only)
v compound identification issue
x Low % solids
y Serial dilution results
z ICS results

September/October 2025

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

October 27, 2025

Vasanta Kalluri
AECOM
6200 South Quebec Street
Greenwood Village, CO 80111

RE: Project: 60754415 PRPA CCR
Pace Project No.: 10751845

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2025. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Soltani
tina.soltani@pacelabs.com
(612) 607-6384
Project Manager

Enclosures

cc: Jamie Herman, AECOM
Kara Hoppes, AECOM
Sawyer Hunt, AECOM
Jeremy Hurshman, AECOM

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 60754415 PRPA CCR
Pace Project No.: 10751845

Pace Analytical Services, LLC - Minneapolis MN
1700 Elm Street SE, Minneapolis, MN 55414
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
DoD Certification via A2LA #: 2926.01
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
ISO/IEC 17025 Certification via A2LA #: 2926.01
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification via A2LA #: R-036
North Dakota Certification via MN #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification via A2LA #: 2926.01
USDA Permit #: P330-19-00208

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 60754415 PRPA CCR
Pace Project No.: 10751845

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10751845001	**ASH-06-CCR**	Water	10/01/25 11:00	10/02/25 09:00
10751845002	**ASH-03-CCR**	Water	10/01/25 12:40	10/02/25 09:00
10751845003	**ASH-08-CCR**	Water	10/01/25 14:20	10/02/25 09:00
10751845004	**ASH-01-CCR**	Water	10/01/25 14:00	10/02/25 09:00

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 60754415 PRPA CCR
Pace Project No.: 10751845

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10751845001	**ASH-06-CCR**	EPA 6020B	GAS1	14	PASI-M
		EPA 7470A	HM	1	PASI-M
		SM 2540C	AMC2	1	PASI-M
		EPA 300.0	AR3	3	PASI-M
10751845002	**ASH-03-CCR**	EPA 6020B	GAS1	14	PASI-M
		EPA 7470A	HM	1	PASI-M
		SM 2540C	AMC2	1	PASI-M
		EPA 300.0	AR3	3	PASI-M
10751845003	**ASH-08-CCR**	EPA 6020B	GAS1	14	PASI-M
		EPA 7470A	HM	1	PASI-M
		SM 2540C	AMC2	1	PASI-M
		EPA 300.0	AR3	3	PASI-M
10751845004	**ASH-01-CCR**	EPA 6020B	GAS1	14	PASI-M
		EPA 7470A	HM	1	PASI-M
		SM 2540C	AMC2	1	PASI-M
		EPA 300.0	AR3	3	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 60754415 PRPA CCR
Pace Project No.: 10751845

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10751845001	**ASH-06-CCR**					
EPA 6020B	Barium	9.5	ug/L	0.60	10/14/25 02:03	
EPA 6020B	Boron	425	ug/L	20.0	10/14/25 02:03	
EPA 6020B	Calcium	374000	ug/L	1000	10/14/25 02:07	
EPA 6020B	Lithium	360	ug/L	1.0	10/14/25 02:03	
SM 2540C	Total Dissolved Solids	422	mg/L	25.0	10/06/25 16:19	
EPA 300.0	Chloride	9.1	mg/L	1.2	10/13/25 23:51	
EPA 300.0	Fluoride	0.70	mg/L	0.050	10/13/25 23:51	
EPA 300.0	Sulfate	73.1	mg/L	1.2	10/13/25 23:51	
10751845002	**ASH-03-CCR**					
EPA 6020B	Barium	9.9	ug/L	0.60	10/14/25 02:10	
EPA 6020B	Boron	711	ug/L	20.0	10/14/25 02:10	
EPA 6020B	Calcium	415000	ug/L	1000	10/14/25 02:14	
EPA 6020B	Cobalt	1.3	ug/L	1.0	10/14/25 02:10	
EPA 6020B	Lithium	317	ug/L	1.0	10/14/25 02:10	
EPA 6020B	Molybdenum	1.4	ug/L	1.0	10/14/25 02:10	
EPA 6020B	Selenium	46.9	ug/L	1.0	10/14/25 02:10	
SM 2540C	Total Dissolved Solids	5110	mg/L	50.0	10/06/25 16:19	PP
EPA 300.0	Chloride	96.0	mg/L	1.2	10/14/25 00:07	
EPA 300.0	Fluoride	0.10	mg/L	0.050	10/14/25 00:07	
EPA 300.0	Sulfate	2940	mg/L	12.0	10/14/25 19:40	
10751845003	**ASH-08-CCR**					
EPA 6020B	Barium	14.0	ug/L	0.60	10/14/25 02:17	
EPA 6020B	Boron	800	ug/L	20.0	10/14/25 02:17	
EPA 6020B	Calcium	447000	ug/L	2000	10/14/25 15:15	
EPA 6020B	Lithium	270	ug/L	1.0	10/14/25 02:17	
EPA 6020B	Selenium	8.0	ug/L	1.0	10/14/25 02:17	
SM 2540C	Total Dissolved Solids	4410	mg/L	50.0	10/06/25 16:19	1M, PP
EPA 300.0	Chloride	37.2	mg/L	1.2	10/14/25 00:22	
EPA 300.0	Fluoride	0.10	mg/L	0.050	10/14/25 00:22	
EPA 300.0	Sulfate	2490	mg/L	12.0	10/14/25 19:55	
10751845004	**ASH-01-CCR**					
EPA 6020B	Barium	15.0	ug/L	0.60	10/13/25 22:30	
EPA 6020B	Boron	879	ug/L	20.0	10/13/25 22:30	
EPA 6020B	Calcium	395000	ug/L	2000	10/14/25 15:18	
EPA 6020B	Lithium	311	ug/L	1.0	10/13/25 22:30	
EPA 6020B	Selenium	8.6	ug/L	1.0	10/13/25 22:30	
SM 2540C	Total Dissolved Solids	3680	mg/L	50.0	10/06/25 16:19	
EPA 300.0	Chloride	17.3	mg/L	1.2	10/14/25 00:38	
EPA 300.0	Fluoride	0.12	mg/L	0.050	10/14/25 00:38	
EPA 300.0	Sulfate	1950	mg/L	12.0	10/14/25 20:11	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 10751845

Sample: ASH-06-CCR **Lab ID: 10751845001** Collected: 10/01/25 11:00 Received: 10/02/25 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Antimony	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:03	7440-36-0	D3
Arsenic	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:03	7440-38-2	D3
Barium	**9.5**	ug/L	0.60	2	10/09/25 05:41	10/14/25 02:03	7440-39-3	
Beryllium	ND	ug/L	0.40	2	10/09/25 05:41	10/14/25 02:03	7440-41-7	D3
Boron	**425**	ug/L	20.0	2	10/09/25 05:41	10/14/25 02:03	7440-42-8	
Cadmium	ND	ug/L	0.16	2	10/09/25 05:41	10/14/25 02:03	7440-43-9	D3
Calcium	**374000**	ug/L	1000	10	10/09/25 05:41	10/14/25 02:07	7440-70-2	
Chromium	ND	ug/L	4.0	2	10/09/25 05:41	10/14/25 02:03	7440-47-3	D3
Cobalt	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:03	7440-48-4	D3
Lead	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:03	7439-92-1	D3
Lithium	**360**	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:03	7439-93-2	
Molybdenum	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:03	7439-98-7	D3
Selenium	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:03	7782-49-2	D3
Thallium	ND	ug/L	0.20	2	10/09/25 05:41	10/14/25 02:03	7440-28-0	D3
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	10/09/25 06:32	10/09/25 12:53	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**422**	mg/L	25.0	1		10/06/25 16:19		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**9.1**	mg/L	1.2	1		10/13/25 23:51	16887-00-6	
Fluoride	**0.70**	mg/L	0.050	1		10/13/25 23:51	16984-48-8	
Sulfate	**73.1**	mg/L	1.2	1		10/13/25 23:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 10751845

Sample: ASH-03-CCR **Lab ID: 10751845002** Collected: 10/01/25 12:40 Received: 10/02/25 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Antimony	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:10	7440-36-0	D3
Arsenic	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:10	7440-38-2	D3
Barium	**9.9**	ug/L	0.60	2	10/09/25 05:41	10/14/25 02:10	7440-39-3	
Beryllium	ND	ug/L	0.40	2	10/09/25 05:41	10/14/25 02:10	7440-41-7	D3
Boron	**711**	ug/L	20.0	2	10/09/25 05:41	10/14/25 02:10	7440-42-8	
Cadmium	ND	ug/L	0.16	2	10/09/25 05:41	10/14/25 02:10	7440-43-9	D3
Calcium	**415000**	ug/L	1000	10	10/09/25 05:41	10/14/25 02:14	7440-70-2	
Chromium	ND	ug/L	4.0	2	10/09/25 05:41	10/14/25 02:10	7440-47-3	D3
Cobalt	**1.3**	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:10	7440-48-4	
Lead	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:10	7439-92-1	D3
Lithium	**317**	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:10	7439-93-2	
Molybdenum	**1.4**	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:10	7439-98-7	
Selenium	**46.9**	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:10	7782-49-2	
Thallium	ND	ug/L	0.20	2	10/09/25 05:41	10/14/25 02:10	7440-28-0	D3
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	10/09/25 06:32	10/09/25 12:57	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**5110**	mg/L	50.0	1		10/06/25 16:19		PP
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**96.0**	mg/L	1.2	1		10/14/25 00:07	16887-00-6	
Fluoride	**0.10**	mg/L	0.050	1		10/14/25 00:07	16984-48-8	
Sulfate	**2940**	mg/L	12.0	10		10/14/25 19:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 10751845

Sample: ASH-08-CCR **Lab ID: 10751845003** Collected: 10/01/25 14:20 Received: 10/02/25 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Antimony	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:17	7440-36-0	D3
Arsenic	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:17	7440-38-2	D3
Barium	**14.0**	ug/L	0.60	2	10/09/25 05:41	10/14/25 02:17	7440-39-3	
Beryllium	ND	ug/L	0.40	2	10/09/25 05:41	10/14/25 02:17	7440-41-7	D3
Boron	**800**	ug/L	20.0	2	10/09/25 05:41	10/14/25 02:17	7440-42-8	
Cadmium	ND	ug/L	0.16	2	10/09/25 05:41	10/14/25 02:17	7440-43-9	D3
Calcium	**447000**	ug/L	2000	20	10/09/25 05:41	10/14/25 15:15	7440-70-2	
Chromium	ND	ug/L	4.0	2	10/09/25 05:41	10/14/25 02:17	7440-47-3	D3
Cobalt	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:17	7440-48-4	D3
Lead	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:17	7439-92-1	D3
Lithium	**270**	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:17	7439-93-2	
Molybdenum	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:17	7439-98-7	D3
Selenium	**8.0**	ug/L	1.0	2	10/09/25 05:41	10/14/25 02:17	7782-49-2	
Thallium	ND	ug/L	0.20	2	10/09/25 05:41	10/14/25 02:17	7440-28-0	D3
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	10/09/25 06:32	10/09/25 13:00	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**4410**	mg/L	50.0	1		10/06/25 16:19		1M,PP
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**37.2**	mg/L	1.2	1		10/14/25 00:22	16887-00-6	
Fluoride	**0.10**	mg/L	0.050	1		10/14/25 00:22	16984-48-8	
Sulfate	**2490**	mg/L	12.0	10		10/14/25 19:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 10751845

Sample: ASH-01-CCR **Lab ID: 10751845004** Collected: 10/01/25 14:00 Received: 10/02/25 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Antimony	ND	ug/L	1.0	2	10/09/25 05:41	10/13/25 22:30	7440-36-0	D3
Arsenic	ND	ug/L	1.0	2	10/09/25 05:41	10/13/25 22:30	7440-38-2	D3
Barium	**15.0**	ug/L	0.60	2	10/09/25 05:41	10/13/25 22:30	7440-39-3	
Beryllium	ND	ug/L	0.40	2	10/09/25 05:41	10/13/25 22:30	7440-41-7	D3
Boron	**879**	ug/L	20.0	2	10/09/25 05:41	10/13/25 22:30	7440-42-8	
Cadmium	ND	ug/L	0.16	2	10/09/25 05:41	10/13/25 22:30	7440-43-9	D3
Calcium	**395000**	ug/L	2000	20	10/09/25 05:41	10/14/25 15:18	7440-70-2	
Chromium	ND	ug/L	4.0	2	10/09/25 05:41	10/13/25 22:30	7440-47-3	D3
Cobalt	ND	ug/L	1.0	2	10/09/25 05:41	10/13/25 22:30	7440-48-4	D3
Lead	ND	ug/L	1.0	2	10/09/25 05:41	10/13/25 22:30	7439-92-1	D3
Lithium	**311**	ug/L	1.0	2	10/09/25 05:41	10/13/25 22:30	7439-93-2	
Molybdenum	ND	ug/L	1.0	2	10/09/25 05:41	10/13/25 22:30	7439-98-7	D3
Selenium	**8.6**	ug/L	1.0	2	10/09/25 05:41	10/13/25 22:30	7782-49-2	
Thallium	ND	ug/L	0.20	2	10/09/25 05:41	10/13/25 22:30	7440-28-0	D3
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	10/09/25 06:32	10/09/25 13:03	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**3680**	mg/L	50.0	1		10/06/25 16:19		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**17.3**	mg/L	1.2	1		10/14/25 00:38	16887-00-6	
Fluoride	**0.12**	mg/L	0.050	1		10/14/25 00:38	16984-48-8	
Sulfate	**1950**	mg/L	12.0	10		10/14/25 20:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 10751845

QC Batch: 1033410
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470A Mercury Water
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10751845001, 10751845002, 10751845003, 10751845004

METHOD BLANK: 5382287 Matrix: Water
Associated Lab Samples: 10751845001, 10751845002, 10751845003, 10751845004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	10/09/25 12:14	

LABORATORY CONTROL SAMPLE: 5382288

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.2	84	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5382289 5382290

Parameter	Units	10751974001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.8	4.8	95	96	80-120	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 10751845

QC Batch: 1033400
QC Batch Method: EPA 3020A
Analysis Method: EPA 6020B
Analysis Description: 6020B Water UPD5
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10751845001, 10751845002, 10751845003, 10751845004

METHOD BLANK: 5382257 Matrix: Water
Associated Lab Samples: 10751845001, 10751845002, 10751845003, 10751845004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	0.50	10/13/25 23:05	
Arsenic	ug/L	ND	0.50	10/13/25 23:05	
Barium	ug/L	ND	0.30	10/13/25 23:05	
Beryllium	ug/L	ND	0.20	10/13/25 23:05	
Boron	ug/L	ND	10.0	10/13/25 23:05	
Cadmium	ug/L	ND	0.080	10/13/25 23:05	
Calcium	ug/L	ND	100	10/13/25 23:05	
Chromium	ug/L	ND	2.0	10/13/25 23:05	
Cobalt	ug/L	ND	0.50	10/13/25 23:05	
Lead	ug/L	ND	0.50	10/13/25 23:05	
Lithium	ug/L	ND	0.50	10/13/25 23:05	
Molybdenum	ug/L	ND	0.50	10/13/25 23:05	
Selenium	ug/L	ND	0.50	10/13/25 23:05	
Thallium	ug/L	ND	0.10	10/13/25 23:05	

LABORATORY CONTROL SAMPLE: 5382258

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	100	101	101	80-120	
Arsenic	ug/L	100	106	106	80-120	
Barium	ug/L	100	106	106	80-120	
Beryllium	ug/L	100	105	105	80-120	
Boron	ug/L	100	105	105	80-120	
Cadmium	ug/L	100	101	101	80-120	
Calcium	ug/L	2000	2110	105	80-120	
Chromium	ug/L	100	110	110	80-120	
Cobalt	ug/L	100	113	113	80-120	
Lead	ug/L	100	107	107	80-120	
Lithium	ug/L	100	102	102	80-120	
Molybdenum	ug/L	100	103	103	80-120	
Selenium	ug/L	100	105	105	80-120	
Thallium	ug/L	100	106	106	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 10751845

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5382259 5382260

Parameter	Units	10751838003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	100	100	99.0	98.4	99	98	75-125	1	20	
Arsenic	ug/L	ND	100	100	109	108	108	108	75-125	0	20	
Barium	ug/L	21.2	100	100	129	123	107	102	75-125	4	20	
Beryllium	ug/L	ND	100	100	99.3	98.9	99	99	75-125	0	20	
Boron	ug/L	395	100	100	479	479	84	84	75-125	0	20	
Cadmium	ug/L	ND	100	100	93.0	92.2	93	92	75-125	1	20	
Calcium	ug/L	548000	2000	2000	520000	497000	-1420	-2540	75-125	4	20	P6
Chromium	ug/L	ND	100	100	102	101	101	101	75-125	1	20	
Cobalt	ug/L	ND	100	100	103	104	103	103	75-125	1	20	
Lead	ug/L	ND	100	100	98.8	98.1	99	98	75-125	1	20	
Lithium	ug/L	205	100	100	301	302	96	97	75-125	0	20	
Molybdenum	ug/L	3.0	100	100	106	106	103	103	75-125	0	20	
Selenium	ug/L	ND	100	100	109	108	108	108	75-125	0	20	
Thallium	ug/L	ND	100	100	106	104	106	104	75-125	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5382261 5382262

Parameter	Units	10751974001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	100	100	100	98.3	100	98	75-125	2	20	
Arsenic	ug/L	ND	100	100	111	110	110	110	75-125	0	20	
Barium	ug/L	10.8	100	100	119	115	108	104	75-125	3	20	
Beryllium	ug/L	ND	100	100	97.5	97.4	97	97	75-125	0	20	
Boron	ug/L	603	100	100	637	639	34	36	75-125	0	20	P6
Cadmium	ug/L	ND	100	100	93.0	91.8	93	92	75-125	1	20	
Calcium	ug/L	485000	2000	2000	445000	450000	-1980	-1760	75-125	1	20	P6
Chromium	ug/L	ND	100	100	103	102	103	101	75-125	2	20	
Cobalt	ug/L	ND	100	100	106	105	105	104	75-125	1	20	
Lead	ug/L	ND	100	100	100	102	100	101	75-125	1	20	
Lithium	ug/L	479	100	100	527	532	48	53	75-125	1	20	P6
Molybdenum	ug/L	1.1	100	100	106	105	105	104	75-125	1	20	
Selenium	ug/L	70.3	100	100	182	178	111	108	75-125	2	20	
Thallium	ug/L	ND	100	100	111	115	111	115	75-125	4	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 10751845

QC Batch: 1033570 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10751845001, 10751845002, 10751845003, 10751845004

METHOD BLANK: 5382722 Matrix: Water
Associated Lab Samples: 10751845001, 10751845002, 10751845003, 10751845004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	10/06/25 16:18	

LABORATORY CONTROL SAMPLE: 5382723

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 5382724

Parameter	Units	10751838003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	4210	4370	4	10	1M,PP

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 10751845

QC Batch: 1034850
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10751845001, 10751845002, 10751845003, 10751845004

METHOD BLANK: 5389847 Matrix: Water
Associated Lab Samples: 10751845001, 10751845002, 10751845003, 10751845004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.2	10/14/25 11:41	
Fluoride	mg/L	ND	0.050	10/14/25 11:41	
Sulfate	mg/L	ND	1.2	10/14/25 11:41	

LABORATORY CONTROL SAMPLE: 5389848

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	200	193	97	90-110	
Fluoride	mg/L	5	4.9	99	90-110	
Sulfate	mg/L	200	194	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5389849 5389850

Parameter	Units	10751838002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	52.5	200	200	237	235	92	91	80-120	1	20	
Fluoride	mg/L	0.096	5	5	4.9	4.9	96	96	80-120	0	20	
Sulfate	mg/L	2700	4000	4000	6380	6380	92	92	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5389851 5389852

Parameter	Units	10751838003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	277	4000	4000	3960	3960	93	93	80-120	0	20	
Fluoride	mg/L	0.34	5	5	5.1	5.2	97	97	80-120	0	20	
Sulfate	mg/L	2210	4000	4000	5830	5840	92	92	80-120	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 60754415 PRPA CCR
Pace Project No.: 10751845

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1M	Constant weight was not achieved after four drying cycles. The residue exhibited a final weight change of >0.5 mg.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
PP	The mass of dried residue obtained did not meet the test method requirements based on volume used.

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60754415 PRPA CCR
Pace Project No.: 10751845

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10751845001	**ASH-06-CCR**	EPA 3020A	1033400	EPA 6020B	1034413
10751845002	**ASH-03-CCR**	EPA 3020A	1033400	EPA 6020B	1034413
10751845003	**ASH-08-CCR**	EPA 3020A	1033400	EPA 6020B	1034413
10751845004	**ASH-01-CCR**	EPA 3020A	1033400	EPA 6020B	1034413
10751845001	**ASH-06-CCR**	EPA 7470A	1033410	EPA 7470A	1034355
10751845002	**ASH-03-CCR**	EPA 7470A	1033410	EPA 7470A	1034355
10751845003	**ASH-08-CCR**	EPA 7470A	1033410	EPA 7470A	1034355
10751845004	**ASH-01-CCR**	EPA 7470A	1033410	EPA 7470A	1034355
10751845001	**ASH-06-CCR**	SM 2540C	1033570		
10751845002	**ASH-03-CCR**	SM 2540C	1033570		
10751845003	**ASH-08-CCR**	SM 2540C	1033570		
10751845004	**ASH-01-CCR**	SM 2540C	1033570		
10751845001	**ASH-06-CCR**	EPA 300.0	1034850		
10751845002	**ASH-03-CCR**	EPA 300.0	1034850		
10751845003	**ASH-08-CCR**	EPA 300.0	1034850		
10751845004	**ASH-01-CCR**	EPA 300.0	1034850		

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

CCR

Page: of

Section A — Required Client Information:

Company:	AECOM
Address:	6200 South Quebec St
	Greenwood Village, CO 80111
Email To:	jamie.herman@aecom.com
Phone: (303) 740-2614	Fax:
Requested Due Date/TAT:	standard

Section B — Required Project Information:

Report To:	Vasanta Kalluri
Copy To:	Jamie Herman
Purchase Order No.:	NEED PO #
Project Name:	60709371 PRPA CCR
Project Number:	60709371

Section C — Invoice Information:

Attention:	Accounts Payable
Company Name:	AECOM
Address:	Same as Section A
Pace Quote Reference:	
Pace Project Manager:	Tina Soltani
Pace Profile #:	36715

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: CO

Section D — Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	300.0 Cl, F, SO4	2540C TDS	6020B Total Metals*	7470A Total Mercury	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N	Y	Y		
1	ash-06- GDPHE CCR	WT	G	—	—	10/1/25	1100		2	1		—						X	X	X	X	N	001
2	ash-03- GDPHE CCR						1240																002
3	ash- 08- GDPHE CCR						1420																003
4	ash- 01 — CCR	↓	↓	↓	↓	↓	1400																004
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12				↓	↓																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Mo, Se, Tl					10/2/25	905	1.7	Y	N	Y

WO# : 10751845

10751845

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Mackensie Swift

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 10/1/25

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

ENV-FRM-MIN4-0150 v21_Sample Condition Upon Receipt

Person Examining & Date: ZE 10/2/25 PROJECT #: **WO#: 10751845**

PM: TS1 **Due Date: 10/16/25**

CLIENT: AECOM

Client Name: AECOM

Custody Seal Present: ☐ YES ☑ NO Seals Intact: ☐ YES ☑ NO

Tracking Number: 4519 4999 6605 ☐ See Exceptions form ENV-FRM-MIN4-0142.

Courier: ☐ Client ☐ Commercial ☑ FedEx 900 ☐ Pace Courier/Field ☐ SpeeDee ☐ UPS ☐ USPS

Packing Material: ☑ Bubble Bags ☑ Bubble Wrap ☐ None ☐ Other: _____ Biological Tissue Frozen: ☐ YES ☑ NO

Thermometer: ☐ T1 (0461) ☐ T2 (0431) ☐ T3 (0459) ☐ T4 (0402) ☐ T5 (0187) ☐ T6 (0396) ☑ T7 (0377) ☐ T8 (0775) ☐ T9 (0428) ☐ 01339252 (0710)

Type of Ice: ☐ Blue ☐ Dry ☑ Wet ☐ Melted ☐ None

Temp Blank: ☐ YES ☑ NO

NOTE: Temp should be ≤ 6°C, but above freezing.

Read Temp w/Temp Blank: _____ °C

Correction Factor: +0.2

Corrected Temp w/Temp Blank: _____ °C

Did Samples Originate in West Virginia: ☐ YES ☑ NO (list temps on exception)

Were All Container Temps Taken: ☐ YES ☐ NO ☑ N/A

Average Corrected Temp (No Temp Blank Only): 1.7

☑ See Exceptions form ENV-FRM-MIN4-0142. ☐ 1 Container

USDA Regulated Soil: ☑ N/A = Water Sample/Other (describe): _____

Did Samples originate from one of the following states (check maps): ☐ YES ☑ NO

Circle State: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, VA

Are samples from a foreign source (international, including Hawaii and Puerto Rico): ☐ YES ☑ NO

NOTE: If YES to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

LOCATION (check one): ☐ DULUTH ☑ MINNEAPOLIS ☐ VIRGINIA	YES	NO	N/A	COMMENT(S)
Chain of Custody Present and Filled Out? **(i.e., Analysis/ID/Date/Time)**	☑	☐		1.
Chain of Custody Relinquished?	☐	☑		2.
Sampler Name and/or Signature on COC?	☑	☐	☐	3.
Samples Arrived within Hold Time? **NOTE:** < 24 hrs if lab filter is requested for Dissolved LL-Mercury by 1631E.	☑	☐		4. If Fecal: ☐ < 8 hrs ☐ > 8 hr but < 24 hrs ☐ >24 hr
Short Hold Time Analysis (<72 hr)?	☐	☑		5. ☐ BOD / cBOD ☐ Fecal coliform ☐ Hex Chrom ☐ HPC ☐ Nitrate ☐ Nitrite ☐ Ortho Phos ☐ Total coliform/*E. coli* ☐ Turbidity ☐ Other: _____
Rush Turn Around Time Requested?	☐	☑		6. ☐ Same Day ☐ 1 Day ☐ 2 Day ☐ 3 Day ☐ 5 Day Due Date: _____
Sufficient Sample Volume? **(If NO, list approximate volume in section 7.)**	☑	☐		7.
Correct Containers Used? – Pace Containers Used?	☑ ☑	☐ ☐	☐	8.
Containers Intact?	☑	☐		9.
Field Filtered Volume Received for Dissolved Tests?	☐	☑	☐	10. Is sediment visible in the dissolved container: ☐ YES ☐ NO
ID/Date/Time Match? **(If NO, fill out section 11.)** Matrix: ☐ Oil ☐ Soil ☑ Water ☐ Other	☑	☐	☐	11. ☐ See Exceptions form ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☑	☐	☐	12.
Sample #: 01-001 ☑ HNO3 _____ ☐ H2SO4 _____ ☐ NaOH _____ ☐ Zinc Acetate _____ **pH Paper Lot #:** ☐ Residual Chlorine _____ ☑ 0-6 Roll 230624 ☐ 0-6 Strip _____ ☐ 0-14 Strip _____ **Positive for Residual Chlorine (NaOH containers only): ☐ YES ☐ NO**				
Preserved containers in compliance with EPA recommendations? (HNO3, H2SO4, < 2 pH, NaOH > 9 Sulfide, NaOH > 10 Cyanide) **EXCEPTIONS (water only):** VOA, Coliform, TOC/DOC, Oil & Grease, Phenols, DRO/8015, Dioxins, and PFAS	☐ ☐	☐ ☐	☑ ☑	☐ See Exceptions form ENV-FRM-MIN4-0142
Extra labels present on soil VOA or WIDRO containers? **(soil only)**	☐	☐	☑	13.
Headspace in Methyl Mercury Container?	☐	☐	☑	14.
Headspace in VOA Vials (greater than 6mm)?	☐	☐	☑	☐ See Exceptions form ENV-FRM-MIN4-0140
Trip Blanks Present?	☐	☐	☑	15.
Trip Blank Custody Seals Present?	☐	☐	☑	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION / RESOLUTION:

Labeled By: ZE Line: 4

Person Contacted & Date/Time: _____ PM Review & Date: 10/2/25 Jina Soltani

NOTE: *When there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEQ Certification Office.*

ENV-FRM-MIN4-0142 v05_Sample Condition Upon Receipt - Exceptions

Workorder #: _____

Anything is OVER 6.0°C, MUST be documented in the sections below.

Tracking Number	Temperature (°C)
4519 4999 6605	1.7

Out of Temp Sample ID	Container Type	# of Containers

PM Notified of Out of Temp Cooler? ☐ YES ☐ NO **Multiple Cooler Project?** ☐ YES ☐ NO

If **YES**, indicate who was contacted, date, and time: _____

If **NO**, indicate reason why: ☐ All Nitric ☐ Not on ice ☐ Sampled same day ☐ Other: _____

No Temp Blank

Temp Gun: T7 **Correction Factor:** +0.2

Read Temp	Corrected Temp	Average Temp
1.1	1.3	1.7
1.4	1.6	
1.5	1.7	
2.1	2.3	

Other	

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative		pH Upon Receipt	Date / Time Adjusted	Amount Added (mL)	Lot # Added	ph After	In Compliance After?		Initials
	HNO_3	H_2SO_4						YES	NO	
	☐	☐						☐	☐	
	☐	☐						☐	☐	
	☐	☐						☐	☐	
	☐	☐						☐	☐	
	☐	☐						☐	☐	
	☐	☐						☐	☐	
	☐	☐						☐	☐	
	☐	☐						☐	☐	
	☐	☐						☐	☐	
	☐	☐						☐	☐	

COMMENT(S):

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

October 27, 2025

Vasanta Kalluri
AECOM
6200 South Quebec Street
Greenwood Village, CO 80111

RE: Project: 60754415 PRPA CCR
Pace Project No.: 10751974

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 2025. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Soltani
tina.soltani@pacelabs.com
(612) 607-6384
Project Manager

Enclosures

cc: Jamie Herman, AECOM
Kara Hoppes, AECOM
Sawyer Hunt, AECOM
Jeremy Hurshman, AECOM

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 60754415 PRPA CCR
Pace Project No.: 10751974

Pace Analytical Services, LLC - Minneapolis MN
1700 Elm Street SE, Minneapolis, MN 55414
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
DoD Certification via A2LA #: 2926.01
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
ISO/IEC 17025 Certification via A2LA #: 2926.01
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification via A2LA #: R-036
North Dakota Certification via MN #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification via A2LA #: 2926.01
USDA Permit #: P330-19-00208

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 60754415 PRPA CCR
Pace Project No.: 10751974

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10751974001	**ASH-07-CCR**	Water	10/02/25 09:50	10/03/25 09:00
10751974002	**ASH-04-CCR**	Water	10/02/25 09:30	10/03/25 09:00
10751974003	**ASH-05-CCR**	Water	10/02/25 10:20	10/03/25 09:00
10751974004	**FD-01-CCR**	Water	10/02/25 00:00	10/03/25 09:00
10751974005	**ERB-01-CCR**	Water	10/02/25 10:50	10/03/25 09:00

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 60754415 PRPA CCR
Pace Project No.: 10751974

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10751974001	**ASH-07-CCR**	EPA 6020B	GAS1	14	PASI-M
		EPA 7470A	HM	1	PASI-M
		SM 2540C	AMC2	1	PASI-M
		EPA 300.0	AR3	3	PASI-M
10751974002	**ASH-04-CCR**	EPA 6020B	GAS1	14	PASI-M
		EPA 7470A	HM	1	PASI-M
		SM 2540C	AMC2	1	PASI-M
		EPA 300.0	AR3	3	PASI-M
10751974003	**ASH-05-CCR**	EPA 6020B	GAS1	14	PASI-M
		EPA 7470A	HM	1	PASI-M
		SM 2540C	AMC2	1	PASI-M
		EPA 300.0	AR3	3	PASI-M
10751974004	**FD-01-CCR**	EPA 6020B	GAS1	14	PASI-M
		EPA 7470A	HM	1	PASI-M
		SM 2540C	AMC2	1	PASI-M
		EPA 300.0	AR3	3	PASI-M
10751974005	**ERB-01-CCR**	EPA 6020B	GAS1	14	PASI-M
		EPA 7470A	HM	1	PASI-M
		SM 2540C	AMC2	1	PASI-M
		EPA 300.0	AR3	3	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 60754415 PRPA CCR
Pace Project No.: 10751974

