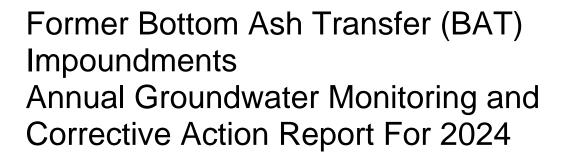
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Former Bottom Ash Transfer (BAT) Impoundments Annual Groundwater Monitoring and Corrective Action Report For 2024

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Acronyms and Abbreviations

95% LCL 95 percent lower confidence limit
ACM assessment of corrective measure
AECOM Technical Services, Inc.

amsl above mean sea level
BAT Bottom Ash Transfer
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

GWPS Groundwater Protection Standard
MCLs Maximum contaminant levels

mg/L milligrams per liter

Platte River Power Authority
Rawhide Station or Site Rawhide Energy Station

SSI statistically significant increase
SSL statistically significant level

TDS total dissolved solids
UPL upper prediction limit

USEPA United States Environmental Protection Agency

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Executive Summary

This report summarizes groundwater monitoring and corrective action activities completed between January 1 and December 31, 2024 at the Coal Combustion Residuals (CCR) Bottom Ash Transfer (BAT) Impoundments 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 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**.

At the start of the 2024 reporting period, Platte River was monitoring the BAT Impoundments under the Assessment monitoring program outlined in 40 CFR Section 257.95. The Assessment monitoring program for the BAT Impoundments was initiated on January 15, 2018 upon identification of Appendix III statistically significant increases (SSIs) over background (AECOM 2018). In the 2024 reporting period, monitoring data reported the detections of the following Appendix III constituents in downgradient monitoring wells at concentrations that represent SSIs over background:

- Calcium in monitoring wells BAT-03, BAT-04R, and BAT-05
- Chloride in monitoring wells BAT-01 and BAT-02
- Sulfate in monitoring well BAT-03

Per CCR rule requirements, groundwater protection standards (GWPS) were developed for each detected Appendix IV constituent and the data were tested for whether the 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:

Cobalt in monitoring well BAT-05

Other salient points for the 2024 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.

Planned activities for the next 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.
- Abandonment of monitoring well BAT-13 due to insufficient water volume.
- Installation of two to three network monitoring wells to further characterize groundwater conditions between the former BAT Impoundments and Hamilton Reservoir.
- Evaluation of the corrective actions presented in the assessment of corrective measure (ACM) that was prepared in June 2019 and presented at a public meeting in November 2019 (AECOM 2019a). Evaluation will include determining if adequate monitoring data, hydrogeological data, contaminant migration pathways information and contaminant exposure pathways information is available to make the final remedy selection.

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1.0 Introduction

This is the 2024 Annual Groundwater Monitoring and Corrective Action Report for the former Coal Combustion Residuals (CCR) Bottom Ash Transfer (BAT) Impoundments 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 activities performed at the decommissioned BAT Impoundments in 2024 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 257.95. In accordance with 40 CFR 257.90(e), an annual report must be prepared to 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, 2025.

1.1 Report Organization

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

- Section 1.0 includes an 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 areal and site hydrogeology;
- Section 3.0 summarizes the groundwater monitoring activities performed in 2024, and references appendices to this report that contain detailed documentation of those activities;
- Section 4.0 summarizes the groundwater sampling; sampling data analysis and results; and problems encountered, and actions taken during groundwater sampling;
- Section 5.0 provides the statistical analysis and results;
- Section 6.0 provides a projection of the key activities anticipated in 2025;
- Section 7.0 provides a summary and findings; and
- 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 2024 that include:

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

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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 at the station. 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 BAT Impoundments Description

The BAT Impoundments were located northwest of the main plant, south of the coal stockpile, and north of Hamilton Reservoir (**Figure 1**). Bottom ash produced during the coal combustion process was hydraulically sluiced from the Unit 1 boiler to one of the two BAT Impoundments. These impoundments also received resin filter backwash water from the demineralizer at the wastewater treatment plant. The impoundments were constructed in the early 1980s by excavating below grade into the underlying Pierre Shale and then lining the bottom with 18 inches of compacted clay. Each of the two impoundments measured approximately 725 feet by 225 feet at the surface (approximately 7.5 acres total) with a bottom elevation of 5,660 feet above mean sea level (amsl), a normal water elevation of 5,674 feet amsl, and a top of berm elevation of between 5,678 and 5,679 feet amsl.

In 2020, the BAT Impoundments were decommissioned per the requirements of 40 CFR 257.101 and 257.102. The two impoundments were taken out of service following a transfer of operations to the Concrete Setting Tank which was constructed and tested in 2018 and 2019 and is located to the south and east of the former BAT Impoundments. During decommissioning of the BAT Impoundments, the CCR material was removed from the impoundments and hauled to the ASH Monofill located at the northwest corner of the site for disposal. Water present in the impoundments was transferred to the phosphorus removal system (PRS) ponds located east of the ASH Monofill. Following CCR material removal, the area was regraded and vegetated. Details of the BAT Impoundments decommissioning can be found in the Bottom Ash Transfer Impoundment Construction Completion Certification Report (AECOM 2021a). Groundwater in this area is currently being monitored to establish post-decommissioning groundwater conditions. Current data suggest that there is an inward flow of groundwater in the former BAT Impoundment area towards monitoring well BAT-05 as discussed in Section 4.0.

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 (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.

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Following construction and operation of the Rawhide Station, Lidstone and Anderson (1989) concluded that sufficient groundwater data were collected to determine that 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 BAT Impoundments Hydrogeology

The uppermost water-bearing stratum around the former BAT Impoundments is identified as the weathered and fractured Pierre Shale, which lies approximately 3 to 17 feet bgs. As noted above, the impoundments were constructed by excavating into the Pierre Shale, which created an environment in which groundwater appears to have been largely recharged by leakage from the former impoundments. Groundwater beneath the former BAT Impoundments is present under water table conditions, where the depth to groundwater ranged from approximately 8.99 feet bgs in BAT-10 in April 2024 to 37.11 feet bgs in BAT-13 in September 2024.

Groundwater in BAT-13 appears to not be hydraulically connected to surrounding monitoring wells as the groundwater elevation in BAT-13 is approximately 25 feet below the elevation in BAT-05, located less than 15 feet away, and is approximately 30 feet lower in elevation than nearby monitoring wells BAT-04R, BAT-06, and BAT-12. BAT-13 also generates much lower volumes of water than surrounding wells. Prior to BAT closure, groundwater flow was generally from north to south across the unit towards Hamilton Reservoir, generally following the topographic slope. However, a groundwater depression developed within the BAT Impoundments as the impoundments were drained of water and decommissioned between July and October 2020. This depression was evidenced by the lowest water levels occurring in BAT-02 and BAT-05. The water levels have recovered partially, but still suggest inward flow to the former impoundments. Under the current observed groundwater flow condition, the previously designated downgradient wells are retained for compliance evaluation purposes and analytical results are compared statistically to upgradient designated wells to identify differences even though the downgradient designated wells are not strictly downgradient of the unit due to the inward observed flow.

Previous reports indicate that little to no groundwater was present in geotechnical boreholes completed in the area of the BAT Impoundments at the time of their construction (Black & Veatch Consulting Engineers 1979). The BAT Impoundments were constructed on a local topographic high, suggesting that groundwater, if present, likely flowed away from the area of the impoundments prior to construction. The previously observed water table beneath the BAT Impoundments, prior to impoundments decommissioning, appears to have been a perched saturated zone in the underlying weathered and fractured Pierre Shale. The drop and rebound of groundwater elevations in the monitored wells observed in 2020 through 2021, suggests that groundwater temporarily drained toward and into the BAT pond excavations until the wells returned to equilibrium with natural static levels. Since 2021, groundwater elevations in the monitored wells appear to be slowly dropping. Current groundwater flow conditions (2024) are discussed in Section 4.0 below.

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3.0 Groundwater Monitoring Activities

This section summarizes groundwater monitoring activities conducted during 2024 to comply with the CCR Rule. Activities included:

- Measuring groundwater levels at each monitoring well prior to purging for sampling to provide potentiometric data.
- Conducting semiannual Assessment-mode groundwater monitoring events in April/May and September/October. Monitoring involved sampling of background monitoring wells and downgradient monitoring wells for analysis of Appendix III and Appendix IV constituents to identify potential releases from the BAT Impoundments and to collect supplemental data to update the background statistics as needed.
- Statistical analysis of the 2024 Appendix III and Appendix IV monitoring data to determine if
 there were any statistically significant increases (SSIs) over background and whether any of the
 SSIs were above groundwater protection standards (GWPS) at a statistically significant level
 (SSL).

Assessment-mode groundwater monitoring and statistical analysis was completed in accordance with the Sitewide Monitoring Plan, Revision 4 (AECOM 2019c).

3.1 Water Level Measurements

During each monitoring event, groundwater levels in BAT Impoundment monitoring network wells were measured using an electronic water level meter. **Table 1** presents monitoring well survey locations, and well construction details including surveyed top of casing elevation 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 A**, and are tabulated in **Table 2** for the groundwater sampling events in April/May and September/October 2024.

3.2 Groundwater Sample Collection

Appendix III and Appendix IV Assessment monitoring groundwater samples were collected from BAT Impoundment monitoring wells BAT-01, BAT-02, BAT-03, BAT-04R, BAT-05, BAT-06, BAT-09, BAT-10, BAT-11, and BAT-12 from May 7 to May 13, 2024, and October 10 to October 16, 2024. An attempt to sample new monitoring well, BAT-13, was also made during the May and October events; however, BAT-13 did not yield enough groundwater to fill complete sample sets during either event despite repeated attempts after purging.

Groundwater samples were collected in accordance with the CCR BAT Impoundments Groundwater Detection Monitoring Plan (AECOM 2017). Each well (with the exception of BAT-13, which was sampled by disposable bailer) 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 drawdown in the well was less than 0.33 feet for three consecutive readings. If a well did not stabilize, it was purged dry and allowed to recharge prior to sample collection within 24 hours of purging. BAT-13 was purged dry during the May and October sampling events. A bladder pump was not used to sample this well as the level of

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water in the well was below the intake port of the bladder pump. Purge water volumes were recorded on groundwater sampling forms (**Appendix A**).

After purging, the groundwater samples were collected from the discharge tube of the bladder pump 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 delivered by overnight carrier (FedEx) to Pace Analytical in Lenexa, Kansas, or Greensburg, Pennsylvania for analysis.

3.3 Analytical Program

Groundwater samples collected from the BAT Impoundment wells were analyzed using United States Environmental Protection Agency (USEPA) SW-846 methods for Appendix III and IV constituents. All analytical results are reported as totals. **Table 3** summarizes the 2024 groundwater analytical results for each sampling event. The laboratory analytical reports are provided in **Appendix B**.

Appendix III constituents include:

Chemical Name	Analytical Method				
Boron	6010C				
Chloride	9056A				
Calcium	6010C				
Fluoride	9056A				
рН	Field measurement				
Sulfate	9056A				
TDS	TDS (American Public Health Association et al. [1998] standard method 2540C)				

TDS = total dissolved solids.

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Appendix IV constituents include:

Chemical Name	Analytical Method				
Antimony	6020A				
Arsenic	6020A				
Barium	6020A				
Beryllium	6020A				
Cadmium	6020A				
Chromium	6020A				
Cobalt	6020A				
Fluoride	9056A				
Lead	6020A				
Lithium	6010C				
Mercury	7470A				
Molybdenum	6020A				
Selenium	6020A				
Thallium	6020A				
Radium 226 and 228, combined	9315/9320				

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 immediately following collection of the primary samples using the same sampling procedures. The equipment rinse blank samples were collected after decontaminating the bladder pump casing using techniques outlined in the Sampling and Analysis Plan.

3.5 Data Validation

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

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4.0 Monitoring Results and Evaluation

This section discusses potentiometric surface elevations, groundwater flow directions, and groundwater analytical results for the BAT Impoundments during 2024.

4.1 Groundwater Potentiometric Surface

Groundwater elevations were used to prepare potentiometric surface maps for the April/May and September/October 2024 monitoring events (**Figure 2** and **Figure 3**). These maps indicate that groundwater in the uppermost aquifer beneath the former BAT Impoundments flows back into the impoundment area towards monitoring wells BAT-02 and BAT-05 at an average hydraulic gradient of 0.0147 foot per foot in 2024 between monitoring wells BAT-10 and BAT-05. Water elevations near the BAT Impoundments post-decommissioning appeared to have returned to equilibrium conditions present prior to decommissioning with groundwater flow from north to south towards Hamilton Reservoir, except that levels in BAT-02 and BAT-05 did not recover fully. Groundwater elevations in these wells have rebounded slightly from the drop observed from 2020 to 2022 but have remained lower than all the surrounding wells post-decommissioning. As a consequence, it is unclear which wells are the most appropriate downgradient compliance points for the unit. As an interim measure, all surrounding monitoring wells (BAT-01 through BAT-06) are treated as downgradient compliance wells. Elevations will continue to be monitored and evaluated in BAT-02 and BAT-05 to see if they return to predecommissioning equilibrium conditions.

4.2 Groundwater Flow Rate

An average groundwater flow rate was calculated for the uppermost aquifer beneath the former BAT Impoundments using the average hydraulic gradient (0.0147 foot per foot) between monitoring wells BAT-10 and BAT-05 (furthest upgradient point to lowest downgradient point); the minimum (0.0002 foot per day [ft/day]) and maximum (0.33 ft/day), and geometric mean (0.029 ft/day) hydraulic conductivities determined from historic slug tests; and an assumed effective porosity of 15 percent for fractured Pierre Shale. The results indicate that groundwater in the uppermost aquifer beneath the former BAT Impoundments in 2024 flows at a rate ranging from approximately 1.961E-5 to 3.236E-2 ft/day and a geometric mean of 2.844E-3 ft/day towards the depression seen in groundwater in monitoring wells BAT-02 and BAT-05. **Appendix C** presents the calculation sheet for the groundwater velocity in 2024. These groundwater flow rates are higher than those previously reported for the BAT impoundment area, which ranged from a minimum of 6.67E-6 ft/day between BAT-10 and BAT-12 in 2020 to a maximum of 1.279E-2 ft/day between monitoring wells BAT-11 and BAT-05 in 2021 (AECOM 2018, 2019b, 2020, 2021b, 2022, 2023, and 2024). Groundwater conditions in 2022 showed that groundwater was flowing inwards towards BAT-05 (AECOM 2023), while post-decommissioning conditions were still in flux. Similar conditions were observed in 2024 as water continued to show inward flow towards BAT-05.

4.3 Groundwater Analytical Results

Groundwater samples were collected and analyzed for Appendix III and Appendix IV parameters during the April/May and September/October 2024 sampling events and analyzed as specified in Section 3.3. The laboratory analytical reports are provided in **Appendix B**. The laboratory results were reviewed for completeness against the project-required analytical methods and the chain-of-custody forms and were 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 B**.

Table 3 summarizes the groundwater analytical results for the April/May and September/October 2024 sampling rounds. Monitoring wells BAT-01, BAT-02, BAT-03, BAT-04R, BAT-05, BAT-06, BAT-09, BAT-10, BAT-11, BAT-12, and BAT-13 were sampled during April/May and September/October to fulfill the semiannual Assessment monitoring requirement. Final field parameter measurements prior to sample

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collection are presented on **Table 3**. Field forms are presented in **Appendix A** and present all field parameter measurements collected during the well purging process.

4.4 Groundwater Monitoring System Evaluation

Monitoring wells comprising the former BAT Impoundments groundwater monitoring network in 2024 were inspected during each sampling round and were found to be in good condition and capable of supplying a representative sample.

Analysis of the 2024 potentiometric surface maps constructed using the groundwater elevation measurements from the monitoring events confirm that monitoring wells BAT-09 and BAT-10 are located upgradient of the former BAT Impoundments and represent background groundwater quality. Monitoring well BAT-11 was determined to be up- and cross-gradient of the former BAT Impoundments but not representative of background groundwater quality, which is a change from previous evaluations.

As discussed above, monitoring wells BAT-01, BAT-02, BAT-03, BAT-04R, BAT-05, BAT-06, BAT-12, and BAT-13 do not appear to be hydraulically downgradient of the former BAT Impoundments as there is inward flow towards BAT-02 and BAT-05 but are designated as downgradient in anticipation that groundwater conditions will return to an equilibrium that reflects groundwater flow that more closely approximates the local topography that grades toward Hamilton Reservoir.

4.5 Problems Encountered and Actions Taken

No new problems were encountered or actions taken during 2024 aside from the reevaluation of background statistics based on removal of monitoring well BAT-11 from the background dataset. Continued problems with limited groundwater production at well, BAT-13, were observed during both sampling events in 2024. A summary of the statistics reevaluation and the BAT-13 viability issues during 2024 are as follows:

- Based on further review of groundwater data, monitoring well BAT-11 was determined to be
 cross-gradient of groundwater flowing toward the former BAT Impoundments and is no longer
 considered representative of background conditions entering the impoundment area. In
 response to this determination, upper prediction limits (UPLs) for the Appendix III and IV
 background data were reevaluated without use of data from BAT-11. UPLs were calculated
 using BAT-09 and BAT-10, located directly upgradient of the impoundment area.
- Attempts to sample BAT-13 were made in May and October 2024. During both sampling events, there was an insufficient volume of groundwater within BAT-13 to use a bladder pump and therefore, a bailer was used to purge and attempt to sample the well. BAT-13 purged dry before field parameters were able to stabilize during the purge process and turbidity was noted as elevated by field personnel. Field personnel returned to BAT-13 to collect water volume for analytical samples three times during the May event and twice during the October event. BAT-13 was purged dry during each of these sampling attempts. A full analytical sample set was unable to be collected for either event due to insufficient groundwater volume. The groundwater elevation in BAT-13 is also approximately 25 feet lower in elevation than nearby monitoring well BAT-05 and nearly 30 feet lower in elevation than the next nearest monitoring wells BAT-04R, BAT-06, and BAT-12. Due to the consistently and anomalously low groundwater yield at BAT-13, Platte River plans to plug and abandon BAT-13 during the 2025 monitoring year. This planned action is noted below in Sections 6.0 and 7.0.

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5.0 Statistical Analysis Results

The Appendix III and Appendix IV groundwater quality data were evaluated using the certified statistical approach presented in the CCR BAT Impoundments Groundwater Detection Monitoring Plan (AECOM 2017). The Appendix III and IV 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 Platte River former BAT Impoundments, monitoring wells BAT-09 and BAT-10 are designated as background wells because they are located upgradient of the impoundments, whereas monitoring wells BAT-01, BAT-02, BAT-03, BAT-4R, BAT-05, BAT-06, and BAT-12 are designated as compliance wells because they are located adjacent to the former waste boundary or downgradient of the former impoundments. Based on further review of groundwater data, BAT-11, which was considered a background well prior to 2024, was removed from the background statistics dataset. BAT-13, which was being considered as a possible well replacement for BAT-05, was unable to be sampled at low flow conditions during any sampling event between October 2023 and October 2024 and therefore will not be incorporated into the statistically evaluated monitoring well network and will be decommissioned in 2025.

The statistical analyses were performed in accordance with the USEPAs Final CCR Rule 40 CFR Parts 257.93(f), 257.93(g), and 257.93(h) and the Statistical Method Certification (AECOM 2017). Prediction limits (i.e., parametric or nonparametric) with retesting, were developed using ProUCL Version 5.1 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 background data. Analytical data from background monitoring wells BAT-09 and BAT-10 collected between March 2016 and October 2024 were used to redevelop an upper prediction limit (UPL) for the Appendix III and IV background data at 95 percent confidence. The background data set was updated to reflect observed changes in the upgradient/background chemical conditions and the removal of BAT-11 from the program.

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

5.1 Appendix III SSI Determination

The Appendix III results were compared against their respective background UPLs (**Table 4**) to determine if they exhibited SSIs above background. The statistical analysis results indicate that the Appendix III constituents of calcium at monitoring wells BAT-03, BAT-04R, and BAT-05, chloride at BAT-01 and BAT-02, and sulfate at BAT-03 have verified SSIs over background UPLs as shown below. Fluoride in BAT-05 and BAT-06 also exceeded the UPL in October but have not been verified as SSIs by subsequent sampling events to date (**Table 3**). Boron, fluoride, pH, and TDS did not have any verified Appendix III SSIs over background. Appendix III SSIs found during 2024 are generally consistent with those identified between 2020 and 2023, except for the newly verified SSI of sulfate at BAT-03. These results confirm that Assessment monitoring is required at the BAT Impoundments. Specific events where exceedances were observed, and analytical concentrations of detections can be found on **Table 3**.

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Well	Boron	Calcium	Chloride	Fluoride	рН	Sulfate	TDS
BAT-01			SSI				
BAT-02			SSI				
BAT-03		SSI				SSI	
BAT-04R		SSI					
BAT-05		SSI					
BAT-06							
BAT-12							

Notes:

= concentration below UPL.

SSI = statistically significant increase (Indicating concentrations above the background UPL).

TDS = total dissolved solids.

5.2 Appendix IV SSI Determination

The Appendix IV Assessment monitoring results were compared against their respective background UPLs (**Table 5**) to determine if they exhibited SSIs above background. This comparison indicates that cobalt at BAT-05 was the only constituent identified as having an SSI above background as shown below. Fluoride in BAT-05 and BAT-06 also exceeded UPLs in October but have not been verified as SSIs by subsequent sampling events to date (**Table 3**). No other Appendix IV constituents were identified as SSIs during the 2024 reporting period. SSLs were calculated for select constituents as described in Section 5.4 below.

Well	Sb	As	Ва	Ве	Cd	Cr	Со	F	Pb	Li	Hg	Мо	Ra	Se	Th
BAT-01															
BAT-02															
BAT-03															
BAT-04R															
BAT-05							SSI								
BAT-06															
BAT-12															

Notes:

---- = concentration below UPL.

| statistically significant increase (Indicating concentrations above the background UPL).

5.3 Establishment of Groundwater Protection Standards

GWPSs were selected for the BAT Impoundments 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 levels (MCLs), groundwater standards provided in 40 CFR 257.95(h)(2), or the background UPLs where they exceed either of the regulatory standards.

5.4 Appendix IV SSL Determination

Appendix IV constituent cobalt at BAT-05, which exhibited an SSI over background, was further evaluated to determine whether those concentrations represent an SSL relative to the GWPS established under the CCR Rule [40 CFR 257.95(d)(2)]. SSLs are identified by calculating the 95 percent lower confidence limit (95% LCL) at each well where the Assessment monitoring constituents exhibited a verified SSI over background 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. Cobalt at monitoring well BAT-05 was the only Appendix IV constituent found to be present at an SSL above its GWPS because its 95% LCL

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(0.00917 milligrams per liter [mg/L]) was greater than the GWPS of 0.006 mg/L as shown below. Appendix IV constituents that exceed the GWPS at an SSL require an alternate source demonstration or corrective action. No other Appendix IV constituents exhibited an SSL above the GWPS.

Well	Sb	As	Ва	Ве	Cd	Cr	Со	F	Pb	Li	Hg	Мо	Ra	Se	Th
BAT-01															
BAT-02															
BAT-03															
BAT-04R															
BAT-05							SSL								
BAT-06															
BAT-12															

Notes:

= concentration below UPL.

SSL = stat

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

Well No.	Parameter with SSI over background	95% LCL (mg/L)	GWPS (mg/L)		
BAT-05	Cobalt	0.00917	0.006		

Notes:

Red highlighted value exceeds GWPS.

95% LCL = 95 percent lower confidence limit.

GWPS = Groundwater Protection Standard.

mg/L = milligrams per liter.

SSI = statistically significant increase.

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6.0 Projected Activities in 2025

The following activities are planned to be performed at the former BAT Impoundments in calendar year 2025:

- Platte River will continue groundwater monitoring on a semiannual basis for the Appendix III and 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.
- Monitoring wells will continue to be monitored for high turbidity conditions. Elevated turbidity
 wells (greater than 100 NTU or wells having problematic results) may be redeveloped as
 needed.
- Monitoring well BAT-13 has been determined as an unsuitable replacement for monitoring well, BAT-05 due to consistent and anomalously low groundwater yield that inhibits the ability to collect a complete sample set using the same method (low flow bladder pump) as the rest of the monitoring network wells. Therefore, BAT-13 will be abandoned during the 2025 monitoring year.
- Two to three network monitoring wells are planned to be installed between the former BAT Impoundments and Hamilton Reservoir near monitoring wells BAT-06 and BAT-12 to better understand the apparent groundwater depression along the southwestern extent of the impoundment area and further refine the influence of Hamilton Reservoir on the BAT Impoundment area.
- An assessment of corrective measure (ACM) was prepared in June 2019 to identify potential remedial alternatives for cobalt in groundwater at the former BAT Impoundments. The ACM included a range of cleanup options that included monitored natural attenuation, groundwater pump and treat, and a permeable reactive barrier (AECOM 2019a). The ACM options were presented at a public meeting in November 2019. The BAT impoundments were subsequently decommissioned and CCR material was removed in 2020. In 2024, the corrective actions presented in ACM will be further evaluated for whether additional remedial action is warranted. Remedy selection will be based on adequate monitoring data, the site hydrogeology, contaminant migration pathways and contaminant exposure pathways.

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7.0 Summary and Findings

AECOM, on behalf of Platte River, completed the groundwater sampling and analysis of semi-annual Appendix III and Appendix IV Assessment monitoring at the former BAT Impoundments. Monitoring data and analytical results collected as part of the Assessment monitoring program were evaluated to determine the aquifer hydraulic conductivities at the new monitoring wells, potentiometric surface elevations, groundwater flow directions and rates, and whether any constituents are present at an SSI above background UPLs or exceeded GWPS at an SSL.

In 2024, sulfate at BAT-03 was newly verified to exhibit an SSI above the UPL. Statistical analysis found that cobalt exceeded the GWPS at an SSL at BAT-05 in October 2024. Platte River will continue to obtain groundwater analytical data on a semi-annual basis.

After three consecutive sampling events, monitoring well BAT-13 has been determined to be an unsuitable replacement for monitoring well, BAT-05, due to consistent and anomalously low groundwater yield that inhibits the ability to collect a complete sample set using low flow methods and appearing to not be hydraulically connected to surrounding wells based on groundwater elevation data. As a result, BAT-13 is planned to be abandoned during the 2025 monitoring year.

An ACM was prepared in June 2019 to identify potential remedial alternatives for cobalt in groundwater at the BAT Impoundments. The ACM included a range of cleanup options that included monitored natural attenuation, groundwater pump and treat, and a permeable reactive barrier (AECOM 2019a). The ACM options were presented at a public meeting in November 2019. The BAT Impoundments were subsequently decommissioned in 2020. In 2024, the corrective actions presented in the ACM will be further evaluated for whether additional remedial action is warranted for final remedy selection.

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8.0 References

AECOM Technical Services, Inc. (AECOM). 2017. Coal Combustion Residuals (CCR) BAT Impoundments Groundwater Detection Monitoring Plan Revision 0. Prepared for Platte River Power Authority Rawhide Energy Station Larimer County, Colorado. October 10, 2017.

- AECOM. 2018. Bottom Ash Transfer (BAT) Impoundments Annual Groundwater Monitoring and Corrective Action Report 2016 2017. Prepared for Platte River Power Authority. January 31.
- AECOM. 2019a. Assessment of Corrective Measures at the Bottom Ash Transfer (BAT) Impoundments Under the Coal Combustion Residuals (CCR) Rule. Prepared for Platte River Power Authority. June 13.
- AECOM. 2019b. Bottom Ash Transfer (BAT) Impoundments Annual Groundwater Monitoring and Corrective Action Report For 2018. Prepared for Platte River Power Authority. January 31.
- AECOM. 2019c. Sitewide Monitoring Plan, Revision 4. Rawhide Energy Station, Platte River Lower Authority, Fort Collins, Colorado. June 2019.
- AECOM. 2020. Bottom Ash Transfer (BAT) Impoundments Annual Groundwater Monitoring and Corrective Action Report For 2019. Prepared for Platte River Power Authority. January 31.
- AECOM. 2021a. Bottom Ash Transfer (BAT) Impoundment Construction Completion Certification Report. Rawhide Energy Station, Platte River Lower Authority, Fort Collins, Colorado. September 2, 2021.
- AECOM). 2021b. Former Bottom Ash Transfer (BAT) Impoundments Annual Groundwater Monitoring and Corrective Action Report For 2020. Prepared for Platte River Power Authority. January 31.
- AECOM. 2022. Former Bottom Ash Transfer (BAT) Impoundments Annual Groundwater Monitoring and Corrective Action Report For 2021. Prepared for Platte River Power Authority. January 31.
- AECOM. 2023. Former Bottom Ash Transfer (BAT) Impoundments Annual Groundwater Monitoring and Corrective Action Report For 2022. Prepared for Platte River Power Authority. January 31.
- AECOM. 2024. Former Bottom Ash Transfer (BAT) Impoundments Annual Groundwater Monitoring and Corrective Action Report For 2023. Prepared for Platte River Power Authority. January 31.
- American Public Health Association, American Water Works Association, and Water Environment Federation. 1998. Standard Methods for the Examination of Water and Wastewater, 20th Edition.
- Black & Veatch Consulting Engineers. 1979. Geotechnical Analysis, Report Platte River Power Authority Rawhide Project, July 1979.
- Lidstone and Anderson, Inc. 1989. Investigation of the Ground-Water Monitoring Program for the Bottom Ash Disposal Site. March 1989.
- Platte River Power Authority (Platte River). 1980. Engineering Report and Operational Plan for the Solid Waste Disposal Facility, Rawhide Energy Project, December 1980.

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Tables

Table 1
BAT Impoundments Monitoring Well Construction Details
PRPA BAT Impoundments Annual Report for 2024
PRPA Rawhide Facility, Colorado

Well Name	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
BAT-01	Downgradient	3129532.039	1557740.813	5683.12	5682.48	34.0	23-33	Shale
BAT-02	Downgradient	3129988.382	1557738.969	5682.95	5682.41	33.8	23.8-33.8	Shale
BAT-03	Downgradient	3130388.569	1557729.857	5682.96	5682.40	36.0	26-36	Shale
BAT-04R	Downgradient	3130456.241	1557262.480	5684.62	5686.98	34.0	24-34	Shale
BAT-05	Downgradient	3129956.757	1557217.374	5682.63	5682.13	39.0	23-38	Shale
BAT-06	Downgradient	3129515.003	1557233.002	5682.84	5685.46	49.0	25-35	Shale
BAT-09	Upgradient	3129552.166	1558136.308	5690.86	5693.03	36.5	26.5-36.5	Shale
BAT-10	Upgradient	3130029.322	1558338.258	5687.73	5690.59	29.0	12-27	Shale
BAT-11	Upgradient	3130022.498	1560138.622	5702.01	5704.87	37.0	20-35	Shale
BAT-12	Downgradient	3129941.937	1557014.170	5698.62	5701.60	42.0	25-40	Shale
BAT-13	Downgradient	3129968.59	1557214.37	5682.41	5682.00	39.0	29-39	Shale

BAT = Bottom Ash Transfer

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

Wells surveyed in North American Datum 1983 (NAD83) and North American Vertical Datum 1988 (NAVD88)

Table 2
BAT Impoundments Water Level Measurements 2024
PRPA BAT Impoundments Annual Report for 2024
PRPA Rawhide Facility, Colorado

			Measuring		
			Point	Depth to	Groundwater
		Measurement	Elevation	water	Elevation
Well ID	Sampling Event	Date	(ft amsl)	(btoc)	(ft amsl)
BAT-01	May 2024	4/29/2024	5682.48	12.34	5670.14
BAT-01	October 2024	9/30/2024	5682.48	11.78	5670.70
BAT-02	May 2024	4/29/2024	5682.41	17.80	5664.61
BAT-02	October 2024	9/30/2024	5682.41	19.44	5662.97
BAT-03	May 2024	4/29/2024	5682.40	9.91	5672.49
BAT-03	October 2024	9/30/2024	5682.40	13.54	5668.86
BAT-04R	May 2024	4/29/2024	5686.98	15.88	5671.10
BAT-04R	October 2024	9/30/2024	5686.98	16.42	5670.56
BAT-05	May 2024	4/29/2024	5682.13	20.30	5661.83
BAT-05	October 2024	9/30/2024	5682.13	20.48	5661.65
BAT-06	May 2024	4/29/2024	5685.46	15.29	5670.17
BAT-06	October 2024	9/30/2024	5685.46	16.93	5668.53
BAT-09	May 2024	4/29/2024	5693.03	18.38	5674.65
BAT-09	October 2024	9/30/2024	5693.03	19.30	5673.73
BAT-10	May 2024	4/29/2024	5690.59	11.85	5678.74
BAT-10	October 2024	9/30/2024	5690.59	12.90	5677.69
BAT-11	May 2024	4/29/2024	5704.87	27.85	5677.02
BAT-11	October 2024	9/30/2024	5704.87	28.09	5676.78
BAT-12	May 2024	4/29/2024	5701.60	30.86	5670.74
BAT-12	October 2024	9/30/2024	5701.60	31.48	5670.12
BAT-13	May 2024	4/29/2024	5682.00	35.29	5646.71
BAT-13	October 2024	9/30/2024	5682.00	36.70	5645.30

BAT = Bottom Ash Transfer

NM = not measured

ft = feet

ft amsl = feet above mean sea level

ft btoc = feet below top of casing

Table 3
BAT Impoundments Analytical Results and Statistical Summary 2024
PRPA BAT Impoundments Annual Report for 2024
PRPA Rawhide Facility, Colorado

				Sample Location	BAT-01	BAT-01	BAT-02	BAT-02	BAT-03	BAT-03	BAT-04R	BAT-04R	BAT-04R	BAT-05	BAT-05	BAT-06	BAT-06
				Sample Type	N	N	N	N	N	N	N	N	FD	N	N	N	N
				Sample Date	5/9/2024	10/14/2024	5/8/2024	10/15/2024	5/13/2024	10/15/2024	5/7/2024	10/16/2024	10/16/2024	5/8/2024	10/14/2024	5/7/2024	10/14/2024
Chemical Name	Analytical Method	Background UPL	GWPS	Unit													
Appendix III Parameters																	
Boron	SW6010	2.39		mg/L	1.74	1.6	1	1.13	1.24	1.22	0.739	0.742	0.728	1.15	1.17	1.8	1.81
Calcium	SW6010	433		mg/L	117	104	342	359	452	442	455	487	480	420	453	116	106
Chloride	EPA9056	190		mg/L	686	393	259	181	17.5	14.3	41.2 J+	29.9	32.6	66.7	53.2	10.9	11.7
Fluoride	EPA9056	0.93		mg/L	0.71	0.90	< 0.20	0.51	1.1	0.92	< 0.20	0.47	0.76	< 0.20	1.4	< 0.20	1.4
Sulfate	EPA9056	2972		mg/L	1050	675	1770	1400	3420	2180	1550 J-	1930	1940	2930	2370	1550 J-	1540
Total Dissolved Solids	SM2540C	4482		mg/L	1570	1850	2310	3010	2360	4340	2210	3470	3460	2540	4350	2390	2480
Appendix IV Parameters																	
Antimony	SW6020	0.001	0.006	mg/L	< 0.0020	< 0.0010	< 0.0020	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0020	< 0.0010	< 0.0010	< 0.0010
Arsenic	SW6020	0.003	0.01	mg/L	< 0.0020	< 0.0100	< 0.0020	< 0.0100	< 0.0010	< 0.0100	< 0.0010	< 0.0100	< 0.0100	0.0022	< 0.0100	< 0.0010	< 0.0100
Barium	SW6020	0.038	2.0	mg/L	0.0382	0.0308	0.0168	0.0138	0.0156 J+	0.0346	0.0251	0.0121	0.0119	0.0359	0.0166	0.0160	0.0228
Beryllium	SW6020	0.0005	0.004	mg/L	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.00050	< 0.0010	< 0.00050	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.00050	< 0.0010
Cadmium	SW6020	0.0005	0.005	mg/L	< 0.0010	< 0.0050	< 0.0010	< 0.0050	< 0.00050	< 0.0050	< 0.00050	< 0.0050	< 0.0050	< 0.0010	< 0.0050	< 0.00050	< 0.0050
Chromium	SW6020	0.002	0.10	mg/L	< 0.0020	< 0.0050	< 0.0020	< 0.0050	< 0.0010 UJ	< 0.0050	< 0.0010	< 0.0050	< 0.0050	0.0052	< 0.0050	< 0.0010	< 0.0050
Cobalt	SW6020	0.002	0.006	mg/L	< 0.0020	< 0.0050	< 0.0020	< 0.0050	0.0014	< 0.0050	< 0.0010	< 0.0050	< 0.0050	0.0083	0.0062	< 0.0010	< 0.0050
Fluoride	EPA9056	0.93	4.0	mg/L	0.71	0.90	< 0.20	0.51	1.1	0.92	< 10.0	0.47	0.76	< 0.20	1.4	< 10.0	1.4
Lead	SW6020	0.001	0.015	mg/L	< 0.0020	< 0.0100	< 0.0020	< 0.0100	< 0.0010	< 0.0100	< 0.0010	< 0.0100	< 0.0100	0.0032	< 0.0100	< 0.0010	< 0.0100
Lithium	SW6010	0.33	0.33 (0.040)	mg/L	0.19	0.177	0.211	0.197	0.282	0.264	0.185	0.177	0.172	0.236	0.231	0.187	0.173
Mercury	EPA7470	0.0002	0.002	mg/L	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Molybdenum	SW6020	0.032	0.10	mg/L	0.0037	< 0.0200	< 0.0020	< 0.0200	< 0.0010	< 0.0200	0.0010	< 0.0200	< 0.0200	0.0024	< 0.0200	0.0083	< 0.0200
Radium, total	TRC	2.83	5.0	pCi/L	1.60	1.17	0.739	1.00	1.48	0.939	1.31	0.903	0.721	1.08	1.35	1.10	0.932
Radium-226	E903.1	2.83	5.0	pCi/L	0.240	0.642	-0.326	0.245	0.655	0.260	0.455 J	0.183	0.403	0.627	0.641	0.738	0.559
Radium-228	E904.0	2.83	5.0	pCi/L	1.36	0.524	0.739	0.756	0.821	0.679	0.859	0.720	0.318	0.456	0.709	0.358	0.373
Selenium	SW6020	0.188	0.188 (0.05)	mg/L	< 0.0020	< 0.0150	< 0.0020	< 0.0150	< 0.0010	< 0.0150	0.0232	< 0.0150	< 0.0150	< 0.0020	< 0.0150	< 0.0010	< 0.0150
Thallium	SW6020	0.001	0.002	mg/L	< 0.0020	< 0.0010	< 0.0020	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0020	< 0.0010	< 0.0010	< 0.0010
Field Parameters																	
Temperature	Field Measure			Degrees C	10.67	14.0	11.87	13.0	11.96	15.5	12.01	12.4	12.4	11.55	13.2	12.76	15.4
рН	Field Measure	7.77		SU	7.10	7.54	7.39	6.97	6.78	6.82	6.70	6.98	6.98	7.35	7.04	7.37	7.69
Specific Conductivity	Field Measure			us/cm	2581	2729	2795	3538	3502	4658	2949	3541	3541	3554	4020	3089	3015
Oxidation Reduction Potential				mV	141.8	-129.9	101.3	-72.7	163	-20.3	160.7	83.3	83.3	187.3	10.4	143.2	-178.4
Dissolved Oxygen	Field Measure			mg/L	1.75	0.15	8.03	0.78	1.03	0.29	0.41	2.73	2.73	11.13	0.01	1.93	0.08
Turbidity	Field Measure			NTU	6.96	11.7	15.7	9.79	7.67	27.9	6.95	13.1	13.1	77.9	21.2	5.83	4.45