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10751974001	**ASH-07-CCR**					
EPA 6020B	Barium	10.8	ug/L	0.60	10/14/25 00:00	
EPA 6020B	Boron	603	ug/L	20.0	10/14/25 00:00	P6
EPA 6020B	Calcium	485000	ug/L	5000	10/14/25 15:22	P6
EPA 6020B	Lithium	479	ug/L	1.0	10/14/25 00:00	P6
EPA 6020B	Molybdenum	1.1	ug/L	1.0	10/14/25 00:00	
EPA 6020B	Selenium	70.3	ug/L	1.0	10/14/25 00:00	
SM 2540C	Total Dissolved Solids	5430	mg/L	50.0	10/06/25 15:53	PP
EPA 300.0	Chloride	117	mg/L	1.2	10/13/25 10:11	
EPA 300.0	Fluoride	0.11	mg/L	0.050	10/13/25 10:11	
EPA 300.0	Sulfate	4210	mg/L	60.0	10/14/25 10:15	M1
10751974002	**ASH-04-CCR**					
EPA 6020B	Arsenic	1.8	ug/L	1.0	10/14/25 00:41	
EPA 6020B	Barium	47.8	ug/L	0.60	10/14/25 00:41	
EPA 6020B	Boron	264	ug/L	20.0	10/14/25 00:41	
EPA 6020B	Calcium	129000	ug/L	1000	10/14/25 00:44	
EPA 6020B	Chromium	4.2	ug/L	4.0	10/14/25 00:41	
EPA 6020B	Cobalt	1.7	ug/L	1.0	10/14/25 00:41	
EPA 6020B	Lead	2.5	ug/L	1.0	10/14/25 00:41	
EPA 6020B	Lithium	65.0	ug/L	1.0	10/14/25 00:41	
EPA 6020B	Molybdenum	3.2	ug/L	1.0	10/14/25 00:41	
EPA 6020B	Selenium	14.7	ug/L	1.0	10/14/25 00:41	
SM 2540C	Total Dissolved Solids	5210	mg/L	50.0	10/06/25 15:53	PP
EPA 300.0	Chloride	136	mg/L	1.2	10/13/25 10:58	
EPA 300.0	Fluoride	0.17	mg/L	0.050	10/13/25 10:58	
EPA 300.0	Sulfate	4030	mg/L	24.0	10/13/25 19:56	
10751974003	**ASH-05-CCR**					
EPA 6020B	Barium	7.1	ug/L	0.60	10/14/25 00:48	
EPA 6020B	Boron	737	ug/L	20.0	10/14/25 00:48	
EPA 6020B	Calcium	399000	ug/L	1000	10/14/25 00:51	
EPA 6020B	Lithium	300	ug/L	1.0	10/14/25 00:48	
EPA 6020B	Molybdenum	1.0	ug/L	1.0	10/14/25 00:48	
SM 2540C	Total Dissolved Solids	4440	mg/L	50.0	10/06/25 15:54	PP
EPA 300.0	Chloride	245	mg/L	1.2	10/13/25 11:14	
EPA 300.0	Fluoride	0.14	mg/L	0.050	10/13/25 11:14	
EPA 300.0	Sulfate	3360	mg/L	24.0	10/13/25 20:12	
10751974004	**FD-01-CCR**					
EPA 6020B	Barium	7.1	ug/L	0.60	10/14/25 00:54	
EPA 6020B	Boron	742	ug/L	20.0	10/14/25 00:54	
EPA 6020B	Calcium	361000	ug/L	1000	10/14/25 00:58	
EPA 6020B	Lithium	302	ug/L	1.0	10/14/25 00:54	
EPA 6020B	Molybdenum	1.0	ug/L	1.0	10/14/25 00:54	
SM 2540C	Total Dissolved Solids	4650	mg/L	50.0	10/06/25 15:54	PP
EPA 300.0	Chloride	244	mg/L	1.2	10/13/25 11:30	
EPA 300.0	Fluoride	0.14	mg/L	0.050	10/13/25 11:30	
EPA 300.0	Sulfate	3660	mg/L	24.0	10/13/25 20:27	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 10751974

Sample: ASH-07-CCR **Lab ID: 10751974001** Collected: 10/02/25 09:50 Received: 10/03/25 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Antimony	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:00	7440-36-0	D3
Arsenic	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:00	7440-38-2	D3
Barium	**10.8**	ug/L	0.60	2	10/09/25 05:41	10/14/25 00:00	7440-39-3	
Beryllium	ND	ug/L	0.40	2	10/09/25 05:41	10/14/25 00:00	7440-41-7	D3
Boron	**603**	ug/L	20.0	2	10/09/25 05:41	10/14/25 00:00	7440-42-8	P6
Cadmium	ND	ug/L	0.16	2	10/09/25 05:41	10/14/25 00:00	7440-43-9	D3
Calcium	**485000**	ug/L	5000	50	10/09/25 05:41	10/14/25 15:22	7440-70-2	P6
Chromium	ND	ug/L	4.0	2	10/09/25 05:41	10/14/25 00:00	7440-47-3	D3
Cobalt	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:00	7440-48-4	D3
Lead	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:00	7439-92-1	D3
Lithium	**479**	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:00	7439-93-2	P6
Molybdenum	**1.1**	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:00	7439-98-7	
Selenium	**70.3**	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:00	7782-49-2	
Thallium	ND	ug/L	0.20	2	10/09/25 05:41	10/14/25 00:00	7440-28-0	D3
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	10/09/25 06:32	10/09/25 13:06	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**5430**	mg/L	50.0	1		10/06/25 15:53		PP
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**117**	mg/L	1.2	1		10/13/25 10:11	16887-00-6	
Fluoride	**0.11**	mg/L	0.050	1		10/13/25 10:11	16984-48-8	
Sulfate	**4210**	mg/L	60.0	50		10/14/25 10:15	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 10751974

Sample: ASH-04-CCR **Lab ID: 10751974002** Collected: 10/02/25 09:30 Received: 10/03/25 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Antimony	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:41	7440-36-0	D3
Arsenic	**1.8**	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:41	7440-38-2	
Barium	**47.8**	ug/L	0.60	2	10/09/25 05:41	10/14/25 00:41	7440-39-3	
Beryllium	ND	ug/L	0.40	2	10/09/25 05:41	10/14/25 00:41	7440-41-7	D3
Boron	**264**	ug/L	20.0	2	10/09/25 05:41	10/14/25 00:41	7440-42-8	
Cadmium	ND	ug/L	0.16	2	10/09/25 05:41	10/14/25 00:41	7440-43-9	D3
Calcium	**129000**	ug/L	1000	10	10/09/25 05:41	10/14/25 00:44	7440-70-2	
Chromium	**4.2**	ug/L	4.0	2	10/09/25 05:41	10/14/25 00:41	7440-47-3	
Cobalt	**1.7**	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:41	7440-48-4	
Lead	**2.5**	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:41	7439-92-1	
Lithium	**65.0**	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:41	7439-93-2	
Molybdenum	**3.2**	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:41	7439-98-7	
Selenium	**14.7**	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:41	7782-49-2	
Thallium	ND	ug/L	0.20	2	10/09/25 05:41	10/14/25 00:41	7440-28-0	D3
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	10/09/25 06:32	10/09/25 13:21	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**5210**	mg/L	50.0	1		10/06/25 15:53		PP
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**136**	mg/L	1.2	1		10/13/25 10:58	16887-00-6	
Fluoride	**0.17**	mg/L	0.050	1		10/13/25 10:58	16984-48-8	
Sulfate	**4030**	mg/L	24.0	20		10/13/25 19:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 10751974

Sample: ASH-05-CCR **Lab ID: 10751974003** Collected: 10/02/25 10:20 Received: 10/03/25 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Antimony	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:48	7440-36-0	D3
Arsenic	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:48	7440-38-2	D3
Barium	**7.1**	ug/L	0.60	2	10/09/25 05:41	10/14/25 00:48	7440-39-3	
Beryllium	ND	ug/L	0.40	2	10/09/25 05:41	10/14/25 00:48	7440-41-7	D3
Boron	**737**	ug/L	20.0	2	10/09/25 05:41	10/14/25 00:48	7440-42-8	
Cadmium	ND	ug/L	0.16	2	10/09/25 05:41	10/14/25 00:48	7440-43-9	D3
Calcium	**399000**	ug/L	1000	10	10/09/25 05:41	10/14/25 00:51	7440-70-2	
Chromium	ND	ug/L	4.0	2	10/09/25 05:41	10/14/25 00:48	7440-47-3	D3
Cobalt	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:48	7440-48-4	D3
Lead	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:48	7439-92-1	D3
Lithium	**300**	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:48	7439-93-2	
Molybdenum	**1.0**	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:48	7439-98-7	
Selenium	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:48	7782-49-2	D3
Thallium	ND	ug/L	0.20	2	10/09/25 05:41	10/14/25 00:48	7440-28-0	D3
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	10/09/25 06:32	10/09/25 13:24	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**4440**	mg/L	50.0	1		10/06/25 15:54		PP
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**245**	mg/L	1.2	1		10/13/25 11:14	16887-00-6	
Fluoride	**0.14**	mg/L	0.050	1		10/13/25 11:14	16984-48-8	
Sulfate	**3360**	mg/L	24.0	20		10/13/25 20:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 10751974

Sample: FD-01-CCR **Lab ID: 10751974004** Collected: 10/02/25 00:00 Received: 10/03/25 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Antimony	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:54	7440-36-0	D3
Arsenic	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:54	7440-38-2	D3
Barium	**7.1**	ug/L	0.60	2	10/09/25 05:41	10/14/25 00:54	7440-39-3	
Beryllium	ND	ug/L	0.40	2	10/09/25 05:41	10/14/25 00:54	7440-41-7	D3
Boron	**742**	ug/L	20.0	2	10/09/25 05:41	10/14/25 00:54	7440-42-8	
Cadmium	ND	ug/L	0.16	2	10/09/25 05:41	10/14/25 00:54	7440-43-9	D3
Calcium	**361000**	ug/L	1000	10	10/09/25 05:41	10/14/25 00:58	7440-70-2	
Chromium	ND	ug/L	4.0	2	10/09/25 05:41	10/14/25 00:54	7440-47-3	D3
Cobalt	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:54	7440-48-4	D3
Lead	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:54	7439-92-1	D3
Lithium	**302**	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:54	7439-93-2	
Molybdenum	**1.0**	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:54	7439-98-7	
Selenium	ND	ug/L	1.0	2	10/09/25 05:41	10/14/25 00:54	7782-49-2	D3
Thallium	ND	ug/L	0.20	2	10/09/25 05:41	10/14/25 00:54	7440-28-0	D3
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	10/09/25 06:32	10/09/25 13:27	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**4650**	mg/L	50.0	1		10/06/25 15:54		PP
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**244**	mg/L	1.2	1		10/13/25 11:30	16887-00-6	
Fluoride	**0.14**	mg/L	0.050	1		10/13/25 11:30	16984-48-8	
Sulfate	**3660**	mg/L	24.0	20		10/13/25 20:27	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 10751974

Sample: ERB-01-CCR **Lab ID: 10751974005** Collected: 10/02/25 10:50 Received: 10/03/25 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Antimony	ND	ug/L	0.50	1	10/09/25 05:41	10/13/25 23:12	7440-36-0	
Arsenic	ND	ug/L	0.50	1	10/09/25 05:41	10/13/25 23:12	7440-38-2	
Barium	ND	ug/L	0.30	1	10/09/25 05:41	10/13/25 23:12	7440-39-3	
Beryllium	ND	ug/L	0.20	1	10/09/25 05:41	10/13/25 23:12	7440-41-7	
Boron	ND	ug/L	10.0	1	10/09/25 05:41	10/13/25 23:12	7440-42-8	
Cadmium	ND	ug/L	0.080	1	10/09/25 05:41	10/13/25 23:12	7440-43-9	
Calcium	ND	ug/L	100	1	10/09/25 05:41	10/13/25 23:12	7440-70-2	
Chromium	ND	ug/L	2.0	1	10/09/25 05:41	10/13/25 23:12	7440-47-3	
Cobalt	ND	ug/L	0.50	1	10/09/25 05:41	10/13/25 23:12	7440-48-4	
Lead	ND	ug/L	0.50	1	10/09/25 05:41	10/13/25 23:12	7439-92-1	
Lithium	ND	ug/L	0.50	1	10/09/25 05:41	10/13/25 23:12	7439-93-2	
Molybdenum	ND	ug/L	0.50	1	10/09/25 05:41	10/13/25 23:12	7439-98-7	
Selenium	ND	ug/L	0.50	1	10/09/25 05:41	10/13/25 23:12	7782-49-2	
Thallium	ND	ug/L	0.10	1	10/09/25 05:41	10/13/25 23:12	7440-28-0	
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	10/09/25 06:32	10/09/25 13:30	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	ND	mg/L	25.0	1		10/06/25 15:54		PL
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	ND	mg/L	1.2	1		10/13/25 15:59	16887-00-6	
Fluoride	ND	mg/L	0.050	1		10/13/25 15:59	16984-48-8	
Sulfate	ND	mg/L	1.2	1		10/13/25 15:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(612)607-1700

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 10751974

QC Batch: 1033410 | Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A | Analysis Description: 7470A Mercury Water
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10751974001, 10751974002, 10751974003, 10751974004, 10751974005

METHOD BLANK: 5382287 Matrix: Water
Associated Lab Samples: 10751974001, 10751974002, 10751974003, 10751974004, 10751974005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	10/09/25 12:14	

LABORATORY CONTROL SAMPLE: 5382288

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.2	84	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5382289 5382290

Parameter	Units	10751974001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.8	4.8	95	96	80-120	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 10751974

QC Batch: 1033400
QC Batch Method: EPA 3020A
Analysis Method: EPA 6020B
Analysis Description: 6020B Water UPD5
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10751974001, 10751974002, 10751974003, 10751974004, 10751974005

METHOD BLANK: 5382257 Matrix: Water
Associated Lab Samples: 10751974001, 10751974002, 10751974003, 10751974004, 10751974005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	0.50	10/13/25 23:05	
Arsenic	ug/L	ND	0.50	10/13/25 23:05	
Barium	ug/L	ND	0.30	10/13/25 23:05	
Beryllium	ug/L	ND	0.20	10/13/25 23:05	
Boron	ug/L	ND	10.0	10/13/25 23:05	
Cadmium	ug/L	ND	0.080	10/13/25 23:05	
Calcium	ug/L	ND	100	10/13/25 23:05	
Chromium	ug/L	ND	2.0	10/13/25 23:05	
Cobalt	ug/L	ND	0.50	10/13/25 23:05	
Lead	ug/L	ND	0.50	10/13/25 23:05	
Lithium	ug/L	ND	0.50	10/13/25 23:05	
Molybdenum	ug/L	ND	0.50	10/13/25 23:05	
Selenium	ug/L	ND	0.50	10/13/25 23:05	
Thallium	ug/L	ND	0.10	10/13/25 23:05	

LABORATORY CONTROL SAMPLE: 5382258

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	100	101	101	80-120	
Arsenic	ug/L	100	106	106	80-120	
Barium	ug/L	100	106	106	80-120	
Beryllium	ug/L	100	105	105	80-120	
Boron	ug/L	100	105	105	80-120	
Cadmium	ug/L	100	101	101	80-120	
Calcium	ug/L	2000	2110	105	80-120	
Chromium	ug/L	100	110	110	80-120	
Cobalt	ug/L	100	113	113	80-120	
Lead	ug/L	100	107	107	80-120	
Lithium	ug/L	100	102	102	80-120	
Molybdenum	ug/L	100	103	103	80-120	
Selenium	ug/L	100	105	105	80-120	
Thallium	ug/L	100	106	106	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 10751974

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5382259 5382260

Parameter	Units	10751838003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	100	100	99.0	98.4	99	98	75-125	1	20	
Arsenic	ug/L	ND	100	100	109	108	108	108	75-125	0	20	
Barium	ug/L	21.2	100	100	129	123	107	102	75-125	4	20	
Beryllium	ug/L	ND	100	100	99.3	98.9	99	99	75-125	0	20	
Boron	ug/L	395	100	100	479	479	84	84	75-125	0	20	
Cadmium	ug/L	ND	100	100	93.0	92.2	93	92	75-125	1	20	
Calcium	ug/L	548000	2000	2000	520000	497000	-1420	-2540	75-125	4	20	P6
Chromium	ug/L	ND	100	100	102	101	101	101	75-125	1	20	
Cobalt	ug/L	ND	100	100	103	104	103	103	75-125	1	20	
Lead	ug/L	ND	100	100	98.8	98.1	99	98	75-125	1	20	
Lithium	ug/L	205	100	100	301	302	96	97	75-125	0	20	
Molybdenum	ug/L	3.0	100	100	106	106	103	103	75-125	0	20	
Selenium	ug/L	ND	100	100	109	108	108	108	75-125	0	20	
Thallium	ug/L	ND	100	100	106	104	106	104	75-125	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5382261 5382262

Parameter	Units	10751974001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	100	100	100	98.3	100	98	75-125	2	20	
Arsenic	ug/L	ND	100	100	111	110	110	110	75-125	0	20	
Barium	ug/L	10.8	100	100	119	115	108	104	75-125	3	20	
Beryllium	ug/L	ND	100	100	97.5	97.4	97	97	75-125	0	20	
Boron	ug/L	603	100	100	637	639	34	36	75-125	0	20	P6
Cadmium	ug/L	ND	100	100	93.0	91.8	93	92	75-125	1	20	
Calcium	ug/L	485000	2000	2000	445000	450000	-1980	-1760	75-125	1	20	P6
Chromium	ug/L	ND	100	100	103	102	103	101	75-125	2	20	
Cobalt	ug/L	ND	100	100	106	105	105	104	75-125	1	20	
Lead	ug/L	ND	100	100	100	102	100	101	75-125	1	20	
Lithium	ug/L	479	100	100	527	532	48	53	75-125	1	20	P6
Molybdenum	ug/L	1.1	100	100	106	105	105	104	75-125	1	20	
Selenium	ug/L	70.3	100	100	182	178	111	108	75-125	2	20	
Thallium	ug/L	ND	100	100	111	115	111	115	75-125	4	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 10751974

QC Batch: 1033573 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10751974001, 10751974002, 10751974003, 10751974004, 10751974005

METHOD BLANK: 5382733 Matrix: Water
Associated Lab Samples: 10751974001, 10751974002, 10751974003, 10751974004, 10751974005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	10/06/25 15:52	

LABORATORY CONTROL SAMPLE: 5382734

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 5382735

Parameter	Units	10752109006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	486	501	3	10	

SAMPLE DUPLICATE: 5382736

Parameter	Units	10751974001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5430	5660	4	10	PP

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 10751974

QC Batch: 1034856
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10751974001, 10751974002, 10751974003, 10751974004, 10751974005

METHOD BLANK: 5389859 Matrix: Water
Associated Lab Samples: 10751974001, 10751974002, 10751974003, 10751974004, 10751974005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.2	10/13/25 09:30	
Fluoride	mg/L	ND	0.050	10/13/25 09:30	
Sulfate	mg/L	ND	1.2	10/13/25 09:30	

LABORATORY CONTROL SAMPLE: 5389860

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	200	203	101	90-110	
Fluoride	mg/L	5	5.4	107	90-110	
Sulfate	mg/L	200	204	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5389861 5389862

Parameter	Units	10751974001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	117	200	200	309	304	96	94	80-120	2	20	
Fluoride	mg/L	0.11	5	5	5.2	5.1	103	100	80-120	2	20	
Sulfate	mg/L	4210	10000	10000	15800	16400	116	122	80-120	4	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5389863 5389864

Parameter	Units	10752006003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	143	200	200	332	348	94	102	80-120	5	20	
Fluoride	mg/L	0.12	5	5	5.4	5.9	106	115	80-120	8	20	
Sulfate	mg/L	2.3	200	200	210	229	104	113	80-120	9	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5389865 5389866

Parameter	Units	10752019003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	195	200	200	377	372	91	88	80-120	2	20	
Fluoride	mg/L	0.16	5	5	5.5	5.3	106	103	80-120	3	20	
Sulfate	mg/L	3710	4000	4000	7000	7040	82	83	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 60754415 PRPA CCR
Pace Project No.: 10751974

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
PL	The minimum mass of dried residue of 2.5 mg could not be obtained using the routine sample volume of 100 mL.
PP	The mass of dried residue obtained did not meet the test method requirements based on volume used.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60754415 PRPA CCR
Pace Project No.: 10751974

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10751974001	**ASH-07-CCR**	EPA 3020A	1033400	EPA 6020B	1034413
10751974002	**ASH-04-CCR**	EPA 3020A	1033400	EPA 6020B	1034413
10751974003	**ASH-05-CCR**	EPA 3020A	1033400	EPA 6020B	1034413
10751974004	**FD-01-CCR**	EPA 3020A	1033400	EPA 6020B	1034413
10751974005	**ERB-01-CCR**	EPA 3020A	1033400	EPA 6020B	1034413
10751974001	**ASH-07-CCR**	EPA 7470A	1033410	EPA 7470A	1034355
10751974002	**ASH-04-CCR**	EPA 7470A	1033410	EPA 7470A	1034355
10751974003	**ASH-05-CCR**	EPA 7470A	1033410	EPA 7470A	1034355
10751974004	**FD-01-CCR**	EPA 7470A	1033410	EPA 7470A	1034355
10751974005	**ERB-01-CCR**	EPA 7470A	1033410	EPA 7470A	1034355
10751974001	**ASH-07-CCR**	SM 2540C	1033573		
10751974002	**ASH-04-CCR**	SM 2540C	1033573		
10751974003	**ASH-05-CCR**	SM 2540C	1033573		
10751974004	**FD-01-CCR**	SM 2540C	1033573		
10751974005	**ERB-01-CCR**	SM 2540C	1033573		
10751974001	**ASH-07-CCR**	EPA 300.0	1034856		
10751974002	**ASH-04-CCR**	EPA 300.0	1034856		
10751974003	**ASH-05-CCR**	EPA 300.0	1034856		
10751974004	**FD-01-CCR**	EPA 300.0	1034856		
10751974005	**ERB-01-CCR**	EPA 300.0	1034856		

WO#: 10751974

10751974

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company:	AECOM
Address:	6200 South Quebec St
	Greenwood Village, CO 80111
Email To:	jamie.herman@aecom.com
Phone: (303) 740-2614	Fax:
Requested Due Date/TAT:	

Report To:	Vasanta Kalluri
Copy To:	Jamie Herman
Purchase Order No.:	NEED PO #
Project Name:	60709371 PRPA CCR
Project Number:	60709371

Section C Invoice Information:

Attention:	Accounts Payable
Company Name:	AECOM
Address:	Same as Section A
Pace Quote Reference:	
Pace Project Manager:	Tina Soltani
Pace Profile #:	36715

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: CO

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: N	N	Y	Y	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																300.0 Cl, F, SO4	2540C TDS	6020B Total Metals*	7470A Total Mercury		
1	ASH-07-CCR	WT	G	10/2/25	0950		6	3		3						X	X	X	X		MS/MSD 001
2	ASH-04-CCR				0930		2	1		1											002
3	ASH-05-CCR				1020		2	1		1											003
4	~~DUP~~ FD-01-CCR				—		2	1		1											004
5	ERB-01-CCR				1050		2	1		1											005
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
*Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Mo, Se, Tl				Casey Pace 10/3/25	9:00		3.6	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Mackensie Swift

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 10/2/25

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

ENV-FRM-MIN4-0150 v21_Sample Condition Upon Receipt

Person Examining & Date: CRL 10/3/25 **PROJECT #:**

WO#: 10751974
PM: TS1 Due Date: 10/17/25
CLIENT: AECOM

Client Name: AECOM

Custody Seal Present: ☐ YES ☐ NO **Seals Intact:** ☑ YES ☐ NO

Tracking Number: 4521 6243 3754 ☐ **See Exceptions form ENV-FRM-MIN4-0142.**

Courier: ☐ Client ☐ Commercial ☑ FedEx ☐ Pace Courier/Field ☐ SpeeDee ☐ UPS ☐ USPS

Packing Material: ☐ Bubble Bags ☑ Bubble Wrap ☐ None ☐ Other: _____ **Biological Tissue Frozen:** ☐ YES ☑ NO

Thermometer: ☐ T1 (0461) ☐ T2 (0431) ☐ T3 (0459) ☐ T4 (0402) ☐ T5 (0187) ☐ T6 (0396) ☑ T7 (0377) ☐ T8 (0775) ☐ T9 (0428) ☐ 01339252 (0710)

Type of Ice: ☐ Blue ☐ Dry ☑ Wet ☐ Melted ☐ None

Temp Blank: ☑ YES ☐ NO

NOTE: *Temp should be ≤ 6°C, but above freezing.*

Read Temp w/Temp Blank: 3.4 °C
Correction Factor: +0.2
Corrected Temp w/Temp Blank: 3.6 °C

Did Samples Originate in West Virginia: ☐ YES ☑ NO **(list temps on exception)**
Were All Container Temps Taken: ☐ YES ☐ NO ☑ N/A
Average Corrected Temp (No Temp Blank Only): _____
☐ **See Exceptions form ENV-FRM-MIN4-0142.** ☐ 1 Container

USDA Regulated Soil: ☑ N/A – Water Sample/Other (describe): _____

Did Samples originate from one of the following states (check maps): ☐ YES ☐ NO
Circle State: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, VA

Are samples from a foreign source (international, including Hawaii and Puerto Rico): ☐ YES ☐ NO

NOTE: If YES to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

LOCATION (check one): ☐ DULUTH ☑ MINNEAPOLIS ☐ VIRGINIA	YES	NO	N/A	COMMENT(S)
Chain of Custody Present and Filled Out? **(i.e., Analysis/ID/Date/Time)**	☑	☐		1.
Chain of Custody Relinquished?	☑	☐		2.
Sampler Name and/or Signature on COC?	☑	☐	☐	3.
Samples Arrived within Hold Time? **NOTE:** < 24 hrs if lab filter is requested for Dissolved LL-Mercury by 1631E.	☑	☐		4. If Fecal: ☐ < 8 hrs ☐ > 8 hr but < 24 hrs ☐ >24 hr
Short Hold Time Analysis (<72 hr)?	☐	☑		5. ☐ BOD / cBOD ☐ Fecal coliform ☐ Hex Chrom ☐ HPC ☐ Nitrate ☐ Nitrite ☐ Ortho Phos ☐ Total coliform/*E. coli* ☐ Turbidity ☐ Other: _____
Rush Turn Around Time Requested?	☐	☑		6. ☐ Same Day ☐ 1 Day ☐ 2 Day ☐ 3 Day ☐ 5 Day Due Date: _____
Sufficient Sample Volume? **(If NO, list approximate volume in section 7.)**	☑	☐		7.
Correct Containers Used? – Pace Containers Used?	☑ ☐	☐ ☐	☐	8.
Containers Intact?	☑	☐		9.
Field Filtered Volume Received for Dissolved Tests?	☐	☐	☑	10. Is sediment visible in the dissolved container: ☐ YES ☐ NO
ID/Date/Time Match? **(If NO, fill out section 11.)** Matrix: ☐ Oil ☐ Soil ☑ Water ☐ Other	☑	☐	☐	11. ☐ **See Exceptions form ENV-FRM-MIN4-0142**
All containers needing acid/base preservation have been checked?	☑	☐	☐	12.
Preserved containers in compliance with EPA recommendations? (HNO3, H2SO4, < 2 pH, NaOH > 9 Sulfide, NaOH > 10 Cyanide)	☑	☐	☐	☐ **See Exceptions form ENV-FRM-MIN4-0142**
EXCEPTIONS (water only): VOA, Coliform, TOC/DOC, Oil & Grease, Phenols, DRO/8015, Dioxins, and PFAS	☐	☐	☑	
Extra labels present on soil VOA or WIDRO containers? **(soil only)**	☐	☐	☑	13.
Headspace in Methyl Mercury Container?	☐	☐	☑	14.
Headspace in VOA Vials (greater than 6mm)?	☐	☐	☑	☐ **See Exceptions form ENV-FRM-MIN4-0140**
Trip Blanks Present?	☐	☐	☑	15.
Trip Blank Custody Seals Present?	☐	☐	☑	Pace Trip Blank Lot # (if purchased): _____

Sample #:
☑ HNO3 001-005 1/001 3/3 ☐ H2SO4 _____ ☐ NaOH _____ ☐ Zinc Acetate _____

pH Paper Lot #:
☐ Residual Chlorine _____ ☑ 0-6 Roll 230621 ☐ 0-6 Strip _____ ☐ 0-14 Strip _____

Positive for Residual Chlorine (NaOH containers only): ☐ YES ☐ NO

CLIENT NOTIFICATION / RESOLUTION: **Labeled By:** CRL **Line:** 2

Person Contacted & Date/Time: _____ **PM Review & Date:** 10/3/25 Tina Sloan

NOTE: *When there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEQ Certification Office.*

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

October 27, 2025

Vasanta Kalluri
AECOM
6200 South Quebec Street
Greenwood Village, CO 80111

RE: Project: 60754415 PRPA CCR
Pace Project No.: 10752029

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 2025. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Soltani
tina.soltani@pacelabs.com
(612) 607-6384
Project Manager

Enclosures

cc: Jamie Herman, AECOM
Kara Hoppes, AECOM
Sawyer Hunt, AECOM
Jeremy Hurshman, AECOM

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 60754415 PRPA CCR
Pace Project No.: 10752029

Pace Analytical Services, LLC - Minneapolis MN
1700 Elm Street SE, Minneapolis, MN 55414
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
DoD Certification via A2LA #: 2926.01
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
ISO/IEC 17025 Certification via A2LA #: 2926.01
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification via A2LA #: R-036
North Dakota Certification via MN #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification via A2LA #: 2926.01
USDA Permit #: P330-19-00208

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 60754415 PRPA CCR
Pace Project No.: 10752029

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10752029001	**ASH-02-CCR**	Water	10/02/25 12:20	10/03/25 09:00
10752029002	**BAT-04R-CCR**	Water	10/02/25 13:45	10/03/25 09:00

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 60754415 PRPA CCR
Pace Project No.: 10752029

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10752029001	**ASH-02-CCR**	EPA 6020B	IMB	14	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2540C	AMC2	1	PASI-M
		EPA 300.0	AR3	3	PASI-M
10752029002	**BAT-04R-CCR**	EPA 6020B	IMB	14	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2540C	AMC2	1	PASI-M
		EPA 300.0	AR3	3	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 60754415 PRPA CCR
Pace Project No.: 10752029

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10752029001	**ASH-02-CCR**					
EPA 6020B	Barium	17.7	ug/L	0.60	10/15/25 18:25	
EPA 6020B	Boron	2000	ug/L	500	10/15/25 18:28	
EPA 6020B	Calcium	165000	ug/L	5000	10/15/25 18:28	
EPA 6020B	Lithium	255	ug/L	1.0	10/15/25 18:25	
EPA 6020B	Molybdenum	6.5	ug/L	1.0	10/15/25 18:25	
SM 2540C	Total Dissolved Solids	3370	mg/L	50.0	10/09/25 19:25	
EPA 300.0	Chloride	22.3	mg/L	1.2	10/15/25 01:21	
EPA 300.0	Fluoride	0.17	mg/L	0.050	10/15/25 01:21	
EPA 300.0	Sulfate	2200	mg/L	12.0	10/17/25 07:15	
10752029002	**BAT-04R-CCR**					
EPA 6020B	Barium	12.5	ug/L	0.60	10/15/25 18:37	
EPA 6020B	Boron	688	ug/L	20.0	10/15/25 18:37	
EPA 6020B	Calcium	489000	ug/L	5000	10/15/25 18:46	P6
EPA 6020B	Lithium	155	ug/L	1.0	10/15/25 18:37	
EPA 6020B	Selenium	19.2	ug/L	1.0	10/15/25 18:37	
SM 2540C	Total Dissolved Solids	3260	mg/L	50.0	10/09/25 19:25	
EPA 300.0	Chloride	32.9	mg/L	1.2	10/15/25 01:37	
EPA 300.0	Fluoride	0.16	mg/L	0.050	10/15/25 01:37	
EPA 300.0	Sulfate	2000	mg/L	12.0	10/17/25 07:31	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 10752029

Sample: ASH-02-CCR **Lab ID: 10752029001** Collected: 10/02/25 12:20 Received: 10/03/25 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Antimony	ND	ug/L	1.0	2	10/13/25 06:17	10/15/25 18:25	7440-36-0	D3
Arsenic	ND	ug/L	1.0	2	10/13/25 06:17	10/15/25 18:25	7440-38-2	D3
Barium	**17.7**	ug/L	0.60	2	10/13/25 06:17	10/15/25 18:25	7440-39-3	
Beryllium	ND	ug/L	0.40	2	10/13/25 06:17	10/15/25 18:25	7440-41-7	D3
Boron	**2000**	ug/L	500	50	10/13/25 06:17	10/15/25 18:28	7440-42-8	
Cadmium	ND	ug/L	0.16	2	10/13/25 06:17	10/15/25 18:25	7440-43-9	D3
Calcium	**165000**	ug/L	5000	50	10/13/25 06:17	10/15/25 18:28	7440-70-2	
Chromium	ND	ug/L	4.0	2	10/13/25 06:17	10/15/25 18:25	7440-47-3	D3
Cobalt	ND	ug/L	1.0	2	10/13/25 06:17	10/15/25 18:25	7440-48-4	D3
Lead	ND	ug/L	1.0	2	10/13/25 06:17	10/15/25 18:25	7439-92-1	D3
Lithium	**255**	ug/L	1.0	2	10/13/25 06:17	10/15/25 18:25	7439-93-2	
Molybdenum	**6.5**	ug/L	1.0	2	10/13/25 06:17	10/15/25 18:25	7439-98-7	
Selenium	ND	ug/L	1.0	2	10/13/25 06:17	10/15/25 18:25	7782-49-2	D3
Thallium	ND	ug/L	0.20	2	10/13/25 06:17	10/15/25 18:25	7440-28-0	D3
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	10/13/25 06:36	10/13/25 11:53	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**3370**	mg/L	50.0	1		10/09/25 19:25		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**22.3**	mg/L	1.2	1		10/15/25 01:21	16887-00-6	
Fluoride	**0.17**	mg/L	0.050	1		10/15/25 01:21	16984-48-8	
Sulfate	**2200**	mg/L	12.0	10		10/17/25 07:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60754415 PRPA CCR
Pace Project No.: 10752029

Sample: BAT-04R-CCR **Lab ID: 10752029002** Collected: 10/02/25 13:45 Received: 10/03/25 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3020A Pace Analytical Services - Minneapolis							
Antimony	ND	ug/L	1.0	2	10/13/25 06:17	10/15/25 18:37	7440-36-0	D3
Arsenic	ND	ug/L	1.0	2	10/13/25 06:17	10/15/25 18:37	7440-38-2	D3
Barium	**12.5**	ug/L	0.60	2	10/13/25 06:17	10/15/25 18:37	7440-39-3	
Beryllium	ND	ug/L	0.40	2	10/13/25 06:17	10/15/25 18:37	7440-41-7	D3
Boron	**688**	ug/L	20.0	2	10/13/25 06:17	10/15/25 18:37	7440-42-8	
Cadmium	ND	ug/L	0.16	2	10/13/25 06:17	10/15/25 18:37	7440-43-9	D3
Calcium	**489000**	ug/L	5000	50	10/13/25 06:17	10/15/25 18:46	7440-70-2	P6
Chromium	ND	ug/L	4.0	2	10/13/25 06:17	10/15/25 18:37	7440-47-3	D3
Cobalt	ND	ug/L	1.0	2	10/13/25 06:17	10/15/25 18:37	7440-48-4	D3
Lead	ND	ug/L	1.0	2	10/13/25 06:17	10/15/25 18:37	7439-92-1	D3
Lithium	**155**	ug/L	1.0	2	10/13/25 06:17	10/15/25 18:37	7439-93-2	
Molybdenum	ND	ug/L	1.0	2	10/13/25 06:17	10/15/25 18:37	7439-98-7	D3
Selenium	**19.2**	ug/L	1.0	2	10/13/25 06:17	10/15/25 18:37	7782-49-2	
Thallium	ND	ug/L	0.20	2	10/13/25 06:17	10/15/25 18:37	7440-28-0	D3
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Minneapolis							
Mercury	ND	ug/L	0.20	1	10/13/25 06:36	10/13/25 11:54	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Minneapolis							
Total Dissolved Solids	**3260**	mg/L	50.0	1		10/09/25 19:25		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Minneapolis							
Chloride	**32.9**	mg/L	1.2	1		10/15/25 01:37	16887-00-6	
Fluoride	**0.16**	mg/L	0.050	1		10/15/25 01:37	16984-48-8	
Sulfate	**2000**	mg/L	12.0	10		10/17/25 07:31	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 10752029

QC Batch: 1034763
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470A Mercury Water
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10752029001, 10752029002

METHOD BLANK: 5389621 Matrix: Water
Associated Lab Samples: 10752029001, 10752029002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	10/13/25 11:50	

LABORATORY CONTROL SAMPLE: 5389622

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5389623 5389624

Parameter	Units	10752029002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.9	5.0	98	101	80-120	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 10752029

QC Batch: 1034264
QC Batch Method: EPA 3020A
Analysis Method: EPA 6020B
Analysis Description: 6020B Water UPD5
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10752029001, 10752029002

METHOD BLANK: 5386475 Matrix: Water
Associated Lab Samples: 10752029001, 10752029002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	0.50	10/15/25 14:59	
Arsenic	ug/L	ND	0.50	10/15/25 14:59	
Barium	ug/L	ND	0.30	10/15/25 14:59	
Beryllium	ug/L	ND	0.20	10/15/25 14:59	
Boron	ug/L	ND	10.0	10/15/25 14:59	
Cadmium	ug/L	ND	0.080	10/15/25 14:59	
Calcium	ug/L	ND	100	10/15/25 14:59	
Chromium	ug/L	ND	2.0	10/15/25 14:59	
Cobalt	ug/L	ND	0.50	10/15/25 14:59	
Lead	ug/L	ND	0.50	10/15/25 14:59	
Lithium	ug/L	ND	0.50	10/15/25 14:59	
Molybdenum	ug/L	ND	0.50	10/15/25 14:59	
Selenium	ug/L	ND	0.50	10/15/25 14:59	
Thallium	ug/L	ND	0.10	10/15/25 14:59	

LABORATORY CONTROL SAMPLE: 5386476

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	100	104	104	80-120	
Arsenic	ug/L	100	106	106	80-120	
Barium	ug/L	100	105	105	80-120	
Beryllium	ug/L	100	110	110	80-120	
Boron	ug/L	100	107	107	80-120	
Cadmium	ug/L	100	104	104	80-120	
Calcium	ug/L	2000	2240	112	80-120	
Chromium	ug/L	100	109	109	80-120	
Cobalt	ug/L	100	111	111	80-120	
Lead	ug/L	100	105	105	80-120	
Lithium	ug/L	100	108	108	80-120	
Molybdenum	ug/L	100	103	103	80-120	
Selenium	ug/L	100	107	107	80-120	
Thallium	ug/L	100	109	109	80-120	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 10752029

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5386477 5386478

Parameter	Units	10752019003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	100	100	97.9	93.0	98	93	75-125	5	20	
Arsenic	ug/L	1.2	100	100	104	102	103	100	75-125	3	20	
Barium	ug/L	27.9	100	100	139	131	111	103	75-125	6	20	
Beryllium	ug/L	ND	100	100	101	95.6	101	96	75-125	5	20	
Boron	ug/L	669	100	100	777	770	108	101	75-125	1	20	
Cadmium	ug/L	ND	100	100	97.4	91.1	97	91	75-125	7	20	
Calcium	ug/L	492000	2000	2000	475000	483000	-891	-455	75-125	2	20	P6
Chromium	ug/L	ND	100	100	106	101	103	98	75-125	5	20	
Cobalt	ug/L	1.7	100	100	104	97.8	102	96	75-125	6	20	
Lead	ug/L	2.0	100	100	103	96.7	101	95	75-125	6	20	
Lithium	ug/L	245	100	100	353	346	107	101	75-125	2	20	
Molybdenum	ug/L	ND	100	100	98.9	95.3	98	94	75-125	4	20	
Selenium	ug/L	48.7	100	100	155	152	106	103	75-125	2	20	
Thallium	ug/L	ND	100	100	104	98.6	104	99	75-125	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5386479 5386480

Parameter	Units	10752029002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	100	100	100	101	100	101	75-125	1	20	
Arsenic	ug/L	ND	100	100	103	103	103	102	75-125	0	20	
Barium	ug/L	12.5	100	100	111	113	99	101	75-125	2	20	
Beryllium	ug/L	ND	100	100	97.8	96.2	98	96	75-125	2	20	
Boron	ug/L	688	100	100	798	776	110	88	75-125	3	20	
Cadmium	ug/L	ND	100	100	94.0	94.1	94	94	75-125	0	20	
Calcium	ug/L	489000	2000	2000	478000	476000	-566	-645	75-125	0	20	P6
Chromium	ug/L	ND	100	100	99.4	98.7	99	98	75-125	1	20	
Cobalt	ug/L	ND	100	100	99.5	100	99	100	75-125	1	20	
Lead	ug/L	ND	100	100	96.7	97.4	97	97	75-125	1	20	
Lithium	ug/L	155	100	100	256	252	100	97	75-125	2	20	
Molybdenum	ug/L	ND	100	100	96.5	97.2	96	96	75-125	1	20	
Selenium	ug/L	19.2	100	100	125	124	106	104	75-125	1	20	
Thallium	ug/L	ND	100	100	102	101	102	101	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
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(612)607-1700

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 10752029

QC Batch: 1034183
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10752029001, 10752029002

METHOD BLANK: 5386175 Matrix: Water
Associated Lab Samples: 10752029001, 10752029002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	10/09/25 19:25	

LABORATORY CONTROL SAMPLE: 5386176

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1040	104	80-120	

SAMPLE DUPLICATE: 5386177

Parameter	Units	10752019003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	4680	4810	3	10	PP

SAMPLE DUPLICATE: 5386178

Parameter	Units	10752029002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3260	3270	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(612)607-1700

QUALITY CONTROL DATA

Project: 60754415 PRPA CCR
Pace Project No.: 10752029

QC Batch: 1034900
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10752029001, 10752029002

METHOD BLANK: 5389973 Matrix: Water
Associated Lab Samples: 10752029001, 10752029002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.2	10/15/25 00:48	
Fluoride	mg/L	ND	0.050	10/15/25 00:48	
Sulfate	mg/L	ND	1.2	10/15/25 00:48	

LABORATORY CONTROL SAMPLE: 5389974

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	200	193	97	90-110	
Fluoride	mg/L	5	5.0	99	90-110	
Sulfate	mg/L	200	194	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5389975 5389976

Parameter	Units	10752029002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	32.9	200	200	218	216	93	92	80-120	1	20	
Fluoride	mg/L	0.16	5	5	5.0	4.9	96	96	80-120	0	20	
Sulfate	mg/L	2000	2000	2000	3880	3880	94	94	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5389977 5389978

Parameter	Units	10752453001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.0	200	200	189	190	93	94	80-120	0	20	
Fluoride	mg/L	0.15	5	5	4.9	4.9	94	95	80-120	1	20	
Sulfate	mg/L	6.0	200	200	192	193	93	93	80-120	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 60754415 PRPA CCR
Pace Project No.: 10752029

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
PP	The mass of dried residue obtained did not meet the test method requirements based on volume used.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60754415 PRPA CCR
Pace Project No.: 10752029

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10752029001	**ASH-02-CCR**	EPA 3020A	1034264	EPA 6020B	1034934
10752029002	**BAT-04R-CCR**	EPA 3020A	1034264	EPA 6020B	1034934
10752029001	**ASH-02-CCR**	EPA 7470A	1034763	EPA 7470A	1034892
10752029002	**BAT-04R-CCR**	EPA 7470A	1034763	EPA 7470A	1034892
10752029001	**ASH-02-CCR**	SM 2540C	1034183		
10752029002	**BAT-04R-CCR**	SM 2540C	1034183		
10752029001	**ASH-02-CCR**	EPA 300.0	1034900		
10752029002	**BAT-04R-CCR**	EPA 300.0	1034900		

Pace Analytical
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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company:	AECOM
Address:	6200 South Quebec St
	Greenwood Village, CO 80111
Email To:	jamie.herman@aecom.com
Phone: (303) 740-2614	Fax:
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Vasanta Kalluri
Copy To:	Jamie Herman
Purchase Order No.:	NEED PO #
Project Name:	60709371 PRPA CCR
Project Number:	60709371

Section C Invoice Information:

Attention:	Accounts Payable
Company Name:	AECOM
Address:	Same as Section A
Pace Quote Reference:	
Pace Project Manager:	Tina Soltani
Pace Profile #:	36715

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: CO

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	300.0 Cl, F, SO4	2540C TDS	6020B Total Metals*	7470A Total Mercury	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	GSH-02-CCR	WT	G	—	—	10/2/25	1220		2	1	1							N	X	X	X	X	N	001
2	BAT-04R-CCR	↓	↓	↓	↓	↓	1345		6	3	3							N	X	X	X	X	↓	MS/MSD
3	~~BAT-12-CCR~~								2	1	1							N	X	X	X	X		002
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Mo, Se, Tl					10/3/25	9:00	0.7	y	y	y

WO# : 10752029

10752029

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Mackensie Swift

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 10/2/25

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

ENV-FRM-MIN4-0150 v21_Sample Condition Upon Receipt

Person Examining & Date: KRM 10/3/25 **PROJECT #:** WO#: 10752029

PM: TS1 Due Date: 10/17/25

CLIENT: AECOM

Client Name: AECOM

Custody Seal Present: ☒ YES ☐ NO **Seals Intact:** ☒ YES ☐ NO

Tracking Number: 4521 6245 2846 ☐ **See Exceptions form ENV-FRM-MIN4-0142.**

Courier: ☐ Client ☐ Commercial ☒ FedEx ☐ Pace Courier/Field ☐ SpeeDee ☐ UPS ☐ USPS

Packing Material: ☐ Bubble Bags ☐ Bubble Wrap ☒ None ☐ Other: _____ **Biological Tissue Frozen:** ☐ YES ☒ NO

Thermometer: ☐ T1 (0461) ☐ T2 (0431) ☐ T3 (0459) ☐ T4 (0402) ☐ T5 (0187) ☐ T6 (0396) ☒ T7 (0377) ☐ T8 (0775) ☐ T9 (0428) ☐ 01339252 (0710)

Type of Ice: ☐ Blue ☐ Dry ☒ Wet ☐ Melted ☐ None

Temp Blank: ☐ YES ☒ NO

NOTE: *Temp should be ≤ 6°C, but above freezing.*

Read Temp w/Temp Blank: _____ °C

Correction Factor: +0.2

Corrected Temp w/Temp Blank: _____ °C

Did Samples Originate in West Virginia: ☐ YES ☒ NO **(list temps on exception)**

Were All Container Temps Taken: ☐ YES ☐ NO ☒ N/A

Average Corrected Temp (No Temp Blank Only): 0.7

☐ **See Exceptions form ENV-FRM-MIN4-0142.** ☐ 1 Container

USDA Regulated Soil: ☒ N/A - Water Sample/Other (describe): _____

Did Samples originate from one of the following states (check maps): ☐ YES ☐ NO

Circle State: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, VA

Are samples from a foreign source (international, including Hawaii and Puerto Rico): ☐ YES ☐ NO

NOTE: If YES to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

LOCATION (check one): ☐ **DULUTH** ☒ **MINNEAPOLIS** ☐ **VIRGINIA**	**YES**	**NO**	**N/A**	**COMMENT(S)**
Chain of Custody Present and Filled Out? **(i.e., Analysis/ID/Date/Time)**	☒	☐		1.
Chain of Custody Relinquished?	☒	☐		2.
Sampler Name and/or Signature on COC?	☒	☐	☐	3.
Samples Arrived within Hold Time? **NOTE:** < 24 hrs if lab filter is requested for Dissolved LL-Mercury by 1631E.	☒	☐		4. If Fecal: ☐ < 8 hrs ☐ > 8 hr but < 24 hrs ☐ >24 hr
Short Hold Time Analysis (<72 hr)?	☐	☒		5. ☐ BOD / cBOD ☐ Fecal coliform ☐ Hex Chrom ☐ HPC ☐ Nitrate ☐ Nitrite ☐ Ortho Phos ☐ Total coliform/*E. coli* ☐ Turbidity ☐ Other: _____
Rush Turn Around Time Requested?	☐	☒		6. ☐ Same Day ☐ 1 Day ☐ 2 Day ☐ 3 Day ☐ 5 Day Due Date: _____
Sufficient Sample Volume? **(If NO, list approximate volume in section 7.)**	☒	☐		7.
Correct Containers Used? – Pace Containers Used?	☒ ☒	☐ ☐	☐	8.
Containers Intact?	☒	☐		9.
Field Filtered Volume Received for Dissolved Tests?	☒	☐	☐	10. Is sediment visible in the dissolved container: ☐ YES ☐ NO
ID/Date/Time Match? **(If NO, fill out section 11.)** Matrix: ☐ Oil ☐ Soil ☐ Water ☐ Other	☒	☐	☐	11. ☐ **See Exceptions form ENV-FRM-MIN4-0142**
All containers needing acid/base preservation have been checked?	☒	☐	☐	12.
Sample #: ☒ HNO3 001 1/1, 002 3/3 ☐ H2SO4 _____ ☐ NaOH _____ ☐ Zinc Acetate _____ **pH Paper Lot #:** ☐ Residual Chlorine _____ ☒ 0-6 Roll 230624 ☐ 0-6 Strip _____ ☐ 0-14 Strip _____ **Positive for Residual Chlorine (NaOH containers only):** ☐ **YES** ☐ **NO**				
Preserved containers in compliance with EPA recommendations? (HNO3, H2SO4, < 2 pH, NaOH > 9 Sulfide, NaOH > 10 Cyanide) **EXCEPTIONS (water only):** VOA, Coliform, TOC/DOC, Oil & Grease, Phenols, DRO/8015, Dioxins, and PFAS	☒ ☐	☐ ☐	☐ ☒	☐ **See Exceptions form ENV-FRM-MIN4-0142**
Extra labels present on soil VOA or WIDRO containers? **(soil only)**	☐	☐	☒	13.
Headspace in Methyl Mercury Container?	☐	☐	☒	14.
Headspace in VOA Vials (greater than 6mm)?	☐	☒	☐	☐ **See Exceptions form ENV-FRM-MIN4-0140**
Trip Blanks Present?	☐	☒	☐	15.
Trip Blank Custody Seals Present?	☐	☐	☒	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION / RESOLUTION: **Labeled By:** AR **Line:** 4

Person Contacted & Date/Time: _____ **PM Review & Date:** 10/7/25 Jina Soltani

NOTE: *When there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEQ Certification Office.*

ENV-FRM-MIN4-0142 v05_Sample Condition Upon Receipt - Exceptions

Workorder #: _____

Anything is OVER 6.0°C, MUST be documented in the sections below.

Tracking Number	Temperature (°C)

Out of Temp Sample ID	Container Type	# of Containers

PM Notified of Out of Temp Cooler? ☐ YES ☐ NO **Multiple Cooler Project?** ☐ YES ☐ NO

If **YES**, indicate who was contacted, date, and time: _____

If **NO**, indicate reason why: ☐ All Nitric ☐ Not on ice ☐ Sampled same day ☐ Other: _____

No Temp Blank

Temp Gun: T-7 **Correction Factor:** +0.2

Read Temp	Corrected Temp	Average Temp
1.1	1.3	0.7
0.3	0.5	
0.5	0.7	
0.1	0.3	

Other	

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative		pH Upon Receipt	Date / Time Adjusted	Amount Added (mL)	Lot # Added	ph After	In Compliance After?		Initials
	HNO_3	H_2SO_4						YES	NO	
	☐	☐						☐	☐	
	☐	☐						☐	☐	
	☐	☐						☐	☐	
	☐	☐						☐	☐	
	☐	☐						☐	☐	
	☐	☐						☐	☐	
	☐	☐						☐	☐	
	☐	☐						☐	☐	
	☐	☐						☐	☐	
	☐	☐						☐	☐	

COMMENT(S):

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

November 06, 2025

Vasanta Kalluri
AECOM
6200 South Quebec Street
Greenwood Village, CO 80111

RE: Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 2025. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Soltani
tina.soltani@pacelabs.com
(612) 607-6384
Project Manager

Enclosures

cc: Jamie Herman, AECOM
Kara Hoppes, AECOM
Sawyer Hunt, AECOM
Jeremy Hurshman, AECOM

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
ANABISO/IEC 17025:2017 Rad Cert#: L24170
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 2950
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA010
Louisiana DEQ/TNI Certification #: 04086
Maine Certification #: 2023021
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572023-03
New Hampshire/TNI Certification #: 297622
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-015
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN02867
Texas/TNI Certification #: T104704188-22-18
Utah/TNI Certification #: PA014572223-14
USDA Soil Permit #: 525-23-67-77263
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10752472001	**ASH-06-CCR**	Water	10/01/25 11:00	10/03/25 10:30
10752472002	**ASH-03-CCR**	Water	10/01/25 12:40	10/03/25 10:30
10752472003	**ASH-01-CCR**	Water	10/01/25 14:00	10/03/25 10:30
10752472004	**ASH-08-CCR**	Water	10/01/25 14:20	10/03/25 10:30
10752472005	**ASH-04-CCR**	Water	10/02/25 09:30	10/03/25 10:30
10752472006	**ASH-05-CCR**	Water	10/02/25 10:20	10/03/25 10:30
10752472007	**ASH-07-CCR**	Water	10/02/25 09:50	10/03/25 10:30
10752472008	**ASH-07-CCR MS**	Water	10/02/25 09:50	10/03/25 10:30
10752472009	**ASH-07-CCR MSD**	Water	10/02/25 09:50	10/03/25 10:30
10752472010	**FD-01-CCR**	Water	10/02/25 00:00	10/03/25 10:30

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SAMPLE ANALYTE COUNT

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10752472001	**ASH-06-CCR**	EPA 903.1	TMY	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
10752472002	**ASH-03-CCR**	EPA 903.1	TMY	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
10752472003	**ASH-01-CCR**	EPA 903.1	TMY	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
10752472004	**ASH-08-CCR**	EPA 903.1	TMY	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
10752472005	**ASH-04-CCR**	EPA 903.1	TMY	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
10752472006	**ASH-05-CCR**	EPA 903.1	TMY	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
10752472007	**ASH-07-CCR**	EPA 903.1	TMY	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
10752472008	**ASH-07-CCR MS**	EPA 903.1	TMY	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
10752472009	**ASH-07-CCR MSD**	EPA 903.1	TMY	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
10752472010	**FD-01-CCR**	EPA 903.1	TMY	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10752472001	**ASH-06-CCR**					
EPA 903.1	Radium-226	0.355 ± 0.287 (0.160) C:NA T:86%	pCi/L		10/31/25 14:12	
EPA 904.0	Radium-228	0.771 ± 0.533 (1.04) C:71% T:87%	pCi/L		10/29/25 14:40	
Total Radium Calculation	Total Radium	1.13 ± 0.820 (1.20)	pCi/L		11/05/25 15:05	
10752472002	**ASH-03-CCR**					
EPA 903.1	Radium-226	0.107 ± 0.257 (0.497) C:NA T:97%	pCi/L		10/31/25 14:12	
EPA 904.0	Radium-228	1.08 ± 0.505 (0.869) C:74% T:91%	pCi/L		10/29/25 14:41	
Total Radium Calculation	Total Radium	1.19 ± 0.762 (1.37)	pCi/L		11/05/25 15:05	
10752472003	**ASH-01-CCR**					
EPA 903.1	Radium-226	-0.0490 ± 0.480 (0.954) C:NA T:100%	pCi/L		10/31/25 14:25	
EPA 904.0	Radium-228	0.484 ± 0.557 (1.18) C:69% T:78%	pCi/L		10/29/25 14:41	
Total Radium Calculation	Total Radium	0.484 ± 1.04 (2.13)	pCi/L		11/05/25 15:05	
10752472004	**ASH-08-CCR**					
EPA 903.1	Radium-226	-0.256 ± 0.666 (1.37) C:NA T:93%	pCi/L		10/31/25 14:25	
EPA 904.0	Radium-228	1.00 ± 0.483 (0.824) C:76% T:83%	pCi/L		10/29/25 14:41	
Total Radium Calculation	Total Radium	1.000 ± 1.15 (2.19)	pCi/L		11/05/25 15:05	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10752472005	**ASH-04-CCR**					
EPA 903.1	Radium-226	0.960 ± 0.620 (0.846) C:NA T:93%	pCi/L		10/31/25 14:25	
EPA 904.0	Radium-228	1.25 ± 0.527 (0.870) C:78% T:88%	pCi/L		10/29/25 14:41	
Total Radium Calculation	Total Radium	2.21 ± 1.15 (1.72)	pCi/L		11/05/25 15:05	
10752472006	**ASH-05-CCR**					
EPA 903.1	Radium-226	0.112 ± 0.582 (1.09) C:NA T:89%	pCi/L		10/31/25 14:25	
EPA 904.0	Radium-228	0.912 ± 0.549 (1.05) C:73% T:86%	pCi/L		10/29/25 11:56	
Total Radium Calculation	Total Radium	1.02 ± 1.13 (2.14)	pCi/L		11/05/25 15:05	
10752472007	**ASH-07-CCR**					
EPA 903.1	Radium-226	0.000 ± 0.482 (0.957) C:NA T:90%	pCi/L		11/05/25 14:25	
EPA 904.0	Radium-228	2.09 ± 0.611 (0.714) C:78% T:84%	pCi/L		10/29/25 11:56	
Total Radium Calculation	Total Radium	2.09 ± 1.09 (1.67)	pCi/L		11/05/25 15:05	
10752472008	**ASH-07-CCR MS**					
EPA 903.1	Radium-226	130.44 %REC ± NA (NA) C:NA T:NA	pCi/L		10/31/25 14:25	
EPA 904.0	Radium-228	118.49 %REC ± NA (NA) C:NA T:NA	pCi/L		10/29/25 11:56	
10752472009	**ASH-07-CCR MSD**					
EPA 903.1	Radium-226	112.77 %REC 14.53RPD ± NA (NA) C:NA T:NA	pCi/L		10/31/25 16:18	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10752472009	**ASH-07-CCR MSD**					
EPA 904.0	Radium-228	121.28 %REC 2.33RPD ± NA (NA) C:NA T:NA	pCi/L		10/29/25 11:56	
10752472010	**FD-01-CCR**					
EPA 903.1	Radium-226	0.725 ± 0.419 (0.164) C:NA T:89%	pCi/L		10/31/25 14:25	
EPA 904.0	Radium-228	0.770 ± 0.437 (0.813) C:82% T:89%	pCi/L		10/29/25 11:57	
Total Radium Calculation	Total Radium	1.50 ± 0.856 (0.977)	pCi/L		11/05/25 15:05	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Sample: ASH-06-CCR **Lab ID: 10752472001** Collected: 10/01/25 11:00 Received: 10/03/25 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.355 ± 0.287 (0.160) C:NA T:86%**	pCi/L	10/31/25 14:12	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.771 ± 0.533 (1.04) C:71% T:87%**	pCi/L	10/29/25 14:40	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.13 ± 0.820 (1.20)**	pCi/L	11/05/25 15:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Sample: ASH-03-CCR **Lab ID: 10752472002** Collected: 10/01/25 12:40 Received: 10/03/25 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.107 ± 0.257 (0.497) C:NA T:97%**	pCi/L	10/31/25 14:12	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.08 ± 0.505 (0.869) C:74% T:91%**	pCi/L	10/29/25 14:41	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.19 ± 0.762 (1.37)**	pCi/L	11/05/25 15:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Sample: ASH-01-CCR **Lab ID: 10752472003** Collected: 10/01/25 14:00 Received: 10/03/25 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.0490 ± 0.480 (0.954) C:NA T:100%**	pCi/L	10/31/25 14:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.484 ± 0.557 (1.18) C:69% T:78%**	pCi/L	10/29/25 14:41	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.484 ± 1.04 (2.13)**	pCi/L	11/05/25 15:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Sample: ASH-08-CCR **Lab ID: 10752472004** Collected: 10/01/25 14:20 Received: 10/03/25 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.256 ± 0.666 (1.37) C:NA T:93%**	pCi/L	10/31/25 14:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.00 ± 0.483 (0.824) C:76% T:83%**	pCi/L	10/29/25 14:41	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.000 ± 1.15 (2.19)**	pCi/L	11/05/25 15:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Sample: ASH-04-CCR **Lab ID: 10752472005** Collected: 10/02/25 09:30 Received: 10/03/25 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.960 ± 0.620 (0.846) C:NA T:93%**	pCi/L	10/31/25 14:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.25 ± 0.527 (0.870) C:78% T:88%**	pCi/L	10/29/25 14:41	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**2.21 ± 1.15 (1.72)**	pCi/L	11/05/25 15:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Sample: ASH-05-CCR **Lab ID: 10752472006** Collected: 10/02/25 10:20 Received: 10/03/25 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.112 ± 0.582 (1.09) C:NA T:89%**	pCi/L	10/31/25 14:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.912 ± 0.549 (1.05) C:73% T:86%**	pCi/L	10/29/25 11:56	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.02 ± 1.13 (2.14)**	pCi/L	11/05/25 15:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Sample: ASH-07-CCR **Lab ID: 10752472007** Collected: 10/02/25 09:50 Received: 10/03/25 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.000 ± 0.482 (0.957) C:NA T:90%**	pCi/L	11/05/25 14:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**2.09 ± 0.611 (0.714) C:78% T:84%**	pCi/L	10/29/25 11:56	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**2.09 ± 1.09 (1.67)**	pCi/L	11/05/25 15:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Sample: ASH-07-CCR MS **Lab ID: 10752472008** Collected: 10/02/25 09:50 Received: 10/03/25 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Comments: • Container received ID SMD-01-CCR. THis was not listed on COC and used as sample 008 Spike.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**130.44 %REC ± NA (NA) C:NA T:NA**	pCi/L	10/31/25 14:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**118.49 %REC ± NA (NA) C:NA T:NA**	pCi/L	10/29/25 11:56	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Sample: ASH-07-CCR MSD **Lab ID: 10752472009** Collected: 10/02/25 09:50 Received: 10/03/25 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Comments: • Container received ID SMD-01-CCR. THis was not listed on COC and used as sample 009 Spike

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**112.77 %REC 14.53RPD ± NA (NA) C:NA T:NA**	pCi/L	10/31/25 16:18	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**121.28 %REC 2.33RPD ± NA (NA) C:NA T:NA**	pCi/L	10/29/25 11:56	15262-20-1	

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Sample: FD-01-CCR **Lab ID: 10752472010** Collected: 10/02/25 00:00 Received: 10/03/25 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.725 ± 0.419 (0.164) C:NA T:89%**	pCi/L	10/31/25 14:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.770 ± 0.437 (0.813) C:82% T:89%**	pCi/L	10/29/25 11:57	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.50 ± 0.856 (0.977)**	pCi/L	11/05/25 15:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

QC Batch: 777629
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 10752472001, 10752472002, 10752472003, 10752472004, 10752472005, 10752472006, 10752472007, 10752472008, 10752472009, 10752472010

METHOD BLANK: 3792395 Matrix: Water
Associated Lab Samples: 10752472001, 10752472002, 10752472003, 10752472004, 10752472005, 10752472006, 10752472007, 10752472008, 10752472009, 10752472010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.613 ± 0.338 (0.301) C:NA T:97%	pCi/L	10/31/25 14:12	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

QC Batch: 777630
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 10752472001, 10752472002, 10752472003, 10752472004, 10752472005, 10752472006, 10752472007, 10752472008, 10752472009, 10752472010

METHOD BLANK: 3792399
Matrix: Water
Associated Lab Samples: 10752472001, 10752472002, 10752472003, 10752472004, 10752472005, 10752472006, 10752472007, 10752472008, 10752472009, 10752472010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.714 ± 0.408 (0.755) C:81% T:95%	pCi/L	10/29/25 14:40	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60754415 PRPA CCR
Pace Project No.: 10752472

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10752472001	**ASH-06-CCR**	EPA 903.1	777629		
10752472002	**ASH-03-CCR**	EPA 903.1	777629		
10752472003	**ASH-01-CCR**	EPA 903.1	777629		
10752472004	**ASH-08-CCR**	EPA 903.1	777629		
10752472005	**ASH-04-CCR**	EPA 903.1	777629		
10752472006	**ASH-05-CCR**	EPA 903.1	777629		
10752472007	**ASH-07-CCR**	EPA 903.1	777629		
10752472008	**ASH-07-CCR MS**	EPA 903.1	777629		
10752472009	**ASH-07-CCR MSD**	EPA 903.1	777629		
10752472010	**FD-01-CCR**	EPA 903.1	777629		
10752472001	**ASH-06-CCR**	EPA 904.0	777630		
10752472002	**ASH-03-CCR**	EPA 904.0	777630		
10752472003	**ASH-01-CCR**	EPA 904.0	777630		
10752472004	**ASH-08-CCR**	EPA 904.0	777630		
10752472005	**ASH-04-CCR**	EPA 904.0	777630		
10752472006	**ASH-05-CCR**	EPA 904.0	777630		
10752472007	**ASH-07-CCR**	EPA 904.0	777630		
10752472008	**ASH-07-CCR MS**	EPA 904.0	777630		
10752472009	**ASH-07-CCR MSD**	EPA 904.0	777630		
10752472010	**FD-01-CCR**	EPA 904.0	777630		
10752472001	**ASH-06-CCR**	Total Radium Calculation	782005		
10752472002	**ASH-03-CCR**	Total Radium Calculation	782005		
10752472003	**ASH-01-CCR**	Total Radium Calculation	782005		
10752472004	**ASH-08-CCR**	Total Radium Calculation	782005		
10752472005	**ASH-04-CCR**	Total Radium Calculation	782005		
10752472006	**ASH-05-CCR**	Total Radium Calculation	782005		
10752472007	**ASH-07-CCR**	Total Radium Calculation	782005		
10752472010	**FD-01-CCR**	Total Radium Calculation	782005		

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

RA PA
CCR

Page: 1 of

Section A Required Client Information:

Company:	AECOM
Address:	6200 South Quebec St
	Greenwood Village, CO 80111
Email To:	jamie.herman@aecom.com
Phone: (303) 740-2614	Fax:
Requested Due Date/TAT:	15 Day TAT

Section B Required Project Information:

Report To:	Vasanta Kalluri
Copy To:	Jamie Herman
Purchase Order No:	NEED PO #
Project Name:	60709371 PRPA CCR
Project Number:	60709371

Section C Invoice Information:

Attention:	Accounts Payable
Company Name:	AECOM
Address:	Same as Section A
Pace Quote Reference:	
Pace Project Manager:	Tina Soltani
Pace Profile #:	36715

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: CO

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Requested Analysis Filtered (Y/N): Radium-226	Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	ASH-06-CCR	WT	G	—	—	10/1/25	1106		2			X						N	X	X	X	N	
2	ASH-03-CCR	WT	G	—	—	10/1/25	1240		2			X						N	X	X	X	N	
3	ASH-01-CCR	WT	G	—	—	10/1/25	1400		2			X						N	X	X	X	N	
4	ASH-08-CCR	WT	G	—	—	10/1/25	1420		2			X						N	X	X	X	N	
5	ASH-04-CCR	WT	G	—	—	10/2/25	0930		2			X						N	X	X	X	N	
6	ASH-05-CCR	WT	G	—	—	10/2/25	1020		2			X						N	X	X	X	N	
7	ASH-07-CCR	WT	G	—	—	10/2/25	0950		6			X						N	X	X	X	N	Run MS/MSD
8	FD-01-CCR	WT	G	—	—	10/2/25	—		2			X						N	X	X	X	N	
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	/AECOM	10/2/25	1700		10/3/25	1030	—	N	4	4

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Olivia Helinski & Mackenzie Swift

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 10/02/25

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

updated COC / RWO received 10/13/25 via email - PS

Internal Transfer Chain of Custody

Pace

☐ Rush Multiplier_____X
☐ Samples Pre-Logged into eCOC

State Of Origin: CO
Cert. Needed: ☐ Yes ☐ No

Workorder: 10752472 **Workorder Name:** 60709371 PRPA CCR

Owner Received Date: 10/3/2025 **Results Requested By:** 10/24/2025

Report To	Subcontract To
Tina Soltani Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612) 607-6384	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3 & 4 Greensburg, PA 15601 Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3	Requested Analysis: Radium 226+228 (Pace Pittsburg)	Radium-226 (Pace Pittsburg)	Radium-228 (Pace Pittsburg)	LAB USE ONLY
1	ASH-06-CCR	PS	10/1/2025 11:00	10752472001	Water	2	X	X	X	001
2	ASH-03-CCR	PS	10/1/2025 12:40	10752472002	Water	2	X	X	X	002
3	ASH-01-CCR	PS	10/1/2025 14:00	10752472003	Water	2	X	X	X	003
4	ASH-08-CCR	PS	10/1/2025 14:20	10752472004	Water	2	X	X	X	004
5	ASH-04-CCR	PS	10/2/2025 09:30	10752472005	Water	2	X	X	X	005
6	ASH-05-CCR	PS	10/2/2025 10:20	10752472006	Water	2	X	X	X	006
7	ASH-07-CCR	RQS	10/2/2025 09:50	10752472007	Water	2	X	X	X	007
8	ASH-07-CCR MS	PS	10/2/2025 09:50	10752472008	Water	2		X	X	008
9	ASH-07-CCR MSD	PS	10/2/2025 09:50	10752472009	Water	2		X	X	009
10	FD-01-CCR	PS	10/2/2025 00:00	10752472010	Water	2	X	X	X	010

Transfers	Released By	Date/Time	Received By	Date/Time
1			10	10/3/25 10:30
2				
3				

Comments

Cooler Temperature on Receipt — °C | **Custody Seal** (Y) or N | **Received on Ice** Y or (N) | **Samples Intact** (Y) or N

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

WO# : 30817834

30817834

Pace ANALYTICAL SERVICES

DC#_Title: ENV-FRM-GBUR-0088 v09_Sample C
Greensburg

Effective Date: 06/24/2025

WO# : 30817834

PM: ARG Due Date: 11/03/25
CLIENT: PACE_10_MIMN

Client Name: Pace MN / AECOM Project

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Tracking Number: 8846 1022 2241

Initial / Date
Examined By: PS 10/7/25
Labeled By: PS 10/14/25
Temped By:

Custody Seal on Cooler/Box Present: ☑ Yes ☐ No Seals Intact: ☑ Yes ☐ No

Therm. Used: — Type of Ice: Wet Blue (None)

Cooler Temp: Observed Temp — °C Correction Factor: — °C Final Temp: — °C

Temp should be above freezing to 6°C

pH paper Lot# HC567196 D.P.D. Residual Chlorine Lot #

Comments:	Yes	No	NA	
Chain of Custody Present	✓			1.
Chain of Custody Filled Out:	✓			2.
-Were client corrections present on COC		✓		
Chain of Custody Relinquished	✓			3.
Sampler Name & Signature on COC:	✓			4.
Sample Labels match COC:	✓			5.
-Includes date/time/ID Matrix: WT				
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used:	✓			10.
-Pace Containers Used	✓			
Containers Intact:	✓			11.
Orthophosphate field filtered:			✓	12.
Hex Cr Aqueous samples field filtered:			✓	13.
Organic Samples checked for dechlorination			✓	14:
Filtered volume received for dissolved tests: **Cr6+, Orthophosphate, DOC, Metals**			✓	15:
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, TOX, LL Hg, Radon, non-aqueous matrix	✓			16. PH<2
All containers meet method preservation requirements:	✓			Initial when completed PS Date/Time of Preservation
				Lot# of added Preservative
8260C/D: Headspace in VOA Vials (> 6mm)			—	17.
624.1: Headspace in VOA Vials (0mm)			✓	18.
Radon: Headspace in RAD Vials (0mm)			✓	19.
Trip Blank Present:			✓	Trip blank custody seal present? YES or NO
Rad Samples Screened <.05 mrem/hr.	✓			Initial when completed MS Date: 10/3/25 Survey Meter SN: 25014380

Comments: * 2 bottles received ID: MSD-01-CCR (10/2/25 09:50) Not on COC. used as samples 008 and 009

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office.
PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.