N = primary sample

FD = field duplicate

-- = not analyzed

mg/L = milligrams per liter

pCi/L = picoCuries per liter

< = less than reporting limit
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

J = estimated concentration (+ = biased high, - = biased low)

U = not detected

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 3
BAT Impoundments Analytical Results and Statistical Summary 2024
PRPA BAT Impoundments Annual Report for 2024
PRPA Rawhide Facility, Colorado

				Sample Location	BAT-09	BAT-09	BAT-10	BAT-10	BAT-11	BAT-11	BAT-12	BAT-12	BAT-12	BAT-13	BAT-13	BAT-13	BAT-13	BAT-13
				Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	N
				Sample Date	5/7/2024	10/10/2024	5/9/2024	10/15/2024	5/9/2024	10/10/2024	5/8/2024	5/8/2024	10/10/2024	5/8/2024	5/10/2024	10/14/2024	10/15/2024	10/16/2024
Chemical Name	Analytical Method	Background UPL	GWPS	Unit														
Appendix III Parameters																		
Boron	SW6010	2.39		mg/L	2.11	2.23	0.815	0.819	0.398	0.354	0.221	0.229	0.23		1.47			1.56
Calcium	SW6010	433		mg/L	186	228	425	404	97.5	92	101	103	111		245			266
Chloride	EPA9056	190		mg/L	103	94.9	29.3	23.4	8.6	5.3	180	188	168		31.4		25.8	
Fluoride	EPA9056	0.93		mg/L	< 0.20	2.3	< 0.20	0.62	< 0.20	0.28	0.96	1.0	< 0.20		0.83		2.2	
Sulfate	EPA9056	2972		mg/L	1760	1830	3100	2180	180	181	399	397	369		2800		2370	
Total Dissolved Solids	SM2540C	4482		mg/L	2610	3140	1860	4060	667	732	897	947	996				-	
Appendix IV Parameters																		
Antimony	SW6020	0.001	0.006	mg/L	< 0.0010	< 0.0010	< 0.0030	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010		< 0.0030			< 0.0020
Arsenic	SW6020	0.003	0.01	mg/L	< 0.0010	< 0.0100	< 0.0030	< 0.0100	< 0.0010	< 0.0100	0.0013	0.0012	< 0.0100		0.0086			< 0.0100
Barium	SW6020	0.038	2.0	mg/L	0.0102	0.0138	0.0144	0.0151	0.0414	0.0331	0.0276	0.0306	0.0311		0.223			0.162
Beryllium	SW6020	0.0005	0.004	mg/L	< 0.00050	< 0.0010	< 0.0015	< 0.0010	< 0.00050	< 0.0010	< 0.00050	< 0.00050	< 0.0010		< 0.0015		-	< 0.0010
Cadmium	SW6020	0.0005	0.005	mg/L	< 0.00050	< 0.0050	< 0.0015	< 0.0050	< 0.00050	< 0.0050	< 0.00050	< 0.00050	< 0.0050		< 0.0015		-	< 0.0050
Chromium	SW6020	0.002	0.10	mg/L	< 0.0010	< 0.0050	< 0.0030	< 0.0050	< 0.0010	< 0.0050	< 0.0010	0.0014	< 0.0050		0.0294			0.0277
Cobalt	SW6020	0.002	0.006	mg/L	< 0.0010	< 0.0050	< 0.0030	< 0.0050	< 0.0010	< 0.0050	< 0.0010	< 0.0010	< 0.0050		0.0128			0.0118
Fluoride	EPA9056	0.93	4.0	mg/L	< 10.0	2.3	< 0.20	0.62	< 0.20	0.28	0.96	1.0	< 0.20		0.83		2.2	
Lead	SW6020	0.001	0.015	mg/L	< 0.0010	< 0.0100	< 0.0030	< 0.0100	< 0.0010	< 0.0100	< 0.0010	< 0.0010	< 0.0100		0.0161			0.0153
Lithium	SW6010	0.33	0.33 (0.040)	mg/L	0.231	0.252	0.23	0.213	0.0698	0.0655	0.0881	0.0917	0.0928		0.273			0.26
Mercury	EPA7470	0.0002	0.002	mg/L	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020		< 0.00020		-	< 0.00020
Molybdenum	SW6020	0.032	0.10	mg/L	0.0023	< 0.0200	0.0050	< 0.0200	0.0042	< 0.0200	0.0066	0.0065	< 0.0200		0.0610			0.0385
Radium, total	TRC	2.83	5.0	pCi/L	0.274	1.87	1.57	0	1.40	0.747	0.0693	0.778	0.470 J		3.78		-	
Radium-226	E903.1	2.83	5.0	pCi/L	0	0.650	0.250	-0.0908	0.352	0.122	-0.628	0	0.470		1.04			
Radium-228	E904.0	2.83	5.0	pCi/L	0.274	1.22	1.32	-0.0121	1.05	0.625	0.0693	0.778	0.000364		2.74		-	
Selenium	SW6020	0.188	0.188 (0.05)	mg/L	< 0.0010	< 0.0150	0.136	0.175	0.0054	< 0.0150	0.0029	0.0031	< 0.0150		0.0146			< 0.0150
Thallium	SW6020	0.001	0.002	mg/L	< 0.0010	< 0.0010	< 0.0030	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010		< 0.0030			< 0.0020
Field Parameters																		
Temperature	Field Measure		-	Degrees C	12.00	15.8	10.77	14.5	10.00	12.7	11.77	11.77	15.7	10.20		11.9		
рН	Field Measure	7.77		SU	6.89	7.25	6.94	7.31	7.09	7.56	7.58	7.58	7.68	7.55		7.79		
Specific Conductivity	Field Measure			us/cm	3472	3679	3467	4388	949	931	1261	1261	1278	3669		4406		
Oxidation Reduction Potential				mV	122.4	19.9	175	75.5	138.5	53.3	169.6	169.6	63.2	188.9		195.2		
Dissolved Oxygen	Field Measure			mg/L	0.75	2.21	4.53	3.15	8.26	0.01	3.99	3.99	0.01	3.55		0.02		
Turbidity	Field Measure			NTU	4.61	3.45	3.90	6.98	8.37	2.56	14.6	14.6	23.9	>1000		>1000		

N = primary sample

FD = field duplicate

-- = not analyzed

mg/L = milligrams per liter

pCi/L = picoCuries per liter

< = less than reporting limit
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

J = estimated concentration (+ = biased high, - = biased low)

U = not detected

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
BAT Impoundments Appendix III Background Upper Prediction Limits
PRPA BAT Impoundments Annual Report for 2024
PRPA Rawhide Facility, Colorado

Parameter (Units)	Number of Samples	Percent Non-detects	Normal or Lognormal Distribution?	Statistical Test	Background Upper Prediction Limit
Boron (mg/L)	38	0	No/No	Nonparametric	2.39
Calcium (mg/L)	38	0	No/No	Nonparametric	433
Chloride (mg/L)	38	0	No/No	Nonparametric	190
Fluoride (mg/L)	39	54	No/Yes	Parametric	0.93
pH (standard units)	34	0	Yes/Yes	Parametric	7.77
Sulfate (mg/L)	35	3	No/No	Nonparametric	2,972
Total Dissolved Solids (mg/L)	38	0	Yes/Yes	Nonparametric	4,482

BAT = Bottom Ash Transfer

mg/L = milligrams per liter

Upper prediction limits calculated using data from September 2016 through October 2024

Table 5
BAT Impoundments Appendix IV Background Upper Prediction Limits
PRPA BAT Impoundments Annual Report for 2024
PRPA Rawhide Facility, Colorado

Parameter (Units)	Number of Samples	Percent Non- detects	Normal or Lognormal Distribution?	Statistical Test	Background Upper Prediction Limit	GWPS
Antimony (mg/L)	39	82	Yes/No	Parametric	0.001	0.006
Arsenic (mg/L)	39	67	Yes/Yes	Parametric	0.003	0.01
Barium (mg/L)	39	0	Yes/Yes	Parametric	0.038	2.0
Beryllium (mg/L)	39	100	No/No	RDL	0.0005	0.004
Cadmium (mg/L)	39	97	No/No	RDL	0.0005	0.005
Chromium (mg/L)	39	79	Yes/Yes	Parametric	0.002	0.1
Cobalt (mg/L)	39	64	Yes/Yes	Parametric	0.002	0.006
Fluoride (mg/L)	39	54	No/Yes	Parametric	0.93	4.0
Lead (mg/L)	39	92	Yes/Yes	Parametric	0.001	0.015
Lithium (mg/L)	39	0	No/No	Nonparametric	0.33	0.33 (0.04)
Mercury (mg/L)	39	100	No/No	RDL	0.0002	0.002
Molybdenum (mg/L)	39	10	Yes/Yes	Parametric	0.032	0.1
Selenium (mg/L)	39	36	Yes/No	Parametric	0.188	0.188 (0.05)
Thallium (mg/L)	39	100	No/No	RDL	0.001	0.002
Radium-226+228 Combined (pCi//L)	38	0	No/No	Nonparametric	2.83	5.0

BAT = Bottom Ash Transfer

GWPS = Groundwater Protection Standard

RDL = background limit set at standard reporting detection limit

mg/L = milligrams per liter

pCi/L = picoCuries per liter

Background Upper Prediction Limit calculated with data from September 2016 through October 2024

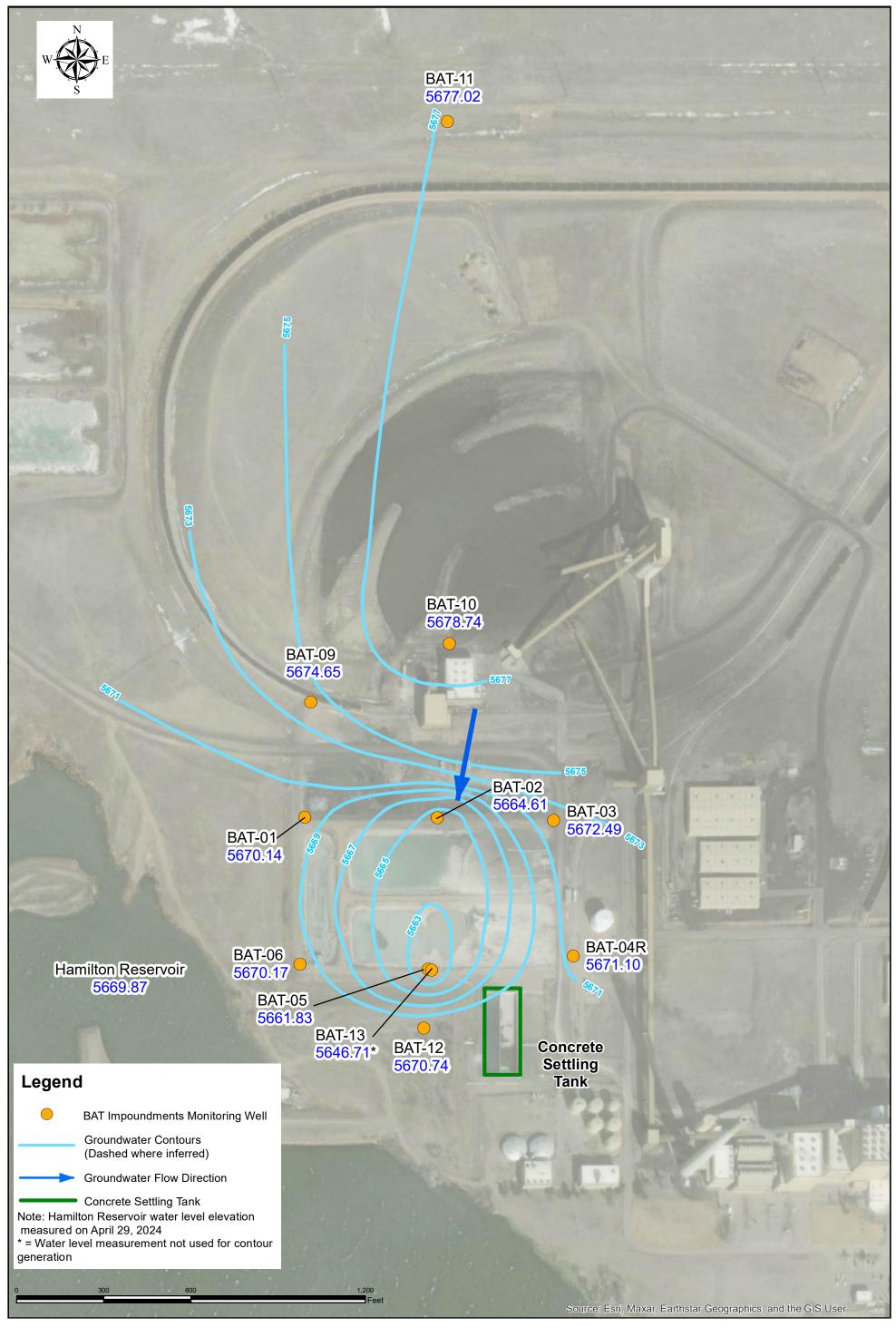
All of the beryllium, mercury, and thallium results in the background monitoring well were reported as not detected and cadmium was only detected 3% of the time. For these constituents, the standard reporting detection limit was selected as the upper prediction limit (UPL) per the double quantification 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.

AECOM Environment

Figures





October 1, 2024.

Note: Hamilton Reservoir water level elevation measured on

Source: Esri, Maxar, Earthstar Geographics, and the GIS User

AECOM Environment

Appendix A

Groundwater Sampling Forms

AECOM Environment

April/May 2024

Event:

PRPA Q2 Sampling
Top of Casing

MP:

Date:

Recorder: 0. Milinski + M. Swift

M. J.	Location	Group	DTW	TD	Notes
0930	PZ-3	Piezometer	32.63		good work hion
0918	PZ-4	Piezometer	13.22	-	
0925	PZ-5	Piezometer	36.09		V
130/24/017		ASH	14.12		Buffalo Area - Need Escort and condition
,	ASH-02	ASH	3.38		1 0
1003	ASH-03	ASH	38.62	7==	
35404118	ASH-04	ASH 13,87	13772	5 -1-	
	ASH-05 ★	ASH	21.25		replaced tubing
0910	ASH-06	ASH	62.51		
	ASH-07	ASH	14.31	i nt	•
1022	ASH-08	ASH	9.32		3
10.18	ASH-09	ASH	3.34	122	
1105	BAT-01	BAT	12.34		
	BAT-02	BAT	17.80	-	
	BAT-03	BAT	9.91	1221	*
1119	BAT-04R	BAT	15.88) *** :	o_case**
	BAT-05 ★	BAT	20,30		
	BAT-06	BAT	15.29		
	BAT-09 ·	BAT	18.38	744 (1)	
0900	BAT-10	BAT	11.85	/	
0448	BAT-11	BAT	27.85		
4	BAT-12+	BAT	30,06	144	
126	BAT-13	BAT	\$.29		
0.190	PRS-01	PRS	25.26		
	PRS-02	PRS	23.00	122	replaced tubing
		PRS	47.73		replaced fubing
	PRS-04	PRS	24.96	3 5.5 .	'
	PRS-05	PRS	26.17		
	PRS-06★	PRS	70.55		replaced tubing
7.5	PRS-07	PRS	24.12	155	J
1212	MW-3	Sitewide	24.97		
100	MW-4	Sitewide	19.55		
30 [24 0820		Sitewide	21.77		Buffalo Area - Need Escort
96 3094978	MW-6	Sitewide	1.25	and .	Cross Barbed Wire Fence and Access by Foot
0840	MW-7	Sitewide	1,90		Cross Barbed Wire Fence and Access by Foot
1327	MW-8	Sitewide	11.20		May need gate to be opened
1202	FTP-01	FTP	30.00		Iviay fieed gate to be opened
	FTP-02	FTP	8.95		May need gate to be opened 10 10(K
148	FTP-03	FTP	26.56		May need gate to be opened 100 TOCK
1225	FTP-04	FTP	17,73		May need gate to be opened , good condition
1243	FTP-05	FTP	11,39		May need gate to be opened '

Acronyms:

DTW - Depth to Water

MP - Measuring Point

TD - Total Depth

*- Pay close attention to readings.
Should be 1 20,20,30,20 ft bloc



Well/Piezo ID:	
VVCII/T ICZO ID.	BAT-01

Ground Water Sample Collection Record

Client: Project No:			River Powe 455 / 6073		ty	_	Date: Time: Start _	5 <u>/9/24</u> 13:30		
Site Location	:		de Generat				_	Finish _	15:30	
Weather Con	nds:	sunny,	, cold, rain		Collector(s)	M. Swift, J. Hurs	hman			
WATER LEV	EL DAT	•		•	O,		Well		Piezometer	
a. Total Well	Length			c. Ca	sing Material	PVC	e. Lengtl	h of Water Colu	umn <u></u>	(a-b)
b. Water Tab	ole Depth	١ .	12.34	d. Ca	sing Diameter	<u>2"</u>	f. Calcula	ated Well Volur	me (see bac	:k) <u></u>
WELL PURG			d <u>low flov</u>	v samplin	g with bladder	pump_			_	
b. Field Testing Equipme				Used:	Make YSI LaMotte	Model 556 2020t		r		
	c. Field	Testing	Equipment	t Calibrati	on Documenta	tion Found on De	esignated (Calibration Log		
<u>_</u> .	Volu		T 0 (5)		Spec. Cond	0	DO	Turbidity	0 :	DTW
Time Stabilization	Remov	· ,	T° (C) +/- 3%	pH +/- 0.1	(µs/cm) +/- 3%	ORP +/- 10 MV	mg/L +/- 10%	(NTU) 5 NTU, 10%	Color	(ft) 0.3 ft
13:35	1.0		12.03	7.24	2535	157.0	2.07	10.04	clear	13.70
13:40	2.		12.04	7.18	2545	156.0	1.92	12.7	clear	14.30
13:45	2.0)	11.63	7.20	2550	155.0	1.95	12.5	clear	14.70
13:50	2.		11.33	7.12	2557	153.0	1.92	11.8	clear	15.42
13:55	3.0		10.88	7.11 7.14	2486 2566	152.0 149.5	1.83	11.1 7.65	clear	15.90
14:00 14:06	3.9 4.0		10.28 10.23	7.14	2569	149.5	2.10 1.81	7.65 7.69	clear clear	16.70 17.20
14:12	4.7		10.23	7.11	2572	146.3	1.80	6.79	clear	17.50
14:16	5.0)	10.20	7.11	2570	145.2	1.79	7.53	clear	17.80
14:21	5.2		10.32	7.09	2576	143.7	1.76	6.38	clear	18.10
14:25	5.	Ō	10.67	7.10	2581	141.8	1.75	6.96	clear	18.40
							-			
							+			
	e Acce	otance	criteria pass	s/fail	Yes	No	N/A			
			lume been			Ŭ				
	Has r	equired	I turbidity be	en reach						
			eters stabili							
	IŤ		I/A - Explair and DTW n		to stabilize w/in	ı reasonable amo	ount of time) .		
		. 5111P				accabic affic				
							•			
SAMPLE C	OLLECT	ION:		Method:	low flow blade	der pump				
Sample	e ID	Contai	ner Type	No. of	Containers	Preservation		Analysis		Time
BAT-01-C			ee CoC		10	see CoC		see CoC		14:30
BAT-01-CCR		Se	ee CoC		5	see CoC	1	see CoC		14:30
							-			
	·									
Comments:										
Signature		Mack	ensie Swift				Date	5/9/24_		