Quality Control Sample Performance Assessment

Pace Analytical
www.pacelabs.com

Test:	Ra-226
Analyst:	TMY
Date:	10/20/2025
Batch ID:	87610
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	3792395
MB concentration:	0.613
M/B 2 Sigma CSU:	0.338
MB MDC:	0.301
MB Numerical Performance Indicator:	3.56
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	#N/A

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS87610	**LCSD87610**
Count Date:	11/5/2025	
Spike I.D.:	25-038	
Spike Concentration (pCi/mL):	31.874	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.654	
Target Conc. (pCi/L, g, F):	4.874	
Uncertainty (Calculated):	0.229	
Result (pCi/L, g, F):	4.180	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.090	
Numerical Performance Indicator:	-1.22	
Percent Recovery:	85.78%	
Status vs Numerical Indicator:	Pass	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	133%	
Lower % Recovery Limits:	73%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:	10/2/2025	
Sample I.D.	10752472007	
Sample MS I.D.	10752472008	
Sample MSD I.D.	10752472009	
Spike I.D.:	25-038	
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	31.876	
Spike Volume Used in MS (mL):	0.20	
Spike Volume Used in MSD (mL):	0.20	
MS Aliquot (L, g, F):	0.661	
MS Target Conc.(pCi/L, g, F):	9.647	
MSD Aliquot (L, g, F):	0.652	
MSD Target Conc. (pCi/L, g, F):	9.772	
MS Spike Uncertainty (calculated):	0.453	
MSD Spike Uncertainty (calculated):	0.459	
Sample Result:	0.000	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.482	
Sample Matrix Spike Result:	12.584	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	2.053	
Sample Matrix Spike Duplicate Result:	11.020	
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.901	
MS Numerical Performance Indicator:	2.669	
MSD Numerical Performance Indicator:	1.215	
MS Percent Recovery:	130.44%	
MSD Percent Recovery:	112.77%	
MS Status vs Numerical Indicator:	Warning	
MSD Status vs Numerical Indicator:	Pass	
MS Status vs Recovery:	Pass	
MSD Status vs Recovery:	Pass	
MS/MSD Upper % Recovery Limits:	136%	
MS/MSD Lower % Recovery Limits:	71%	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:		
Duplicate Sample I.D.		
Sample Result (pCi/L, g, F):		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Duplicate Result (pCi/L, g, F):		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:		
Duplicate RPD:		
Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD:		
% RPD Limit:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.	10752472007	
Sample MS I.D.	10752472008	
Sample MSD I.D.	10752472009	
Sample Matrix Spike Result:	12.584	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	2.053	
Sample Matrix Spike Duplicate Result:	11.020	
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.901	
Duplicate Numerical Performance Indicator:	1.095	
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	14.53%	
MS/ MSD Duplicate Status vs Numerical Indicator:	Pass	
MS/ MSD Duplicate Status vs RPD:	Pass	
% RPD Limit:	32%	

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the RL.

Comments:

TY 11.5.25 DO 11/5/25

Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test:	Ra-228
Analyst:	VAL
Date:	10/21/2025
Worklist:	87611
Matrix:	WT

Method Blank Assessment	
MB Sample ID	3792399
MB concentration:	0.714
M/B 2 Sigma CSU:	0.408
MB MDC:	0.755
MB Numerical Performance Indicator:	3.43
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS87611	LCSD87611
Count Date:	10/29/2025	
Spike I.D.:	23-043	
Decay Corrected Spike Concentration (pCi/mL):	30.829	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.828	
Target Conc. (pCi/L, g, F):	3.723	
Uncertainty (Calculated):	0.182	
Result (pCi/L, g, F):	4.473	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.060	
Numerical Performance Indicator:	1.37	
Percent Recovery:	120.17%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	135%	
Lower % Recovery Limits:	60%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:	10/2/2025	
Sample I.D.	10752472007	
Sample MS I.D.	10752472008	
Sample MSD I.D.	10752472009	
Spike I.D.:	23-043	
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	31.106	
Spike Volume Used in MS (mL):	0.20	
Spike Volume Used in MSD (mL):	0.20	
MS Aliquot (L, g, F):	0.817	
MS Target Conc.(pCi/L, g, F):	7.611	
MSD Aliquot (L, g, F):	0.823	
MSD Target Conc. (pCi/L, g, F):	7.561	
MS Spike Uncertainty (calculated):	0.373	
MSD Spike Uncertainty (calculated):	0.370	
Sample Result:	2.091	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.611	
Sample Matrix Spike Result:	11.109	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	2.258	
Sample Matrix Spike Duplicate Result:	11.261	
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	2.272	
MS Numerical Performance Indicator:	1.164	
MSD Numerical Performance Indicator:	1.324	
MS Percent Recovery:	118.49%	
MSD Percent Recovery:	121.28%	
MS Status vs Numerical Indicator:	Pass	
MSD Status vs Numerical Indicator:	Pass	
MS Status vs Recovery:	Pass	
MSD Status vs Recovery:	Pass	
MS/MSD Upper % Recovery Limits:	135%	
MS/MSD Lower % Recovery Limits:	60%	

Duplicate Sample Assessment		
Sample I.D.:		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.		
Sample Result (pCi/L, g, F):		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Duplicate Result (pCi/L, g, F):		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:		
Duplicate RPD:		
Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD:		
% RPD Limit:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.	10752472007	
Sample MS I.D.	10752472008	
Sample MSD I.D.	10752472009	
Sample Matrix Spike Result:	11.109	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	2.258	
Sample Matrix Spike Duplicate Result:	11.261	
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	2.272	
Duplicate Numerical Performance Indicator:	-0.093	
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	2.33%	
MS/ MSD Duplicate Status vs Numerical Indicator:	Pass	
MS/ MSD Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

~~*If the lowest activity sample in this batch is greater than ten times the blank value, the blank is acceptable, otherwise this batch must be re-prepped.~~ MB activity < MDC, Pass

11/10/31/25 VAL

10/31/25

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

November 03, 2025

Vasanta Kalluri
AECOM
6200 South Quebec Street
Greenwood Village, CO 80111

RE: Project: 60754415 PRPA CCR
Pace Project No.: 10752477

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 2025. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Soltani
tina.soltani@pacelabs.com
(612) 607-6384
Project Manager

Enclosures

cc: Jamie Herman, AECOM
Kara Hoppes, AECOM
Sawyer Hunt, AECOM
Jeremy Hurshman, AECOM

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 60754415 PRPA CCR
Pace Project No.: 10752477

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
ANABISO/IEC 17025:2017 Rad Cert#: L24170
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 2950
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA010
Louisiana DEQ/TNI Certification #: 04086
Maine Certification #: 2023021
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572023-03
New Hampshire/TNI Certification #: 297622
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-015
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN02867
Texas/TNI Certification #: T104704188-22-18
Utah/TNI Certification #: PA014572223-14
USDA Soil Permit #: 525-23-67-77263
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad

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Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 60754415 PRPA CCR
Pace Project No.: 10752477

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10752477001	**ERB-01-CCR**	Water	10/02/25 10:50	10/03/25 10:30
10752477002	**ASH-02-CCR**	Water	10/02/25 12:20	10/03/25 10:30
10752477003	**BAT-04R-CCR**	Water	10/02/25 13:45	10/03/25 10:30
10752477004	**BAT-04R-CCR MS**	Water	10/02/25 13:45	10/03/25 10:30
10752477005	**BAT-04R-CCR MSD**	Water	10/02/25 13:45	10/03/25 10:30

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SAMPLE ANALYTE COUNT

Project: 60754415 PRPA CCR
Pace Project No.: 10752477

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10752477001	**ERB-01-CCR**	EPA 903.1	DSO	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
10752477002	**ASH-02-CCR**	EPA 903.1	DSO	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
10752477003	**BAT-04R-CCR**	EPA 903.1	DSO	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
10752477004	**BAT-04R-CCR MS**	EPA 903.1	DSO	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
10752477005	**BAT-04R-CCR MSD**	EPA 903.1	DSO	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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(612)607-1700

SUMMARY OF DETECTION

Project: 60754415 PRPA CCR
Pace Project No.: 10752477

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10752477001	**ERB-01-CCR**					
EPA 903.1	Radium-226	-0.0474 ± 0.383 (0.790) C:NA T:99%	pCi/L		10/30/25 15:19	
EPA 904.0	Radium-228	1.08 ± 0.572 (1.04) C:78% T:73%	pCi/L		10/28/25 11:30	
Total Radium Calculation	Total Radium	1.08 ± 0.955 (1.83)	pCi/L		10/31/25 13:11	
10752477002	**ASH-02-CCR**					
EPA 903.1	Radium-226	0.383 ± 0.493 (0.821) C:NA T:98%	pCi/L		10/30/25 15:19	
EPA 904.0	Radium-228	0.481 ± 0.435 (0.889) C:84% T:79%	pCi/L		10/28/25 11:30	
Total Radium Calculation	Total Radium	0.864 ± 0.928 (1.71)	pCi/L		10/31/25 13:11	
10752477003	**BAT-04R-CCR**					
EPA 903.1	Radium-226	0.319 ± 0.297 (0.392) C:NA T:94%	pCi/L		10/30/25 15:19	
EPA 904.0	Radium-228	0.665 ± 0.387 (0.708) C:88% T:85%	pCi/L		10/28/25 11:30	
Total Radium Calculation	Total Radium	0.984 ± 0.684 (1.10)	pCi/L		10/31/25 13:11	
10752477004	**BAT-04R-CCR MS**					
EPA 903.1	Radium-226	91.61 %REC ± NA (NA) C:NA T:NA	pCi/L		10/30/25 15:19	
EPA 904.0	Radium-228	116.87 %REC ± NA (NA) C:NA T:NA	pCi/L		10/28/25 11:30	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 60754415 PRPA CCR
Pace Project No.: 10752477

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10752477005	**BAT-04R-CCR MSD**					
EPA 903.1	Radium-226	107.93 %REC 16.35RPD ± NA (NA) C:NA T:NA	pCi/L		10/30/25 15:19	
EPA 904.0	Radium-228	101.50 %REC 14.08RPD ± NA (NA) C:NA T:NA	pCi/L		10/28/25 11:30	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752477

Sample: ERB-01-CCR **Lab ID: 10752477001** Collected: 10/02/25 10:50 Received: 10/03/25 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.0474 ± 0.383 (0.790) C:NA T:99%**	pCi/L	10/30/25 15:19	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.08 ± 0.572 (1.04) C:78% T:73%**	pCi/L	10/28/25 11:30	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.08 ± 0.955 (1.83)**	pCi/L	10/31/25 13:11	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752477

Sample: ASH-02-CCR **Lab ID: 10752477002** Collected: 10/02/25 12:20 Received: 10/03/25 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.383 ± 0.493 (0.821) C:NA T:98%**	pCi/L	10/30/25 15:19	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.481 ± 0.435 (0.889) C:84% T:79%**	pCi/L	10/28/25 11:30	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.864 ± 0.928 (1.71)**	pCi/L	10/31/25 13:11	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752477

Sample: BAT-04R-CCR **Lab ID: 10752477003** Collected: 10/02/25 13:45 Received: 10/03/25 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.319 ± 0.297 (0.392) C:NA T:94%**	pCi/L	10/30/25 15:19	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.665 ± 0.387 (0.708) C:88% T:85%**	pCi/L	10/28/25 11:30	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.984 ± 0.684 (1.10)**	pCi/L	10/31/25 13:11	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752477

Sample: BAT-04R-CCR MS **Lab ID: 10752477004** Collected: 10/02/25 13:45 Received: 10/03/25 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**91.61 %REC ± NA (NA) C:NA T:NA**	pCi/L	10/30/25 15:19	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**116.87 %REC ± NA (NA) C:NA T:NA**	pCi/L	10/28/25 11:30	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752477

Sample: BAT-04R-CCR MSD **Lab ID: 10752477005** Collected: 10/02/25 13:45 Received: 10/03/25 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**107.93 %REC 16.35RPD ± NA (NA) C:NA T:NA**	pCi/L	10/30/25 15:19	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**101.50 %REC 14.08RPD ± NA (NA) C:NA T:NA**	pCi/L	10/28/25 11:30	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752477

QC Batch: 777314
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 10752477001, 10752477002, 10752477003, 10752477004, 10752477005

METHOD BLANK: 3790674 Matrix: Water
Associated Lab Samples: 10752477001, 10752477002, 10752477003, 10752477004, 10752477005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0393 ± 0.204 (0.423) C:NA T:96%	pCi/L	10/30/25 15:19	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 60754415 PRPA CCR
Pace Project No.: 10752477

QC Batch: 777315
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 10752477001, 10752477002, 10752477003, 10752477004, 10752477005

METHOD BLANK: 3790676 Matrix: Water
Associated Lab Samples: 10752477001, 10752477002, 10752477003, 10752477004, 10752477005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.620 ± 0.375 (0.685) C:78% T:88%	pCi/L	10/28/25 11:30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 60754415 PRPA CCR
Pace Project No.: 10752477

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
1700 Elm Street
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60754415 PRPA CCR
Pace Project No.: 10752477

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10752477001	**ERB-01-CCR**	EPA 903.1	777314		
10752477002	**ASH-02-CCR**	EPA 903.1	777314		
10752477003	**BAT-04R-CCR**	EPA 903.1	777314		
10752477004	**BAT-04R-CCR MS**	EPA 903.1	777314		
10752477005	**BAT-04R-CCR MSD**	EPA 903.1	777314		
10752477001	**ERB-01-CCR**	EPA 904.0	777315		
10752477002	**ASH-02-CCR**	EPA 904.0	777315		
10752477003	**BAT-04R-CCR**	EPA 904.0	777315		
10752477004	**BAT-04R-CCR MS**	EPA 904.0	777315		
10752477005	**BAT-04R-CCR MSD**	EPA 904.0	777315		
10752477001	**ERB-01-CCR**	Total Radium Calculation	781063		
10752477002	**ASH-02-CCR**	Total Radium Calculation	781063		
10752477003	**BAT-04R-CCR**	Total Radium Calculation	781063		

CCR RA

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www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company:	AECOM
Address:	6200 South Quebec St
	Greenwood Village, CO 80111
Email To:	jamie.herman@aecom.com
Phone: (303) 740-2614	Fax:
Requested Due Date/TAT:	15 Day TAT

Section B Required Project Information:

Report To:	Vasanta Kalluri
Copy To:	Jamie Herman
Purchase Order No.:	1717889
Project Name:	~~60754422~~ PRPA ~~CDPHE~~ CCR 60709371
Project Number:	~~60754422~~ 60709371

Section C Invoice Information:

Attention:	Accounts Payable
Company Name:	AECOM
Address:	Same as Section A
Pace Quote Reference:	73141
Pace Project Manager:	Heather Wilson
Pace Profile #:	11033, 8

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER CCR

Site Location STATE: CO

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test: Total Radium-226	Total Radium-228	Sum Radium-226 & 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	ERB-01-CCR	WT	G	—	—	10/2/25	1050		2			X						N	X	X	X	N	~~001~~
2	ASH-02-CCR	WT	G	—	—	10/2/25	1220		2			X						N	X	X	X	N	002
3	BAT-04R-CCR	WT	G	—	—	10/2/25	1345		6			X						N	X	X	X	N	MS/MSD ~~003~~
4																							ES 10-7-25
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
RUN MS/MSD ON BAT-04R-CCR	[signature] / AECOM	10/2/25	1700	Mackenzie Swift	10/3/25	10:30	—	N	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Olivia Helinski, Mackensie Swift, ~~Kara Hoppes~~

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 10/02/25

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

new COC/ updated received 10-13-25 by email ES

Internal Transfer Chain of Custody

Rush Multiplier____X

Samples Pre-Logged into eCOC

State Of Origin: CO

Cert. Needed: Yes No

Owner Received Date: 10/3/2025 Results Requested By: 10/24/2025

Workorder: 10752477 Workorder Name: 60709371 PRPA CCR

Report To	Subcontract To
Tina Soltani Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612) 607-6384	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3 & 4 Greensburg, PA 15601 Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers HNO3						Requested Analysis: Radium 226+228 (Pace PIttsburg)	Radium-226 (Pace PIttsburg)	Radium-228 (Pace PIttsburg)										LAB USE ONLY
1	ERB-01-CCR	PS	10/2/2025 10:50	10752477001	Water	2						X	X	X										001
2	ASH-02-CCR	PS	10/2/2025 12:20	10752477002	Water	2						X	X	X										002
3	BAT-04R-CCR	RQS	10/2/2025 13:45	10752477003	Water	2						X	X	X										003
4	BAT-04R-CCR MS	PS	10/2/2025 13:45	10752477004	Water	2							X	X										004
5	BAT-04R-CCR MSD	PS	10/2/2025 13:45	10752477005	Water	2							X	X										005

Transfers	Released By	Date/Time	Received By	Date/Time
1				
2				
3				

Comments

Cooler Temperature on Receipt ___ °C | Custody Seal Y or (N) | Received on Ice Y or (N) | Samples Intact (Y) or N

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

WO# : 30817865

30817865

Pace ANALYTICAL SERVICES

DC#_Title: ENV-FRM-GBUR-0088 v09_Sample Con
Greensburg

Effective Date: 06/24/2025

WO# : 30817865

PM: ARG Due Date: 10/27/25
CLIENT: PACE_10_MIMN

Client Name: AECOM **Project #:**

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Tracking Number: 8846 1028 5350

Initial / Date

Examined By: ES 10-7-25
Labeled By: ES 10-13-25
Temped By: —

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No **Seals Intact:** ☐ Yes ☑ No
Therm. Used: — **Type of Ice:** Wet Blue (None)
Cooler Temp: Observed Temp — °C Correction Factor: — °C Final Temp: — °C
Temp should be above freezing to 6°C

Comments:	Yes	No	NA	pH paper Lot# 10D43241 / D.P.D. Residual Chlorine Lot # —
Chain of Custody Present	/			1.
Chain of Custody Filled Out:	/			2.
-Were client corrections present on COC	/	X ES 10-7-25		
Chain of Custody Relinquished	/			3.
Sampler Name & Signature on COC:	/			4.
Sample Labels match COC: -Includes date/time/ID Matrix: WT	/			5.
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):		/		7.
Rush Turn Around Time Requested:		/		8.
Sufficient Volume:	/			9.
Correct Containers Used:	/			10.
-Pace Containers Used	/			
Containers Intact:	/			11.
Orthophosphate field filtered:			/	12.
Hex Cr Aqueous samples field filtered:			/	13.
Organic Samples checked for dechlorination			/	14:
Filtered volume received for dissolved tests: **Cr6+, Orthophosphate, DOC, Metals**			/	15:
All containers checked for preservation:	/			16.
exceptions: VOA, coliform, TOC, O&G, TOX, LL Hg, Radon, non-aqueous matrix				pH < 2
All containers meet method preservation requirements:	/			Initial when completed ES / Date/Time of Preservation / Lot# of added Preservative
8260C/D: Headspace in VOA Vials (> 6mm)			/	17.
624.1: Headspace in VOA Vials (0mm)			/	18.
Radon: Headspace in RAD Vials (0mm)			/	19.
Trip Blank Present:			/	Trip blank custody seal present? YES or NO
Rad Samples Screened <.05 mrem/hr.	✓			Initial when completed MS / Date: 10/3/25 / Survey Meter SN: 2501438 0

Comments:

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office.
PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.

Quality Control Sample Performance Assessment

Pace Analytical
www.pacelabs.com

Test:	Ra-226
Analyst:	DSO
Date:	10/20/2025
Batch ID:	87582
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	3790674
MB concentration:	0.039
M/B 2 Sigma CSU:	0.204
MB MDC:	0.423
MB Numerical Performance Indicator:	0.38
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS87582	LCSD87582
Count Date:	10/30/2025	
Spike I.D.:	25-038	
Spike Concentration (pCi/mL):	31.875	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.657	
Target Conc. (pCi/L, g, F):	4.851	
Uncertainty (Calculated):	0.228	
Result (pCi/L, g, F):	4.872	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.134	
Numerical Performance Indicator:	0.03	
Percent Recovery:	100.42%	
Status vs Numerical Indicator:	Pass	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	133%	
Lower % Recovery Limits:	73%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:	10/2/2025	
Sample I.D.	10752477003	
Sample MS I.D.	10752477004	
Sample MSD I.D.	10752477005	
Spike I.D.:	25-036	
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	31.876	
Spike Volume Used in MS (mL):	0.20	
Spike Volume Used in MSD (mL):	0.20	
MS Aliquot (L, g, F):	0.503	
MS Target Conc.(pCi/L, g, F):	12.665	
MSD Aliquot (L, g, F):	0.513	
MSD Target Conc. (pCi/L, g, F):	12.419	
MS Spike Uncertainty (calculated):	0.595	
MSD Spike Uncertainty (calculated):	0.584	
Sample Result:	0.319	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.297	
Sample Matrix Spike Result:	11.922	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	2.123	
Sample Matrix Spike Duplicate Result:	13.723	
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	2.341	
MS Numerical Performance Indicator:	-0.936	
MSD Numerical Performance Indicator:	0.794	
MS Percent Recovery:	91.61%	
MSD Percent Recovery:	107.93%	
MS Status vs Numerical Indicator:	Pass	
MSD Status vs Numerical Indicator:	Pass	
MS Status vs Recovery:	Pass	
MSD Status vs Recovery:	Pass	
MS/MSD Upper % Recovery Limits:	136%	
MS/MSD Lower % Recovery Limits:	71%	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:		
Duplicate Sample I.D.		
Sample Result (pCi/L, g, F):		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Duplicate Result (pCi/L, g, F):		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:		
Duplicate RPD:		
Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD:		
% RPD Limit:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.	10752477003	
Sample MS I.D.	10752477004	
Sample MSD I.D.	10752477005	
Sample Matrix Spike Result:	11.922	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	2.123	
Sample Matrix Spike Duplicate Result:	13.723	
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	2.341	
Duplicate Numerical Performance Indicator:	-1.117	
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	16.35%	
MS/ MSD Duplicate Status vs Numerical Indicator:	Pass	
MS/ MSD Duplicate Status vs RPD:	Pass	
% RPD Limit:	32%	

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the RL.

Comments:

TH 10.30.25

Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Test:	Ra-228
Analyst:	JJS1
Date:	10/21/2025
Worklist:	87583
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	3790676
MB concentration:	0.620
M/B 2 Sigma CSU:	0.375
MB MDC:	0.685
MB Numerical Performance Indicator:	3.24
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS87583	LCSD87583
Count Date:	10/28/2025	
Spike I.D.:	23-043	
Decay Corrected Spike Concentration (pCi/mL):	30.838	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.827	
Target Conc. (pCi/L, g, F):	3.728	
Uncertainty (Calculated):	0.183	
Result (pCi/L, g, F):	2.844	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.788	
Numerical Performance Indicator:	-2.14	
Percent Recovery:	76.29%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	135%	
Lower % Recovery Limits:	60%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:	10/2/2025	
Sample I.D.	10752477003	
Sample MS I.D.	10752477004	
Sample MSD I.D.	10752477005	
Spike I.D.:	23-043	
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	31.104	
Spike Volume Used in MS (mL):	0.20	
Spike Volume Used in MSD (mL):	0.20	
MS Aliquot (L, g, F):	0.805	
MS Target Conc.(pCi/L, g, F):	7.723	
MSD Aliquot (L, g, F):	0.817	
MSD Target Conc. (pCi/L, g, F):	7.612	
MS Spike Uncertainty (calculated):	0.378	
MSD Spike Uncertainty (calculated):	0.373	
Sample Result:	0.665	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.387	
Sample Matrix Spike Result:	9.691	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.952	
Sample Matrix Spike Duplicate Result:	8.391	
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.729	
MS Numerical Performance Indicator:	1.261	
MSD Numerical Performance Indicator:	0.124	
MS Percent Recovery:	116.87%	
MSD Percent Recovery:	101.50%	
MS Status vs Numerical Indicator:	Pass	
MSD Status vs Numerical Indicator:	Pass	
MS Status vs Recovery:	Pass	
MSD Status vs Recovery:	Pass	
MS/MSD Upper % Recovery Limits:	135%	
MS/MSD Lower % Recovery Limits:	60%	

Duplicate Sample Assessment		
Sample I.D.:		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.		
Sample Result (pCi/L, g, F):		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Duplicate Result (pCi/L, g, F):		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:		
Duplicate RPD:		
Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD:		
% RPD Limit:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.	10752477003
Sample MS I.D.	10752477004
Sample MSD I.D.	10752477005
Sample Matrix Spike Result:	9.691
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.952
Sample Matrix Spike Duplicate Result:	8.391
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.729
Duplicate Numerical Performance Indicator:	0.977
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	14.08%
MS/ MSD Duplicate Status vs Numerical Indicator:	Pass
MS/ MSD Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

*If ~~the lowest activity sample in this batch is greater than ten times the blank value, the blank is acceptable; otherwise this batch must be re-prepped.~~

MB < MDC
pass
MH 10/29/25

VAL
10/29/25

Data Validation Report

Project/Site: Platte River Power Authority/CCR Ash Wells
Validating Chemist: Manasa M B
Secondary Review Chemist: Jamie Herman

Event: 2SA Groundwater 2025
Date: 12/10/2025
Date: 12/17/2025

Introduction:

This validation report documents the data review through the checklists below. Further identification and explanation of the anomalies identified through the validation process are provided following each section of the checklist, as needed.

The field sample and laboratory identification associations are summarized in Table 1. Qualified data are summarized and presented in Table 2. Data were qualified per the qualifiers and reason codes presented in Attachment A.

In instances where multiple validation qualifiers were applied with an associated bias (J+ or J-), the final validation qualifier reflects the overall bias considering all qualifications. For example, if a sample was qualified with both a high (J+) and low bias (J-), the overall qualification was J with no affiliated bias.

Laboratory and Sample Delivery Groups (SDGs):

Pace Analytical Services in LLC-Minneapolis MN – 10751845, 10751974, 10752029

Pace Analytical Services in Greensburg, Pennsylvania – 10752472, 10752477

Analytical Methods Validated:

Anions (chloride, sulfate, fluoride) by EPA Method 300.0, total metals (select list) by EPA Method 6020B, total mercury by EPA Method 7470A, total dissolved solids (TDS) by SM2540C, radium-226 by EPA Method 903.1, radium-228 by EPA method 904.0, and total radium calculation (TRC).

Validation:

Stage 2A Validation

Validation Guidance Documents:

The data review was conducted in accordance with *National Functional Guidelines for Inorganic Superfund Methods Data Review* (EPA November 2020), and evaluation of laboratory criteria, as applicable.

Overall Assessment of Data:

As no data was missing or qualified as unusable during the validation process, the overall assessment of data was acceptable at 100%. Qualified data are summarized and presented in Table 2.

Data Validation Report

Project/Site: Platte River Power Authority/CCR Ash Wells
Validating Chemist: Manasa M B
Secondary Review Chemist: Jamie Herman

Event: 2SA Groundwater 2025
Date: 12/10/2025
Date: 12/17/2025

1.0 Sample Documentation and Case Narrative

Sample Documentation Criteria	Yes	No	NA
Were all samples documented correctly on the chain-of-custody (COC) and container labels?	X		
Were sample analyses completed per the COC?	X[1]		
Were samples extracted and analyzed within the method required holding times?	X		
Laboratory Case Narrative	**Yes**	**No**	**NA**
Were there additional narrative clarifications made by the laboratory, not addressed within this validation?	X[1]		

1. **Data Packages 10752029 and 10752477:** Both ASH and BAT wells were included on the same COC and reported by the laboratory. Only the ASH well is evaluated within this validation report; the BAT well is evaluated under a separate cover.

   Data Package 10751845 and 10751974: The dry residue obtained for TDS analysis did not meet Method SM2540C requirements for samples ASH-03-CCR, ASH-08-CCR, ASH-07-CCR, ASH-04-CCR, ASH-05-CCR, FD-01-CCR, and ERB-01-CCR. The associated results were qualified as estimated (J/UJ pr).

Data Validation Report

Project/Site: Platte River Power Authority/CCR Ash Wells
Validating Chemist: Manasa M B
Secondary Review Chemist: Jamie Herman

Event: 2SA Groundwater 2025
Date: 12/10/2025
Date: 12/17/2025

2.0 Quality Control and Performance Checks

Stage 2A Validation Criteria			
Method Blank Criteria	**Yes**	**No**	**NA**
Was a method blank analyzed for each batch, as applicable to the method?	X		
Were method blank concentrations reported as not detected or less than the MDC?		X[1]	
Laboratory Control Sample Criteria	**Yes**	**No**	**NA**
Was an LCS reported with each preparation batch, as applicable to the method?	X		
Were LCS/LCSD recoveries and/or RPDs within acceptance criteria?	X		
Matrix Spike/Matrix Spike Duplicates Criteria	**Yes**	**No**	**NA**
Was an MS/MSD performed on a project specific sample?*	X		
Parent Sample	**Method**		
ASH-07-CCR	7470A, 6020B, 300.0, 903.1, 904.0, TRC		
For concentrations <4x the spike concentration, were MS/MSD recoveries and RPDs within acceptance criteria?		X[1]	
Spike recovery limits and RPDs are not applicable when the parent sample concentration is ≥ 4x the spike added. The data is reported without qualification.			
Laboratory Duplicate Criteria – As applicable to the analytical method	**Yes**	**No**	**NA**
Was a laboratory duplicate performed on a project specific sample?	X		
If both the parent sample and duplicate values were >5xRL, was laboratory duplicate RPD within laboratory acceptance criteria?	X		
If either the parent sample or duplicate value was <5xRL, was the absolute difference within acceptance criteria of <2xRL for waters, and <3.5xRL for solids?			X
For radiological parameters, was the DER agreement between parent sample results and laboratory duplicate sample results ≤2?			X
Tracery/Carrier Recovery - Radiological	**Yes**	**No**	**NA**
The sample specific recoveries were within the laboratory limits (30-110%).	X		

* MS/MSD performed on project specific field samples were evaluated.

1. The following method blanks were reported with detected concentrations for the target analyte(s):

Blank Identification	Method	Analyte	Blank Concentration	RL/MDC	Unit
Data Package 10752472					
MB 3792395	903.1	Radium-226	0.613 ± 0.338	0.301	pCi/L

The associated sample results were qualified as estimated (J bl).

2. The following matrix spike samples were outside QC acceptance criteria.

Matrix Spike Identification	Method	Analyte	Recovery	Recovery Criteria	RPD	RPD Criteria
Data Package 10751974						
ASH-07-CCR	300.0	Sulfate	116/**122**	80-120	4	20

Where the MS recovery was greater than the upper acceptance limit, the associated detected results were qualified as estimated (J+ m) to demonstrate the potential high bias.

Data Validation Report

Project/Site: Platte River Power Authority/CCR Ash Wells
Validating Chemist: Manasa M B
Secondary Review Chemist: Jamie Herman

Event: 2SA Groundwater 2025
Date: 12/10/2025
Date: 12/17/2025

3.0 Field Quality Control Samples

Field QC Blank Criteria	Yes	No	NA
Was a trip blank shipped with, and analyzed with the samples?			X
Were trip blank concentrations reported as non-detect for target analytes?			X
Were field and/or equipment blanks collected and analyzed with the samples?	X		
Were field QC blank concentrations reported as non-detect or less than the MDC for radiological parameters, for the target analytes?		X[1]	
Field Duplicate Criteria	**Yes**	**No**	**NA**
Were field duplicate samples collected for this sampling event?	X		
Parent Sample / **Field Duplicate Sample**			
ASH-05-CCR / FD-01-CCR			
If both the parent sample and/field duplicate sample results were >5xRL were the RPDs within the acceptance criteria of ≤30%?	X		
If either the parent sample or duplicate value was <5xRL, was the absolute difference within the acceptance criteria of <2xRL?	X		
For radiological parameters, was the DER agreement between parent sample results and field duplicate sample results ≤2?	X		

1. The following analytes were reported as detected in the equipment blank:

Blank Identification	Method	Analyte	Blank result	Associated samples	Sample result	Unit
Data Package 10752477						
ERB-01-CCR	904.0	Radium-228	1.08	ASH-02-CCR	0.481	pCi/L

The associated sample results were qualified as estimated (J be) due to equipment blank contamination.

Data Validation Report

Project/Site: Platte River Power Authority/CCR Ash Wells
Validating Chemist: Manasa M B
Secondary Review Chemist: Jamie Herman
Event: 2SA Groundwater 2025
Date: 12/10/2025
Date: 12/17/2025

4.0 Sensitivity, Additional Qualification, and Completeness

Sensitivity Criteria	**Yes**	**No**	**NA**
Did all analytes meet sensitivity requirements?		X[1]	
For radiological parameters, if the associated uncertainty was greater than the reported result, the 2 sigma (σ) uncertainty multiplied by 1.65 was less than or equal to the MDC?	X		
Additional Qualification Criteria	**Yes**	**No**	**NA**
Was professional judgment used to qualify data?		X	
Were multiple results reported for a single analyte?		X	
Total vs Dissolved Analyses	**Yes**	**No**	**NA**
Was the dissolved concentration greater than the total concentration?			X
If either sample result was >5xRL, were the RPDs within ≤30%?			X
If either sample result was <5xRL, was the absolute difference within 2xRL?			X
Completeness Criteria	**Yes**	**No**	**NA**
Were the reported results usable if qualified?	X		
Were the analyses requested performed, the correct analyte lists used, and correct sample preparation and analyses methods and units utilized?	X		

1. Several samples were reported as non-detect at elevated reporting limits. These non-detect results will need to be evaluated with respect to project objectives.

Table 1 – Sample Summary and Laboratory Association

Sample Identification	Collection Date	Laboratory Identification	Sample Type
Data Package 10751845			
ASH-06-CCR	10/01/2025	10751845001	Normal
ASH-03-CCR	10/01/2025	10751845002	Normal
ASH-08-CCR	10/01/2025	10751845003	Normal
ASH-01-CCR	10/01/2025	10751845004	Normal
Data Package 10751974			
ASH-07-CCR	10/02/2025	10751974001	Normal
ASH-04-CCR	10/02/2025	10751974002	Normal
ASH-05-CCR	10/02/2025	10751974003	Normal
FD-01-CCR	10/02/2025	10751974004	Field Duplicate
ERB-01-CCR	10/02/2025	10751974005	Equipment Blank
Data Package 60475047			
ASH-06-CCR	10/01/2025	10752472001	Normal
ASH-03-CCR	10/01/2025	10752472002	Normal
ASH-01-CCR	10/01/2025	10752472003	Normal
ASH-08-CCR	10/01/2025	10752472004	Normal
ASH-04-CCR	10/02/2025	10752472005	Normal
ASH-05-CCR	10/02/2025	10752472006	Normal
ASH-07-CCR	10/02/2025	10752472007	Matrix Spike
FD-01-CCR	10/02/2025	10752472010	Field Duplicate
Data Package 10752029			
ASH-02-CCR	10/02/2025	10752029001	Normal
Data Package 10752477			
ERB-01-CCR	10/02/2025	10752477001	Equipment Blank
ASH-02-CCR	10/02/2025	10752477002	Normal

Table 2 – Summary of Qualified Sample Results

Sample Identification	Laboratory Identification	Analytical Method	Analyte	Result	Unit	Qualifier	Reason
ASH-03-	10751845002	SM2540C	Total	5110	mg/L	J	pr
ASH-08-	10751845003	SM2540C	Total	4410	mg/L	J	pr
ASH-07-	10751974001	E300.0	Sulfate	4210	mg/L	J+	m
ASH-07-	10751974001	SM2540C	Total	5430	mg/L	J	pr
ASH-04-	10751974002	SM2540C	Total	5210	mg/L	J	pr
ASH-05-	10751974003	SM2540C	Total	4440	mg/L	J	pr
FD-01-	10751974004	SM2540C	Total	4650	mg/L	J	pr
ERB-01-	10751974005	SM2540C	Total	ND	mg/L	UJ	pr
ASH-06-	10752472001	E903.1	Radium-	0.355	pCi/L	J	bl
ASH-03-	10752472002	E903.1	Radium-	0.107	pCi/L	J	bl
ASH-01-	10752472003	E903.1	Radium-	-0.0490	pCi/L	J	bl
ASH-08-	10752472004	E903.1	Radium-	-0.256	pCi/L	J	bl
ASH-04-	10752472005	E903.1	Radium-	0.960	pCi/L	J	bl
ASH-05-	10752472006	E903.1	Radium-	0.112	pCi/L	J	bl
ASH-07-	10752472007	E903.1	Radium-	0.000	pCi/L	J	bl
FD-01-	10752472010	E903.1	Radium-	0.725	pCi/L	J	bl
ASH-02-	10752477002	E904.0	Radium-	0.481	pCi/L	J	be

ATTACHMENT A

DATA QUALIFIER DEFINITIONS

U The analyte was analyzed for but was not detected above the reported sample quantitation limit, or the sample result was considered not-detected due to associated blank contamination.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

J+ The result is an estimated quantity, but the result may be biased high.

J- The result is an estimated quantity, but the result may be biased low.

UJ The analyte was analyzed for but was not detected. The reported sample quantitation limit is approximate and may be inaccurate or imprecise.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control (QC) criteria. The analyte may or may not be present in the sample.

DATA QUALIFIER REASON CODE DEFINITIONS

be Equipment blank contamination
bf Field blank contamination
bl Laboratory blank contamination
bm Missing Blank Information
c Calibration issue
cl Clean-up standard recovery
cp Insufficient growth (radiochemical data only)
cr Chromatographic resolution
d Reporting limit raised due to chromatographic interference
dt Dissolved result > total over limit
fd Field duplicate imprecision
g Chromatographic pattern match issue
h Holding times
i Internal standard areas
ii Injection internal standard area or retention time exceedance
k Estimated Maximum Possible Concentrations
l LCS recoveries
lc Labeled compound recovery
ld Laboratory duplicate imprecision (matrix duplicate, MSD, LCSD)
lq Level of quantitation/trace value
m Matrix spike recovery
nb Negative laboratory blank contamination
p Chemical preservation issue
pe Post Extraction Spike
pr Professional Judgement
q Quantitation issue
r Dual column RPD
rp Re-extraction precision issue [PAHs only]
rt SIM ions not within + 2 seconds
s Surrogate recovery
sp Sample preparation issue
su Evidence of ion suppression
t Temperature Preservation Issue
u High combined sample result uncertainty (radiochemical data Only)
v compound identification issue
x Low % solids
y Serial dilution results
z ICS results

Appendix D

Groundwater Velocity Calculation Sheet

Hydraulic Gradient Calculations
Ash Monofill
Platte River Power Authority, Rawhide Station

Darcy
$V = Ki/n_e$

V = Velocity
K = Average Hydraulic Conductivity in ft/day
i = delta (height) / delta (length) (change in GW elevation / length of line drawn)
n_e = Effective Porosity (15% for fractured Pierre shale)

Average Hydraulic Conductivity

April ASH		September/October ASH	
K =	0.935	K =	0.935
dH	70.7	dH	73.41
dL	4850	dL	4850
n_e	0.15	n_e	0.15
GW Velocity =	9.087E-02	GW Velocity =	9.435E-02

Average	9.261E-02

Notes:
ASH wells gradient between ASH-01 and ASH-02 for dH and dL

Gradient	ASH-01 to ASH-02
April 2025	0.01457732
September/October 2025	0.015136082
Average	0.014856701

Low Hydraulic Conductivity

April ASH		September/October ASH	
K =	0.085	K =	0.085
dH	70.7	dH	73.41
dL	4850	dL	4850
n_e	0.15	n_e	0.15
GW Velocity =	8.260E-03	GW Velocity =	8.577E-03
average:	8.419E-03		

Max Hydraulic Conductivity

April ASH		September/October ASH	
K =	1.44	K =	1.44
dH	70.7	dH	73.41
dL	4850	dL	4850
n_e	0.15	n_e	0.15
GW Velocity =	1.399E-01	GW Velocity =	1.453E-01
average:	1.426E-01		

Notes:
K values take from following wells: ASH-06, ASH-07, ASH-08
low = 0.085 ft/day
high = 1.44 ft/day
average = 0.935

Appendix E

Statistical Analysis Results and Input/Output Files

Location_ID	Date	Boron	D_Boron	Calcium	D_Calcium	Chloride	D_Chloride	Fluoride	D_Fluoride	pH	D_pH	Sulfate	D_Sulfate	TDS	D_TDS
ASH-01	9/13/16	500	1	380000	1	29	1	0.12	1	6.74	1	2100	1	3600	1
ASH-01	11/3/16	460	1	360000	1	25	1	0.2	0	6.92	1	2100	1	3400	1
ASH-01	12/20/16	450	1	330000	1	24	1	1.65	1	7.03	1	2100	1	3500	1
ASH-01	2/8/17	500	1	350000	1	25	1	0.39	1	6.94	1	2100	1	3500	1
ASH-01	4/5/17	580	1	370000	1	25	1	0.2	1	7.3	1	2200	1	3600	1
ASH-01	5/10/17	540	1	340000	1	22	1	0.29	1	7.2	1	2000	1	3600	1
ASH-01	6/15/17	630	1	370000	1	21	1	0.56	1	6.55	1	2000	1	3600	1
ASH-01	7/12/17	470	1	320000	1	20	1	0.2	0	7.22	1	1900	1	3900	1
ASH-01	6/21/18	520	1	339000	1	19	1	0.33	1	7.14	1	2520	1	3350	1
ASH-01	10/10/18	471	1	355000	1	19.4	1	0.23	1			1710	1	3190	1
ASH-01	5/2/19	489	1	363000	1	20.2	1	0.2	0	7.31	1	1	0	3250	1
ASH-01	7/10/19	474	1	375000	1	19.6	1	0.2	0	9.63	1	2000	1	3450	1
ASH-01	10/8/19	462	1	346000	1			0.2	0					3290	1
ASH-01	4/14/20	486	1	381000	1	23.1	1	0.24	1	7.93	1	2000	1	3250	1
ASH-01	10/5/20	487	1	329000	1	23	1	0.24	1	7.31	1	2100	1	3330	1
ASH-01	4/21/21	457	1	326000	1	23.6	1	0.2	0	7.29	1	1950	1	3250	1
ASH-01	10/19/21	494	1	369000	1	25.4	1	0.2	0	7.07	1	2040	1	3420	1
ASH-06	1/24/19	288	1	27500	1	7.8	1	0.84	1	9.25	1	104	1	487	1
ASH-06	5/6/19	283	1	26700	1	7.8	1	0.79	1	8	1	75.7	1	384	1
ASH-06	7/18/19	326	1	28900	1	9.7	1	0.69	1	8.28	1	197	1	634	1
ASH-06	10/8/19	324	1	26700	1			0.81	1					515	1
ASH-06	1/15/20	304	1	24300	1	7	1	0.72	1	7.47	1	68.3	1	500	1
ASH-06	4/20/20	308	1	24100	1	7	1	0.69	1	8.19	1	63.6	1	443	1
ASH-06	7/22/20					7.9	1	0.77	1	7.71	1	101	1	472	1
ASH-06	7/24/20	334	1	37600	1					7.71	1				
ASH-06	10/16/20	312	1	24500	1	7.7	1	0.84	1	7.22	1	82.8	1	417	1
ASH-06	10/20/20														
ASH-06	1/6/21	334	1	27000	1	7.9	1	0.76	1	7.95	1	77.8	1	449	1
ASH-06	4/7/21	310	1	25800	1	7	1	0.2	1	8.04	1	81.8	1	485	1
ASH-06	4/12/21														
ASH-06	10/11/21	290	1	23200	1	6.9	1	0.82	1	7.9	1	68.8	1	446	1

Location_ID	Date	ASH-SO4	D_ASH-SO4
ASH-01	9/13/2016	2100	1
ASH-01	11/3/2016	2100	1
ASH-01	12/20/2016	2100	1
ASH-01	2/8/2017	2100	1
ASH-01	4/5/2017	2200	1
ASH-01	5/10/2017	2000	1
ASH-01	6/15/2017	2000	1
ASH-01	7/12/2017	1900	1
ASH-01	6/21/2018	2520	1
ASH-01	10/10/2018	1710	1
ASH-01	5/2/2019	1	0
ASH-01	7/10/2019	2000	1
ASH-01	10/8/2019		
ASH-01	4/14/2020	2000	1
ASH-01	10/5/2020	2100	1
ASH-01	4/21/2021	1950	1
ASH-01	10/19/2021	2040	1
ASH-01	4/27/2022	2470	1
ASH-01	10/18/2022	2060	1
ASH-01	4/25/2023	2660	1
ASH-01	10/11/2023	1880	1
ASH-01	4/30/2024	3740	1
ASH-01	10/1/2024	3270	1
ASH-06	1/24/2019	104	1
ASH-06	5/6/2019	75.7	1
ASH-06	7/18/2019	197	1
ASH-06	10/8/2019		
ASH-06	1/15/2020	68.3	1
ASH-06	4/20/2020	63.6	1
ASH-06	7/22/2020	101	1
ASH-06	7/24/2020		
ASH-06	10/16/2020	82.8	1
ASH-06	10/20/2020		
ASH-06	1/6/2021	77.8	1
ASH-06	4/7/2021	81.8	1
ASH-06	4/12/2021		
ASH-06	10/11/2021	68.8	1
ASH-06	4/27/2022	93.2	1
ASH-06	10/18/2022	65.6	1
ASH-06	4/24/2023	77.6	1
ASH-06	10/11/2023	75.7	1
ASH-06	5/1/2024	134	1
ASH-06	10/8/2024	87.4	1

Location_ID	Date	Antimony	D_Antimony	Arsenic	D_Arsenic	Barium	D_Barium	Beryllium	D_Beryllium	Cadmium	D_Cadmium	Chromium	D_Chromium	Cobalt	D_Cobalt	Fluoride	D_Fluoride	Lead	D_Lead	Lithium	D_Lithium	Mercury	D_Mercury	Molybdenum	D_Molybdenum	Radium	D_Radium	Radium-226	D_Radium-226	Radium-228	D_Radium-228	Selenium	D_Selenium	Thallium	D_Thallium
ASH-01	9/13/16	1	0	1	0	11	1	1	0	0.1	0	1	0	1	0	0.12	1	1	0	410	1	0.1	0	1	0	3	1					2	1	1	0
ASH-01	11/3/16	1	0	1	0	11	1	1	0	0.1	0	1	0	1	0	0.2	0	1	0	407	1	0.1	0	1	0	0.91	1					2	1	1	0
ASH-01	12/20/16	1	0	1	0	9	1	1	0	0.1	0	1	0	1	0	1.65	1	1	0	570	1	0.1	0	1	0	1.2	1					3	1	1	0
ASH-01	2/8/17	1	0	1	0	9	1	1	0	0.1	0	1	0	1	0	0.39	1	1	0	440	1	0.1	0	1	0	1.9	1					1	1	1	0
ASH-01	4/5/17	1	0	1	0	8	1	1	0	0.1	0	1	0	1	0	0.2	1	2	1	399	1	0.1	0	1	0	0.48	0					2	1	1	0
ASH-01	5/10/17	1	0	1	0	10	1	1	0	0.1	0	1	0	1	0	0.29	1	1	0	405	1	0.1	0	2	1	0.96	1					1	0	1	0
ASH-01	6/15/17	1	0	1	0	10	1	1	0	0.1	0	1	0	1	0	0.56	1	1	0	525	1	0.1	0	1	0	1.1	1					2	1	1	0
ASH-01	7/12/17	1	0	1	0	10	1	1	0	0.1	0	1	0	1	0	0.2	0	1	0	399	1	0.1	0	1	0	0.71	0					2	1	1	0
ASH-01	6/21/18	3	0	3	0	9.6	1	0.5	0	1.5	0	3	0	3	0	0.33	1	3	0	433	1	0.2	0	3	0	0.797	1	0.285	1	0.512	1	3	0	3	0
ASH-01	10/10/18	0.5	0	0.5	0	11.9	1	0.2	0	0.08	0	0.93	0	0.5	0	0.23	1	0.5	1	409	1	0.2	0	0.5	0							0.5	0	0.1	0
ASH-01	5/2/19	1	0	1	0	8.3	1	0.5	0	0.5	0	1	0	1	0	0.2	0	1	0	398	1	0.2	0	1	0	1.62	1	0.947	1	0.676	1	1	0	1	0
ASH-01	7/10/19	1	0	1	0	9	1	0.5	0	5	0	1	0	1	0	0.2	0	1	0	402	1	0.2	0	1	0							1	0	1	0
ASH-01	10/8/19	4	0	4	0	9.7	1	2	0	2	0	4	0	4	0	0.2	0	4	0	387	1	0.2	0	4	0	0.282	1	0.187	1	1.08	1	4	0	4	0
ASH-01	4/14/20	1	0	1	0	9.6	1	0.5	0	0.5	0	1	0	1	0	0.24	1	1	0	439	1	0.2	0	1	0	0.981	1	0.238	1	0.743	1	1	0	1	0
ASH-01	10/5/20	1	0	1	0	9.3	1	0.5	0	0.5	0	1	0	1	0	0.24	1	1	0	413	1	0.2	0	1	0	1.32	1	0.202	1	1.12	1	1	0	1	0
ASH-01	4/21/21	1	0	1	0	9.1	1	0.5	0	0.5	0	1	0	1	0	0.2	0	1	0	390	1	0.2	0	1	0	2.71	1	0.818	1	1.89	1	1	0	1	0
ASH-01	10/19/21	1	0	1	0	9.8	1	0.5	0	0.5	0	1	0	1	0	0.2	0	1	0	435	1	0.2	0	1	0	2.12	1	0.364	1	1.76	1	1	0	1	0
ASH-06	1/24/19	1	0	1.3	1	72.2	1	0.5	0	0.5	0	42.2	1	1	0	0.84	1	1	0	89.5	1	0.2	0	41	1							20.6	1	1	0
ASH-06	5/6/19	1	0	1.2	1	67	1	0.5	0	0.5	0	3.4	1	1	0	0.79	1	1	0	56	1	0.2	0	29.1	1	0.873	1	0.639	1	0.234	1	22.8	1	1	0
ASH-06	7/18/19	1	0	1	0	66.6	1	0.5	0	0.5	0	1	0	1	0	0.69	1	1	0	63.9	1	0.2	0	55.8	1	2.74	1	1.71	1	1.03	1	24.2	1	1	0
ASH-06	10/8/19	1	0	1	0	60.5	1	0.5	0	0.5	0	1.6	1	1	0	0.81	1	1	0	51.9	1	0.2	0	48.2	1	0.901	1	-0.0627	1	0.969	1	33.7	1	1	0
ASH-06	1/15/20	1	0	1.2	1	61.6	1	0.5	0	0.5	0	2.3	1	1	0	0.72	1	1	0	56.3	1	0.2	0	17.3	1	0.812	1	0.122	1	0.69	1	23.5	1	1	0
ASH-06	4/20/20	1	0	1.2	1	58.8	1	0.5	0	0.5	0	2.6	0	1	0	0.69	1	1	0	60.2	1	0.2	0	15.4	1	0.481	1	0.0661	1	0.415	1	24.5	1	1	0
ASH-06	7/22/20															0.77	1																		
ASH-06	7/24/20	5	0	5	0	64.7	1	2.5	0	2.5	0	12.6	1	5	0			5	0	57.5	1	0.2	0	22.4	1							25.9	1	5	0
ASH-06	10/16/20	3	0	3	0	47.7	1	1.5	0	1.5	0	5.1	1	3	0	0.84	1	3	0	51.6	1	0.2	0	17.7	1							27.6	1	3	0
ASH-06	10/20/20																									1.11	1	0.213	1	0.899	1				
ASH-06	1/6/21	1	0	1	0	56.1	1	0.5	0	0.5	0	8.3	1	1	0	0.76	1	1	0	55.9	1	0.2	0	13.7	1	0.584	1	-0.0582	1	0.584	1	24.9	1	1	0
ASH-06	4/7/21	1	0	1	0	45.5	1	0.5	0	0.5	0	21.9	1	1	0	0.2	1	1	0	51.8	1	0.2	0	17.9	1							45	1	1	0
ASH-06	4/12/21																									0.908	1	-0.0505	1	0.908	1				
ASH-06	10/11/21	2	0	2	0	40.7	1	1	0	1	0	2.6	1	2	0	0.82	1	2	0	54.9	1	0.2	0	11.8	1	1.5	1	0.718	1	0.786	1	21	1	2	0

1				**Background Statistics for Data Sets with Non-Detects**								
2			**User Selected Options**									
3			Date/Time of Computation	ProUCL 5.11/18/2022 3:57:30 PM								
4			From File	ProUCL Input PRPA CCR ASH Appendix III Total 2016-2021.xls								
5			Full Precision	OFF								
6			Confidence Coefficient	95%								
7			Coverage	95%								
8			Different or Future K Observations	1								
9			Number of Bootstrap Operations	2000								
10												
11	**Boron**											
12												
13	**General Statistics**											
14						Total Number of Observations	28			Number of Distinct Observations	26		
15										Number of Missing Observations	3	
16						Minimum	283			First Quartile	321	
17						Second Largest	580			Median	461	
18						Maximum	630			Third Quartile	490.3	
19						Mean	424.4			SD	100.9	
20						Coefficient of Variation	0.238			Skewness	-0.00677	
21						Mean of logged Data	6.022			SD of logged Data	0.247	
22												
23						**Critical Values for Background Threshold Values (BTVs)**							
24						Tolerance Factor K (For UTL)	2.246			d2max (for USL)	2.714	
25												
26						**Normal GOF Test**						
27						Shapiro Wilk Test Statistic	0.888			**Shapiro Wilk GOF Test**		
28						5% Shapiro Wilk Critical Value	0.924			Data Not Normal at 5% Significance Level		
29						Lilliefors Test Statistic	0.208			**Lilliefors GOF Test**		
30						5% Lilliefors Critical Value	0.164			Data Not Normal at 5% Significance Level		
31						**Data Not Normal at 5% Significance Level**						
32												
33						**Background Statistics Assuming Normal Distribution**						
34						95% UTL with 95% Coverage	651			90% Percentile (z)	553.7	
35						95% UPL (t)	599.3			95% Percentile (z)	590.3	
36						95% USL	698.2			99% Percentile (z)	659.1	
37												
38						**Gamma GOF Test**						
39						A-D Test Statistic	1.67			**Anderson-Darling Gamma GOF Test**		
40						5% A-D Critical Value	0.745			Data Not Gamma Distributed at 5% Significance Level		
41						K-S Test Statistic	0.236			**Kolmogorov-Smirnov Gamma GOF Test**		
42						5% K-S Critical Value	0.165			Data Not Gamma Distributed at 5% Significance Level		
43						**Data Not Gamma Distributed at 5% Significance Level**						
44												
45						**Gamma Statistics**						
46						k hat (MLE)	17.64			k star (bias corrected MLE)	15.77	
47						Theta hat (MLE)	24.06			Theta star (bias corrected MLE)	26.91	
48						nu hat (MLE)	987.7			nu star (bias corrected)	883.2	
49						MLE Mean (bias corrected)	424.4			MLE Sd (bias corrected)	106.9	
50												
51						**Background Statistics Assuming Gamma Distribution**						
52						95% Wilson Hilferty (WH) Approx. Gamma UPL	618.8			90% Percentile	565.8	
53						95% Hawkins Wixley (HW) Approx. Gamma UPL	621.9			95% Percentile	614.1	
54						95% WH Approx. Gamma UTL with 95% Coverage	689.1			99% Percentile	711.7	

55				95% HW Approx. Gamma UTL with	95% Coverage	695.5						
56					95% WH USL	758				95% HW USL	768.4	
57												
58					**Lognormal GOF Test**							
59					Shapiro Wilk Test Statistic	0.87	**Shapiro Wilk Lognormal GOF Test**					
60					5% Shapiro Wilk Critical Value	0.924	Data Not Lognormal at 5% Significance Level					
61					Lilliefors Test Statistic	0.245	**Lilliefors Lognormal GOF Test**					
62					5% Lilliefors Critical Value	0.164	Data Not Lognormal at 5% Significance Level					
63					**Data Not Lognormal at 5% Significance Level**							
64												
65					**Background Statistics assuming Lognormal Distribution**							
66				95% UTL with	95% Coverage	717.9				90% Percentile (z)	565.8	
67					95% UPL (t)	632.6				95% Percentile (z)	618.9	
68					95% USL	805.9				99% Percentile (z)	732.3	
69												
70					**Nonparametric Distribution Free Background Statistics**							
71					**Data do not follow a Discernible Distribution (0.05)**							
72												
73					**Nonparametric Upper Limits for Background Threshold Values**							
74					Order of Statistic, r	28				95% UTL with	95% Coverage	630
75					Approx, f used to compute achieved CC	1.474				Approximate Actual Confidence Coefficient achieved by UTL		0.762
76										Approximate Sample Size needed to achieve specified CC		59
77				95% Percentile Bootstrap UTL with	95% Coverage	630				95% BCA Bootstrap UTL with	95% Coverage	630
78					95% UPL	607.5				90% Percentile		526
79					90% Chebyshev UPL	732.4				95% Percentile		566
80					95% Chebyshev UPL	871.9				99% Percentile		616.5
81					95% USL	630						
82												
83					Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.							
84					Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers							
85					and consists of observations collected from clean unimpacted locations.							
86					The use of USL tends to provide a balance between false positives and false negatives provided the data							
87					represents a background data set and when many onsite observations need to be compared with the BTV.							
88												
89	**Calcium**											
90												
91	**General Statistics**											
92					Total Number of Observations	28				Number of Distinct Observations	26	
93										Number of Missing Observations	3	
94					Minimum	23200				First Quartile	26925	
95					Second Largest	380000				Median	329500	
96					Maximum	381000				Third Quartile	360750	
97					Mean	224975				SD	162964	
98					Coefficient of Variation	0.724				Skewness	-0.436	
99					Mean of logged Data	11.76				SD of logged Data	1.286	
100												
101					**Critical Values for Background Threshold Values (BTVs)**							
102					Tolerance Factor K (For UTL)	2.246				d2max (for USL)	2.714	
103												
104					**Normal GOF Test**							
105					Shapiro Wilk Test Statistic	0.69	**Shapiro Wilk GOF Test**					
106					5% Shapiro Wilk Critical Value	0.924	Data Not Normal at 5% Significance Level					
107					Lilliefors Test Statistic	0.327	**Lilliefors GOF Test**					
108					5% Lilliefors Critical Value	0.164	Data Not Normal at 5% Significance Level					

109	**Data Not Normal at 5% Significance Level**											
110												
111	**Background Statistics Assuming Normal Distribution**											
112				95% UTL with	95% Coverage	590992				90% Percentile (z)	433822	
113					95% UPL (t)	507463				95% Percentile (z)	493027	
114					95% USL	667334				99% Percentile (z)	604086	
115												
116	**Gamma GOF Test**											
117					A-D Test Statistic	4.48	**Anderson-Darling Gamma GOF Test**					
118					5% A-D Critical Value	0.773	Data Not Gamma Distributed at 5% Significance Level					
119					K-S Test Statistic	0.366	**Kolmogorov-Smirnov Gamma GOF Test**					
120					5% K-S Critical Value	0.17	Data Not Gamma Distributed at 5% Significance Level					
121	**Data Not Gamma Distributed at 5% Significance Level**											
122												
123	**Gamma Statistics**											
124					k hat (MLE)	1.02				k star (bias corrected MLE)	0.935	
125					Theta hat (MLE)	220477				Theta star (bias corrected MLE)	240645	
126					nu hat (MLE)	57.14				nu star (bias corrected)	52.35	
127					MLE Mean (bias corrected)	224975				MLE Sd (bias corrected)	232678	
128												
129	**Background Statistics Assuming Gamma Distribution**											
130				95% Wilson Hilferty (WH) Approx. Gamma UPL		725340				90% Percentile	526675	
131				95% Hawkins Wixley (HW) Approx. Gamma UPL		791249				95% Percentile	690250	
132				95% WH Approx. Gamma UTL with	95% Coverage	1007705				99% Percentile	1071952	
133				95% HW Approx. Gamma UTL with	95% Coverage	1155021						
134					95% WH USL	1322586				95% HW USL	1585803	
135												
136	**Lognormal GOF Test**											
137					Shapiro Wilk Test Statistic	0.667	**Shapiro Wilk Lognormal GOF Test**					
138					5% Shapiro Wilk Critical Value	0.924	Data Not Lognormal at 5% Significance Level					
139					Lilliefors Test Statistic	0.369	**Lilliefors Lognormal GOF Test**					
140					5% Lilliefors Critical Value	0.164	Data Not Lognormal at 5% Significance Level					
141	**Data Not Lognormal at 5% Significance Level**											
142												
143	**Background Statistics assuming Lognormal Distribution**											
144				95% UTL with	95% Coverage	2300940				90% Percentile (z)	665363	
145					95% UPL (t)	1189958				95% Percentile (z)	1061791	
146					95% USL	4203759				99% Percentile (z)	2551505	
147												
148	**Nonparametric Distribution Free Background Statistics**											
149	**Data do not follow a Discernible Distribution (0.05)**											
150												
151	**Nonparametric Upper Limits for Background Threshold Values**											
152					Order of Statistic, r	28				95% UTL with	95% Coverage	381000
153					Approx, f used to compute achieved CC	1.474	Approximate Actual Confidence Coefficient achieved by UTL					0.762
154							Approximate Sample Size needed to achieve specified CC					59
155				95% Percentile Bootstrap UTL with	95% Coverage	381000				95% BCA Bootstrap UTL with	95% Coverage	381000
156					95% UPL	380550				90% Percentile		371500
157					90% Chebyshev UPL	722520				95% Percentile		378250
158					95% Chebyshev UPL	947892				99% Percentile		380730
159					95% USL	381000						
160												
161	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
162	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											

163	and consists of observations collected from clean unimpacted locations.											
164	The use of USL tends to provide a balance between false positives and false negatives provided the data											
165	represents a background data set and when many onsite observations need to be compared with the BTV.											
166												
167	**Chloride**											
168												
169	**General Statistics**											
170						Total Number of Observations	26			Number of Distinct Observations	20	
171										Number of Missing Observations	5	
172						Minimum	6.9			First Quartile	7.825	
173						Second Largest	25.4			Median	19.8	
174						Maximum	29			Third Quartile	23.48	
175						Mean	16.96			SD	7.812	
176						Coefficient of Variation	0.461			Skewness	-0.263	
177						Mean of logged Data	2.701			SD of logged Data	0.55	
178												
179	**Critical Values for Background Threshold Values (BTVs)**											
180						Tolerance Factor K (For UTL)	2.275			d2max (for USL)	2.681	
181												
182	**Normal GOF Test**											
183						Shapiro Wilk Test Statistic	0.825			**Shapiro Wilk GOF Test**		
184						5% Shapiro Wilk Critical Value	0.92			Data Not Normal at 5% Significance Level		
185						Lilliefors Test Statistic	0.223			**Lilliefors GOF Test**		
186						5% Lilliefors Critical Value	0.17			Data Not Normal at 5% Significance Level		
187	**Data Not Normal at 5% Significance Level**											
188												
189	**Background Statistics Assuming Normal Distribution**											
190						95% UTL with 95% Coverage	34.73			90% Percentile (z)	26.97	
191						95% UPL (t)	30.56			95% Percentile (z)	29.81	
192						95% USL	37.91			99% Percentile (z)	35.14	
193												
194	**Gamma GOF Test**											
195						A-D Test Statistic	2.429			**Anderson-Darling Gamma GOF Test**		
196						5% A-D Critical Value	0.748			Data Not Gamma Distributed at 5% Significance Level		
197						K-S Test Statistic	0.27			**Kolmogorov-Smirnov Gamma GOF Test**		
198						5% K-S Critical Value	0.172			Data Not Gamma Distributed at 5% Significance Level		
199	**Data Not Gamma Distributed at 5% Significance Level**											
200												
201	**Gamma Statistics**											
202						k hat (MLE)	4			k star (bias corrected MLE)	3.564	
203						Theta hat (MLE)	4.24			Theta star (bias corrected MLE)	4.759	
204						nu hat (MLE)	208			nu star (bias corrected)	185.3	
205						MLE Mean (bias corrected)	16.96			MLE Sd (bias corrected)	8.984	
206												
207	**Background Statistics Assuming Gamma Distribution**											
208						95% Wilson Hilferty (WH) Approx. Gamma UPL	34.68			90% Percentile	29.01	
209						95% Hawkins Wixley (HW) Approx. Gamma UPL	35.51			95% Percentile	33.92	
210						95% WH Approx. Gamma UTL with 95% Coverage	42.69			99% Percentile	44.46	
211						95% HW Approx. Gamma UTL with 95% Coverage	44.45					
212						95% WH USL	49.54			95% HW USL	52.3	
213												
214	**Lognormal GOF Test**											
215						Shapiro Wilk Test Statistic	0.78			**Shapiro Wilk Lognormal GOF Test**		
216						5% Shapiro Wilk Critical Value	0.92			Data Not Lognormal at 5% Significance Level		