Well/Piezo ID:	BAT-02
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Ground Water Sample Collection Record

Client: Project No: Site Location:			River Powe		ty	_	Date: Time: Start	5 <u>/8/24</u> _14:30	<u> </u>	
			de Generat		n		_		15:30	
Weather Cor						M. Swift, C., Ahr	endt			
WATER LEV		•		•	O,		Well	•'	Piezomete	
a. Total Well	Length			c. Ca	sing Material	PVC	e. Lengtl	n of Water Colu	ımn <u></u>	(a-b)
b. Water Tal	ole Depth	١.	17.8	d. Ca	asing Diameter	<u>2"</u>	f. Calcula	ated Well Volur	me (see bad	ck) <u></u>
WELL PURG			d <u>low flov</u>	w samplin	g with bladder	pump		· · · · · · · · · · · · · · · · · · ·	_	
b. Field Testing Equipm				Used:	Make YSI LaMotte	Model 556 2020t				
			Equipment	t Calibrati		tion Found on De				
Time	Volu Remove		T° (C)	<u></u>	Spec. Cond	OPP	DO mg/l	Turbidity	Color	DTW (ft)
Stabilization	Remove 	(0 /	T° (C) +/- 3%	pH +/- 0.1	(µs/cm) +/- 3%	ORP +/- 10 MV	mg/L +/- 10%	(NTU) 5 NTU, 10%	COIOI	(ft) 0.3 ft
14:30	0.		12.35	7.73	2804	136.5	11.69		clear	
14:35	0.2		12.09	7.57	2796	130.9	11.90	16.31	clear	20.57
14:40	0.		12.06	7.69	2780	111.3	11.56	22.80	clear	21.41
14:45	0.		11.97	7.61	2775	100.7	10.03	20.40	clear	22.20
14:50	1.		12.23	7.49	2789	98.1	7.81	19.01	clear	21.81
14:55 15:00	1. 1.		11.98 11.87	7.41 7.39	2788 2795	100.3 101.3	8.02 8.03	17.60 15.70	clear clear	22.09
13.00	l.	3	11.07	1.39	2193	101.5	0.03	15.70	Clear	
	e Acce	ntance (criteria pass	s/fail	Yes	No	N/A			
	Has req Has I Have	uired vo required parame	lume been turbidity be eters stabili I/A - Explair	removed een reach zed						
SAMPLE C	OLLECT	ION:		Method:	low flow blade	der pump				
Sample			ner Type	No. of	Containers	Preservation		Analysis		Time
BAT-02-C			e CoC		10	see CoC		see CoC		13:00
BAT-02-	BAT-02-CCR		See CoC		5	see CoC	see CoC			13:00
Comments:										
Signature		Mack	ensie Swift	<u> </u>	_		Date	5/8/24		



Well/Piezo ID:	
Well/Plezo ID.	BAT-03
	D/ 11 00

Client: Project No:			River Powe		у	_	Date: Time: Start	5 <u>/13/2</u> 8:55	4	
Site Location: Rawhide Generating State					n		=	Finish		_
Weather Con						M. Swift, K. Hop	pes			
				_	- ` '					
WATER LEV	EL DAT	•		•	O,		Well	•'	Piezometer	
a. Total Well Length				c. Ca	sing Material	PVC	e. Lengtl	n of Water Colu	ımn <u></u>	(a-b)
b. Water Tab	ole Depth		9.91	d. Ca	sing Diameter	<u>2"</u>	f. Calcula	ated Well Volu	me (see bac	sk)
WELL PURG			d <u>low flov</u>	w samplin	g with bladder	pump			_	
b. Field Testing Equipmen				Used:	Make YSI LaMotte	Model 556 2020t		Serial Number U11116IX 2214-3721	r 	
	c. Field	Testing	Equipment	t Calibrati	on Documenta	ition Found on De	esignated (Calibration Log		
	Volu	me			Spec. Cond		DO	Turbidity		DTW
Time	Remov	· ,	T° (C)	pН	(µs/cm)	ORP	mg/L	(NTU)	Color	(ft)
Stabilization			+/- 3%	+/- 0.1	+/- 3%	+/- 10 MV	+/- 10%	5 NTU, 10%	-1	0.3 ft
9:00 9:05	3.0		12.34 11.78	6.74 6.77	3407 3352	185 182	4.47 1.70	22.9 31.10	clear cloudy	13.41 16.30
9:10	5.0		12.00	6.80	3325	179	1.57	25.80		17.60
9:15	6.5	5	12.47	6.80	3345	177	1.47	22.20	clear	17.98
9:20	7.0		12.93	6.79	3380	175	1.27	17.40	clear	18.40
9:25 9:30	7.5		13.36	6.81 6.79	3420 3444	173 172	0.88	15.90 14.90	clear	18.00 18.32
9:35	8.0 8.5		13.11 12.74	6.76	3476	172	1.06	11.80	clear clear	18.70
9:42	9.7		13.39	6.77	3530	168	1.12	11.60	clear	19.12
9:45	10.2	25	12.76	6.76	3529	166	1.07	8.38	clear	19.50
9:50	11.5		12.51	6.77	3520	165	1.03	8.80	clear	20.00
9:55	12.7		12.20	6.78	3500	164	1.00	8.58	clear	20.43
10:00			11.96	6.78	3502	163	1.03	7.67	clear	21.27
				/£_:1	Var	N-	NI/A			
			criteria pass Iume been		Yes	No	N/A			
			turbidity be		_					
			eters stabili							
	lf		I/A - Explair		hilina aftar 1 h					
		remp	and Divv d	iid not sta	bilize after 1 h	our.				
SAMPLE C	OLLECT	ION:		Method:	low flow blade	der pump				
Sample	e ID	Contai	ner Type	No. of	Containers	Preservation		Analysis		Time
BAT-03-C			e CoC		7	see CoC		see CoC		10:05
BAT-03-			e CoC		5	see CoC		see CoC		10:05
ERB-02-			e CoC		5	see CoC		see CoC		10:20
ERB-02-C	DLHF	Se	e CoC		7	see CoC	1	see CoC		10:20
		 					+			
<u> </u>		1		<u> </u>		ı	1			
Comments:	ERB-02-	CCR ar	nd -CDPHE	collected	l here at 10:20	using lab provide	ed DI water	with deconne	d FL water o	dipped in.
Signature		Mack	ensie Swift		_		Date	5/13/24_		



Well/Piezo ID:	BAT-04R
	_,

Client: Project No:		60731	River Powe 455/607313	303	•					
Site Location		Rawhi	de Generat				<u> </u>	Finish _	14:15	
Weather Con	nds:		sunny, win	dy	Collector(s)	M. Swift, O. Heli	nski			
WATER LEV		A: (mea	sured fron	•	•		Well	•	Piezomete	
a. Total Well	Length	,	-	c. Ca	sing Material	PVC	e. Lengtl	n of Water Colu	ımn <u></u>	(a-b)
b. Water Tal	ole Depth	١ .	15.88'	d. Ca	sing Diameter	<u>2"</u>	f. Calcula	ated Well Volur	ne (see ba	ck)
WELL PURG			d <u>low flov</u>	v samplir	g with bladder	pump_			_	
	b. Field	Testing	Equipment	Used:	Make YSI LaMotte	Model 556 2020t		Serial Number U11116IX 2214-3721		- -
	c. Field	Testing	Equipment	Calibrat	on Documenta	tion Found on De	esignated (Calibration Log		
T.	Volu		Tº (O)		Spec. Cond	000	DO	Turbidity	0.1	DTW
Time Stabilization	Remov	. ,	T° (C) +/- 3%	pH +/- 0.1	(µs/cm) +/- 3%	ORP +/- 10 MV	mg/L +/- 10%	(NTU) 5 NTU, 10%	Color	(ft) 0.3 ft
12:20	1.		11.99	6.79	2838	177.5	0.84	22.2	clear	16.80
12:25	3.	0	11.92	6.77	2824	175.9	0.71	24.1	clear	16.98
12:30	4.		11.86	6.74	2854	172.7	0.54	13.5	clear	17.19
12:35 12:40	6.7 9.		12.03 11.99	6.71	2899 2906	168.7 165.6	0.45	8.78 8.55	clear	17.30
12:45	12		12.01	6.70 6.70	2949	160.7	0.35	6.95	clear clear	17.49 17.58
.2			.2.0	00				0.00	0.04.	
	Has requested Has represented Has requested Has represented Has requested Has requeste	uired vo equired parame	criteria pass lume been l turbidity be eters stabili	removed een reach zed	Yes □ ned ■	N∘ □ □	N/A			
	lf	no or N	I/A - Explair	n below.						
SAMPLE C	OLLECT	ION:		Method:	low flow blade	der pump				
Sample			ner Type	No. of	Containers	Preservation		Analysis		Time
BAT-04R			ee CoC		5	see CoC		see CoC		12:50
BAT-04R-0	DPHE	36	ee CoC		10	see CoC		see CoC		12:50
Commonts	MeMer) collect	ted boro							
Comments:	IVIO/IVIOL	Collect	led nere							
Signature		Mack	ensie Swift		_		Date	5/7/24		



Well/Piezo ID:	BAT-05

Client: Project No: Site Location Weather Con	: _	607314 Rawhio	River Powe 455/607313 de Generat nny, windy,	303 ing Statio	n	M. Swift, C. Ahre	- - endt	Date: Time: Start Finish		
WATER LEV a. Total Well		•	sured fron	•	Casing) sing Material	PVC	Well e. Length	า of Water Colเ	Piezometei umn <u></u>	_
b. Water Tal	ole Depth	-	20.37'	d. Ca	sing Diameter	<u>2"</u>	f. Calcula	ated Well Volur	ne (see bac	:k) <u></u>
WELL PURG			d <u>low flov</u>	w samplin	g with bladder	pump_		 	_	
	b. Field T	esting	Equipment	Used:	Make YSI LaMotte	Model 556 2020t		Serial Number U11116IX 2214-3721		
	c. Field T	esting	Equipment	t Calibrati	on Documenta	tion Found on De	esignated C	Calibration Log		
Time Stabilization	Volun Removed		T° (C) +/- 3%	pH +/- 0.1	Spec. Cond (µs/cm) +/- 3%	ORP +/- 10 MV	DO mg/L +/- 10%	Turbidity (NTU) 5 NTU, 10%	Color	DTW (ft) 0.3 ft
9:08	0.25	5	11.03	7.18	3672	189.1	7.48	108.8	cloudy	20.32
9:13	0.5		10.98	7.33	3561	174.9	12.34	overrange	cloudy	22.30
9:18	1.00		10.93	7.52	3423	169.6	12.64	overrange	cloudy	22.94
9:23 9:28	1.25 1.50		10.98	7.53 7.54	3416 3417	171.4 172.5	12.64	overrange	cloudy	23.05 23.25
9:33	1.75		11.07 10.97	7.50	3430	172.5	12.53 12.18	overrange overrange	cloudy cloudy	23.48
9:38	1.85		11.99	7.47	3445	177.8	11.92	overrange	cloudy	23.67
9:42	1.95		10.91	7.44	3463	179.7	11.79	overrange	clear	24.04
9:48	2.25		10.93	7.42	3484	181.6	11.60	overrange	clear	24.22
9:53 9:58	2.30		11.20 11.10	7.39 7.38	3502 3510	183.0 183.6	11.50 11.41	102.2 96.4	clear clear	24.52 24.68
10:03	2.50		11.12	7.38	3522	184.6	11.35	88.4	clear	24.84
10:08	2.60		11.21	7.37	3534	185.7	11.25	75.9	clear	25.26
10:15	2.65	5	11.6	7.35	3554	187.3	11.13	77.9	clear	25.20
			criteria pass		Yes	No	N/A			
	Has re Have p	quired parame	lume been turbidity be eters stabili /A - Explair	een reach zed	ed 🔲					
		DO wa	ıs calibrate	d on 5/7/2		cked turbidity met easonable amour		ourging; second	l calibration	okay.
SAMPLE C	OLLECTI	ON:		Method:	low flow blade	der pump				
Sample		Contai	ner Type	No. of	Containers	Preservation		Analysis		Time
BAT-05-C			e CoC		10	see CoC		see CoC		10:15
BAT-05-	CCR	Se	e CoC		5	see CoC		see CoC		10:15
							1			
Comments:										
Signature		_Mack	ensie Swift		_		Date	5/8/24		



Well/Piezo ID:	
Well/Plezo ID.	BAT-06

Client: Project No: Site Location Weather Con		60731 Rawhi	River Powe 455/607313 de Generat rcast, 50 F,	303 ing Statio		O. Helinski	- - -	Time: Start	5 <u>/7/24</u> 14:39 15:40	k
WATER LEV		•		•	C.	D) (0	Well		Piezomete	
a. Total Well	Length	•		c. Ca	sing Material __	<u>PVC</u>	e. Lengtl	n of Water Colu	ımn <u></u>	(a-b)
b. Water Tab	ole Depth		15.29	d. Ca	sing Diameter	<u>2"</u>	f. Calcula	ated Well Volur	ne (see bad	ck)
WELL PURG			d <u>low flov</u>	v samplin	g with bladder	pump			_	
		J	Equipment		Make YSI LaMotte	Model 556 2020t		Serial Number U11116IX 2214-3721	-	
	c. Field	Testing	Equipment	t Calibrati	on Documenta	tion Found on De	esignated (Calibration Log		
Time	Volui Remove	ed (L)	T° (C)	pH	Spec. Cond (µs/cm)	ORP	DO mg/L	Turbidity (NTU)	Color	DTW (ft)
Stabilization 14:39	0.0		+/- 3% 11.16	+/- 0.1 7.49	+/- 3% 2958	+/- 10 MV 172.4	+/- 10% 2.57	5 NTU, 10% 6.17	clear	0.3 ft 15.68
14:44	2.2		10.80	7.49	3008	167.5	0.59	14.5	clear	17.85
14:49	4.5		10.77	7.38	3026	165.3	0.46	7.84	clear	20.20
14:52	5.2		10.70	7.38	3033	163.5	1.23	14.6	clear	21.21
14:55	5.5		10.77	7.36	3038	162.5	1.71		clear	
14:58 15:01	5.9 6.4		10.68 10.91	7.41 7.37	3039 3049	159.4 156.9	1.78 1.92	8.01 5.13	clear clear	21.89 22.24
15:04	6.8		11.28	7.35	3058	154.5	2.31	5.13	clear	22.58
15:07	7.1		12.12	7.33	3079	150.9	1.94	9.07	clear	22.72
15:10	7.4	ļ	12.55	7.34	3086	148.1	1.73	6.71	clear	22.86
15:13	7.7		12.58	7.33	3081	146.2	1.66	9.73	clear	23.03
15:15	8.0)	12.76	7.32	3089	143.2	1.95	5.83	clear	23.19
			., .	<i>(</i> 2 · · ·						
	Has requ Has re Have	iired vo equired parame	criteria pass lume been turbidity be eters stabili I/A - Explair	removed een reach zed	Yes □ ed ■	No 	N/A			
SAMPLE C	OLLECT	ION:		Method:	low flow blade	ler pump				
Sample			ner Type	No. of	Containers	Preservation		Analysis		Time
BAT-06-C BAT-06-C			e CoC e CoC		5 10	see CoC see CoC		see CoC see CoC		15:20 15:20
BA1-00-1	OOK	00			10	300 000		300 000		13.20
Comments:										
Signature		_Olivia	Helinski_	 			Date	5/7/24		



Well/Piezo ID:	
VVCII/I ICZO ID.	BAT-09
	DA 1-09

Client: Project No: Site Location Weather Con	:	60731	455/607313 de Generat	Date: 5/7/24 Time: Start 10:12 Finish 11:50 unny, windy Collector(s) O. Helinski ured from Top of Casing) c. Casing Material PVC 18.38 d. Casing Diameter 2" f. Calculated Well Volume (see back)						
WATERIEV	FI DATA	۰ (mea	sured fron	Top of	Casing)		Well		Piezomete	r 🗆
a. Total Well		(•	σ,	PVC				
b. Water Tab	Ū	•			-		•			. ,
	·		10.00	u. Oa	sing Diameter	<u></u>	i. Galcula	ated vveli volui	ne (see ba	GK) <u></u>
WELL PURG			d <u>low flov</u>	v samplin	g with bladder	pump			_	
	b. Field T	esting	Equipment	Used:	Make YSI	Model 556		Serial Number U11116IX		
					LaMotte	2020t		2214-3721		- -
	c. Field	Testing	Equipment	Calibrati	on Documenta	tion Found on De	esignated C	Calibration Log		
	Volur	ne			Spec. Cond		DO	Turbidity		DTW
Time	Remove	· /	T° (C)	pH	(µs/cm)	ORP	mg/L	(NTU)	Color	(ft)
Stabilization			+/- 3%	+/- 0.1	+/- 3%	+/- 10 MV	+/- 10%		alaan	0.3 ft 18.51
10:12 10:17	0.0 3.0		11.64 11.27	7.15 7.08	3085 3281	145.4 148.6	6.12 5.18	8.88 7.65	clear clear	21.85
10:17	4.0		11.21	7.10	3325	148.5	5.28	6.92	clear	22.50
10:23	5.0		11.31	7.07	3356	148.2	4.85	6.17	clear	23.65
10:26	6.0)	11.38	7.05	3380	147.9	4.77	6.07	clear	24.30
10:29	6.9		11.34	7.01	3396	147.5	4.49	6.19	clear	25.13
10:32	7.9		11.37	6.99	3410	146.8	4.12	6.45	clear	25.45
10:35	8.5 9.0		11.41	6.97	3429	146.0	3.37	8.19	clear	26.35
10:38 10:43	9.8		11.45 11.43	6.92 6.91	3443 3450	145.0 141.9	2.77	17.50 16.80	clear clear	26.75 27.32
10:46	10.8		11.46	6.92	3455	140.5	2.70	10.13	clear	27.59
10:49	11.4		11.50	6.90	3441	138.2	1.45	8.06	clear	27.81
10:52	11.9		11.55	6.91	3445	135.0	1.00	7.19	clear	28.11
10:55	12.2	2	11.82	6.89	3455	132.3	0.86	5.63	clear	28.20 28.27
10:58	12.8	8	11.95	6.85	3467	129.8	0.81	4.32	clear	
11:01	-		12.00	6.89	3472	122.4	0.75	4.61	clear	28.39
	e. Accep	tance o	criteria pass	/fail	Yes	No	N/A			
	Has re Have	equired parame	lume been turbidity be eters stabili //A - Explair	en reach zed	ed =					
SAMPLE C	OLLECTI	ON:		Method:	low flow blade	ler pump				
			ner Type		Containers	' '		Analysis		Time
Sample BAT-09-C			e CoC	NO. OI	10	Preservation see CoC		see CoC		11:05
BAT-09-			e CoC		5	see CoC		see CoC		11:05
					-					11.00
Comments:										
Signature		_Olivia	Helinski				Date	5/7/24	· · · · · · · · · · · · · · · · · · ·	



Well/Piezo ID:	BAT-10

Project No:		60731	River Powe 455/607313	303		_ _	Time: Start _		<u>1</u>	
Site Location Weather Cor		Rawhi	de Generat sunny, win			M. Swift, J. Hurs	_ hman	Finish	13:00	
vvcaulei COI	iuo.	-	Julily, Will	чу	_Collector(s)	IVI. OWIIL, J. FIUIS	iiiiaii			
WATER LEV		•		•	O,	DVC	Well	_	Piezomete	
a. Total Well	Lengin	,				PVC	e. Lengu	h of Water Colւ	ımn <u></u>	<u>-</u> (a-b)
b. Water Tal	ole Depth	١ .	11.85	d. Ca	sing Diameter	<u>2"</u>	f. Calcula	ated Well Volur	ne (see ba	ck) <u></u>
WELL PURG			d <u>low flov</u>	v samplin	g with bladder	pump			_	
	b. Field	Testing	Equipment	Used:	Make YSI LaMotte	Model 556 2020t		Serial Number U11116IX 2214-3721		<u>.</u>
	c. Field	Testing	Equipment	Calibrati	on Documenta	tion Found on De	esignated (Calibration Log		
Time Stabilization	Volu Remov	ed (L)	T° (C) +/- 3%	pH +/- 0.1	Spec. Cond (µs/cm) +/- 3%	ORP +/- 10 MV	DO mg/L +/- 10%	Turbidity (NTU) 5 NTU, 10%	Color	DTW (ft) 0.3 ft
10:45	0.		10.14	7.26	3299	175.2	4.90	5.79	clear	12.76
10:50	0.		10.81	7.11	3206	176.8	4.43	4.80	clear	13.25
10:55	1.		10.62	7.05	3401	177	4.48	4.04	clear	13.77
11:00 11:05	2.2 3.		10.51 10.60	7.01 6.96	3432 3452	177 176	4.22	4.13 4.21	clear clear	14.36 14.52
11:10	3.		10.77	6.94	3467	175	4.53	3.90	clear	14.65
			-			-				
	0 1000	ntanco	criteria pass	s/fail	Yes	No	N/A			
	Has requested Has represented Has requested Has represented Has requested Has requeste	uired vo equired parame	lume been turbidity be eters stabili I/A - Explair	removed een reach zed						
SAMPLE C	OLLECT	ION:		Method:	low flow blade	der pump				
Sample			ner Type	No. of	Containers	Preservation		Analysis		Time
BAT-10-C			e CoC		10	see CoC		see CoC		11:15
BAT-10-	CCK	Se	ee CoC		5	see CoC		see CoC		11:15
Comments:										
Signature		Mack	ensie Swift		_		Date	5/9/24_		



Well/Piezo ID:	
WOM/I TOZO ID.	BAT-11
	D/\1-11

Client: Project No: Site Location Weather Con		60731	River Powe 455/607313 de Generat cloudy, 50	303 ing Statio		Date: 5/9/24 Time: Start 8:37 Finish 10:15 Swift				
WATER LEVEL DATA: (measured from Top of a. Total Well Length					sing Material		_	n of Water Colu		(a-b)
WELL PURG			d <u>low flov</u>	v samplin	g with bladder	pump			_	
			Equipment Equipment		Make YSI LaMotte on Documenta	Model 556 2020t ation Found on De	esignated (Serial Number U11116IX 2214-3721 Calibration Log		
Time	Volu Remov		T° (C)	pН	Spec. Cond (µs/cm)	ORP	DO mg/L	Turbidity (NTU)	Color	DTW (ft)
Stabilization	Kelliovi	eu (L)	+/- 3%	+/- 0.1	+/- 3%	+/- 10 MV	+/- 10%	5 NTU, 10%	COIOI	0.3 ft
8:43	initia	al	10.25	7.11	1003	147.4	7.14	6.73	clear	28.22
8:45	1.8		10.08	7.73	988	144.8	7.76	8.37	clear	28.40
8:48	2.3	3	10.03	7.05	971	142.1	8.04	8.03	clear	28.70
8:54	3.1	0	10.03	7.06	957	140.4	8.18	8.19	clear	29.01
8:57	4.0)	10.01	7.06	949	139.1	8.22	7.90	clear	29.15
9:01	4.6	3	10.00	7.09	949	138.5	8.26	8.37	clear	29.35
	Has requ Has r Have	uired vo equired parame	criteria pass lume been turbidity be eters stabili: I/A - Explair	removed een reach zed	Yes □ ed ■	No	N/A			
SAMPLE C	OLLECT	ION:		Method:	low flow blade	der pump				
Sample	e ID	Contai	ner Type	No. of	Containers	Preservation		Analysis		Time
BAT-11-C			e CoC		10	see CoC		see CoC		9:05
BAT-11-	CCR	Se	e CoC		5	see CoC		see CoC		9:05
Comments:										
Signature		Jeren	ny Hurshma	an			Date	5/9/24		



Well/Piezo ID:	DAT 40
	BAT-12

Client: Platte River Power Authority Project No: 60731455/60731303 Site Location: Rawhide Generating Station							- -	Time: Start _	5 <u>/8/24</u> 12:15 14:00	
Weather Con			oudy, windy	M. Swift, C. Ahre	endt	_				
WATER LEV		A: (mea		•	•	DVO	Well		Piezomete	
a. Total Well	Length			c. Ca	ising Material	<u>PVC</u>	e. Lengti	n of Water Colu	ımn <u></u>	(a-b)
b. Water Tal	ole Depth	١ .	30.86	d. Ca	sing Diameter	2"	f. Calcula	ated Well Volur	ne (see bad	ck)
WELL PURG			d <u>low flov</u>	v samplin	g with bladder	pump_			_	
			Equipment		Make YSI LaMotte	Model 556 2020t		Serial Number U11116IX 2214-3721	-	
	c. Field	I esting	Equipment	Calibrati	on Documenta	ition Found on De	esignated (Calibration Log		
Time Stabilization	Volu Remov	ed (L)	T° (C) +/- 3%	pH +/- 0.1	Spec. Cond (µs/cm) +/- 3%	ORP +/- 10 MV	DO mg/L +/- 10%	Turbidity (NTU) 5 NTU, 10%	Color	DTW (ft) 0.3 ft
12:20	2.0	0	11.75	7.70	1291	477.0	4.42	19.4	clear	31.42
12:25	3.2		11.82	7.66	1283	174.4	4.30	16.3	clear	31.42
12:30 12:35	4.2 5.5		11.90 11.77	7.61 7.58	1273 1261	172.2 169.6	3.58	19.5 14.6	clear clear	31.52 31.60
	Has requested Has represented Has represented Has represented Has requested Has reques	uired vo equired parame	criteria pass lume been turbidity be eters stabili. //A - Explair	removed een reach zed	Yes	No	N/A			
SAMPLE C					low flow blade	der pump				
Sample			ner Type	No. of	Containers	Preservation	1	Analysis		Time
BAT-12-C BAT-12-			e CoC e CoC		10 5	see CoC see CoC	+	see CoC		12:40 12:40
DUP-02-C			e CoC		10	see CoC	see CoC see CoC			12.40
DUP-02-			e CoC		5	see CoC		see CoC		
Comments:							Date	5/8/24		



Well/Piezo ID	BAT-13

Client:			River Powe		ty		_		5/8/ <u>24</u>	
Project No:			455 / 6073				_	Time: Start _		
Site Location			de Genera						14:00 on	5/14
Weather Co	nds:	sunny	, windy, 43	<u> </u>	Collector(s)	M. Swift, C. Ahre	endt, K. Ho	oppes		
WATER LE\		A: (me	asured fro 38.48	•	•	PVC	Well	l h of Water Col	Piezomete	
	· ·						Ū			
o. Water Ta	ble Depth	l	35.12	d. Ca	sing Diamete	r <u>2"</u>	f. Calcul	ated Well Volu	me (see ba	ack)0.55
VELL PUR			d <u>dispos</u>	able baile	<u>r</u>					
	b. Field 1	Testing	Equipmen	t Used:	Make YSI LaMotte	Model ProSeries 2020t		Serial Numbe 15M100687 22 14-3721	r	
	c. Field	Testing	g Equipmer	t Calibrat	ion Documen	tation Found on D		l Calibration Lo	ΟĆ	
Time	Volur		T° (C)	n⊔	Spec. Cond		DO mg/l	Turbidity	Color	DTW (ft)
Time tabilization	Remove	su (L)	T° (C)	pH +/- 0.1	(us/cm) +/- 3%	ORP +/- 10 MV	mg/L +/- 10%	(NTU) 5 NTU, 10%	Color	(ft) 0.3 ft
8:34	0.8	5	10.75	7.57	2631	188.3	346	overrange	brown	
8:37	1.7		11.16	7.53	3671	187.5	7.71	overrange	brown	
8:45	1.8	}	10.72	7.54	3677	188.5	3.75	overrange	brown	
8:48	2.2	4	10.34	7.55	3671	188.7	3.75	overrange	brown	
8:50	2.6	0	10.39	7.55	3671	188.6	3.55	overrange	brown	
8:56	3.0	0	10.20	7.54	3669	188.9		overrange	brown	
					VE MEASUF	REMENTS TAKEN	N ON 5/8			
9:10	Initia			-					-	
9:30	1.2	5			DOVE INFO		ED DRY			
13:25	Initia	al			ABOVE INFO	RMATION FROM I	15/13			
13.23	HILL	aı			NEORMATIO	N FROM 5/14 - P	URGED D			
				ABO VE I	VI OTAWITATIO	1411(0)(10)14 1	T	71(1		
	Has requi Has re Have If	iired vo equireo param no or N		removed een reacl ized n below.	ned 🗌	No □ ■ ■ ■ the bailer. Sand	N/A	ed into casing.	Purged dry	before well coul
SAMPLE C				Method:						
Sample			iner Type		Containers	Preservation	ļ .	Analysis	-1-	Time
BAT-13-			e CoC . HDPE	se	e CoC	see CoC HNO3		nions and met		5/10/2024 14:20
BAT-13-C			MI HDPE		2	see CoC		ons and phosp		5/10/2024 14:20 5/14/2024 13:40
2, 11 10 0		2001			_	300 000	Aill	ono ana pnosp	110140	5, 17,2527 15.40
omments:						r both CCR and C e collected from 5				olume for both. W
ianatı	1/-	ro Us:-					Dets	E140104		
gnature	na	ra Hop	hes				Dale	5/13/24		

AECOM Environment

September/October 2024

Event: MP:

Top of Casing

Date: 9/30/14

Recorder: 0/10/14 Helinski + Machensie Swift

Location	Group	DTW	TD	Notes	
*PZ-3	Piezometer	23-70	43.37	*	
*PZ-4	Piezometer	33.01	43.20		
*PZ-5	Piezometer	37-13	41.56	*	
ASH-01	ASH	13.98	31.34	Buffalo Area - Need Escort ⊁	
ASH-02	ASH	4:72	51.81	* filled with Manuer webs + dead Flies	
ASH-03	ASH	40,02	51.80	*	
ASH-04	ASH	15.09	32.10	*	
ASH-05	ASH	22.15	31,33	×	
ASH-06	ASH	62.63	70.13	*	
ASH-07	ASH	16.45	30.10	*	
ASH-08	ASH	10.66	29,93	×	
ASH-09	ASH	5,22	26.97	*	
BAT-01	BAT	11.78	30.85	*	
BAT-02	BAT	19.44	33.40	* In the state of	
BAT-03	BAT	13.54	35.23	* missing bolt	
BAT-04R	BAT	110.42	36.00	*	
BAT-05	BAT	20,48	36.94	* dead mice in flush mount	
BAT-06	BAT	16.93	37.58	*	
BAT-09	BAT	19.30	34.71	*	
BAT-10	BAT	12.90	31.28	*	
BAT-11	BAT	28.09	38.95	*	
BAT-12	BAT	31,48	45,06	*	
BAT-13	BAT	36.70	38.53	*	
PRS-01	PRS	28,10	44,59	*	
PRS-02	PRS	25.70	36.30	*	
PRS-03	PRS	48.46	61.81	*	
PRS-04	PRS	28.27	36.94	4	
PRS-05	PRS	29.40	37.69	*	
PRS-06	PRS	21,74	35,34	+	
PRS-07	PRS	25.29	42.45	*	
MW-3	Sitewide	24.96	37.45	*	
MW-4	Sitewide	19.9)	36.50	*	
MW-5	Sitewide	22.17	75.15	Buffalo Area - Need Escort Spidersing lock	
MW-6	Sitewide	3.08	30.05	Cross Barbed Wire Fence and Access by Foot	1120 -
MW-7	Sitewide	4.97	23.14	Cross Barbed Wire Fence and Access by Foot WASP5+ 9 pickr5	4190 7
MW-8	Sitewide	11.02	38,02	*	
FTP-1	FTP	29.94	35,98	*	
FTP-2	FTP	9.58	39.60	*No lock	
FTP-3	FTP	26.08	34.78	NO LOCK X	
FTP-4	FTP	18.21	24.95	+ NO lock	
TP-5	FTP	12.27	21.94	*NO 10CK	

Acronyms:

DTW - Depth to Water MP - Measuring Point TD - Total Depth

* Fluid levels only, no sample * (NOKS) = 9000 (Ondition



Well/Piezo ID:	BAT-01
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Client: Project No:	Project No: 60731455/60731303						-	Time: Start _	10/14/ 13:00	/24
Site Location Weather Con			de Generat (~10 mph)	ırıy Statio	n Collector(s)	O. Helinski	_	Finish	<u>15:00</u>	
_			1 /							
WATER LEV		A: (mea		-	•	DVC	Well		Piezomete	
a. Total Well	Length	•	30.85	c. Ca	sing Material	<u>PVC</u>	e. Lengt	h of Water Colւ	ımn <u></u>	· (a-b)
b. Water Tab	ole Depth		11.78	d. Ca	sing Diameter	<u>2"</u>	f. Calcula	ated Well Volur	me (see bad	ck) <u></u>
WELL PURG			d <u>low flov</u>	v (100-50	0 ml/min) blade	der pump				
			Equipment			Model ProSeries 2100Q Turbidime		Serial Number 041769 16030C04822		
			Ечарион	Calibrati		don't dana di Be				
Time	Volui Remove		T° (C)	рН	Spec. Cond (µs/cm)	ORP	DO mg/L	Turbidity (NTU)	Color	DTW (ft)
Stabilization		,	+/- 3%	+/- 0.1	(μs/cm) +/- 3%	+/- 10 MV	+/- 10%		Coloi	0.3 ft
13:16	0.0)	14.2	7.53	2845	-91.0	0.67	27.1	clear	12.38
13:21	1.9		13.8	7.64	2828	-115.9	0.29	25.0	clear	13.88
13:24	2.3		13.8	7.74	2821	-122.4	0.23	19.6	clear	14.62
13:27	3.0		13.7	7.72	2820	-127.6	0.19	18.3	clear	15.31
13:30 13:33	3.5 4.0		15.4 14.5	7.68 7.54	2739 2828	-130.4 -132.4	0.15 0.18	18.2 14.5	clear clear	15.42 15.98
13:38	4.8		14.8	7.62	2799	-134.1	0.15	15.5	clear	16.83
13:43	5.8		14.1	7.60	2792	-134.8	0.11	9.70	clear	17.76
13:48	6.8	3	14.0	7.55	2780	-134.7	0.11	7.62	clear	18.88
13:53	7.8		13.8	7.53	2806	-134.7	0.12	8.49	clear	19.52
13:59	8.4		13.9	7.56	2750	-133.5	0.16	11.3	clear	20.48
14:04	9.2		14.2	7.54	2732	-132.3	0.13	11.5	clear	21.36
14:09	10.	1	14.0	7.54	2729	-129.9	0.15	11.7	clear	21.53
	Has requ Has re Have	iired vo equired parame no or N	criteria pass lume been turbidity be eters stabili: /A - Explair lid not stab	removed een reach zed n below.		amount of time	N/A			
SAMPLE C	OLLECT			Method:	low flow (100-	-500 ml/min) blad	der pump			
Sample			ner Type	No. of	Containers	Preservation		Analysis		Time
			ee CoC		9	see CoC	1	see CoC		14:15
DA1-U1-	CUK	56	ee CoC		5	see CoC		see CoC		14:15
Comments:		l								
Signature		_Olivia	Helinski_				Date	10/14/2	24	



Well/Piezo ID:	BAT-02
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Client: Project No: Site Location Weather Con		607314 Rawhie	River Powe 455/607313 de Generat y (~10mph)	303 ing Statio	•	O. Helinski	- - -	Date: Time: Start Finish		24
WATER LEV a. Total Well		A: (mea	sured from 33.40	<u>PVC</u>	Well e. Lengt	h of Water Colu	Piezometei			
b. Water Tal	ole Depth		19.44	d. Ca	sing Diameter	<u>2"</u>	f. Calcul	ated Well Volur	ne (see bad	ck) <u></u>
WELL PURG			d <u>low flov</u>	v (100-50	0 ml/min) blade	der pump				
			Equipment Equipment			Model ProSeries 2100Q Turbidime		Serial Number 212547 16030C04822 Calibration Log		
	Volui	ne			Spec. Cond		DO	Turbidity		DTW
Time	Remove	d (gal)	T° (C)	рН	·(µs/cm)	ORP	mg/L	(NTU)	Color	(ft)
Stabilization			+/- 3%	+/- 0.1	+/- 3%	+/- 10 MV	+/- 10%			0.3 ft
10:25	0.0		14.4	7.56	3644	-106.2	2.45	60.9	clearish	20.46
10:30 10:35	1.0 2.0		12.7 12.7	7.19 7.08	3937 3821	-130.5 -114.4	1.72 1.96	30.2 20.1	clearish clear	21.38 22.46
10:38	3.0		12.7	7.00	3693	-95.9	1.69	16.3	clear	22.77
10:41	3.3		12.9	6.99	3658	-88.2	1.54	11.7	clear	23.00
10:44	4.0		12.9	6.96	3621	-81.3	1.20	9.64	clear	23.25
10:47	4.4	ļ	13.0	6.96	3580	-76.6	0.91	9.63	clear	23.44
10:50	5.0)	13.0	6.97	3538	-72.7	0.78	9.79	clear	23.53
	Has requ Has re Have	iired vo equired parame	criteria pass lume been turbidity be eters stabili /A - Explair	removed een reach zed	Yes	No	N/A			
SAMPLE C	OLLECT	ION:		Method:	low flow (100-	-500 ml/min) blad	der pump			
		ner Type	No. of	Containers	Preservation		Analysis		Time	
	BAT-02-CDPHE See		e CoC		9	see CoC	1	see CoC		10:55
DA1-U2-	CUR	36	e CoC		5	see CoC		see CoC		10:55
Comments:										
Signature		_Olivia	Helinski				Date	10/15/24		_