217				Lilliefors Test Statistic		0.286	**Lilliefors Lognormal GOF Test**					
218				5% Lilliefors Critical Value		0.17	Data Not Lognormal at 5% Significance Level					
219	**Data Not Lognormal at 5% Significance Level**											
220												
221	**Background Statistics assuming Lognormal Distribution**											
222				95% UTL with 95% Coverage		52.08				90% Percentile (z)		30.15
223				95% UPL (t)		38.81				95% Percentile (z)		36.82
224				95% USL		65.11				99% Percentile (z)		53.57
225												
226	**Nonparametric Distribution Free Background Statistics**											
227	**Data do not follow a Discernible Distribution (0.05)**											
228												
229	**Nonparametric Upper Limits for Background Threshold Values**											
230				Order of Statistic, r		26				95% UTL with 95% Coverage		29
231				Approx, f used to compute achieved CC		1.368				Approximate Actual Confidence Coefficient achieved by UTL		0.736
232										Approximate Sample Size needed to achieve specified CC		59
233			95% Percentile Bootstrap UTL with 95% Coverage			29				95% BCA Bootstrap UTL with 95% Coverage		28.1
234				95% UPL		27.74				90% Percentile		25
235				90% Chebyshev UPL		40.84				95% Percentile		25.3
236				95% Chebyshev UPL		51.66				99% Percentile		28.1
237				95% USL		29						
238												
239	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
240	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
241	and consists of observations collected from clean unimpacted locations.											
242	The use of USL tends to provide a balance between false positives and false negatives provided the data											
243	represents a background data set and when many onsite observations need to be compared with the BTV.											
244												
245	**Fluoride**											
246												
247	**General Statistics**											
248				Total Number of Observations		28				Number of Missing Observations		3
249				Number of Distinct Observations		17						
250				Number of Detects		21				Number of Non-Detects		7
251				Number of Distinct Detects		17				Number of Distinct Non-Detects		1
252				Minimum Detect		0.12				Minimum Non-Detect		0.2
253				Maximum Detect		1.65				Maximum Non-Detect		0.2
254				Variance Detected		0.129				Percent Non-Detects		25%
255				Mean Detected		0.58				SD Detected		0.359
256				Mean of Detected Logged Data		-0.744				SD of Detected Logged Data		0.68
257												
258	**Critical Values for Background Threshold Values (BTVs)**											
259				Tolerance Factor K (For UTL)		2.246				d2max (for USL)		2.714
260												
261	**Normal GOF Test on Detects Only**											
262				Shapiro Wilk Test Statistic		0.857	**Shapiro Wilk GOF Test**					
263				5% Shapiro Wilk Critical Value		0.908	Data Not Normal at 5% Significance Level					
264				Lilliefors Test Statistic		0.187	**Lilliefors GOF Test**					
265				5% Lilliefors Critical Value		0.188	Detected Data appear Normal at 5% Significance Level					
266	**Detected Data appear Approximate Normal at 5% Significance Level**											
267												
268	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**											
269				KM Mean		0.465				KM SD		0.363
270				95% UTL95% Coverage		1.281				95% KM UPL (t)		1.095

271				90% KM Percentile (z)		0.931				95% KM Percentile (z)		1.063
272				99% KM Percentile (z)		1.31				95% KM USL		1.451
273												
274	**DL/2 Substitution Background Statistics Assuming Normal Distribution**											
275				Mean		0.46				SD		0.375
276				95% UTL95% Coverage		1.302				95% UPL (t)		1.11
277				90% Percentile (z)		0.94				95% Percentile (z)		1.077
278				99% Percentile (z)		1.332				95% USL		1.478
279	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**											
280												
281	**Gamma GOF Tests on Detected Observations Only**											
282				A-D Test Statistic		0.918	**Anderson-Darling GOF Test**					
283				5% A-D Critical Value		0.751	Data Not Gamma Distributed at 5% Significance Level					
284				K-S Test Statistic		0.213	**Kolmogorov-Smirnov GOF**					
285				5% K-S Critical Value		0.191	Data Not Gamma Distributed at 5% Significance Level					
286	**Data Not Gamma Distributed at 5% Significance Level**											
287												
288	**Gamma Statistics on Detected Data Only**											
289				k hat (MLE)		2.66				k star (bias corrected MLE)		2.312
290				Theta hat (MLE)		0.218				Theta star (bias corrected MLE)		0.251
291				nu hat (MLE)		111.7				nu star (bias corrected)		97.1
292				MLE Mean (bias corrected)		0.58						
293				MLE Sd (bias corrected)		0.381				95% Percentile of Chisquare (2kstar)		10.48
294												
295	**Gamma ROS Statistics using Imputed Non-Detects**											
296	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
297	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
298	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
299	This is especially true when the sample size is small.											
300	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
301				Minimum		0.01				Mean		0.452
302				Maximum		1.65				Median		0.31
303				SD		0.384				CV		0.851
304				k hat (MLE)		1.026				k star (bias corrected MLE)		0.94
305				Theta hat (MLE)		0.44				Theta star (bias corrected MLE)		0.481
306				nu hat (MLE)		57.44				nu star (bias corrected)		52.62
307				MLE Mean (bias corrected)		0.452				MLE Sd (bias corrected)		0.466
308				95% Percentile of Chisquare (2kstar)		5.755				90% Percentile		1.056
309				95% Percentile		1.383				99% Percentile		2.147
310	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**											
311	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
312					WH	HW					WH	HW
313				95% Approx. Gamma UTL with 95% Coverage	1.972	2.264				95% Approx. Gamma UPL	1.426	1.559
314				95% Gamma USL	2.58	3.096						
315												
316	**Estimates of Gamma Parameters using KM Estimates**											
317				Mean (KM)		0.465				SD (KM)		0.363
318				Variance (KM)		0.132				SE of Mean (KM)		0.0703
319				k hat (KM)		1.638				k star (KM)		1.487
320				nu hat (KM)		91.75				nu star (KM)		83.26
321				theta hat (KM)		0.284				theta star (KM)		0.313
322				80% gamma percentile (KM)		0.72				90% gamma percentile (KM)		0.971
323				95% gamma percentile (KM)		1.215				99% gamma percentile (KM)		1.766
324												

325	**The following statistics are computed using gamma distribution and KM estimates**											
326	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
327					WH	HW					WH	HW
328	95% Approx. Gamma UTL with 95% Coverage				1.593	1.684	95% Approx. Gamma UPL				1.212	1.247
329	95% KM Gamma Percentile				1.153	1.182	95% Gamma USL				2.004	2.175
330												
331	**Lognormal GOF Test on Detected Observations Only**											
332	Shapiro Wilk Test Statistic				0.912		**Shapiro Wilk GOF Test**					
333	5% Shapiro Wilk Critical Value				0.908		Detected Data appear Lognormal at 5% Significance Level					
334	Lilliefors Test Statistic				0.232		**Lilliefors GOF Test**					
335	5% Lilliefors Critical Value				0.188		Data Not Lognormal at 5% Significance Level					
336	**Detected Data appear Approximate Lognormal at 5% Significance Level**											
337												
338	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
339	Mean in Original Scale				0.467		Mean in Log Scale				-1.086	
340	SD in Original Scale				0.369		SD in Log Scale				0.857	
341	95% UTL95% Coverage				2.313		95% BCA UTL95% Coverage				1.367	
342	95% Bootstrap (%) UTL95% Coverage				1.65		95% UPL (t)				1.491	
343	90% Percentile (z)				1.012		95% Percentile (z)				1.382	
344	99% Percentile (z)				2.478		95% USL				3.456	
345												
346	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
347	KM Mean of Logged Data				-1.088		95% KM UTL (Lognormal)95% Coverage				2.161	
348	KM SD of Logged Data				0.828		95% KM UPL (Lognormal)				1.414	
349	95% KM Percentile Lognormal (z)				1.314		95% KM USL (Lognormal)				3.184	
350												
351	**Background DL/2 Statistics Assuming Lognormal Distribution**											
352	Mean in Original Scale				0.46		Mean in Log Scale				-1.134	
353	SD in Original Scale				0.375		SD in Log Scale				0.902	
354	95% UTL95% Coverage				2.442		95% UPL (t)				1.538	
355	90% Percentile (z)				1.023		95% Percentile (z)				1.42	
356	99% Percentile (z)				2.626		95% USL				3.727	
357	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											
358												
359	**Nonparametric Distribution Free Background Statistics**											
360	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
361												
362	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**											
363	Order of Statistic, r				28		95% UTL with95% Coverage				1.65	
364	Approx, f used to compute achieved CC				1.474		Approximate Actual Confidence Coefficient achieved by UTL				0.762	
365	Approximate Sample Size needed to achieve specified CC				59		95% UPL				1.286	
366	95% USL				1.65		95% KM Chebyshev UPL				2.077	
367												
368	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
369	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
370	and consists of observations collected from clean unimpacted locations.											
371	The use of USL tends to provide a balance between false positives and false negatives provided the data											
372	represents a background data set and when many onsite observations need to be compared with the BTV.											
373												
374	**pH**											
375												
376	**General Statistics**											
377	Total Number of Observations				26		Number of Distinct Observations				23	
378							Number of Missing Observations				5	

379					Minimum	6.55					First Quartile	7.155
380					Second Largest	9.25					Median	7.31
381					Maximum	9.63					Third Quartile	7.945
382					Mean	7.588					SD	0.714
383					Coefficient of Variation	0.094					Skewness	1.308
384					Mean of logged Data	2.023					SD of logged Data	0.0899
385												
386	**Critical Values for Background Threshold Values (BTVs)**											
387					Tolerance Factor K (For UTL)	2.275					d2max (for USL)	2.681
388												
389	**Normal GOF Test**											
390					Shapiro Wilk Test Statistic	0.892	**Shapiro Wilk GOF Test**					
391					5% Shapiro Wilk Critical Value	0.92	Data Not Normal at 5% Significance Level					
392					Lilliefors Test Statistic	0.19	**Lilliefors GOF Test**					
393					5% Lilliefors Critical Value	0.17	Data Not Normal at 5% Significance Level					
394	**Data Not Normal at 5% Significance Level**											
395												
396	**Background Statistics Assuming Normal Distribution**											
397				95% UTL with	95% Coverage	9.212					90% Percentile (z)	8.503
398					95% UPL (t)	8.83					95% Percentile (z)	8.762
399					95% USL	9.501					99% Percentile (z)	9.248
400												
401	**Gamma GOF Test**											
402					A-D Test Statistic	0.749	**Anderson-Darling Gamma GOF Test**					
403					5% A-D Critical Value	0.742	Data Not Gamma Distributed at 5% Significance Level					
404					K-S Test Statistic	0.189	**Kolmogorov-Smirnov Gamma GOF Test**					
405					5% K-S Critical Value	0.171	Data Not Gamma Distributed at 5% Significance Level					
406	**Data Not Gamma Distributed at 5% Significance Level**											
407												
408	**Gamma Statistics**											
409					k hat (MLE)	125.2					k star (bias corrected MLE)	110.8
410					Theta hat (MLE)	0.0606					Theta star (bias corrected MLE)	0.0685
411					nu hat (MLE)	6512					nu star (bias corrected)	5762
412					MLE Mean (bias corrected)	7.588					MLE Sd (bias corrected)	0.721
413												
414	**Background Statistics Assuming Gamma Distribution**											
415				95% Wilson Hilferty (WH) Approx. Gamma UPL		8.834					90% Percentile	8.526
416				95% Hawkins Wixley (HW) Approx. Gamma UPL		8.835					95% Percentile	8.812
417				95% WH Approx. Gamma UTL with	95% Coverage	9.249					99% Percentile	9.365
418				95% HW Approx. Gamma UTL with	95% Coverage	9.255						
419					95% WH USL	9.573					95% HW USL	9.584
420												
421	**Lognormal GOF Test**											
422					Shapiro Wilk Test Statistic	0.922	**Shapiro Wilk Lognormal GOF Test**					
423					5% Shapiro Wilk Critical Value	0.92	Data appear Lognormal at 5% Significance Level					
424					Lilliefors Test Statistic	0.183	**Lilliefors Lognormal GOF Test**					
425					5% Lilliefors Critical Value	0.17	Data Not Lognormal at 5% Significance Level					
426	**Data appear Approximate Lognormal at 5% Significance Level**											
427												
428	**Background Statistics assuming Lognormal Distribution**											
429				95% UTL with	95% Coverage	9.273					90% Percentile (z)	8.481
430					95% UPL (t)	8.838					95% Percentile (z)	8.762
431					95% USL	9.618					99% Percentile (z)	9.316
432												

433	**Nonparametric Distribution Free Background Statistics**											
434	**Data appear Approximate Lognormal at 5% Significance Level**											
435												
436	**Nonparametric Upper Limits for Background Threshold Values**											
437					Order of Statistic, r	26				95% UTL with 95% Coverage		9.63
438					Approx, f used to compute achieved CC	1.368				Approximate Actual Confidence Coefficient achieved by UTL		0.736
439										Approximate Sample Size needed to achieve specified CC		59
440					95% Percentile Bootstrap UTL with 95% Coverage	9.63				95% BCA Bootstrap UTL with 95% Coverage		9.63
441					95% UPL	9.497				90% Percentile		8.235
442					90% Chebyshev UPL	9.77				95% Percentile		9.008
443					95% Chebyshev UPL	10.76				99% Percentile		9.535
444					95% USL	9.63						
445												
446	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
447	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
448	and consists of observations collected from clean unimpacted locations.											
449	The use of USL tends to provide a balance between false positives and false negatives provided the data											
450	represents a background data set and when many onsite observations need to be compared with the BTV.											
451												
452	**Sulfate**											
453												
454	**General Statistics**											
455					Total Number of Observations	26				Number of Missing Observations		5
456					Number of Distinct Observations	19						
457					Number of Detects	25				Number of Non-Detects		1
458					Number of Distinct Detects	18				Number of Distinct Non-Detects		1
459					Minimum Detect	63.6				Minimum Non-Detect		1
460					Maximum Detect	2520				Maximum Non-Detect		1
461					Variance Detected	980753				Percent Non-Detects		3.846%
462					Mean Detected	1270				SD Detected		990.3
463					Mean of Detected Logged Data	6.361				SD of Detected Logged Data		1.594
464												
465	**Critical Values for Background Threshold Values (BTVs)**											
466					Tolerance Factor K (For UTL)	2.275				d2max (for USL)		2.681
467												
468	**Normal GOF Test on Detects Only**											
469					Shapiro Wilk Test Statistic	0.721				**Shapiro Wilk GOF Test**		
470					5% Shapiro Wilk Critical Value	0.918				Data Not Normal at 5% Significance Level		
471					Lilliefors Test Statistic	0.298				**Lilliefors GOF Test**		
472					5% Lilliefors Critical Value	0.173				Data Not Normal at 5% Significance Level		
473	**Data Not Normal at 5% Significance Level**											
474												
475	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**											
476					KM Mean	1221				KM SD		982.3
477					95% UTL95% Coverage	3455				95% KM UPL (t)		2931
478					90% KM Percentile (z)	2480				95% KM Percentile (z)		2837
479					99% KM Percentile (z)	3506				95% KM USL		3854
480												
481	**DL/2 Substitution Background Statistics Assuming Normal Distribution**											
482					Mean	1221				SD		1002
483					95% UTL95% Coverage	3500				95% UPL (t)		2965
484					90% Percentile (z)	2505				95% Percentile (z)		2869
485					99% Percentile (z)	3551				95% USL		3906
486	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**											

487												
488	**Gamma GOF Tests on Detected Observations Only**											
489					A-D Test Statistic	3.735	**Anderson-Darling GOF Test**					
490					5% A-D Critical Value	0.783	Data Not Gamma Distributed at 5% Significance Level					
491					K-S Test Statistic	0.343	**Kolmogorov-Smirnov GOF**					
492					5% K-S Critical Value	0.181	Data Not Gamma Distributed at 5% Significance Level					
493	**Data Not Gamma Distributed at 5% Significance Level**											
494												
495	**Gamma Statistics on Detected Data Only**											
496					k hat (MLE)	0.761	k star (bias corrected MLE)	0.696				
497					Theta hat (MLE)	1669	Theta star (bias corrected MLE)	1824				
498					nu hat (MLE)	38.03	nu star (bias corrected)	34.8				
499					MLE Mean (bias corrected)	1270						
500					MLE Sd (bias corrected)	1522	95% Percentile of Chisquare (2kstar)	4.748				
501												
502	**Gamma ROS Statistics using Imputed Non-Detects**											
503	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
504	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
505	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
506	This is especially true when the sample size is small.											
507	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
508					Minimum	63.6	Mean	1241				
509					Maximum	2520	Median	1925				
510					SD	981.5	CV	0.791				
511					k hat (MLE)	0.777	k star (bias corrected MLE)	0.713				
512					Theta hat (MLE)	1597	Theta star (bias corrected MLE)	1740				
513					nu hat (MLE)	40.4	nu star (bias corrected)	37.07				
514					MLE Mean (bias corrected)	1241	MLE Sd (bias corrected)	1469				
515					95% Percentile of Chisquare (2kstar)	4.821	90% Percentile	3101				
516					95% Percentile	4195	99% Percentile	6803				
517	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**											
518	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
519						WH	HW			WH	HW	
520					95% Approx. Gamma UTL with 95% Coverage	6448	7668	95% Approx. Gamma UPL		4441	4958	
521					95% Gamma USL	8323	10372					
522												
523	**Estimates of Gamma Parameters using KM Estimates**											
524					Mean (KM)	1221	SD (KM)	982.3				
525					Variance (KM)	964830	SE of Mean (KM)	196.6				
526					k hat (KM)	1.545	k star (KM)	1.392				
527					nu hat (KM)	80.33	nu star (KM)	72.39				
528					theta hat (KM)	790.3	theta star (KM)	876.9				
529					80% gamma percentile (KM)	1904	90% gamma percentile (KM)	2591				
530					95% gamma percentile (KM)	3261	99% gamma percentile (KM)	4782				
531												
532	**The following statistics are computed using gamma distribution and KM estimates**											
533	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
534						WH	HW			WH	HW	
535					95% Approx. Gamma UTL with 95% Coverage	6709	8275	95% Approx. Gamma UPL		4544	5208	
536					95% KM Gamma Percentile	4214	4764	95% Gamma USL		8748	11386	
537												
538	**Lognormal GOF Test on Detected Observations Only**											
539					Shapiro Wilk Test Statistic	0.695	**Shapiro Wilk GOF Test**					
540					5% Shapiro Wilk Critical Value	0.918	Data Not Lognormal at 5% Significance Level					

541					Lilliefors Test Statistic	0.352	**Lilliefors GOF Test**					
542					5% Lilliefors Critical Value	0.173	Data Not Lognormal at 5% Significance Level					
543	**Data Not Lognormal at 5% Significance Level**											
544												
545	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
546					Mean in Original Scale	1222				Mean in Log Scale	6.229	
547					SD in Original Scale	1001				SD in Log Scale	1.7	
548					95% UTL95% Coverage	24259				95% BCA UTL95% Coverage	2440	
549					95% Bootstrap (%) UTL95% Coverage	2520				95% UPL (t)	9781	
550					90% Percentile (z)	4482				95% Percentile (z)	8311	
551					99% Percentile (z)	26472				95% USL	48366	
552												
553	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
554					KM Mean of Logged Data	6.116				95% KM UTL (Lognormal)95% Coverage	39139	
555					KM SD of Logged Data	1.96				95% KM UPL (Lognormal)	13735	
556					95% KM Percentile Lognormal (z)	11383				95% KM USL (Lognormal)	86715	
557												
558	**Background DL/2 Statistics Assuming Lognormal Distribution**											
559					Mean in Original Scale	1221				Mean in Log Scale	6.09	
560					SD in Original Scale	1002				SD in Log Scale	2.086	
561					95% UTL95% Coverage	50803				95% UPL (t)	16664	
562					90% Percentile (z)	6394				95% Percentile (z)	13644	
563					99% Percentile (z)	56547				95% USL	118479	
564	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											
565												
566	**Nonparametric Distribution Free Background Statistics**											
567	**Data do not follow a Discernible Distribution (0.05)**											
568												
569	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**											
570					Order of Statistic, r	26				95% UTL with95% Coverage	2520	
571					Approx, f used to compute achieved CC	1.368				Approximate Actual Confidence Coefficient achieved by UTL	0.736	
572					Approximate Sample Size needed to achieve specified CC	59				95% UPL	2408	
573					95% USL	2520				95% KM Chebyshev UPL	5584	
574												
575	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
576	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
577	and consists of observations collected from clean unimpacted locations.											
578	The use of USL tends to provide a balance between false positives and false negatives provided the data											
579	represents a background data set and when many onsite observations need to be compared with the BTV.											
580												
581	**TDS**											
582												
583	**General Statistics**											
584					Total Number of Observations	28				Number of Distinct Observations	22	
585										Number of Missing Observations	3	
586					Minimum	384				First Quartile	486.5	
587					Second Largest	3600				Median	3250	
588					Maximum	3900				Third Quartile	3463	
589					Mean	2275				SD	1482	
590					Coefficient of Variation	0.651				Skewness	-0.436	
591					Mean of logged Data	7.362				SD of logged Data	0.991	
592												
593	**Critical Values for Background Threshold Values (BTVs)**											
594					Tolerance Factor K (For UTL)	2.246				d2max (for USL)	2.714	

595												
596	**Normal GOF Test**											
597					Shapiro Wilk Test Statistic	0.702	**Shapiro Wilk GOF Test**					
598					5% Shapiro Wilk Critical Value	0.924	Data Not Normal at 5% Significance Level					
599					Lilliefors Test Statistic	0.339	**Lilliefors GOF Test**					
600					5% Lilliefors Critical Value	0.164	Data Not Normal at 5% Significance Level					
601	**Data Not Normal at 5% Significance Level**											
602												
603	**Background Statistics Assuming Normal Distribution**											
604				95% UTL with	95% Coverage	5603			90% Percentile (z)	4174		
605					95% UPL (t)	4844			95% Percentile (z)	4712		
606					95% USL	6297			99% Percentile (z)	5722		
607												
608	**Gamma GOF Test**											
609					A-D Test Statistic	4.292	**Anderson-Darling Gamma GOF Test**					
610					5% A-D Critical Value	0.763	Data Not Gamma Distributed at 5% Significance Level					
611					K-S Test Statistic	0.367	**Kolmogorov-Smirnov Gamma GOF Test**					
612					5% K-S Critical Value	0.168	Data Not Gamma Distributed at 5% Significance Level					
613	**Data Not Gamma Distributed at 5% Significance Level**											
614												
615	**Gamma Statistics**											
616					k hat (MLE)	1.504			k star (bias corrected MLE)	1.367		
617					Theta hat (MLE)	1513			Theta star (bias corrected MLE)	1665		
618					nu hat (MLE)	84.23			nu star (bias corrected)	76.54		
619					MLE Mean (bias corrected)	2275			MLE Sd (bias corrected)	1946		
620												
621	**Background Statistics Assuming Gamma Distribution**											
622				95% Wilson Hilferty (WH) Approx. Gamma UPL		6369			90% Percentile	4851		
623				95% Hawkins Wixley (HW) Approx. Gamma UPL		6767			95% Percentile	6116		
624				95% WH Approx. Gamma UTL with	95% Coverage	8494			99% Percentile	8991		
625				95% HW Approx. Gamma UTL with	95% Coverage	9358						
626					95% WH USL	10808			95% HW USL	12318		
627												
628	**Lognormal GOF Test**											
629					Shapiro Wilk Test Statistic	0.685	**Shapiro Wilk Lognormal GOF Test**					
630					5% Shapiro Wilk Critical Value	0.924	Data Not Lognormal at 5% Significance Level					
631					Lilliefors Test Statistic	0.369	**Lilliefors Lognormal GOF Test**					
632					5% Lilliefors Critical Value	0.164	Data Not Lognormal at 5% Significance Level					
633	**Data Not Lognormal at 5% Significance Level**											
634												
635	**Background Statistics assuming Lognormal Distribution**											
636				95% UTL with	95% Coverage	14594			90% Percentile (z)	5610		
637					95% UPL (t)	8781			95% Percentile (z)	8043		
638					95% USL	23220			99% Percentile (z)	15804		
639												
640	**Nonparametric Distribution Free Background Statistics**											
641	**Data do not follow a Discernible Distribution (0.05)**											
642												
643	**Nonparametric Upper Limits for Background Threshold Values**											
644					Order of Statistic, r	28			95% UTL with	95% Coverage	3900	
645					Approx, f used to compute achieved CC	1.474			Approximate Actual Confidence Coefficient achieved by UTL		0.762	
646									Approximate Sample Size needed to achieve specified CC		59	
647				95% Percentile Bootstrap UTL with	95% Coverage	3900			95% BCA Bootstrap UTL with	95% Coverage	3600	
648					95% UPL	3765			90% Percentile		3600	

	A	B	C	D	E	F	G	H	I	J	K	L
649					90% Chebyshev UPL	6799					95% Percentile	3600
650					95% Chebyshev UPL	8848					99% Percentile	3819
651					95% USL	3900						
652												
653	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
654	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
655	and consists of observations collected from clean unimpacted locations.											
656	The use of USL tends to provide a balance between false positives and false negatives provided the data											
657	represents a background data set and when many onsite observations need to be compared with the BTV.											
658												

	Background Statistics for Data Sets with Non-Detects	
User Selected Options		
Date/Time of Computation	ProUCL 5.2 1/23/2025 12:54:17 PM	
From File	ASH-SO4.xls	
Full Precision	OFF	
Confidence Coefficient	95%	
Coverage	95%	
Different or Future K Observations	1	
Number of Bootstrap Operations	2000	

ASH-SO4

General Statistics

Total Number of Observations	38	Number of Missing Observations	5
Number of Distinct Observations	30		
Number of Detects	37	Number of Non-Detects	1
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	63.6	Minimum Non-Detect	1
Maximum Detect	3740	Maximum Non-Detect	1
Variance Detected	1286934	Percent Non-Detects	2.632%
Mean Detected	1307	SD Detected	1134
Mean of Detected Logged Data	6.297	SD of Detected Logged Data	1.639

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.132	d2max (for USL)	2.846

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.801	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.814	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.268	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.168	Data Not Normal at 1% Significance Level

Data Not Normal at 1% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	1273	KM SD	1124
95% UTL95% Coverage	3669	95% KM UPL (t)	3193
90% KM Percentile (z)	2713	95% KM Percentile (z)	3121
99% KM Percentile (z)	3887	95% KM USL	4471

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	1272	SD	1139
95% UTL95% Coverage	3701	95% UPL (t)	3219
90% Percentile (z)	2732	95% Percentile (z)	3146
99% Percentile (z)	3922	95% USL	4514

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	4.464	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.794	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.304	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.151	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

53												
54	**Gamma Statistics on Detected Data Only**											
55					k hat (MLE)	0.689			k star (bias corrected MLE)	0.651		
56					Theta hat (MLE)	1896			Theta star (bias corrected MLE)	2006		
57					nu hat (MLE)	51			nu star (bias corrected)	48.2		
58					MLE Mean (bias corrected)	1307						
59					MLE Sd (bias corrected)	1619			95% Percentile of Chisquare (2kstar)	4.551		
60												
61	**Gamma ROS Statistics using Imputed Non-Detects**											
62	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
63	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
64	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
65	This is especially true when the sample size is small.											
66	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
67					Minimum	63.6			Mean	1283		
68					Maximum	3740			Median	1890		
69					SD	1129			CV	0.88		
70					k hat (MLE)	0.696			k star (bias corrected MLE)	0.659		
71					Theta hat (MLE)	1843			Theta star (bias corrected MLE)	1947		
72					nu hat (MLE)	52.91			nu star (bias corrected)	50.07		
73					MLE Mean (bias corrected)	1283			MLE Sd (bias corrected)	1580		
74					95% Percentile of Chisquare (2kstar)	4.584			90% Percentile	3266		
75					95% Percentile	4463			99% Percentile	7335		
76	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**											
77	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
78						WH	HW			WH	HW	
79					95% Approx. Gamma UTL with 95% Coverage	6285	7320		95% Approx. Gamma UPL	4600	5086	
80					95% Gamma USL	9987	12669					
81												
82	**Estimates of Gamma Parameters using KM Estimates**											
83					Mean (KM)	1273			SD (KM)	1124		
84					Variance (KM)	1262896			SE of Mean (KM)	184.8		
85					k hat (KM)	1.282			k star (KM)	1.199		
86					nu hat (KM)	97.45			nu star (KM)	91.09		
87					theta hat (KM)	992.4			theta star (KM)	1062		
88					80% gamma percentile (KM)	2015			90% gamma percentile (KM)	2802		
89					95% gamma percentile (KM)	3578			99% gamma percentile (KM)	5357		
90												
91	**The following statistics are computed using gamma distribution and KM estimates**											
92	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
93						WH	HW			WH	HW	
94					95% Approx. Gamma UTL with 95% Coverage	6409	7634		95% Approx. Gamma UPL	4653	5232	
95					95% KM Gamma Percentile	4418	4924		95% Gamma USL	10292	13454	
96												
97	**Lognormal GOF Test on Detected Observations Only**											
98					Shapiro Wilk Test Statistic	0.727			**Shapiro Wilk GOF Test**			
99					10% Shapiro Wilk Critical Value	0.946			Data Not Lognormal at 10% Significance Level			
100					Lilliefors Test Statistic	0.326			**Lilliefors GOF Test**			
101					10% Lilliefors Critical Value	0.132			Data Not Lognormal at 10% Significance Level			
102	Data Not Lognormal at 10% Significance Level											
103												
104	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											

105					Mean in Original Scale	1273					Mean in Log Scale	6.199
106					SD in Original Scale	1138					SD in Log Scale	1.724
107					95% UTL95% Coverage	19446					95% BCA UTL95% Coverage	3740
108					95% Bootstrap (%) UTL95% Coverage	3740					95% UPL (t)	9379
109					90% Percentile (z)	4487					95% Percentile (z)	8394
110					99% Percentile (z)	27183					95% USL	66627
111												
112					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**							
113					KM Mean of Logged Data	6.131					95% KM UTL (Lognormal)95% Coverage	25690
114					KM SD of Logged Data	1.887					95% KM UPL (Lognormal)	11566
115					95% KM Percentile Lognormal (z)	10245					95% KM USL (Lognormal)	98865
116												
117					**Background DL/2 Statistics Assuming Lognormal Distribution**							
118					Mean in Original Scale	1272					Mean in Log Scale	6.113
119					SD in Original Scale	1139					SD in Log Scale	1.975
120					95% UTL95% Coverage	30411					95% UPL (t)	13193
121					90% Percentile (z)	5671					95% Percentile (z)	11620
122					99% Percentile (z)	44628					95% USL	124598
123					DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.							
124												
125					**Nonparametric Distribution Free Background Statistics**							
126					Data do not follow a Discernible Distribution							
127												
128					**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**							
129					Order of Statistic, r	38					95% UTL with95% Coverage	3740
130					Approx, f used to compute achieved CC	2					Approximate Actual Confidence Coefficient achieved by UTL	0.858
131					Approximate Sample Size needed to achieve specified CC	59					95% UPL	3294
132					95% USL	3740					95% KM Chebyshev UPL	6235
133												
134					Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.							
135					Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers							
136					and consists of observations collected from clean unimpacted locations.							
137					The use of USL tends to provide a balance between false positives and false negatives provided the data							
138					represents a background data set and when many onsite observations need to be compared with the BTV.							
139												

	Background Statistics for Data Sets with Non-Detects	
User Selected Options		
Date/Time of Computation	ProUCL 5.11/19/2022 10:35:53 AM	
From File	ProUCL Input PRPA CCR ASH Appendix IV Total 2016-2021.xls	
Full Precision	OFF	
Confidence Coefficient	95%	
Coverage	95%	
Different or Future K Observations	1	
Number of Bootstrap Operations	2000	

Antimony

General Statistics

Total Number of Observations	28	Number of Missing Observations	3
Number of Distinct Observations	6		
Number of Detects	0	Number of Non-Detects	28
Number of Distinct Detects	0	Number of Distinct Non-Detects	6
Minimum Detect	N/A	Minimum Non-Detect	0.5
Maximum Detect	N/A	Maximum Non-Detect	5
Variance Detected	N/A	Percent Non-Detects	100%
Mean Detected	N/A	SD Detected	N/A
Mean of Detected Logged Data	N/A	SD of Detected Logged Data	N/A

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!

Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!

The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Antimony was not processed!