Well/Piezo ID:	BAT-03
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Client: Project No:		60731	River Powe 455/607313	303	•	, ,	Time: Start _		24	
Site Location Weather Con			de Generat cast; slight		Collector(s)	D Rubl	_	Finish _	13:40	_
vveauler Con	ius.	over	casi, siignt	bi eeze	_Collector(s)	D. DUIII				
WATER LEV	EL DAT	A: (mea	sured fron	•	•		Well		Piezomete	
a. Total Well	Length		35.23	c. Ca	sing Material	PVC	e. Lengtl	n of Water Colu	ımn <u></u>	(a-b)
b. Water Tal	ole Depth	ו	13.54	d. Ca	asing Diameter	2"	f. Calcula	ated Well Volu	me (see bad	ck) <u></u> _
WELL PURG			d <u>low flov</u>	v (100-50	0 ml/min) blad	der pump_				
		Ū	Equipment		Make YSI HACH	Model ProSeries 2100Q Turbidimenton Found on De		Serial Number 212547 16030C04822		
	c. riciu	resuring	Ечирпсп	Calibrati		tion i ound on De		Jaiibration Log		
Time	Volu Remov		T° (C)	ъЦ	Spec. Cond	ORP	DO mg/l	Turbidity	Color	DTW (ft)
Stabilization	Remov	. ,	+/- 3%	pH +/- 0.1	(µs/cm) +/- 3%	+/- 10 MV	mg/L +/- 10%	(NTU) 5 NTU, 10%	Color	(ft) 0.3 ft
12:10	0.	5	15.9	6.83	4848	-73.3	1.86	200.0	tan tint	14.86
12:15	1.		15.9	6.81	4793	-45.9	1.24	96.3	clear	15.32
12:20	2.		15.7	6.81	4761	-34.7	0.70	119.0	tan tint	15.95
12:25 12:30	3. 4.		15.7 15.5	6.81 6.96	4755 4700	-27.4 -4.1	0.51	81.0 88.6	clear clear	16.43 17.08
12:35	4.		15.7	6.81	4676	5.6	0.40	74.4	clear	17.50
12:40	5.		15.6	6.82	4645	16.8	0.36	45.6	clear	17.90
12:45	6.	5	15.5	6.82	4632	17.3	0.35	46.5	clear	18.30
12:50	7.		15.6	6.82	4629	19.0	0.33	38.7	clear	18.70
12:55	8.		15.6	6.81	4637	12.9	0.31	37.4	clear	19.10
13:00 13:05	9. 9.		15.7 15.5	6.81 6.81	4642 4654	-7.5 1.7	0.30	30.5 28.7	clear clear	19.50 19.81
13:10	10		15.5	6.82	4658	-20.3	0.29	27.9	clear	20.21
								-		
	Has req Has Have	uired vo required parame	criteria pass lume been I turbidity be eters stabili I/A - Explair Irift	removed een reach zed	Yes ned	No	N/A			
SAMPLE C	OLLEC1	TION:		Method:	low flow (100-	-500 ml/min) blad	lder pump			
Sample			ner Type	No. of	Containers	Preservation		Analysis		Time
BAT-03-C			e CoC		9	see CoC		see CoC		13:15
BAT-03-	CCR	Se	ee CoC		5	see CoC		see CoC		13:15
Comments:										
Signature		David	d Buhl				Date	10/15/24	ļ	-



Well/Piezo ID:	BAT-04R

Client: Project No:		60731	River Powe 455/607313	303	•	_ _	Time: Start		/24	
Site Location			de Generat				_	Finish _	10:15	
Weather Con	ıds:	sun	ny, cool (in	shade)	Collector(s)	O. Helinski				
WATER LEV	EL DAT	A: (mea	asured fron	n Top of	Casing)		Well		Piezomete	r 🔲
a. Total Well	Length	-	36.00	c. Ca	sing Material	PVC	e. Lengt	h of Water Colu	ımn <u></u>	(a-b)
b. Water Tab	ole Depth	1	16.42	d. Ca	ısing Diameter	<u>2"</u>	f. Calcula	ated Well Volur	me (see ba	ck) <u></u> _
WELL PURG										
	a. Purge	Metho	d <u>low flov</u>	v (100-50	0 ml/min) blad	der pump				
b. Field Testing Equipment Use					Make YSI	Model ProSeries		Serial Number 212547	-	
						2100Q Turbidim	eter	16030C04822	8	- -
	c. Field	Testing	Equipment	Calibrati	on Documenta	tion Found on De	esignated (Calibration Log		
	Volu				Spec. Cond		DO	Turbidity		DTW
Time Stabilization	Remov	ed (L)	T° (C)	pH	(µs/cm)	ORP	mg/L	(NTU)	Color	(ft)
8:40	0.0	∩	+/- 3% 13.0	+/- 0.1 7.00	+/- 3% 2872	+/- 10 MV 17.1	+/- 10% 1.88	5 NTU, 10% 17.6	clear	0.3 ft 16.65
8:40 8:45	1.0		12.5	6.98	3519	40.4	1.88	27.0	clear clear	17.00
8:50	3.0		12.3	6.88	3520	62.5	3.21	26.7	clear	17.53
8:53	4.0	_	12.4	6.90	3524	70.8	3.03	23.7	clear	17.60
8:56	5.9		12.4	6.90	3530	78.5	2.90	17.8	clear	17.80
8:59	6.9		12.4	6.99	3538	79.3	2.79	15.6	clear	17.92
9:02	7.9		12.4	6.98	3541	83.3	2.73	13.1	clear	17.98
		-								
		·—			\perp		1			
							1			<u> </u>
					1					
	e. Acce	ptance :	criteria pass	s/fail	Yes	No	N/A	I		<u>I</u>
	Has requ Has r Have	uired vo equired parame	ollume been I turbidity be eters stabili I/A - Explair	removed een reach zed						
										
SAMPLE C	OLLECT	ION:		Method:	low flow (100-	-500 ml/min) blad	lder pump			
Sample		Contai	iner Type	No. of	Containers	Preservation		Analysis		Time
BAT-04R			ee CoC		5	see CoC		see CoC		9:05
BAT-04R-0			ee CoC		9	see CoC		see CoC		9:05
DUP-02-			ee CoC		5	see CoC		see CoC		
DUP-02-C	DPHE	Se	ee CoC		9	see CoC		see CoC		
0										<u> </u>
Comments:									_	_
Signature	· · · · · · · · · · · · · · · · · · ·	Olivia	a Helinski				Date	10/16/24		_



Well/Piezo ID:	
Well/I lezo ib.	
	BAT-05
I	

Client: Project No:			River Powe 455/607313		ty	-	Date: Time: Start _	10/14/2 8:25	24	
Site Location			de Generat			0.11.11.11	_	Finish _	10:20	
Weather Con	ids:	su	nny, light bi	reeze	_Collector(s)	U. Helinski				
WATER LEV	EL DAT	A: (mea	sured fron	n Top of	Casing)		Well		Piezometer	· []
a. Total Well	Length		36.94	c. Ca	sing Material	PVC	e. Lengtl	h of Water Colւ	. <u></u> nmu	(a-b)
b. Water Tab	ole Depth	l .	20.48	d. Ca	ısing Diameter	2"	f. Calcula	ated Well Volu	me (see bac	;k) <u></u>
WELL PURG			d low flow	v (100-50	0 ml/min) blado	der numn				
	a. i uige	. 1416(110(<u>IOW IIOV</u>	<u>, (100-00</u>	o minimi) biad(aor pullip				
	b. Field ⁻	Testing	Equipment	Used:	Make YSI	Model ProSeries	ate:	Serial Number		
					•	2100Q Turbidime		16030C04822		
	c. Field	Testing	Equipment	t Calibrati	on Documenta	tion Found on De	esignated (Calibration Log		
	Volu				Spec. Cond		DO	Turbidity		DTW
Time Stabilization	Remov	ed (L)	T° (C)	pH +/- 0.1	(µs/cm)	ORP +/- 10 MV	mg/L	(NTU)	Color	(ft)
Stabilization 8:34	0.0	·	+/- 3% 12.7	+/- 0.1 7.17	+/- 3% 4073	+/- 10 MV 9.0	+/- 10%	5 NTU, 10% 157	cloudy	0.3 ft 20.91
8:34	0.0		12.7	7.17	4073	-51.0	0.02	77.5	sl. cloudy	20.91
8:44	1.8		12.6	7.09	4108	-47.6	0.02	45.1	sl. cloudy	21.90
8:49	2.3		13.1	7.07	4083	-44.4	0.01	34.1	sl. cloudy	22.14
8:54	2.9	_	12.7	7.07	4095	-42.4	0.02	45.7	sl. cloudy	22.59
8:59	4.0		12.5	7.07	4090	-37.6	0.01	19.7	clear	22.80
9:04	4.8		12.6	7.06	4079	-33.6	0.02	20.4	clear	23.01
9:07 9:10	5.4 6.0		12.6 12.6	7.06 7.05	4067 4056	-31.1 -28.0	0.01	23.1 26.1	clear clear	23.16 23.40
9:10 9:13	6.4		12.6 12.8	7.05	4056	-28.0 -22.1	0.01	26.1	clear	23.40
9:16	6.7		12.9	7.16	4015	-13.5	0.01	20.3	clear	23.83
9:21	7.4		13.0	7.10	4010	-0.2	0.01	21.7	clear	23.22
9:26	8.		13.2	7.04	4015	-6.0	0.01	24.9	clear	24.52
9:31	8.8	8	13.2	7.04	4020	10.4	0.01	21.2	clear	24.85
							+			
							<u></u>			
			criteria pass		Yes	No	N/A			
	Has r Have	equired parame no or N	olume been I turbidity be eters stabili I/A - Explair adings may	een reach zed n below.	ned	d DTW did not sta	abilize with	in reasonable a	amount of ti	me
SAMPLE C	OLLECT	ION:		Method:	low flow (100-	-500 ml/min) blad	der pump			
Sample			iner Type	No. of	Containers	Preservation		Analysis		Time
BAT-05-CI			ee CoC		9	see CoC		see Coc		9:35
BAT-05-0	CCR	Se	ee CoC	_	5	see CoC	+ -	see Coc		9:35
		<u> </u>								
Comments:										
-										
Signature		Olivia	a Helinski				Date	10/14/24	l	-



Well/Piezo ID:	BAT-06
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Client: Project No: Site Location		60731	River Powe 455/607313 de Generat	303		- -	Time: Start	10/14/ 10:55 12:40		
Weather Con						O. Helinski and D	D. Buhl	FIIIISII	12.40	
WATER LEY	/FI BAT:				0!		\A/-U		D: '	
WATER LEV a. Total Well		\: (mea	sured fron 37.58	•	•	PVC	Well e Length	n of Water Colu	Piezomete	
	Ü	•					_			
b. Water Tal	•	•	16.93	u. Ca	sing Diameter	<u>2"</u>	i. Calcula	ated Well Volur	ne (see bac	JK)
WELL PURG			d <u>low flov</u>	v (100-50	0 ml/min) blade	der pump_	······································			
	b. Field T	esting	Equipment	Used:	Make YSI HACH	Model ProSeries 2100Q Turbidime	eter	Serial Number 041769 16030C04822		
	c. Field	Гesting	Equipment	Calibration	on Documenta	tion Found on De	signated C	Calibration Log		
Time	Volur Remove		T° (C)	pH	Spec. Cond (µs/cm)	ORP	DO mg/L +/- 10%	Turbidity (NTU) 5 NTU, 10%	Color	DTW (ft)
Stabilization 10:55	0.0)	+/- 3% 14.8	+/- 0.1 7.54	+/- 3% 3134	+/- 10 MV -102.8	2.60	41.7	clear	0.3 ft 16.33
11:00	1.5		13.1	7.73	3037	-136.6	0.36	13.4	clear	18.54
11:05	2.2		13.3	7.72	2985	-148.2	0.20	5.61	clear	18.83
11:10	2.9		13.9	7.72	3033	-152.6	0.21	4.62	clear	19.59
11:15 11:20	3.5 4.2		14.1 14.0	7.71 7.71	3040 3011	-156.8 -161.0	0.17	3.54 7.20	clear clear	20.27 21.13
11:25	4.9		14.9	7.70	2999	-166.7	0.13	8.37	clear	21.71
11:30	5.5		15.2	7.69	3009	-171.6	0.11	3.22	clear	22.25
11:33	6.0		15.2	7.69	3007	-173.6	0.10	3.90	clear	22.60
11:36	6.2		15.4	7.69	3008	-175.5	0.09	3.49	clear	22.88
11:39	6.5		15.5	7.69	3010	-177.2	0.09	3.97	clear	23.18
11:42	6.8)	15.4	7.69	3015	-178.4	0.08	4.45	clear	23.48
	e Accen	tance (criteria pass	:/fail	Yes	No	N/A			
	Has requ Has re Have	ired vo equired parame	lume been turbidity be eters stabili: I/A - Explair	removed een reach zed						
	•									
SAMPLE C	OLLECTI	ON:		Method:	low flow (100-	500 ml/min) blade	der pump			
Sample	e ID	Contai	ner Type	No. of	Containers	Preservation		Analysis		Time
BAT-06-C			e CoC		9	see CoC		see CoC		11:45
BAT-06-	CCR	Se	e CoC		5	see CoC		see CoC		11:45
Comments:										
Signature		David	d Buhl				Date	10/14/24_		



Well/Piezo ID:	BAT-09
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Client: Project No: Site Location	60731 Rawhi	River Powe 455/607313 de Generat	303 ing Statio	n	Date:10/10/24 Time: Start10:30 Finish12:50					
Weather Con	nds:	su	nny, light b	reeze	Collector(s)	O. Helinski				
WATER LEV		A: (mea		•	O,	DVO	Well		Piezomete	
a. Total Well	Length		34.71	c. Ca	sing Material _.	PVC	e. Lengt	h of Water Colւ	ımn <u></u>	(a-b)
b. Water Tab	ole Depth		19.30	d. Ca	sing Diameter	<u>2"</u>	f. Calcul	ated Well Volur	me (see ba	ck)
WELL PURG			d <u>low flov</u>	<u>v (100-50</u>	0 ml/min) blade	der pump_				
			Equipment			Model ProSeries 2100Q Turbidime		Serial Number 041769 16030C04822		
			Equipmon	Cambran		aon i cana on Be	<u> </u>			
Time	Volui Remove		T° (C)	pН	Spec. Cond (µs/cm)	ORP	DO mg/L	Turbidity (NTU)	Color	DTW (ft)
Stabilization	Remove	· /	+/- 3%	+/- 0.1	+/- 3%	+/- 10 MV	+/- 10%		Coloi	0.3 ft
10:35	0.0		14.4	7.30	3750	103.1	2.19	10.10	clear	19.14
10:40	2.0)	12.8	7.27	3681	32.5	0.95	6.86	clear	22.22
10:43	2.9		14.1	7.31	3631	22.1	1.27	6.57	clear	22.76
10:46	3.1		15.9	7.29	3620	17.5	1.38	5.87	clear	23.10
10:49	3.4		14.9	7.27	3681	15.6	1.41	4.81	clear	23.41
10:52 10:55	3.9 4.2		14.4 15.5	7.26 7.26	3690 3635	15.1 15.6	2.53	5.30 4.43	clear	23.83 24.28
11:00	4.2		15.7	7.18	3664	17.4	2.43	5.48	clear clear	24.20
11:05	5.1		15.8	7.16	3666	18.9	2.27	4.07	clear	25.10
11:08	5.8		15.8	7.24	3679	19.6	2.26	3.46	clear	25.22
11:11	6.1	1	15.8	7.25	3679	19.9	2.21	3.45	clear	25.33
	e. Accer	otance o	criteria pass	s/fail	Yes	No	N/A	l .		
	Has requ Has re Have	uired vo equired parame	lume been I turbidity be eters stabili I/A - Explair	removed een reach zed	ed T					
SAMPLE C	OLLECT	ION:		Method:	low flow (100-	-500 ml/min) blad	der pump			
Sample			ner Type	No. of	Containers	Preservation		Analysis		Time
BAT-09-C BAT-09-			ee CoC ee CoC		9 5	see CoC see CoC		see CoC see CoC		11:20 11:20
DV1-09-	JUIN	36	,. 000		J	366 000		366 000		11.20
							1			
Comments:										
Signature		Olivia	a Helinski_				Date	10/10/24		



Well/Piezo ID:	
VVCII/T ICZO ID.	BAT-10
	DA1-10

Client: Project No:			River Powe 455/607313		ty	-	Date: Time: Start _	10/15/ 14:00		
Site Location	:	Rawhi	de Generat	ing Statio	<u>n</u>		_	Finish	15:40	
Weather Con			rm (~70's);			O. Helinski				·
WATER LEV	EL DAT	A: (mea	asured fron	n Top of	Casing)		Well		Piezometer	r
a. Total Well	Length		31.28	c. Ca	sing Material	PVC	e. Lengt	h of Water Colu	umn <u></u>	(a-b)
b. Water Table Depth 12.90			d. Ca	sing Diameter	<u>2"</u>	f. Calcula	ated Well Volui	me (see bac	ck) <u></u> _	
WELL PURG			d low-flo	v (100 50	0 ml/min) blad	der numn				
	a. ruige	, INICII IO	u <u>10W 110V</u>	<u>v (100-50</u>	o miimi) biadi	uci pullip				
	b. Field	Testing	Equipment	Used:	Make YSI HACH	Model ProSeries 2100Q Turbidime	eter	Serial Number 212547 16030C04822		
	c. Field	Testing	Equipmen	: Calibrati		tion Found on De			. -	
	Volu	ime			Spec. Cond		DO	Turbidity		DTW
Time	Remov		T° (C)	pН	·(µs/cm)	ORP	mg/L	(NTU)	Color	(ft)
Stabilization			+/- 3%	+/- 0.1	+/- 3%	+/- 10 MV	+/- 10%	5 NTU, 10%		0.3 ft
14:12	0.	0	14.3	6.96	4544	97.6	3.46	136	sl. cloudy	13.48
14:17	2.	5	13.5	7.33	4507	78.6	2.26	31.7	clear	13.62
14:22	4.		13.5	7.25	4493	70.0	1.97	14.4	clear	15.20
14:25	5.9		13.7	7.25	4476	66.5	1.92	10.9	clear	15.52
14:28	6.		14.1	7.21	4474	64.7	1.99	10.2	clear	15.64
14:31	7.		13.8	7.28	4478	66.2	2.19	8.36	clear	15.92
14:34	7.		13.9	7.28	4457	68.7	2.49	7.37	clear	16.16
14:37	8.		14.2	7.34	4405	71.7	2.77	7.46	clear	16.43
14:40	9.		14.5	7.32	4402	74.1	2.99	7.43	clear	16.61
14:43	9.	8	14.5	7.31	4388	75.5	3.15	6.98	clear	16.75
		,		<i>(c</i>		.,				
	Has requested Has represented Has represented Has represented Has represented Has requested Has requ	uired vo required parame	criteria pass olume been I turbidity be eters stabili I/A - Explair	removed een reach zed	Yes ed	No	N/A			
SAMPLE C	OLLECT	ION:		Method:	low flow (100-	-500 ml/min) blad	lder pump			
Sample			iner Type	No. of	Containers	Preservation		Analysis		Time
BAT-10-C			ee CoC		9	see CoC		see CoC		14:45
BAT-10-	CCR	Se	ee CoC		5	see CoC		see CoC		14:45
Comments:										
Signature		Olivia	a Helinski_				Date	10/15/24	l	



Project No: 6073			Platte River Power Authority 60731455/60731303					Date: Time: Start _	10/10/ 8:25	
		Rawhi	whide Generating Station				_	Finish _	_10:20	
Weather Conds: smc			smoke, co	ol	Collector(s)	D. Buhl and O. H	lelinski			
WATER LEV	EL DAT	A: (mea	asured fron	n Top of	Casing)		Well		Piezomete	r \square
a. Total Well		,	38.95	•	C,	PVC	e. Lengt	n of Water Colu	ımn <u></u>	(a-b)
b. Water Tab	ole Depth	ı	28.09	d. Ca	sing Diameter	<u>2"</u>	f. Calcula	ated Well Volu	ne (see ba	ck)
WELL PURG			d <u>low flov</u>	v(100-500) ml/min) blado	der pump		· · · · · · · · · · · · · · · · · · ·		
		-	Equipment		Make YSI HACH on Documenta	Model ProSeries 2100Q Turbidime		Serial Number 041769 16030C04822 Calibration Log		-
	Volu	me			Spec. Cond		DO	Turbidity		I DTW
Time	Remov		T° (C)	pН	(µs/cm)	ORP	mg/L	(NTU)	Color	(ft)
Stabilization			+/- 3%	+/- 0.1	+/- 3%	+/- 10 MV	+/- 10%	5 NTU, 10%		0.3 ft
8:25	0.0	0	13.7	7.84	1077	30.1	0.01	5.73	clear	27.95
8:30	0.:	5	12.5	7.50	1049	-53.8	0.02	5.67	clear	28.30
8:35	1.0	0	12.4	7.48	1037	-74.4	0.02	5.15	clear	28.48
8:40	2.0	0	12.3	7.46	1022	-67.0	0.01	6.13	clear	28.70
8:45	3.0	0	12.3	7.46	998	-50.7	0.02	7.44	clear	28.91
8:50	3.0	6	12.4	7.50	968	-32.1	0.02	8.89	clear	29.14
8:55	4.4	4	12.4	7.57	936	-14.1	0.01	6.19	clear	29.36
9:00	5.2	2	12.4	7.66	903	5.6	0.02	3.74	clear	29.57
9:05	6.0	0	12.5	7.65	900	24.5	0.02	3.08	clear	29.79
9:10	6.8	8	12.5	7.62	906	35.9	0.01	2.75	clear	29.96
9:15	7.4	4	12.5	7.60	918	43.0	0.02	3.01	clear	30.29
9:20	8.2	2	12.6	7.58	922	48.9	0.01	2.58	clear	30.42
9:25	9.0	0	12.7	7.56	931	53.3	0.01	2.56	clear	30.65
	Has requested Has represented Has represented Has represented Has represented Has requested Has requ	uired vo equired parame no or N	criteria pass lume been I turbidity be eters stabili: I/A - Explair ering ORP	removed een reach zed	Yes ed T	No	N/A			
		-								
SAMPLE C	OLLECT	ION:		Method:	low flow(100-	500 ml/min) blado	der pump			
Sample ID Containe		iner Type	No. of	Containers	Preservation		Analysis		Time	
BAT-11-CDPHE			e CoC		9	see CoC		see CoC		9:30
		Se	ee CoC		5	see CoC		see CoC		9:30
			ee CoC		9	see CoC	see CoC			9:40
ERB-02-CDPHE See CoC ERB-02-CCR See CoC				5	see CoC		see CoC		9:40	
										0.10
Comments:	DO may	be artif	ically low du	ue to a fai	ulty sensor; EF	RB	1			ı
Signatura		Devid	d Dubl				Data	10/10/24		
Signature		David	d Buhl				Date	10/10/24	·	_



Well/Piezo ID:	BAT-12
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Client: Project No: Site Location: Weather Conds:		Platte River Power Authority 60731455/60731303						Time: Start _		
		Rawhide Generating Station					_		15:30	
		SI	unny, clear,	74F	Collector(s)	D. Buhl and O. H	lelinski			
WATER LEV		•		•	O,		Well		Piezomete	
a. Total Well	Length	-	45.06	c. Ca	sing Material	PVC	e. Lengt	h of Water Colւ	ımn <u></u>	(a-b)
b. Water Tal	ole Depth	١ .	31.48	d. Ca	ısing Diameter	<u>2"</u>	f. Calcula	ated Well Volur	ne (see bad	ck) <u></u> _
WELL PURG			voll wolt	<u>v(100-500</u>	0 ml/min) bladd	ler pump_				
			Equipment			Model ProSeries 2100Q Turbidime		Serial Number 041769 16030C04822		
			⊏quipment	ı Calibrati		tion Found on De				F. T
Time	Volu Remov		T° (C)	pН	Spec. Cond (µs/cm)	ORP	DO mg/L	Turbidity (NTU)	Color	DTW (ft)
Stabilization		. ,	+/- 3%	+/- 0.1	+/- 3%	+/- 10 MV	+/- 10%			0.3 ft
13:15	0.0)	17.5	7.85	1330	42.4	0.01	51.3	clear	31.40
13:20	1.2		15.0	7.80	1291	39.3	0.01	33.7	clear	31.86
13:25	2.5		14.8	7.72	1288	47.1	0.01	32.7	clear	32.04
13:30	3.5		15.8	7.70	1284	54.9	0.00	22.3	clear	32.10
13:35	4.0		15.9 15.7	7.68	1283	58.9 63.2	0.01	24.0	clear	32.08
13:40	4.8	υ	15.7	7.68	1278	63.2	0.01	23.9	clear	32.10
	1		 	 	+					
	 		 	 	+			 		
			 	 						
			 	 						
					1					
										_
	0 ^ = :	ators	oritoria :-	/foil	Yes	NI-	NI/A	<u> </u>		
	Has requested Has represented Has represented Has represented Has represented Has requested Has requ	uired vo equired parame	criteria pass lume been I turbidity be eters stabiliz I/A - Explair	removed een reach zed		No	N/A			
SAMPLE C	OLLECT	ION:		Method:	low flow(100-	500 ml/min) blado	der pump			
Sample ID Contain		iner Type	No. of	Containers	Preservation	L	Analysis		Time	
BAT-12-CDPHE		See CoC			17	see CoC		see CoC		13:45
BAT-12-	CCR	Se	ee CoC		13	see CoC		see CoC		13:45
		-		ļ			-			
Comments:	MS/MSF	<u> </u>)		<u> </u>						
Je.mnomo.	O, IVIOL									
Signature		David	d Buhl				Date	10/10/24		_



|--|

Client: Platte River Power Author Project No: 60731455 /60731303 Site Location: Rawhide Generating Stati					Time: Start <u>7:50 on 10/14</u>					/14		
			Rawhide Generating Station Finish 9:00 on 10/16 sunny, no breeze Collector(s) O. Helinski and D. Buhl									
vveatrier Cor	ius.	Suriny,	TIO DIEEZE		Collector(s)	O. Heiliski aliu L	J. Dulli					
WATER LEV a. Total Well		A: (mea	sured fron 38.53			<u>PVC</u>	Well e. Lengtl	n of Water Colu	Piezometer			
b. Water Tal	ble Depth		36.70	d. Ca	sing Diameter	<u>2"</u>	f. Calcula	ated Well Volur	me (see bad	ck)		
			000		.eg 2		• • • • • • • • • • • • • • • • • •		(000 241	,		
WELL PURC			d <u>bailer</u>									
	b. Field	Testing	Equipment	Used:	Make YSI	Model ProSeries	atar.	Serial Number 041769				
					HACH	2100Q Turbidime	eter	16030C04822	8			
	c. Field	Testing	Equipment	t Calibrati	on Documenta	ition Found on De	esignated (Calibration Log				
	Volu	me			Spec. Cond		DO	Turbidity		DTW		
Time	Remov	, ,	T° (C)	pН	(us/cm)	ORP	mg/L	(NTU)	Color	(ft)		
Stabilization			10.0	+/- 0.1	+/- 3%	+/- 10 MV	+/- 10%	5 NTU, 10%	4	0.3 ft		
8:05 8:20	0.0 2.0		13.0 11.9	7.81 7.79	4383 4406	186.5 195.2	2.08 0.02	731	tan	36.52 37.90		
0.20	2.0	J	11.9	1.19	4400	195.2	0.02	TTTT	tan	37.90		
	Has requ Has r Have	uired vo equired parame no or N	criteria pass lume been l turbidity be eters stabili l/A - Explair dry on 10/	removed een reach zed n below.		No	N/A	d ~1L on 10/16	i.			
SAMPLE C	OLLECT			Method:								
Sample			ner Type	No. of	Containers	Preservation		Analysis		Time		
BAT-13-CCR			es. 250ml		1			CI, F, SO4		10/14 at 8:40		
BAT-13-CCR		1L	HDPE		1	HNO3		Total Metals		10/16 at 9:40		
		ļ					ļ					
Comments:												
0: 1			18				Date	40/44 12	140104			
Signature	0	ии Не	iinski				⊔ate	10/14-10	וו 16/24	 		

AECOM Environment

Appendix B

Laboratory Analytical and Data Validation Reports

AECOM Environment

April/May 2024





June 13, 2024

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

RE: Project: 60431303 PRPA CCR

Pace Project No.: 60452426

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 08, 2024. 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 Wilson

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

Databa m. Wilson

Enclosures

cc: Ann Cinabro, AECOM Jamie Herman, AECOM Jeremy Hurshman, AECOM







CERTIFICATIONS

Project: 60431303 PRPA CCR

Pace Project No.: 60452426

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
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

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

Ohio EPA Rad Approval: #41249

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



SAMPLE SUMMARY

Project: 60431303 PRPA CCR

Pace Project No.: 60452426

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60452426001	BAT-09-CCR	Water	05/07/24 11:05	05/08/24 09:35
60452426003	BAT-04R-CCR	Water	05/07/24 12:50	05/08/24 09:35
60452426004	BAT-04R-CCR MS	Water	05/07/24 12:50	05/08/24 09:35
60452426005	BAT-04R-CCR MSD	Water	05/07/24 12:50	05/08/24 09:35
60452426006	BAT-06-CCR	Water	05/07/24 15:20	05/08/24 09:35



SAMPLE ANALYTE COUNT

Project: 60431303 PRPA CCR

Pace Project No.: 60452426

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60452426001	BAT-09-CCR	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60452426003	BAT-04R-CCR	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60452426004	BAT-04R-CCR MS	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
60452426005	BAT-04R-CCR MSD	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
60452426006	BAT-06-CCR	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg



Project: 60431303 PRPA CCR

Pace Project No.: 60452426

Sample: BAT-09-CCR PWS:	Lab ID: 60452 Site ID:	2426001 Collected: 05/07/24 11:05 Sample Type:	Received:	05/08/24 09:35	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical S	Services - Greensburg				
Radium-226	EPA 903.1	0.000 ± 0.322 (0.669) C:NA T:93%	pCi/L	05/27/24 14:10	0 13982-63-3	
	Pace Analytical S	Services - Greensburg				
Radium-228	EPA 904.0	0.274 ± 0.341 (0.719) C:80% T:83%	pCi/L	05/21/24 14:28	8 15262-20-1	
	Pace Analytical S	Services - Greensburg				
Total Radium	Total Radium Calculation	0.274 ± 0.663 (1.39)	pCi/L	05/28/24 14:0	5 7440-14-4	



Project: 60431303 PRPA CCR

Pace Project No.: 60452426

Sample: BAT-04R-CCR PWS:	Lab ID: 60452 4 Site ID:	426003 Collected: 05/07/24 12:50 Sample Type:	Received:	05/08/24 09:35	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical S	ervices - Greensburg				
Radium-226	EPA 903.1	0.455 ± 0.457 (0.721) C:NA T:87%	pCi/L	05/27/24 14:10	13982-63-3	
	Pace Analytical S	ervices - Greensburg				
Radium-228	EPA 904.0	0.859 ± 0.443 (0.771) C:77% T:81%	pCi/L	05/21/24 14:29	9 15262-20-1	
	Pace Analytical S	ervices - Greensburg				
Total Radium	Total Radium Calculation	1.31 ± 0.900 (1.49)	pCi/L	05/28/24 14:05	5 7440-14-4	



Project: 60431303 PRPA CCR

Pace Project No.: 60452426

Sample: BAT-04R-CCR MS Lab ID: 60452426004 Collected: 05/07/24 12:50 Received: 05/08/24 09:35 Matrix: Water

C:NA T:NA

PWS: Site ID: Sample Type: Method Act ± Unc (MDC) Carr Trac Units CAS No. **Parameters** Analyzed Qual Pace Analytical Services - Greensburg EPA 903.1 83.76 %REC ± NA (NA) Radium-226 pCi/L 05/27/24 14:10 13982-63-3 C:NA T:NA Pace Analytical Services - Greensburg 68.58 %REC ± NA (NA) EPA 904.0 Radium-228 pCi/L 05/21/24 14:30 15262-20-1



Radium-228

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60431303 PRPA CCR

Pace Project No.: 60452426

Sample: BAT-04R-CCR MSD Lab ID: 60452426005 Collected: 05/07/24 12:50 Received: 05/08/24 09:35 Matrix: Water

PWS: Site ID: Sample Type:

EPA 904.0

Method Act ± Unc (MDC) Carr Trac Units CAS No. **Parameters** Analyzed Qual Pace Analytical Services - Greensburg EPA 903.1 83.06 %REC 0.84RPD ± NA Radium-226 pCi/L 05/27/24 14:10 13982-63-3 (NA) C:NA T:NA Pace Analytical Services - Greensburg

74.64 %REC 8.46RPD ± NA

pCi/L

05/21/24 14:30 15262-20-1

(NA) C:NA T:NA



Project: 60431303 PRPA CCR

Pace Project No.: 60452426

Sample: BAT-06-CCR PWS:	Lab ID: 6045242 0 Site ID:	6006 Collected: 05/07/24 15:20 Sample Type:	Received:	05/08/24 09:35	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Ser	vices - Greensburg				
Radium-226	EPA 903.1	0.738 ± 0.383 (0.133) C:NA T:92%	pCi/L	05/27/24 14:21	13982-63-3	
	Pace Analytical Serv	vices - Greensburg				
Radium-228	EPA 904.0	0.358 ± 0.412 (0.866) C:77% T:76%	pCi/L	05/21/24 14:30	15262-20-1	
	Pace Analytical Serv	vices - Greensburg				
Total Radium	Total Radium Calculation	1.10 ± 0.795 (0.999)	pCi/L	05/28/24 14:05	7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project: 60431303 PRPA CCR

Pace Project No.: 60452426

QC Batch: 667548 Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60452426001, 60452426003, 60452426004, 60452426005, 60452426006

METHOD BLANK: 3250435 Matrix: Water

Associated Lab Samples: 60452426001, 60452426003, 60452426004, 60452426005, 60452426006

 Parameter
 Act ± Unc (MDC) Carr Trac
 Units
 Analyzed
 Qualifiers

 Radium-226
 0.000 ± 0.237 (0.501) C:NA T:94%
 pCi/L
 05/27/24 13:56

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.



QUALITY CONTROL - RADIOCHEMISTRY

Project: 60431303 PRPA CCR

Pace Project No.: 60452426

QC Batch: 667549 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: 60452426001, 60452426003, 60452426004, 60452426005, 60452426006

METHOD BLANK: 3250436 Matrix: Water

Associated Lab Samples: 60452426001, 60452426003, 60452426004, 60452426005, 60452426006

 Parameter
 Act ± Unc (MDC) Carr Trac
 Units
 Analyzed
 Qualifiers

 Radium-228
 0.0842 ± 0.330 (0.751) C:75% T:85%
 pCi/L
 05/21/24 14:27

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.



QUALIFIERS

Project: 60431303 PRPA CCR

Pace Project No.: 60452426

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

Date: 06/13/2024 06:25 PM

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60431303 PRPA CCR

Pace Project No.: 60452426

Date: 06/13/2024 06:25 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60452426001	BAT-09-CCR	EPA 903.1	667548		
60452426003	BAT-04R-CCR	EPA 903.1	667548		
60452426004	BAT-04R-CCR MS	EPA 903.1	667548		
60452426005	BAT-04R-CCR MSD	EPA 903.1	667548		
60452426006	BAT-06-CCR	EPA 903.1	667548		
60452426001	BAT-09-CCR	EPA 904.0	667549		
60452426003	BAT-04R-CCR	EPA 904.0	667549		
60452426004	BAT-04R-CCR MS	EPA 904.0	667549		
60452426005	BAT-04R-CCR MSD	EPA 904.0	667549		
60452426006	BAT-06-CCR	EPA 904.0	667549		
60452426001	BAT-09-CCR	Total Radium Calculation	671703		
60452426003	BAT-04R-CCR	Total Radium Calculation	671703		
60452426006	BAT-06-CCR	Total Radium Calculation	671703		

Face Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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

COOLEY If hold RA IPA

Pace Project No./ Lab I.D. (N/A) DRINKING WATER OTHER SAMPLE CONDITIONS Cooler (Y/N) o Custody Sealed Ice (Y/N) Received on GROUND WATER Page: Residual Chlorine (Y/N) O" ni qmeT REGULATORY AGENCY 00 RCRA 935 TIME Requested Analysis Filtered (Y/N) STATE: Site Location NPDES DATE 18/18 UST ACCEPTED BY / AFFILIATION マス ス Total Radium 822-muibes 322-muibes ↑Analysis Test N/A PRINT Name OF SAMPLER: MOLL FINS R (IMIT Same as Section A Other Accounts Payable Methanol Heather Wilson Preservatives Na₂S₂O₃ Company Name: AECOM Reference:
Pace Project Heather Wi Manager:
Pace Profile #: 11033, 3 HOBN SIGNATURE OF SAMPLER: MONORAL 42700 HCI Invoice Information: HNO3 9 ⁵OS²H Section C TIME Unpreserved Pace Quote Attention: Address: # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION DATE TIME COMPOSITE END/GRAB DATE COLLECTED RELINQUISHED BY / AFFILIATION 250 60709371 PRPA CCR TIME 500 COMPOSITE Purchase Order No.: NEED PO # 5/6/24 G 510/24 MOUKENIIP DATE Report To: Vasanta Kalluri Copy To: Jamie Herman Project Number: 60709371 Required Project Information 5 SAMPLE TYPE (G=GRAB C=COMP) 5 5 (see valid codes to left) **AMATRIX CODE** Project Name: Section B Service Services Valid Matrix Codes ₩ ¥ ¥ FATT-OUR DRINKING WATER V
WASTE WATER V
PRODUCT
SOIUSOLID Greenwood Village, CO 80111 jamie.herman@aecom.com ADDITIONAL COMMENTS Standar 0 (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE 6200 South Quebec St SAMPLE ID Fax: Section D Required Client Information (303) 740-2614 Requested Due Date/TAT: Section A Required Client Information: AECOM MSIMSD Company: Email To: Address: Page 14 of 16 Phone 10 Ŧ 12 2 9 1 æ 6 # WELL

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

DATE Signed ()

Quality Control Sample Performance Assessment

CLM 5/10/2024

Analyst: Date: Batch ID: Matrix:

Test:

Pace Analytical

79113 DW

3250435 0.000

MB Sample ID

Method Blank Assessmen

MB concentration:

M/B Counting Uncertainty: MB MDC:

MB Numerical Performance Indicator: MB Status vs Numerical Indicator: MB Status vs. MDC:

0.237 0.501 0.00 N/A Pass

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Sample Description Date: Sample MS 1.D. Sample MS 1.D. Sample MS 1.D. Sample MS 1.D. Spike 1.D. Spike 1.D. Spike 1.D. MS Aliquot (L. g. F): get Conc. (pCi/L. g. F): Sample Result: cortainty (pCi/L. g. F): Remainty (pCi/L. g. F): Performance Indicator: Roreant Recovery: So Numerical Indicator: As Numerical Indicator: As Status vs Recovery: So Status vs Recovery:	MS/MSD 1 MS/MSD 2 5/7/2024 5/7/2024	60452436002 60452426003 60452436003 60452426004	60452436004 60452426005	23-063 23-063	32.300 32.300	0.20 0.20	_	0.655 0.654	9.868 9.874	0.654 0.653		0.464 0.464	0.464 0.465	0.041 0.455	0.548 0.454	10.655 8.726	1,376 1,360	11.467 8.674	1.335 1.223	0.942 -2.085	2.008 -2.373	107.56% 83.76%	115.72% 83.06%	N/A N/A	N/A N/A	Pass	Pass Pass	136% 136%	71% 71%
			_	Spike I.D.:	MS/MSD Decay Corrected Spike Concentration (pCi/mL):	Spike Volume Used in MS (mL):	Spike Volume Used in MSD (mL):	MS Aliquot (L, g, F):	MS Target Conc.(pCi/L, g, F):	MSD Aliquot (L, g, F):	MSD Target Conc. (pCl/L, g, F):	MS Spike Uncertainty (calculated):	MSD Spike Uncertainty (calculated):	Sample Result:	Sample Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Result:	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	MS Numerical Performance Indicator:	MSD Numerical Performance Indicator:	MS Percent Recovery:	MSD Percent Recovery:	MS Status vs Numerical Indicator:	MSD Status vs Numerical Indicator:	MS Status vs Recovery:	MSD Status vs Recovery:	MS/MSD Upper % Recovery Limits:	MS/MSD Lower % Recovery Limits:

MS Spike Uncertainty (calculated):	MSD Spike Uncertainty (calculated):	Sample Result:	Sample Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Result:	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	MS Numerical Performance Indicator:	MSD Numerical Performance Indicator:	MS Percent Recovery:	MSD Percent Recovery:	MS Status vs Numerical Indicator:	MSD Status vs Numerical Indicator:	MS Status vs Recovery:	MSD Status vs Recovery:	MS/MSD Upper % Recovery Limits:	MS/MSD Lower % Recovery Limits:
	z	LCSD79113															

LCS79113 5/27/2024 23-063 32.300 0.10 0.654 4.941 0.232 5.226 0.978

Spike I.D.: Spike Lourentration (pCi/mL): Volume Used (mL): Aliquot Volume (L, g, F): Target Conc. (pCi/L, g, F):

Count Date:

0.56 105.76%

Percent Recovery: Status vs Numerical Indicator:

Numerical Performance Indicator:

Upper % Recovery Limits: Lower % Recovery Limits:

Status vs Recovery:

Result (pCi/L, g, F): LCS/LCSD Counting Uncertainty (pCi/L, g, F):

Uncertainty (Calculated):

CSD (Y or N)?