Arsenic

General Statistics

Total Number of Observations	28	Number of Missing Observations	3
Number of Distinct Observations	8		
Number of Detects	4	Number of Non-Detects	24
Number of Distinct Detects	2	Number of Distinct Non-Detects	6
Minimum Detect	1.2	Minimum Non-Detect	0.5
Maximum Detect	1.3	Maximum Non-Detect	5
Variance Detected	0.0025	Percent Non-Detects	85.71%
Mean Detected	1.225	SD Detected	0.05
Mean of Detected Logged Data	0.202	SD of Detected Logged Data	0.04

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.246	d2max (for USL)	2.714

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.63	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.441	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.375	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

55					KM Mean	0.626					KM SD	0.275
56					95% UTL95% Coverage	1.245					95% KM UPL (t)	1.103
57					90% KM Percentile (z)	0.979					95% KM Percentile (z)	1.079
58					99% KM Percentile (z)	1.267					95% KM USL	1.374
59												
60					**DL/2 Substitution Background Statistics Assuming Normal Distribution**							
61					Mean	0.809					SD	0.544
62					95% UTL95% Coverage	2.032					95% UPL (t)	1.753
63					90% Percentile (z)	1.507					95% Percentile (z)	1.704
64					99% Percentile (z)	2.075					95% USL	2.287
65					**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**							
66												
67					**Gamma GOF Tests on Detected Observations Only**							
68					A-D Test Statistic	0.96	**Anderson-Darling GOF Test**					
69					5% A-D Critical Value	0.657	Data Not Gamma Distributed at 5% Significance Level					
70					K-S Test Statistic	0.468	**Kolmogorov-Smirnov GOF**					
71					5% K-S Critical Value	0.394	Data Not Gamma Distributed at 5% Significance Level					
72					**Data Not Gamma Distributed at 5% Significance Level**							
73												
74					**Gamma Statistics on Detected Data Only**							
75					k hat (MLE)	821.7	k star (bias corrected MLE)	205.6				
76					Theta hat (MLE)	0.00149	Theta star (bias corrected MLE)	0.00596				
77					nu hat (MLE)	6574	nu star (bias corrected)	1645				
78					MLE Mean (bias corrected)	1.225						
79					MLE Sd (bias corrected)	0.0854	95% Percentile of Chisquare (2kstar)	459.5				
80												
81					**Gamma ROS Statistics using Imputed Non-Detects**							
82					GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs							
83					GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)							
84					For such situations, GROS method may yield incorrect values of UCLs and BTVs							
85					This is especially true when the sample size is small.							
86					For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates							
87					Minimum	0.815	Mean	1.038				
88					Maximum	1.3	Median	1.036				
89					SD	0.11	CV	0.106				
90					k hat (MLE)	92.31	k star (bias corrected MLE)	82.45				
91					Theta hat (MLE)	0.0112	Theta star (bias corrected MLE)	0.0126				
92					nu hat (MLE)	5170	nu star (bias corrected)	4617				
93					MLE Mean (bias corrected)	1.038	MLE Sd (bias corrected)	0.114				
94					95% Percentile of Chisquare (2kstar)	195.9	90% Percentile	1.187				
95					95% Percentile	1.233	99% Percentile	1.323				
96					**The following statistics are computed using Gamma ROS Statistics on Imputed Data**							
97					**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**							
98						WH	HW				WH	HW
99					95% Approx. Gamma UTL with 95% Coverage	1.301	1.304	95% Approx. Gamma UPL	1.237	1.238		
100					95% Gamma USL	1.362	1.366					
101												
102					**Estimates of Gamma Parameters using KM Estimates**							
103					Mean (KM)	0.626	SD (KM)	0.275				
104					Variance (KM)	0.0758	SE of Mean (KM)	0.0663				
105					k hat (KM)	5.168	k star (KM)	4.639				
106					nu hat (KM)	289.4	nu star (KM)	259.8				
107					theta hat (KM)	0.121	theta star (KM)	0.135				
108					80% gamma percentile (KM)	0.849	90% gamma percentile (KM)	1.015				

109				95% gamma percentile (KM)		1.168				99% gamma percentile (KM)		1.491
110												
111	**The following statistics are computed using gamma distribution and KM estimates**											
112	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
113					WH	HW					WH	HW
114				95% Approx. Gamma UTL with 95% Coverage	1.25	1.25				95% Approx. Gamma UPL	1.072	1.067
115				95% KM Gamma Percentile	1.043	1.038				95% Gamma USL	1.428	1.437
116												
117	**Lognormal GOF Test on Detected Observations Only**											
118				Shapiro Wilk Test Statistic		0.63	**Shapiro Wilk GOF Test**					
119				5% Shapiro Wilk Critical Value		0.748	Data Not Lognormal at 5% Significance Level					
120				Lilliefors Test Statistic		0.441	**Lilliefors GOF Test**					
121				5% Lilliefors Critical Value		0.375	Data Not Lognormal at 5% Significance Level					
122	**Data Not Lognormal at 5% Significance Level**											
123												
124	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
125				Mean in Original Scale		1.055	Mean in Log Scale					0.0498
126				SD in Original Scale		0.0968	SD in Log Scale					0.0909
127				95% UTL95% Coverage		1.289	95% BCA UTL95% Coverage					1.2
128				95% Bootstrap (%) UTL95% Coverage		1.3	95% UPL (t)					1.23
129				90% Percentile (z)		1.181	95% Percentile (z)					1.221
130				99% Percentile (z)		1.299	95% USL					1.345
131												
132	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
133				KM Mean of Logged Data		-0.537	95% KM UTL (Lognormal)95% Coverage					1.253
134				KM SD of Logged Data		0.34	95% KM UPL (Lognormal)					1.053
135				95% KM Percentile Lognormal (z)		1.022	95% KM USL (Lognormal)					1.469
136												
137	**Background DL/2 Statistics Assuming Lognormal Distribution**											
138				Mean in Original Scale		0.809	Mean in Log Scale					-0.38
139				SD in Original Scale		0.544	SD in Log Scale					0.556
140				95% UTL95% Coverage		2.385	95% UPL (t)					1.794
141				90% Percentile (z)		1.395	95% Percentile (z)					1.707
142				99% Percentile (z)		2.494	95% USL					3.095
143	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											
144												
145	**Nonparametric Distribution Free Background Statistics**											
146	**Data do not follow a Discernible Distribution (0.05)**											
147												
148	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**											
149				Order of Statistic, r		28	95% UTL with95% Coverage					5
150				Approx, f used to compute achieved CC		1.474	Approximate Actual Confidence Coefficient achieved by UTL					0.762
151				Approximate Sample Size needed to achieve specified CC		59	95% UPL					4.55
152				95% USL		5	95% KM Chebyshev UPL					1.848
153												
154	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
155	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
156	and consists of observations collected from clean unimpacted locations.											
157	The use of USL tends to provide a balance between false positives and false negatives provided the data											
158	represents a background data set and when many onsite observations need to be compared with the BTV.											
159												
160	**Barium**											
161												
162	**General Statistics**											

163	Total Number of Observations					28	Number of Distinct Observations					22
164							Number of Missing Observations					3
165	Minimum					8	First Quartile					9.525
166	Second Largest					67	Median					10.5
167	Maximum					72.2	Third Quartile					56.78
168	Mean					28.78	SD					24.95
169	Coefficient of Variation					0.867	Skewness					0.634
170	Mean of logged Data					2.966	SD of logged Data					0.899
171												
172	**Critical Values for Background Threshold Values (BTVs)**											
173	Tolerance Factor K (For UTL)					2.246	d2max (for USL)					2.714
174												
175	**Normal GOF Test**											
176	Shapiro Wilk Test Statistic					0.725	**Shapiro Wilk GOF Test**					
177	5% Shapiro Wilk Critical Value					0.924	Data Not Normal at 5% Significance Level					
178	Lilliefors Test Statistic					0.358	**Lilliefors GOF Test**					
179	5% Lilliefors Critical Value					0.164	Data Not Normal at 5% Significance Level					
180	**Data Not Normal at 5% Significance Level**											
181												
182	**Background Statistics Assuming Normal Distribution**											
183	95% UTL with 95% Coverage					84.81	90% Percentile (z)					60.75
184	95% UPL (t)					72.02	95% Percentile (z)					69.81
185	95% USL					96.49	99% Percentile (z)					86.81
186												
187	**Gamma GOF Test**											
188	A-D Test Statistic					3.59	**Anderson-Darling Gamma GOF Test**					
189	5% A-D Critical Value					0.765	Data Not Gamma Distributed at 5% Significance Level					
190	K-S Test Statistic					0.339	**Kolmogorov-Smirnov Gamma GOF Test**					
191	5% K-S Critical Value					0.169	Data Not Gamma Distributed at 5% Significance Level					
192	**Data Not Gamma Distributed at 5% Significance Level**											
193												
194	**Gamma Statistics**											
195	k hat (MLE)					1.414	k star (bias corrected MLE)					1.287
196	Theta hat (MLE)					20.35	Theta star (bias corrected MLE)					22.36
197	nu hat (MLE)					79.2	nu star (bias corrected)					72.05
198	MLE Mean (bias corrected)					28.78	MLE Sd (bias corrected)					25.37
199												
200	**Background Statistics Assuming Gamma Distribution**											
201	95% Wilson Hilferty (WH) Approx. Gamma UPL					81.24	90% Percentile					62.26
202	95% Hawkins Wixley (HW) Approx. Gamma UPL					83.33	95% Percentile					78.96
203	95% WH Approx. Gamma UTL with 95% Coverage					109.3	99% Percentile					117
204	95% HW Approx. Gamma UTL with 95% Coverage					115.5						
205	95% WH USL					139.9	95% HW USL					152.3
206												
207	**Lognormal GOF Test**											
208	Shapiro Wilk Test Statistic					0.73	**Shapiro Wilk Lognormal GOF Test**					
209	5% Shapiro Wilk Critical Value					0.924	Data Not Lognormal at 5% Significance Level					
210	Lilliefors Test Statistic					0.314	**Lilliefors Lognormal GOF Test**					
211	5% Lilliefors Critical Value					0.164	Data Not Lognormal at 5% Significance Level					
212	**Data Not Lognormal at 5% Significance Level**											
213												
214	**Background Statistics assuming Lognormal Distribution**											
215	95% UTL with 95% Coverage					146.3	90% Percentile (z)					61.46
216	95% UPL (t)					92.28	95% Percentile (z)					85.21

217					95% USL	222.9				99% Percentile (z)		157.3
218												
219					**Nonparametric Distribution Free Background Statistics**							
220					**Data do not follow a Discernible Distribution (0.05)**							
221												
222					**Nonparametric Upper Limits for Background Threshold Values**							
223					Order of Statistic, r	28				95% UTL with 95% Coverage		72.2
224					Approx, f used to compute achieved CC	1.474				Approximate Actual Confidence Coefficient achieved by UTL		0.762
225										Approximate Sample Size needed to achieve specified CC		59
226					95% Percentile Bootstrap UTL with 95% Coverage	72.2				95% BCA Bootstrap UTL with 95% Coverage		72.2
227					95% UPL	69.86				90% Percentile		65.27
228					90% Chebyshev UPL	104.9				95% Percentile		66.86
229					95% Chebyshev UPL	139.4				99% Percentile		70.8
230					95% USL	72.2						
231												
232					Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.							
233					Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers							
234					and consists of observations collected from clean unimpacted locations.							
235					The use of USL tends to provide a balance between false positives and false negatives provided the data							
236					represents a background data set and when many onsite observations need to be compared with the BTV.							
237												
238	**Beryllium**											
239												
240					**General Statistics**							
241					Total Number of Observations	28				Number of Missing Observations		3
242					Number of Distinct Observations	6						
243					Number of Detects	0				Number of Non-Detects		28
244					Number of Distinct Detects	0				Number of Distinct Non-Detects		6
245					Minimum Detect	N/A				Minimum Non-Detect		0.2
246					Maximum Detect	N/A				Maximum Non-Detect		2.5
247					Variance Detected	N/A				Percent Non-Detects		100%
248					Mean Detected	N/A				SD Detected		N/A
249					Mean of Detected Logged Data	N/A				SD of Detected Logged Data		N/A
250												
251					**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**							
252					**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**							
253					**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**							
254												
255					**The data set for variable Beryllium was not processed!**							
256												
257												
258	**Cadmium**											
259												
260					**General Statistics**							
261					Total Number of Observations	28				Number of Missing Observations		3
262					Number of Distinct Observations	8						
263					Number of Detects	0				Number of Non-Detects		28
264					Number of Distinct Detects	0				Number of Distinct Non-Detects		8
265					Minimum Detect	N/A				Minimum Non-Detect		0.08
266					Maximum Detect	N/A				Maximum Non-Detect		5
267					Variance Detected	N/A				Percent Non-Detects		100%
268					Mean Detected	N/A				SD Detected		N/A
269					Mean of Detected Logged Data	N/A				SD of Detected Logged Data		N/A
270												

	A	B	C	D	E	F	G	H	I	J	K	L
271	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**											
272	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**											
273	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**											
274												
275	**The data set for variable Cadmium was not processed!**											
276												
277												
278	**Chromium**											
279												
280	**General Statistics**											
281						Total Number of Observations	28				Number of Missing Observations	3	
282						Number of Distinct Observations	13						
283						Number of Detects	9				Number of Non-Detects	19	
284						Number of Distinct Detects	9				Number of Distinct Non-Detects	5	
285						Minimum Detect	1.6				Minimum Non-Detect	0.93	
286						Maximum Detect	42.2				Maximum Non-Detect	4	
287						Variance Detected	178.6				Percent Non-Detects	67.86%	
288						Mean Detected	11.11				SD Detected	13.37	
289						Mean of Detected Logged Data	1.843				SD of Detected Logged Data	1.108	
290													
291	**Critical Values for Background Threshold Values (BTVs)**											
292						Tolerance Factor K (For UTL)	2.246				d2max (for USL)	2.714	
293													
294	**Normal GOF Test on Detects Only**											
295						Shapiro Wilk Test Statistic	0.748				**Shapiro Wilk GOF Test**		
296						5% Shapiro Wilk Critical Value	0.829				Data Not Normal at 5% Significance Level		
297						Lilliefors Test Statistic	0.25				**Lilliefors GOF Test**		
298						5% Lilliefors Critical Value	0.274				Detected Data appear Normal at 5% Significance Level		
299	**Detected Data appear Approximate Normal at 5% Significance Level**											
300													
301	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**											
302						KM Mean	4.224				KM SD	8.576	
303						95% UTL95% Coverage	23.48				95% KM UPL (t)	19.09	
304						90% KM Percentile (z)	15.21				95% KM Percentile (z)	18.33	
305						99% KM Percentile (z)	24.17				95% KM USL	27.5	
306													
307	**DL/2 Substitution Background Statistics Assuming Normal Distribution**											
308						Mean	4.027				SD	8.815	
309						95% UTL95% Coverage	23.83				95% UPL (t)	19.31	
310						90% Percentile (z)	15.32				95% Percentile (z)	18.53	
311						99% Percentile (z)	24.53				95% USL	27.96	
312	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**											
313													
314	**Gamma GOF Tests on Detected Observations Only**											
315						A-D Test Statistic	0.418				**Anderson-Darling GOF Test**		
316						5% A-D Critical Value	0.743				Detected data appear Gamma Distributed at 5% Significance Level		
317						K-S Test Statistic	0.191				**Kolmogorov-Smirnov GOF**		
318						5% K-S Critical Value	0.287				Detected data appear Gamma Distributed at 5% Significance Level		
319	**Detected data appear Gamma Distributed at 5% Significance Level**											
320													
321	**Gamma Statistics on Detected Data Only**											
322						k hat (MLE)	1.02				k star (bias corrected MLE)	0.754	
323						Theta hat (MLE)	10.89				Theta star (bias corrected MLE)	14.73	
324						nu hat (MLE)	18.36				nu star (bias corrected)	13.57	

325				MLE Mean (bias corrected)		11.11						
326				MLE Sd (bias corrected)		12.8				95% Percentile of Chisquare (2kstar)		4.998
327												
328	**Gamma ROS Statistics using Imputed Non-Detects**											
329	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
330	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
331	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
332	This is especially true when the sample size is small.											
333	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
334				Minimum		0.01				Mean		3.578
335				Maximum		42.2				Median		0.01
336				SD		8.989				CV		2.512
337				k hat (MLE)		0.194				k star (bias corrected MLE)		0.197
338				Theta hat (MLE)		18.43				Theta star (bias corrected MLE)		18.15
339				nu hat (MLE)		10.87				nu star (bias corrected)		11.04
340				MLE Mean (bias corrected)		3.578				MLE Sd (bias corrected)		8.058
341				95% Percentile of Chisquare (2kstar)		2.04				90% Percentile		10.82
342				95% Percentile		18.51				99% Percentile		39.71
343	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**											
344	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
345					WH	HW					WH	HW
346				95% Approx. Gamma UTL with 95% Coverage	23.83	26.78				95% Approx. Gamma UPL	13.8	13.74
347				95% Gamma USL	36.45	45.31						
348												
349	**Estimates of Gamma Parameters using KM Estimates**											
350				Mean (KM)		4.224				SD (KM)		8.576
351				Variance (KM)		73.54				SE of Mean (KM)		1.719
352				k hat (KM)		0.243				k star (KM)		0.24
353				nu hat (KM)		13.59				nu star (KM)		13.46
354				theta hat (KM)		17.41				theta star (KM)		17.57
355				80% gamma percentile (KM)		6.047				90% gamma percentile (KM)		12.71
356				95% gamma percentile (KM)		20.68				99% gamma percentile (KM)		42.02
357												
358	**The following statistics are computed using gamma distribution and KM estimates**											
359	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
360					WH	HW					WH	HW
361				95% Approx. Gamma UTL with 95% Coverage	19.55	19.3				95% Approx. Gamma UPL	13.41	12.79
362				95% KM Gamma Percentile	12.5	11.86				95% Gamma USL	26.58	27.17
363												
364	**Lognormal GOF Test on Detected Observations Only**											
365				Shapiro Wilk Test Statistic		0.949				**Shapiro Wilk GOF Test**		
366				5% Shapiro Wilk Critical Value		0.829				Detected Data appear Lognormal at 5% Significance Level		
367				Lilliefors Test Statistic		0.156				**Lilliefors GOF Test**		
368				5% Lilliefors Critical Value		0.274				Detected Data appear Lognormal at 5% Significance Level		
369	**Detected Data appear Lognormal at 5% Significance Level**											
370												
371	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
372				Mean in Original Scale		3.764				Mean in Log Scale		-0.649
373				SD in Original Scale		8.916				SD in Log Scale		2.123
374				95% UTL95% Coverage		61.56				95% BCA UTL95% Coverage		42.2
375				95% Bootstrap (%) UTL95% Coverage		42.2				95% UPL (t)		20.73
376				90% Percentile (z)		7.942				95% Percentile (z)		17.18
377				99% Percentile (z)		73.01				95% USL		166.4
378												

379	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
380	KM Mean of Logged Data				0.557	95% KM UTL (Lognormal)95% Coverage						19.35
381	KM SD of Logged Data				1.071	95% KM UPL (Lognormal)						11.18
382	95% KM Percentile Lognormal (z)				10.16	95% KM USL (Lognormal)						31.96
383												
384	**Background DL/2 Statistics Assuming Lognormal Distribution**											
385	Mean in Original Scale				4.027	Mean in Log Scale						0.242
386	SD in Original Scale				8.815	SD in Log Scale						1.323
387	95% UTL95% Coverage				24.89	95% UPL (t)						12.63
388	90% Percentile (z)				6.946	95% Percentile (z)						11.23
389	99% Percentile (z)				27.68	95% USL						46.25
390	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											
391												
392	**Nonparametric Distribution Free Background Statistics**											
393	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
394												
395	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**											
396	Order of Statistic, r				28	95% UTL with95% Coverage						42.2
397	Approx, f used to compute achieved CC				1.474	Approximate Actual Confidence Coefficient achieved by UTL						0.762
398	Approximate Sample Size needed to achieve specified CC				59	95% UPL						33.06
399	95% USL				42.2	95% KM Chebyshev UPL						42.27
400												
401	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
402	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
403	and consists of observations collected from clean unimpacted locations.											
404	The use of USL tends to provide a balance between false positives and false negatives provided the data											
405	represents a background data set and when many onsite observations need to be compared with the BTV.											
406												
407	**Cobalt**											
408												
409	**General Statistics**											
410	Total Number of Observations				28	Number of Missing Observations						3
411	Number of Distinct Observations				6							
412	Number of Detects				0	Number of Non-Detects						28
413	Number of Distinct Detects				0	Number of Distinct Non-Detects						6
414	Minimum Detect				N/A	Minimum Non-Detect						0.5
415	Maximum Detect				N/A	Maximum Non-Detect						5
416	Variance Detected				N/A	Percent Non-Detects						100%
417	Mean Detected				N/A	SD Detected						N/A
418	Mean of Detected Logged Data				N/A	SD of Detected Logged Data						N/A
419												
420	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**											
421	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**											
422	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**											
423												
424	**The data set for variable Cobalt was not processed!**											
425												
426												
427	**Fluoride**											
428												
429	**General Statistics**											
430	Total Number of Observations				28	Number of Missing Observations						3
431	Number of Distinct Observations				17							
432	Number of Detects				21	Number of Non-Detects						7

433				Number of Distinct Detects		17				Number of Distinct Non-Detects		1
434				Minimum Detect		0.12				Minimum Non-Detect		0.2
435				Maximum Detect		1.65				Maximum Non-Detect		0.2
436				Variance Detected		0.129				Percent Non-Detects		25%
437				Mean Detected		0.58				SD Detected		0.359
438				Mean of Detected Logged Data		-0.744				SD of Detected Logged Data		0.68
439												
440				**Critical Values for Background Threshold Values (BTVs)**								
441				Tolerance Factor K (For UTL)		2.246				d2max (for USL)		2.714
442												
443				**Normal GOF Test on Detects Only**								
444				Shapiro Wilk Test Statistic		0.857				**Shapiro Wilk GOF Test**		
445				5% Shapiro Wilk Critical Value		0.908				Data Not Normal at 5% Significance Level		
446				Lilliefors Test Statistic		0.187				**Lilliefors GOF Test**		
447				5% Lilliefors Critical Value		0.188				Detected Data appear Normal at 5% Significance Level		
448				**Detected Data appear Approximate Normal at 5% Significance Level**								
449												
450				**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**								
451				KM Mean		0.465				KM SD		0.363
452				95% UTL95% Coverage		1.281				95% KM UPL (t)		1.095
453				90% KM Percentile (z)		0.931				95% KM Percentile (z)		1.063
454				99% KM Percentile (z)		1.31				95% KM USL		1.451
455												
456				**DL/2 Substitution Background Statistics Assuming Normal Distribution**								
457				Mean		0.46				SD		0.375
458				95% UTL95% Coverage		1.302				95% UPL (t)		1.11
459				90% Percentile (z)		0.94				95% Percentile (z)		1.077
460				99% Percentile (z)		1.332				95% USL		1.478
461				**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**								
462												
463				**Gamma GOF Tests on Detected Observations Only**								
464				A-D Test Statistic		0.918				**Anderson-Darling GOF Test**		
465				5% A-D Critical Value		0.751				Data Not Gamma Distributed at 5% Significance Level		
466				K-S Test Statistic		0.213				**Kolmogorov-Smirnov GOF**		
467				5% K-S Critical Value		0.191				Data Not Gamma Distributed at 5% Significance Level		
468				**Data Not Gamma Distributed at 5% Significance Level**								
469												
470				**Gamma Statistics on Detected Data Only**								
471				k hat (MLE)		2.66				k star (bias corrected MLE)		2.312
472				Theta hat (MLE)		0.218				Theta star (bias corrected MLE)		0.251
473				nu hat (MLE)		111.7				nu star (bias corrected)		97.1
474				MLE Mean (bias corrected)		0.58						
475				MLE Sd (bias corrected)		0.381				95% Percentile of Chisquare (2kstar)		10.48
476												
477				**Gamma ROS Statistics using Imputed Non-Detects**								
478				GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs								
479				GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)								
480				For such situations, GROS method may yield incorrect values of UCLs and BTVs								
481				This is especially true when the sample size is small.								
482				For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates								
483				Minimum		0.01				Mean		0.452
484				Maximum		1.65				Median		0.31
485				SD		0.384				CV		0.851
486				k hat (MLE)		1.026				k star (bias corrected MLE)		0.94

487					Theta hat (MLE)	0.44				Theta star (bias corrected MLE)		0.481
488					nu hat (MLE)	57.44				nu star (bias corrected)		52.62
489					MLE Mean (bias corrected)	0.452				MLE Sd (bias corrected)		0.466
490					95% Percentile of Chisquare (2kstar)	5.755				90% Percentile		1.056
491					95% Percentile	1.383				99% Percentile		2.147
492	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**											
493	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
494					WH	HW					WH	HW
495	95% Approx. Gamma UTL with 95% Coverage				1.972	2.264	95% Approx. Gamma UPL				1.426	1.559
496	95% Gamma USL				2.58	3.096						
497												
498	**Estimates of Gamma Parameters using KM Estimates**											
499					Mean (KM)	0.465				SD (KM)		0.363
500					Variance (KM)	0.132				SE of Mean (KM)		0.0703
501					k hat (KM)	1.638				k star (KM)		1.487
502					nu hat (KM)	91.75				nu star (KM)		83.26
503					theta hat (KM)	0.284				theta star (KM)		0.313
504					80% gamma percentile (KM)	0.72				90% gamma percentile (KM)		0.971
505					95% gamma percentile (KM)	1.215				99% gamma percentile (KM)		1.766
506												
507	**The following statistics are computed using gamma distribution and KM estimates**											
508	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
509					WH	HW					WH	HW
510	95% Approx. Gamma UTL with 95% Coverage				1.593	1.684	95% Approx. Gamma UPL				1.212	1.247
511	95% KM Gamma Percentile				1.153	1.182	95% Gamma USL				2.004	2.175
512												
513	**Lognormal GOF Test on Detected Observations Only**											
514					Shapiro Wilk Test Statistic	0.912	**Shapiro Wilk GOF Test**					
515					5% Shapiro Wilk Critical Value	0.908	Detected Data appear Lognormal at 5% Significance Level					
516					Lilliefors Test Statistic	0.232	**Lilliefors GOF Test**					
517					5% Lilliefors Critical Value	0.188	Data Not Lognormal at 5% Significance Level					
518	**Detected Data appear Approximate Lognormal at 5% Significance Level**											
519												
520	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
521					Mean in Original Scale	0.467	Mean in Log Scale					-1.086
522					SD in Original Scale	0.369	SD in Log Scale					0.857
523					95% UTL95% Coverage	2.313	95% BCA UTL95% Coverage					1.367
524					95% Bootstrap (%) UTL95% Coverage	1.65	95% UPL (t)					1.491
525					90% Percentile (z)	1.012	95% Percentile (z)					1.382
526					99% Percentile (z)	2.478	95% USL					3.456
527												
528	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
529					KM Mean of Logged Data	-1.088	95% KM UTL (Lognormal)95% Coverage					2.161
530					KM SD of Logged Data	0.828	95% KM UPL (Lognormal)					1.414
531					95% KM Percentile Lognormal (z)	1.314	95% KM USL (Lognormal)					3.184
532												
533	**Background DL/2 Statistics Assuming Lognormal Distribution**											
534					Mean in Original Scale	0.46	Mean in Log Scale					-1.134
535					SD in Original Scale	0.375	SD in Log Scale					0.902
536					95% UTL95% Coverage	2.442	95% UPL (t)					1.538
537					90% Percentile (z)	1.023	95% Percentile (z)					1.42
538					99% Percentile (z)	2.626	95% USL					3.727
539	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											
540												

	A	B	C	D	E	F	G	H	I	J	K	L
541	**Nonparametric Distribution Free Background Statistics**											
542	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
543												
544	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**											
545					Order of Statistic, r	28			95% UTL with95% Coverage			1.65
546					Approx, f used to compute achieved CC	1.474			Approximate Actual Confidence Coefficient achieved by UTL			0.762
547					Approximate Sample Size needed to achieve specified CC	59			95% UPL			1.286
548					95% USL	1.65			95% KM Chebyshev UPL			2.077
549												
550	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
551	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
552	and consists of observations collected from clean unimpacted locations.											
553	The use of USL tends to provide a balance between false positives and false negatives provided the data											
554	represents a background data set and when many onsite observations need to be compared with the BTV.											
555												
556	**Lead**											
557												
558	**General Statistics**											
559					Total Number of Observations	28			Number of Missing Observations			3
560					Number of Distinct Observations	6						
561					Number of Detects	2			Number of Non-Detects			26
562					Number of Distinct Detects	2			Number of Distinct Non-Detects			5
563					Minimum Detect	0.5			Minimum Non-Detect			1
564					Maximum Detect	2			Maximum Non-Detect			5
565					Variance Detected	1.125			Percent Non-Detects			92.86%
566					Mean Detected	1.25			SD Detected			1.061
567					Mean of Detected Logged Data	0			SD of Detected Logged Data			0.98
568												
569	**Warning: Data set has only 2 Detected Values.**											
570	**This is not enough to compute meaningful or reliable statistics and estimates.**											
571												
572												
573	**Critical Values for Background Threshold Values (BTVs)**											
574					Tolerance Factor K (For UTL)	2.246			d2max (for USL)			2.714
575												
576	**Normal GOF Test on Detects Only**											
577	**Not Enough Data to Perform GOF Test**											
578												
579	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**											
580					KM Mean	0.563			KM SD			0.3
581					95% UTL95% Coverage	1.236			95% KM UPL (t)			1.082
582					90% KM Percentile (z)	0.947			95% KM Percentile (z)			1.056
583					99% KM Percentile (z)	1.26			95% KM USL			1.376
584												
585	**DL/2 Substitution Background Statistics Assuming Normal Distribution**											
586					Mean	0.768			SD			0.569
587					95% UTL95% Coverage	2.046			95% UPL (t)			1.754
588					90% Percentile (z)	1.497			95% Percentile (z)			1.704
589					99% Percentile (z)	2.092			95% USL			2.312
590	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**											
591												
592	**Gamma GOF Tests on Detected Observations Only**											
593	**Not Enough Data to Perform GOF Test**											
594												

595	**Gamma Statistics on Detected Data Only**											
596						k hat (MLE)	2.394			k star (bias corrected MLE)		N/A
597						Theta hat (MLE)	0.522			Theta star (bias corrected MLE)		N/A
598						nu hat (MLE)	9.577			nu star (bias corrected)		N/A
599						MLE Mean (bias corrected)	N/A					
600						MLE Sd (bias corrected)	N/A			95% Percentile of Chisquare (2kstar)		N/A
601												
602	**Estimates of Gamma Parameters using KM Estimates**											
603						Mean (KM)	0.563			SD (KM)		0.3
604						Variance (KM)	0.0898			SE of Mean (KM)		0.0865
605						k hat (KM)	3.522			k star (KM)		3.168
606						nu hat (KM)	197.2			nu star (KM)		177.4
607						theta hat (KM)	0.16			theta star (KM)		0.178
608						80% gamma percentile (KM)	0.797			90% gamma percentile (KM)		0.986
609						95% gamma percentile (KM)	1.162			99% gamma percentile (KM)		1.543
610												
611	**The following statistics are computed using gamma distribution and KM estimates**											
612	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
613							WH	HW			WH	HW
614						95% Approx. Gamma UTL with 95% Coverage	1.069	1.048		95% Approx. Gamma UPL	0.926	0.908
615						95% KM Gamma Percentile	0.902	0.885		95% Gamma USL	1.211	1.19
616												
617	**Lognormal GOF Test on Detected Observations Only**											
618	**Not Enough Data to Perform GOF Test**											
619												
620	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
621						Mean in Original Scale	0.607			Mean in Log Scale		-0.652
622						SD in Original Scale	0.381			SD in Log Scale		0.551
623						95% UTL95% Coverage	1.795			95% BCA UTL95% Coverage		2
624						95% Bootstrap (%) UTL95% Coverage	2			95% UPL (t)		1.354
625						90% Percentile (z)	1.055			95% Percentile (z)		1.289
626						99% Percentile (z)	1.876			95% USL		2.323
627												
628	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
629						KM Mean of Logged Data	-0.635			95% KM UTL (Lognormal)95% Coverage		0.987
630						KM SD of Logged Data	0.277			95% KM UPL (Lognormal)		0.856
631						95% KM Percentile Lognormal (z)	0.835			95% KM USL (Lognormal)		1.124
632												
633	**Background DL/2 Statistics Assuming Lognormal Distribution**											
634						Mean in Original Scale	0.768			Mean in Log Scale		-0.433
635						SD in Original Scale	0.569			SD in Log Scale		0.525
636						95% UTL95% Coverage	2.108			95% UPL (t)		1.61
637						90% Percentile (z)	1.27			95% Percentile (z)		1.537
638						99% Percentile (z)	2.198			95% USL		2.695
639	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											
640												
641	**Nonparametric Distribution Free Background Statistics**											
642	**Data do not follow a Discernible Distribution (0.05)**											
643												
644	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**											
645						Order of Statistic, r	28			95% UTL with95% Coverage		5
646						Approx, f used to compute achieved CC	1.474			Approximate Actual Confidence Coefficient achieved by UTL		0.762
647						Approximate Sample Size needed to achieve specified CC	59			95% UPL		4.55
648						95% USL	5			95% KM Chebyshev UPL		1.892

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers
and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data
represents a background data set and when many onsite observations need to be compared with the BTV.

Lithium

General Statistics

Total Number of Observations	28	Number of Distinct Observations	27
		Number of Missing Observations	3
Minimum	51.6	First Quartile	57.2
Second Largest	525	Median	398.5
Maximum	570	Third Quartile	410.8
Mean	282.5	SD	187
Coefficient of Variation	0.662	Skewness	-0.317
Mean of logged Data	5.272	SD of logged Data	0.995

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.246	d2max (for USL)	2.714

Normal GOF Test

Shapiro Wilk Test Statistic	0.759	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.924	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.319	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.164	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

95% UTL with 95% Coverage	702.5	90% Percentile (z)	522.2
95% UPL (t)	606.7	95% Percentile (z)	590.1
95% USL	790.1	99% Percentile (z)	717.5

Gamma GOF Test

A-D Test Statistic	3.86	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.763	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.357	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.168	Data Not Gamma Distributed at 5% Significance Level	

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.488	k star (bias corrected MLE)	1.353
Theta hat (MLE)	189.8	Theta star (bias corrected MLE)	208.9
nu hat (MLE)	83.34	nu star (bias corrected)	75.74
MLE Mean (bias corrected)	282.5	MLE Sd (bias corrected)	242.9

Background Statistics Assuming Gamma Distribution

95% Wilson Hilferty (WH) Approx. Gamma UPL	793.4	90% Percentile	603.8
95% Hawkins Wixley (HW) Approx. Gamma UPL	842.6	95% Percentile	762.1
95% WH Approx. Gamma UTL with 95% Coverage	1059	99% Percentile	1122
95% HW Approx. Gamma UTL with 95% Coverage	1167		
95% WH USL	1349	95% HW USL	1537

703	**Lognormal GOF Test**											
704					Shapiro Wilk Test Statistic	0.707	**Shapiro Wilk Lognormal GOF Test**					
705					5% Shapiro Wilk Critical Value	0.924	Data Not Lognormal at 5% Significance Level					
706					Lilliefors Test Statistic	0.362	**Lilliefors Lognormal GOF Test**					
707					5% Lilliefors Critical Value	0.164	Data Not Lognormal at 5% Significance Level					
708	**Data Not Lognormal at 5% Significance Level**											
709												
710	**Background Statistics assuming Lognormal Distribution**											
711					95% UTL with 95% Coverage	1821				90% Percentile (z)	697.2	
712					95% UPL (t)	1093				95% Percentile (z)	1001	
713					95% USL	2903				99% Percentile (z)	1972	
714												
715	**Nonparametric Distribution Free Background Statistics**											
716	**Data do not follow a Discernible Distribution (0.05)**											
717												
718	**Nonparametric Upper Limits for Background Threshold Values**											
719					Order of Statistic, r	28				95% UTL with 95% Coverage	570	
720					Approx, f used to compute achieved CC	1.474				Approximate Actual Confidence Coefficient achieved by UTL	0.762	
721										Approximate Sample Size needed to achieve specified CC	59	
722					95% Percentile Bootstrap UTL with 95% Coverage	570				95% BCA Bootstrap UTL with 95% Coverage	570	
723					95% UPL	549.8				90% Percentile	439.3	
724					90% Chebyshev UPL	853.4				95% Percentile	495.3	
725					95% Chebyshev UPL	1112				99% Percentile	557.9	
726					95% USL	570						
727												
728	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
729	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
730	and consists of observations collected from clean unimpacted locations.											
731	The use of USL tends to provide a balance between false positives and false negatives provided the data											
732	represents a background data set and when many onsite observations need to be compared with the BTV.											
733												
734	**Mercury**											
735												
736	**General Statistics**											
737					Total Number of Observations	28				Number of Missing Observations	3	
738					Number of Distinct Observations	2						
739					Number of Detects	0				Number of Non-Detects	28	
740					Number of Distinct Detects	0				Number of Distinct Non-Detects	2	
741					Minimum Detect	N/A				Minimum Non-Detect	0.1	
742					Maximum Detect	N/A				Maximum Non-Detect	0.2	
743					Variance Detected	N/A				Percent Non-Detects	100%	
744					Mean Detected	N/A				SD Detected	N/A	
745					Mean of Detected Logged Data	N/A				SD of Detected Logged Data	N/A	
746												
747	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**											
748	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**											
749	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**											
750												
751	**The data set for variable Mercury was not processed!**											
752												
753												
754	**Molybdenum**											
755												
756	**General Statistics**											

757				Total Number of Observations		28				Number of Missing Observations		3
758				Number of Distinct Observations		16						
759				Number of Detects		12				Number of Non-Detects		16
760				Number of Distinct Detects		12				Number of Distinct Non-Detects		4
761				Minimum Detect		2				Minimum Non-Detect		0.5
762				Maximum Detect		55.8				Maximum Non-Detect		4
763				Variance Detected		258.9				Percent Non-Detects		57.14%
764				Mean Detected		24.36				SD Detected		16.09
765				Mean of Detected Logged Data		2.934				SD of Detected Logged Data		0.868
766												
767				**Critical Values for Background Threshold Values (BTVs)**								
768				Tolerance Factor K (For UTL)		2.246				d2max (for USL)		2.714
769												
770				**Normal GOF Test on Detects Only**								
771				Shapiro Wilk Test Statistic		0.9				**Shapiro Wilk GOF Test**		
772				5% Shapiro Wilk Critical Value		0.859				Detected Data appear Normal at 5% Significance Level		
773				Lilliefors Test Statistic		0.239				**Lilliefors GOF Test**		
774				5% Lilliefors Critical Value		0.243				Detected Data appear Normal at 5% Significance Level		
775				**Detected Data appear Normal at 5% Significance Level**								
776												
777				**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**								
778				KM Mean		10.73				KM SD		15.52
779				95% UTL95% Coverage		45.6				95% KM UPL (t)		37.64
780				90% KM Percentile (z)		30.63				95% KM Percentile (z)		36.27
781				99% KM Percentile (z)		46.84				95% KM USL		52.87
782												
783				**DL/2 Substitution Background Statistics Assuming Normal Distribution**								
784				Mean		10.81				SD		15.76
785				95% UTL95% Coverage		46.21				95% UPL (t)		38.13
786				90% Percentile (z)		31.01				95% Percentile (z)		36.73
787				99% Percentile (z)		47.47				95% USL		53.59
788				**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**								
789												
790				**Gamma GOF Tests on Detected Observations Only**								
791				A-D Test Statistic		0.407				**Anderson-Darling GOF Test**		
792				5% A-D Critical Value		0.741				Detected data appear Gamma Distributed at 5% Significance Level		
793				K-S Test Statistic		0.162				**Kolmogorov-Smirnov GOF**		
794				5% K-S Critical Value		0.248				Detected data appear Gamma Distributed at 5% Significance Level		
795				**Detected data appear Gamma Distributed at 5% Significance Level**								
796												
797				**Gamma Statistics on Detected Data Only**								
798				k hat (MLE)		2.086				k star (bias corrected MLE)		1.62
799				Theta hat (MLE)		11.68				Theta star (bias corrected MLE)		15.04
800				nu hat (MLE)		50.06				nu star (bias corrected)		38.87
801				MLE Mean (bias corrected)		24.36						
802				MLE Sd (bias corrected)		19.14				95% Percentile of Chisquare (2kstar)		8.226
803												
804				**Gamma ROS Statistics using Imputed Non-Detects**								
805				GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs								
806				GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)								
807				For such situations, GROS method may yield incorrect values of UCLs and BTVs								
808				This is especially true when the sample size is small.								
809				For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates								
810				Minimum		0.01				Mean		10.52

811					Maximum	55.8				Median		0.01
812					SD	15.96				CV		1.517
813					k hat (MLE)	0.207				k star (bias corrected MLE)		0.209
814					Theta hat (MLE)	50.82				Theta star (bias corrected MLE)		50.42
815					nu hat (MLE)	11.59				nu star (bias corrected)		11.68
816					MLE Mean (bias corrected)	10.52				MLE Sd (bias corrected)		23.03
817					95% Percentile of Chisquare (2kstar)	2.126				90% Percentile		31.81
818					95% Percentile	53.6				99% Percentile		113.2
819	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**											
820	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
821					WH	HW				WH	HW	
822	95% Approx. Gamma UTL with 95% Coverage				81.76	108.2	95% Approx. Gamma UPL			48.86	56.83	
823	95% Gamma USL				122.5	180.3						
824												
825	**Estimates of Gamma Parameters using KM Estimates**											
826					Mean (KM)	10.73				SD (KM)		15.52
827					Variance (KM)	241				SE of Mean (KM)		3.064
828					k hat (KM)	0.478				k star (KM)		0.451
829					nu hat (KM)	26.77				nu star (KM)		25.23
830					theta hat (KM)	22.45				theta star (KM)		23.82
831					80% gamma percentile (KM)	17.52				90% gamma percentile (KM)		29.65
832					95% gamma percentile (KM)	42.78				99% gamma percentile (KM)		75.38
833												
834	**The following statistics are computed using gamma distribution and KM estimates**											
835	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
836					WH	HW				WH	HW	
837	95% Approx. Gamma UTL with 95% Coverage				64.81	73.72	95% Approx. Gamma UPL			41.9	44.26	
838	95% KM Gamma Percentile				38.59	40.24	95% Gamma USL			91.94	111.7	
839												
840	**Lognormal GOF Test on Detected Observations Only**											
841					Shapiro Wilk Test Statistic	0.862	**Shapiro Wilk GOF Test**					
842					5% Shapiro Wilk Critical Value	0.859	Detected Data appear Lognormal at 5% Significance Level					
843					Lilliefors Test Statistic	0.212	**Lilliefors GOF Test**					
844					5% Lilliefors Critical Value	0.243	Detected Data appear Lognormal at 5% Significance Level					
845	**Detected Data appear Lognormal at 5% Significance Level**											
846												
847	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
848					Mean in Original Scale	11.78				Mean in Log Scale		1.616
849					SD in Original Scale	15.16				SD in Log Scale		1.405
850					95% UTL95% Coverage	118.2				95% BCA UTL95% Coverage		55.8
851					95% Bootstrap (%) UTL95% Coverage	55.8				95% UPL (t)		57.52
852					90% Percentile (z)	30.48				95% Percentile (z)		50.78
853					99% Percentile (z)	132.3				95% USL		228.3
854												
855	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
856					KM Mean of Logged Data	0.868				95% KM UTL (Lognormal)95% Coverage		159.9
857					KM SD of Logged Data	1.873				95% KM UPL (Lognormal)		61.22
858					95% KM Percentile Lognormal (z)	51.86				95% KM USL (Lognormal)		384.4
859												
860	**Background DL/2 Statistics Assuming Lognormal Distribution**											
861					Mean in Original Scale	10.81				Mean in Log Scale		0.925
862					SD in Original Scale	15.76				SD in Log Scale		1.89
863					95% UTL95% Coverage	176				95% UPL (t)		66.8
864					90% Percentile (z)	28.44				95% Percentile (z)		56.5

865				99% Percentile (z)	204.9					95% USL	426.6	
866	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											
867												
868	**Nonparametric Distribution Free Background Statistics**											
869	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
870												
871	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**											
872				Order of Statistic, r	28					95% UTL with95% Coverage	55.8	
873				Approx, f used to compute achieved CC	1.474					Approximate Actual Confidence Coefficient achieved by UTL	0.762	
874				Approximate Sample Size needed to achieve specified CC	59					95% UPL	52.38	
875				95% USL	55.8					95% KM Chebyshev UPL	79.59	
876												
877	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
878	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
879	and consists of observations collected from clean unimpacted locations.											
880	The use of USL tends to provide a balance between false positives and false negatives provided the data											
881	represents a background data set and when many onsite observations need to be compared with the BTV.											
882												
883	**Radium**											
884												
885	**General Statistics**											
886				Total Number of Observations	24					Number of Missing Observations	7	
887				Number of Distinct Observations	24							
888				Number of Detects	22					Number of Non-Detects	2	
889				Number of Distinct Detects	22					Number of Distinct Non-Detects	2	
890				Minimum Detect	0.282					Minimum Non-Detect	0.48	
891				Maximum Detect	3					Maximum Non-Detect	0.71	
892				Variance Detected	0.561					Percent Non-Detects	8.333%	
893				Mean Detected	1.31					SD Detected	0.749	
894				Mean of Detected Logged Data	0.117					SD of Detected Logged Data	0.577	
895												
896	**Critical Values for Background Threshold Values (BTVs)**											
897				Tolerance Factor K (For UTL)	2.309					d2max (for USL)	2.644	
898												
899	**Normal GOF Test on Detects Only**											
900				Shapiro Wilk Test Statistic	0.879					**Shapiro Wilk GOF Test**		
901				5% Shapiro Wilk Critical Value	0.911					Data Not Normal at 5% Significance Level		
902				Lilliefors Test Statistic	0.196					**Lilliefors GOF Test**		
903				5% Lilliefors Critical Value	0.184					Data Not Normal at 5% Significance Level		
904	**Data Not Normal at 5% Significance Level**											
905												
906	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**											
907				KM Mean	1.229					KM SD	0.751	
908				95% UTL95% Coverage	2.962					95% KM UPL (t)	2.542	
909				90% KM Percentile (z)	2.191					95% KM Percentile (z)	2.464	
910				99% KM Percentile (z)	2.975					95% KM USL	3.213	
911												
912	**DL/2 Substitution Background Statistics Assuming Normal Distribution**											
913				Mean	1.225					SD	0.771	
914				95% UTL95% Coverage	3.005					95% UPL (t)	2.574	
915				90% Percentile (z)	2.213					95% Percentile (z)	2.493	
916				99% Percentile (z)	3.019					95% USL	3.264	
917	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**											
918												

	A	B	C	D	E	F	G	H	I	J	K	L
919	**Gamma GOF Tests on Detected Observations Only**											
920				A-D Test Statistic		0.484	**Anderson-Darling GOF Test**					
921				5% A-D Critical Value		0.748	Detected data appear Gamma Distributed at 5% Significance Level					
922				K-S Test Statistic		0.137	**Kolmogorov-Smirnov GOF**					
923				5% K-S Critical Value		0.186	Detected data appear Gamma Distributed at 5% Significance Level					
924	**Detected data appear Gamma Distributed at 5% Significance Level**											
925												
926	**Gamma Statistics on Detected Data Only**											
927				k hat (MLE)		3.442	k star (bias corrected MLE)					3.003
928				Theta hat (MLE)		0.38	Theta star (bias corrected MLE)					0.436
929				nu hat (MLE)		151.4	nu star (bias corrected)					132.1
930				MLE Mean (bias corrected)		1.31						
931				MLE Sd (bias corrected)		0.756	95% Percentile of Chisquare (2kstar)					12.6
932												
933	**Gamma ROS Statistics using Imputed Non-Detects**											
934	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
935	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
936	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
937	This is especially true when the sample size is small.											
938	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
939				Minimum		0.16	Mean					1.22
940				Maximum		3	Median					0.971
941				SD		0.778	CV					0.637
942				k hat (MLE)		2.469	k star (bias corrected MLE)					2.189
943				Theta hat (MLE)		0.494	Theta star (bias corrected MLE)					0.558
944				nu hat (MLE)		118.5	nu star (bias corrected)					105
945				MLE Mean (bias corrected)		1.22	MLE Sd (bias corrected)					0.825
946				95% Percentile of Chisquare (2kstar)		10.09	90% Percentile					2.324
947				95% Percentile		2.814	99% Percentile					3.894
948	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**											
949	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
950					WH	HW					WH	HW
951				95% Approx. Gamma UTL with 95% Coverage	3.749	3.971	95% Approx. Gamma UPL				2.89	2.985
952				95% Gamma USL	4.337	4.666						
953												
954	**Estimates of Gamma Parameters using KM Estimates**											
955				Mean (KM)		1.229	SD (KM)					0.751
956				Variance (KM)		0.563	SE of Mean (KM)					0.157
957				k hat (KM)		2.682	k star (KM)					2.375
958				nu hat (KM)		128.7	nu star (KM)					114
959				theta hat (KM)		0.458	theta star (KM)					0.518
960				80% gamma percentile (KM)		1.803	90% gamma percentile (KM)					2.297
961				95% gamma percentile (KM)		2.764	99% gamma percentile (KM)					3.789
962												
963	**The following statistics are computed using gamma distribution and KM estimates**											
964	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
965					WH	HW					WH	HW
966				95% Approx. Gamma UTL with 95% Coverage	3.527	3.684	95% Approx. Gamma UPL				2.758	2.821
967				95% KM Gamma Percentile	2.628	2.679	95% Gamma USL				4.05	4.287
968												
969	**Lognormal GOF Test on Detected Observations Only**											
970				Shapiro Wilk Test Statistic		0.961	**Shapiro Wilk GOF Test**					
971				5% Shapiro Wilk Critical Value		0.911	Detected Data appear Lognormal at 5% Significance Level					
972				Lilliefors Test Statistic		0.139	**Lilliefors GOF Test**					

973				5% Lilliefors Critical Value		0.184	Detected Data appear Lognormal at 5% Significance Level					
974	**Detected Data appear Lognormal at 5% Significance Level**											
975												
976	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
977				Mean in Original Scale		1.233				Mean in Log Scale		0.0298
978				SD in Original Scale		0.761				SD in Log Scale		0.627
979				95% UTL95% Coverage		4.383				95% BCA UTL95% Coverage		3
980				95% Bootstrap (%) UTL95% Coverage		3				95% UPL (t)		3.085
981				90% Percentile (z)		2.301				95% Percentile (z)		2.89
982				99% Percentile (z)		4.431				95% USL		5.407
983												
984	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
985				KM Mean of Logged Data		0.0153				95% KM UTL (Lognormal)95% Coverage		4.473
986				KM SD of Logged Data		0.642				95% KM UPL (Lognormal)		3.122
987				95% KM Percentile Lognormal (z)		2.92				95% KM USL (Lognormal)		5.546
988												
989	**Background DL/2 Statistics Assuming Lognormal Distribution**											
990				Mean in Original Scale		1.225				Mean in Log Scale		0.005
991				SD in Original Scale		0.771				SD in Log Scale		0.672
992				95% UTL95% Coverage		4.748				95% UPL (t)		3.259
993				90% Percentile (z)		2.379				95% Percentile (z)		3.038
994				99% Percentile (z)		4.804				95% USL		5.947
995	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											
996												
997	**Nonparametric Distribution Free Background Statistics**											
998	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
999												
1000	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**											
1001				Order of Statistic, r		24				95% UTL with95% Coverage		3
1002				Approx, f used to compute achieved CC		1.263				Approximate Actual Confidence Coefficient achieved by UTL		0.708
1003				Approximate Sample Size needed to achieve specified CC		59				95% UPL		2.935
1004				95% USL		3				95% KM Chebyshev UPL		4.568
1005												
1006	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
1007	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
1008	and consists of observations collected from clean unimpacted locations.											
1009	The use of USL tends to provide a balance between false positives and false negatives provided the data											
1010	represents a background data set and when many onsite observations need to be compared with the BTV.											
1011												
1012	**Radium-226**											
1013												
1014	**General Statistics**											
1015				Total Number of Observations		16				Number of Distinct Observations		16
1016										Number of Missing Observations		15
1017				Minimum		-0.0627				First Quartile		0.108
1018				Second Largest		0.947				Median		0.226
1019				Maximum		1.71				Third Quartile		0.659
1020				Mean		0.396				SD		0.471
1021				Coefficient of Variation		1.188				Skewness		1.603
1022												
1023	**Critical Values for Background Threshold Values (BTVs)**											
1024				Tolerance Factor K (For UTL)		2.524				d2max (for USL)		2.443
1025												
1026	**Normal GOF Test**											

	A	B	C	D	E	F	G	H	I	J	K	L
1027					Shapiro Wilk Test Statistic	0.839	**Shapiro Wilk GOF Test**					
1028					5% Shapiro Wilk Critical Value	0.887	Data Not Normal at 5% Significance Level					
1029					Lilliefors Test Statistic	0.218	**Lilliefors GOF Test**					
1030					5% Lilliefors Critical Value	0.213	Data Not Normal at 5% Significance Level					
1031	**Data Not Normal at 5% Significance Level**											
1032												
1033	**Background Statistics Assuming Normal Distribution**											
1034				95% UTL with	95% Coverage	1.584				90% Percentile (z)		0.999
1035					95% UPL (t)	1.247				95% Percentile (z)		1.17
1036					95% USL	1.546				99% Percentile (z)		1.491
1037												
1038	**Gamma Statistics**											
1039	**Gamma Statistics Not Available**											
1040												
1041	**Dataset Contains Values <= 0 - Cannot Compute Gamma Statistics**											
1042												
1043	**Dataset Contains Values <= 0 - Cannot Compute Log Statistics**											
1044												
1045	**Nonparametric Distribution Free Background Statistics**											
1046	**Data do not follow a Discernible Distribution (0.05)**											
1047												
1048	**Nonparametric Upper Limits for Background Threshold Values**											
1049					Order of Statistic, r	16				95% UTL with	95% Coverage	1.71
1050				Approx, f used to compute achieved CC		0.842				Approximate Actual Confidence Coefficient achieved by UTL		0.56
1051										Approximate Sample Size needed to achieve specified CC		59
1052			95% Percentile Bootstrap UTL with		95% Coverage	1.71				95% BCA Bootstrap UTL with	95% Coverage	1.71
1053					95% UPL	1.71				90% Percentile		0.883
1054					90% Chebyshev UPL	1.852				95% Percentile		1.138
1055					95% Chebyshev UPL	2.511				99% Percentile		1.596
1056					95% USL	1.71						
1057												
1058	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
1059	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
1060	and consists of observations collected from clean unimpacted locations.											
1061	The use of USL tends to provide a balance between false positives and false negatives provided the data											
1062	represents a background data set and when many onsite observations need to be compared with the BTV.											
1063												
1064	**Radium-228**											
1065												
1066	**General Statistics**											
1067					Total Number of Observations	16				Number of Distinct Observations		16
1068										Number of Missing Observations		15
1069					Minimum	0.234				First Quartile		0.653
1070					Second Largest	1.76				Median		0.843
1071					Maximum	1.89				Third Quartile		1.043
1072					Mean	0.894				SD		0.438
1073					Coefficient of Variation	0.491				Skewness		1.046
1074					Mean of logged Data	-0.228				SD of logged Data		0.516
1075												
1076	**Critical Values for Background Threshold Values (BTVs)**											
1077					Tolerance Factor K (For UTL)	2.524				d2max (for USL)		2.443
1078												
1079	**Normal GOF Test**											
1080					Shapiro Wilk Test Statistic	0.911	**Shapiro Wilk GOF Test**					

1081				5% Shapiro Wilk Critical Value		0.887		Data appear Normal at 5% Significance Level				
1082				Lilliefors Test Statistic		0.178		**Lilliefors GOF Test**				
1083				5% Lilliefors Critical Value		0.213		Data appear Normal at 5% Significance Level				
1084				**Data appear Normal at 5% Significance Level**								
1085												
1086				**Background Statistics Assuming Normal Distribution**								
1087				95% UTL with 95% Coverage		2		90% Percentile (z)				1.455
1088				95% UPL (t)		1.686		95% Percentile (z)				1.615
1089				95% USL		1.965		99% Percentile (z)				1.913
1090												
1091				**Gamma GOF Test**								
1092				A-D Test Statistic		0.253		**Anderson-Darling Gamma GOF Test**				
1093				5% A-D Critical Value		0.742		Detected data appear Gamma Distributed at 5% Significance Level				
1094				K-S Test Statistic		0.132		**Kolmogorov-Smirnov Gamma GOF Test**				
1095				5% K-S Critical Value		0.216		Detected data appear Gamma Distributed at 5% Significance Level				
1096				**Detected data appear Gamma Distributed at 5% Significance Level**								
1097												
1098				**Gamma Statistics**								
1099				k hat (MLE)		4.483		k star (bias corrected MLE)				3.684
1100				Theta hat (MLE)		0.199		Theta star (bias corrected MLE)				0.243
1101				nu hat (MLE)		143.4		nu star (bias corrected)				117.9
1102				MLE Mean (bias corrected)		0.894		MLE Sd (bias corrected)				0.466
1103												
1104				**Background Statistics Assuming Gamma Distribution**								
1105				95% Wilson Hilferty (WH) Approx. Gamma UPL		1.824		90% Percentile				1.518
1106				95% Hawkins Wixley (HW) Approx. Gamma UPL		1.86		95% Percentile				1.771
1107				95% WH Approx. Gamma UTL with 95% Coverage		2.374		99% Percentile				2.313
1108				95% HW Approx. Gamma UTL with 95% Coverage		2.47						
1109				95% WH USL		2.307		95% HW USL				2.394
1110												
1111				**Lognormal GOF Test**								
1112				Shapiro Wilk Test Statistic		0.961		**Shapiro Wilk Lognormal GOF Test**				
1113				5% Shapiro Wilk Critical Value		0.887		Data appear Lognormal at 5% Significance Level				
1114				Lilliefors Test Statistic		0.129		**Lilliefors Lognormal GOF Test**				
1115				5% Lilliefors Critical Value		0.213		Data appear Lognormal at 5% Significance Level				
1116				**Data appear Lognormal at 5% Significance Level**								
1117												
1118				**Background Statistics assuming Lognormal Distribution**								
1119				95% UTL with 95% Coverage		2.926		90% Percentile (z)				1.541
1120				95% UPL (t)		2.021		95% Percentile (z)				1.859
1121				95% USL		2.806		99% Percentile (z)				2.642
1122												
1123				**Nonparametric Distribution Free Background Statistics**								
1124				**Data appear Normal at 5% Significance Level**								
1125												
1126				**Nonparametric Upper Limits for Background Threshold Values**								
1127				Order of Statistic, r		16		95% UTL with 95% Coverage				1.89
1128				Approx, f used to compute achieved CC		0.842		Approximate Actual Confidence Coefficient achieved by UTL				0.56
1129								Approximate Sample Size needed to achieve specified CC				59
1130				95% Percentile Bootstrap UTL with 95% Coverage		1.89		95% BCA Bootstrap UTL with 95% Coverage				1.89
1131				95% UPL		1.89		90% Percentile				1.44
1132				90% Chebyshev UPL		2.249		95% Percentile				1.793
1133				95% Chebyshev UPL		2.863		99% Percentile				1.871
1134				95% USL		1.89						

	A	B	C	D	E	F	G	H	I	J	K	L
1135												
1136	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
1137	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
1138	and consists of observations collected from clean unimpacted locations.											
1139	The use of USL tends to provide a balance between false positives and false negatives provided the data											
1140	represents a background data set and when many onsite observations need to be compared with the BTV.											
1141												
1142	**Selenium**											
1143												
1144	**General Statistics**											
1145						Total Number of Observations	28			Number of Missing Observations	3	
1146						Number of Distinct Observations	16					
1147						Number of Detects	18			Number of Non-Detects	10	
1148						Number of Distinct Detects	14			Number of Distinct Non-Detects	4	
1149						Minimum Detect	1			Minimum Non-Detect	0.5	
1150						Maximum Detect	45			Maximum Non-Detect	4	
1151						Variance Detected	182.7			Percent Non-Detects	35.71%	
1152						Mean Detected	17.09			SD Detected	13.52	
1153						Mean of Detected Logged Data	2.245			SD of Detected Logged Data	1.333	
1154												
1155	**Critical Values for Background Threshold Values (BTVs)**											
1156						Tolerance Factor K (For UTL)	2.246			d2max (for USL)	2.714	
1157												
1158	**Normal GOF Test on Detects Only**											
1159						Shapiro Wilk Test Statistic	0.853			**Shapiro Wilk GOF Test**		
1160						5% Shapiro Wilk Critical Value	0.897			Data Not Normal at 5% Significance Level		
1161						Lilliefors Test Statistic	0.24			**Lilliefors GOF Test**		
1162						5% Lilliefors Critical Value	0.202			Data Not Normal at 5% Significance Level		
1163	**Data Not Normal at 5% Significance Level**											
1164												
1165	**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**											
1166						KM Mean	11.21			KM SD	13.16	
1167						95% UTL95% Coverage	40.78			95% KM UPL (t)	34.03	
1168						90% KM Percentile (z)	28.08			95% KM Percentile (z)	32.87	
1169						99% KM Percentile (z)	41.84			95% KM USL	46.95	
1170												
1171	**DL/2 Substitution Background Statistics Assuming Normal Distribution**											
1172						Mean	11.25			SD	13.38	
1173						95% UTL95% Coverage	41.29			95% UPL (t)	34.44	
1174						90% Percentile (z)	28.39			95% Percentile (z)	33.25	
1175						99% Percentile (z)	42.37			95% USL	47.56	
1176	**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**											
1177												
1178	**Gamma GOF Tests on Detected Observations Only**											
1179						A-D Test Statistic	1.869			**Anderson-Darling GOF Test**		
1180						5% A-D Critical Value	0.768			Data Not Gamma Distributed at 5% Significance Level		
1181						K-S Test Statistic	0.312			**Kolmogorov-Smirnov GOF**		
1182						5% K-S Critical Value	0.21			Data Not Gamma Distributed at 5% Significance Level		
1183	**Data Not Gamma Distributed at 5% Significance Level**											
1184												
1185	**Gamma Statistics on Detected Data Only**											
1186						k hat (MLE)	0.975			k star (bias corrected MLE)	0.85	
1187						Theta hat (MLE)	17.53			Theta star (bias corrected MLE)	20.11	
1188						nu hat (MLE)	35.11			nu star (bias corrected)	30.59	

1189					MLE Mean (bias corrected)	17.09						
1190					MLE Sd (bias corrected)	18.54				95% Percentile of Chisquare (2kstar)		5.395
1191												
1192	**Gamma ROS Statistics using Imputed Non-Detects**											
1193	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
1194	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
1195	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
1196	This is especially true when the sample size is small.											
1197	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
1198					Minimum	0.01				Mean		11.23
1199					Maximum	45				Median		2
1200					SD	13.4				CV		1.194
1201					k hat (MLE)	0.369				k star (bias corrected MLE)		0.353
1202					Theta hat (MLE)	30.42				Theta star (bias corrected MLE)		31.78
1203					nu hat (MLE)	20.67				nu star (bias corrected)		19.78
1204					MLE Mean (bias corrected)	11.23				MLE Sd (bias corrected)		18.89
1205					95% Percentile of Chisquare (2kstar)	3.063				90% Percentile		32.37
1206					95% Percentile	48.66				99% Percentile		90.19
1207	**The following statistics are computed using Gamma ROS Statistics on Imputed Data**											
1208	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
1209						WH	HW				WH	HW
1210					95% Approx. Gamma UTL with 95% Coverage	74.3	95.66			95% Approx. Gamma UPL	47.95	56.21
1211					95% Gamma USL	105.5	147.2					
1212												
1213	**Estimates of Gamma Parameters using KM Estimates**											
1214					Mean (KM)	11.21				SD (KM)		13.16
1215					Variance (KM)	173.3				SE of Mean (KM)		2.56
1216					k hat (KM)	0.726				k star (KM)		0.672
1217					nu hat (KM)	40.63				nu star (KM)		37.61
1218					theta hat (KM)	15.45				theta star (KM)		16.69
1219					80% gamma percentile (KM)	18.45				90% gamma percentile (KM)		28.42
1220					95% gamma percentile (KM)	38.74				99% gamma percentile (KM)		63.46
1221												
1222	**The following statistics are computed using gamma distribution and KM estimates**											
1223	**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**											
1224						WH	HW				WH	HW
1225					95% Approx. Gamma UTL with 95% Coverage	63.9	73.39			95% Approx. Gamma UPL	42.55	45.7
1226					95% KM Gamma Percentile	39.42	41.85			95% Gamma USL	88.79	108.3
1227												
1228	**Lognormal GOF Test on Detected Observations Only**											
1229					Shapiro Wilk Test Statistic	0.779				**Shapiro Wilk GOF Test**		
1230					5% Shapiro Wilk Critical Value	0.897				Data Not Lognormal at 5% Significance Level		
1231					Lilliefors Test Statistic	0.332				**Lilliefors GOF Test**		
1232					5% Lilliefors Critical Value	0.202				Data Not Lognormal at 5% Significance Level		
1233	**Data Not Lognormal at 5% Significance Level**											
1234												
1235	**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**											
1236					Mean in Original Scale	11.26				Mean in Log Scale		1.266
1237					SD in Original Scale	13.37				SD in Log Scale		1.758
1238					95% UTL95% Coverage	183.9				95% BCA UTL95% Coverage		41.05
1239					95% Bootstrap (%) UTL95% Coverage	45				95% UPL (t)		74.69
1240					90% Percentile (z)	33.75				95% Percentile (z)		63.92
1241					99% Percentile (z)	211.8				95% USL		419
1242												

1243	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
1244				KM Mean of Logged Data		1.237			95% KM UTL (Lognormal)95% Coverage			164.2
1245				KM SD of Logged Data		1.72			95% KM UPL (Lognormal)			68
1246				95% KM Percentile Lognormal (z)		58.39			95% KM USL (Lognormal)			367.6
1247												
1248	**Background DL/2 Statistics Assuming Lognormal Distribution**											
1249				Mean in Original Scale		11.25			Mean in Log Scale			1.26
1250				SD in Original Scale		13.38			SD in Log Scale			1.747
1251				95% UTL95% Coverage		178.5			95% UPL (t)			72.89
1252				90% Percentile (z)		33.09			95% Percentile (z)			62.43
1253				99% Percentile (z)		205.4			95% USL			404.7
1254	**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**											
1255												
1256	**Nonparametric Distribution Free Background Statistics**											
1257	**Data do not follow a Discernible Distribution (0.05)**											
1258												
1259	**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**											
1260				Order of Statistic, r		28			95% UTL with95% Coverage			45
1261				Approx, f used to compute achieved CC		1.474			Approximate Actual Confidence Coefficient achieved by UTL			0.762
1262				Approximate Sample Size needed to achieve specified CC		59			95% UPL			39.92
1263				95% USL		45			95% KM Chebyshev UPL			69.61
1264												
1265	Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.											
1266	Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers											
1267	and consists of observations collected from clean unimpacted locations.											
1268	The use of USL tends to provide a balance between false positives and false negatives provided the data											
1269	represents a background data set and when many onsite observations need to be compared with the BTV.											
1270												
1271	**Thallium**											
1272												
1273	**General Statistics**											
1274				Total Number of Observations		28			Number of Missing Observations			3
1275				Number of Distinct Observations		6						
1276				Number of Detects		0			Number of Non-Detects			28
1277				Number of Distinct Detects		0			Number of Distinct Non-Detects			6
1278				Minimum Detect		N/A			Minimum Non-Detect			0.1
1279				Maximum Detect		N/A			Maximum Non-Detect			5
1280				Variance Detected		N/A			Percent Non-Detects			100%
1281				Mean Detected		N/A			SD Detected			N/A
1282				Mean of Detected Logged Data		N/A			SD of Detected Logged Data			N/A
1283												
1284	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**											
1285	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**											
1286	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**											
1287												
1288	**The data set for variable Thallium was not processed!**											
1289												
1290												