Laboratory Control Sample Assessment

Matrix Spike/Matrix Spike Duplicate Sample Assessment	Sample I.D. Sample MS I.D. Sample MS I.D. Sample MSD I.D. Sample MSD I.D. Sample Matrix Spike Result Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Result Spike Duplicate Result: (Based on the Percent Recoveries) MS/ MSD Duplicate RPD: MS/ MSD Duplicate Status vs Numerical Indicator: MS/ MSD Duplicate Status vs RPD: % RPD Limit:
	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
	See Below ##
Duplicate Sample Assessment	Sample I.D. Sample Result (pci/l., g, F): Sample Result (pci/l., g, F): Sample Duplicate Result (pci/l., g, F): Sample Duplicate Result (pci/l., g, F): Are sample and/or duplicate results below RL? Duplicate Numerical Performance Indicator: Duplicate Status vs Numerical Indicator: Duplicate Status vs Numerical Indicator: Duplicate Status vs RPD: RRPD Limit:

60452426003 60452426004 60452426005 8.726 1.360 8.674 1.223 0.056 0.056 0.84% NA NA NA Pass 32%

60452436002 60452436003 60452436004 10.655 1.376 1.335 -0.831 7.31% N/A Pass 32%

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

Comments:

UM STrailly HZ 82 SO 77

Ra-226 NELAC QC Printed: 5/27/2024 2:45 PM

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Pace Analytical"

	LCSD79114	LCS79114		
	z	LCSD (Y or N)?	mple Assessment	Laboratory Control Sample Assessment
	-	0000	MD Status vs. MDC.	
		Pass	MB Status vs Numerical Indicator:	
		0.50	MB Numerical Performance Indicator:	
		0.751	MB MDC:	
		0.330	M/B 2 Sigma CSU:	
		0.084	MB concentration:	
MS/MSD Dec		3250436	MB Sample ID	
			nent	Method Blank Assessment
		TW	Matrix:	
		79114	Worklist	
		5/14/2024	Date:	
Sample Matrix Spike		JJS1	Analyst:	
		Ra-228	Test:	www.pacelabs.com

ample Collection Date: Sample MS 1.D. Spike 1.D.: 23-043 Soncentration (pCi/mL): me Used in MS (mL): me U		Comple Matrix Caite Control Accomment	MCARCH 4	MCMCD 2
60452436004 60452436004 23-043 32.843 0.20 0.20 0.20 0.810 9.105 0.446 0.446 0.446 0.588 0.426 8.191 1.691 1.599 -1.629 -2.334 83.56% 77.58% Pass Pass Pass Pass Pass Pass Pass Pas		Califord Islands Opine Collect Assessment	CONTON	MOUNION
60452436002 60452436004 60452436004 23-043 36.843 0.20 0.20 0.810 9.105 0.446 0.446 0.446 0.446 1.599 1.691 1.691 1.599 -1.69 1.599 -1.691 7.58% Pass Pass Pass Pass 135% 60%		Sample Collection Date:	5/7/2024	5/7/2024
0.426 23-043 36.843 0.20 0.20 0.20 0.809 0.809 0.446 0.446 0.446 0.446 0.446 0.446 0.446 0.446 0.446 0.446 0.446 0.446 0.446 8.191 1.691 1.691 7.7.58% Pass Varming Pass Pass Pass 60%		Sample I.D.	60452436002	60452426003
23-043 36.843 0.20 0.20 0.20 0.809 0.809 0.809 0.406 0.446 0.446 0.446 0.426 8.191 1.691 1.691 7.653 1.599 -1.629 -2.334 83.56% 77.58% Pass Naming Pass 135% 60%		Sample MSD I.D.	60452436004	60452426005
36.843 0.20 0.20 0.20 0.809 0.809 0.809 0.406 0.446 0.446 0.426 8.191 1.691 7.653 1.599 -1.629 -2.334 Pass Vanning Pass 135% 60%		Spike I.D.:	23-043	23-043
0.20 0.20 0.20 0.310 9.099 0.809 0.406 0.446 0.446 0.588 0.426 0.588 1.599 -1.599 -1.599 -1.599 -1.599 -1.599 -1.599 -1.599 -1.629 -1.599 -1.5		MS/MSD Decay Corrected Spike Concentration (pCi/mL):	36.843	36.843
0.20 0.20 9.099 0.809 9.105 0.446 0.446 0.426 0.426 0.426 1.639 1.639 1.639 1.599 1.599 1.599 1.599 1.599 1.629 1.59		Spike Volume Used in MS (mL):	0.20	0.20
0.810 0.809 0.809 9.105 0.446 0.446 0.588 0.426 8.191 1.599 -1.599 -1.653 1.599 -7.758% Pass Warning Pass 135% 60%		Spike Volume Used in MSD (mL):	0.20	0.20
9.099 0.0809 0.105 0.446 0.446 0.426 8.191 1.691 7.653 1.599 -1.629 -2.334 83.56% 77.58% Pass Warning Pass 135% 60%		MS Aliquot (L, g, F):	0.810	0.805
0.809 9.105 0.446 0.446 0.588 0.426 8.191 1.691 7.653 1.599 -1.629 -2.334 83.56% 77.58% Pass Varming Pass 135% 60%		MS Target Conc.(pCi/L, g, F):	660'6	9.150
9.105 0.446 0.446 0.588 0.426 8.191 1.691 1.599 1.629 -2.334 83.56% 77.58% Pass Pass Pass 135% 60%		MSD Aliquot (L, g, F):	608.0	0.807
0.446 0.588 0.588 0.426 8.191 1.691 1.599 -1.629 -2.334 83.56% 77.68% Pass Varning Pass 135% 60%		MSD Target Conc. (pCi/L, g, F):	9.105	9.134
0.446 0.588 0.426 8.191 1.691 7.653 1.599 -1.599 -2.334 83.56% 77.58% Pass Warning Pass 135% 60%	1	MS Spike Uncertainty (calculated):	0.446	0.448
0.588 0.426 8.191 1.691 7.653 1.599 -1.599 -2.334 83.56% 77.58% Pass Warning Pass 135% 60%		MSD Spike Uncertainty (calculated):	0.446	0.448
0.426 8.191 1.691 7.653 1.599 -1.629 -2.334 83.56% 77.58% Pass Warming Pass 135% 60%	_	Sample Result:	0.588	0.859
8.191 7.653 7.653 1.599 -1.629 -2.334 83.56% 77.58% Pass Pass 135% 60%	_	Sample Result 2 Sigma CSU (pCi/L, g, F):	0.426	0.443
1.691 7.653 1.599 -1.629 -2.334 83.56% 77.58% Pass Warning Pass 135% 60%	_	Sample Matrix Spike Result:	8.191	7.135
7.653 1.599 -1.629 -2.334 83.56% 77.58% Pass Warning Pass 135% 60%	_	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.691	1.556
1.599 -1.629 -2.334 83.56% 77.58% Pass Warning Pass 135% 60%	_	Sample Matrix Spike Duplicate Result:	7.653	7.676
-1.629 -2.334 83.56% 77.58% Pass Warning Pass Pass 135% 60%	-	Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.599	1.611
-2.334 83.56% 77.58% Pass Warning Pass 135% 60%	-	MS Numerical Performance Indicator:	-1.629	-3.355
83.56% 77.758% Pass Warning Pass 135% 60%	_	MSD Numerical Performance Indicator:	-2.334	-2.625
77.58% Pass Warning Pass Pass 135% 60%	_	MS Percent Recovery:	83.56%	68.58%
Pass Waming Pass Pass 135% 60%	_	MSD Percent Recovery:	77.58%	74.64%
Warning Pass Pass 135% 60%	-	MS Status vs Numerical Indicator:	Pass	Fail****
Pass Pass 135% 60%	_	MSD Status vs Numerical Indicator:	Waming	Waming
Pass 135% 60%	_	MS Status vs Recovery:	Pass	Pass
135% 60%	-	MSD Status vs Recovery:	Pass	Pass
60%	_	MS/MSD Upper % Recovery Limits:	135%	135%
	_	MS/MSD Lower % Recovery Limits:	%09	%09

5/21/2024 23-043 36.672

Count Date: Spike I.D.:

Decay Corrected Spike Concentration (pCi/mL):

Volume Used (mL): Aliquot Volume (L, g, F): Target Conc. (pCi/L, g, F): Uncertainty (Calculated): Result (pCi/L, g, F):

0.10 0.815 4.499 0.220 3.399 0.828 -2.52 75.54% N/A Pass 135%

LCS/LCSD 2 Sigma CSU (pCi/L, g, F): Numerical Performance Indicator:

Percent Recovery: Status vs Recovery: Status vs Numerical Indicator:

Upper % Recovery Limits: Lower % Recovery Limits:

Duplicate Sample Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:		Enter Duplicate	Sample I.D.
Duplicate Sample I.D.		sample IDs if	Sample MS I.D.
Sample Result (pCi/L, g, F):		other than	Sample MSD I.D.
Sample Result 2 Sigma CSU (pCi/L, g, F):		LCS/LCSD in	Sample Matrix Spike Result:
Sample Duplicate Result (pCI/L, g, F):	*	the space below.	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):			Sample Matrix Spike Duplicate Result:
Are sample and/or duplicate results below RL?	See Below ##		Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
Duplicate Numerical Performance Indicator:			Duplicate Numerical Performance Indicator:
Duplicate RPD:			(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:
Duplicate Status vs Numerical Indicator:			MS/ MSD Duplicate Status vs Numerical Indicator:
Duplicate Status vs RPD:			MS/ MSD Duplicate Status vs RPD:
% RPD Limit:			% RPD Limit:
## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.	ample or duplicate re	sults are below th	e MDC.

60452426003 60452426004 60452426005 7.135 1.556 7.676 1.611 -0.474 8.46% Pass Pass 96%

8.191 7.653 1.599 0.454 7.41% Pass Pass 36%

60452436003 60452436004

60452436002

		. 2	3

Comme

5/22/24

1 of 1

SLC 5/22/24





June 19, 2024

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

RE: Project: 60731303 PRPA CCR

Pace Project No.: 60452578

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 09, 2024. 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 Wilson

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

Databa m. Wilson

Enclosures

cc: Ann Cinabro, AECOM Jamie Herman, AECOM Jeremy Hurshman, AECOM





9608 Loiret Blvd. Lenexa, KS 66219 (913)599-5665

CERTIFICATIONS

Project: 60731303 PRPA CCR

Pace Project No.: 60452578

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219 Arkansas Inorganic Drinking Water Certification Arkansas Certification #: 88-00679

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



SAMPLE SUMMARY

Project: 60731303 PRPA CCR

Pace Project No.: 60452578

Lab ID	Sample ID	Matrix	Date Collected	Date Received	
60452578001	BAT-05-CCR	Water	05/08/24 10:15	05/09/24 09:05	
60452578002	BAT-12-CCR	Water	05/08/24 12:40	05/09/24 09:05	
60452578003	DUP-02-CCR	Water	05/08/24 00:00	05/09/24 09:05	
60452578004	BAT-02-CCR	Water	05/08/24 15:05	05/09/24 09:05	



SAMPLE ANALYTE COUNT

Project: 60731303 PRPA CCR

Pace Project No.: 60452578

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60452578001	BAT-05-CCR	EPA 6010	ARMN	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JXD	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 9056	PL	3	PASI-K
60452578002	BAT-12-CCR	EPA 6010	ARMN	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JXD	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 9056	PL	3	PASI-K
60452578003	DUP-02-CCR	EPA 6010	ARMN	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JXD	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 9056	PL	3	PASI-K
60452578004	BAT-02-CCR	EPA 6010	ARMN	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JXD	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 9056	PL	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City



Project: 60731303 PRPA CCR

Pace Project No.: 60452578

Date: 06/19/2024 12:47 PM

Sample: BAT-05-CCR	Lab ID: 6045	2578001	Collected: 05/08/2	24 10:15	Received: 05	i/09/24 09:05 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Metl	nod: EP/	A 3010			
	Pace Analytical	Services -	Kansas City					
Boron	1150	ug/L	100	1	05/16/24 14:24	05/28/24 10:14	7440-42-8	
Calcium	420000	ug/L	200	1	05/16/24 14:24	05/28/24 10:14	7440-70-2	
Lithium	236	ug/L	10.0	1	05/16/24 14:24	05/28/24 10:14	7439-93-2	
020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Met	nod: EP/	A 3010			
	Pace Analytical	Services -	Kansas City					
Antimony	ND	ug/L	2.0	2	05/17/24 07:40	06/18/24 16:23	7440-36-0	D3
Arsenic	2.2	ug/L	2.0	2	05/17/24 07:40	06/18/24 16:23	7440-38-2	
Barium	35.9	ug/L	3.0	3	05/17/24 07:40	06/18/24 14:54	7440-39-3	
Beryllium	ND	ug/L	1.0	2	05/17/24 07:40	06/18/24 16:23	7440-41-7	D3
admium	ND	ug/L	1.0	2	05/17/24 07:40	06/18/24 16:23	7440-43-9	D3
Chromium	5.2	ug/L	3.0	3	05/17/24 07:40	06/18/24 14:54	7440-47-3	
Cobalt	8.3	ug/L	3.0	3	05/17/24 07:40	06/18/24 14:54	7440-48-4	
.ead	3.2	ug/L	3.0	3	05/17/24 07:40	06/18/24 14:54	7439-92-1	
Nolybdenum	2.4	ug/L	2.0	2	05/17/24 07:40	06/18/24 16:23	7439-98-7	
Selenium	ND	ug/L	2.0	2	05/17/24 07:40	06/18/24 16:23	7782-49-2	D3
hallium	ND	ug/L	2.0	2	05/17/24 07:40	06/18/24 16:23	7440-28-0	D3
470 Mercury	Analytical Meth	od: EPA 74	70 Preparation Met	nod: EP/	A 7470			
•	Pace Analytical	Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	05/20/24 12:41	05/21/24 12:58	7439-97-6	
540C Total Dissolved Solids	Analytical Meth	od: SM 25	40C					
	Pace Analytical							
Total Dissolved Solids	2540	mg/L	100	1		05/10/24 11:45		
056 IC Anions	Analytical Meth	od: EPA 90	056					
	Pace Analytical	Services -	Kansas City					
Chloride	66.7	mg/L	10.0	10		05/28/24 22:22	16887-00-6	
luoride	ND	mg/L	0.20	1		05/28/24 22:01		N2
Sulfate	2930	mg/L	400	400		05/28/24 22:43		



Project: 60731303 PRPA CCR

Pace Project No.: 60452578

Date: 06/19/2024 12:47 PM

Sample: BAT-12-CCR	Lab ID: 6045	52578002	Collected: 05/08/2	4 12:40	Received: 05	5/09/24 09:05 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Meth	nod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Boron	221	ug/L	100	1	05/16/24 14:24	05/28/24 10:16	7440-42-8	
Calcium	101000	ug/L	200	1	05/16/24 14:24	05/28/24 10:16	7440-70-2	
Lithium	88.1	ug/L	10.0	1	05/16/24 14:24	05/28/24 10:16	7439-93-2	
6020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Meth	nod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Antimony	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:29	7440-36-0	
Arsenic	1.3	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:29	7440-38-2	
Barium	27.6	ug/L	2.0	2	05/17/24 07:40	06/18/24 14:59	7440-39-3	
Beryllium	ND	ug/L	0.50	1	05/17/24 07:40	06/18/24 16:29	7440-41-7	
Cadmium	ND	ug/L	0.50	1	05/17/24 07:40	06/18/24 16:29	7440-43-9	
Chromium	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:29	7440-47-3	
Cobalt	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:29	7440-48-4	
Lead	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:29	7439-92-1	
Molybdenum	6.6	ug/L	2.0	2	05/17/24 07:40	06/18/24 14:59	7439-98-7	
Selenium	2.9	ug/L	2.0	2	05/17/24 07:40	06/18/24 14:59	7782-49-2	
Thallium	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:29	7440-28-0	
7470 Mercury	Analytical Meth	od: EPA 74	70 Preparation Meth	nod: EP	A 7470			
	Pace Analytical	Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	05/20/24 12:41	05/21/24 13:00	7439-97-6	
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	40C					
	Pace Analytical							
Total Dissolved Solids	897	mg/L	13.3	1		05/10/24 11:45		
9056 IC Anions	Analytical Meth	od: EPA 90	056					
	Pace Analytical	Services -	Kansas City					
Chloride	180	mg/L	20.0	20		05/28/24 23:25	16887-00-6	
Fluoride	0.96	mg/L	0.20	1		05/28/24 23:04		N2
Sulfate	399	mg/L	20.0	20		05/28/24 23:25		



Project: 60731303 PRPA CCR

Pace Project No.: 60452578

Date: 06/19/2024 12:47 PM

Sample: DUP-02-CCR	Lab ID: 6045	52578003	Collected: 05/08/2	24 00:00	Received: 05	5/09/24 09:05 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	od: EPA 60	10 Preparation Meth	nod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Boron	229	ug/L	100	1	05/16/24 14:24	05/28/24 10:18	7440-42-8	
Calcium	103000	ug/L	200	1	05/16/24 14:24	05/28/24 10:18	7440-70-2	
Lithium	91.7	ug/L	10.0	1	05/16/24 14:24	05/28/24 10:18	7439-93-2	
6020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Meth	nod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Antimony	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:38	7440-36-0	
Arsenic	1.2	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:38	7440-38-2	
Barium	30.6	ug/L	2.0	2	05/17/24 07:40	06/18/24 15:06	7440-39-3	
Beryllium	ND	ug/L	0.50	1	05/17/24 07:40	06/18/24 16:38	7440-41-7	
Cadmium	ND	ug/L	0.50	1	05/17/24 07:40	06/18/24 16:38	7440-43-9	
Chromium	1.4	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:38	7440-47-3	
Cobalt	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:38	7440-48-4	
₋ead	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:38	7439-92-1	
Molybdenum	6.5	ug/L	2.0	2	05/17/24 07:40	06/18/24 15:06	7439-98-7	
Selenium	3.1	ug/L	2.0	2	05/17/24 07:40	06/18/24 15:06	7782-49-2	
Γhallium	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:38	7440-28-0	
470 Mercury	Analytical Meth	od: EPA 74	70 Preparation Meth	nod: EP	A 7470			
•	Pace Analytical	Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	05/20/24 12:41	05/21/24 13:02	7439-97-6	
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	10C					
	Pace Analytical	Services -	Kansas City					
Total Dissolved Solids	947	mg/L	13.3	1		05/10/24 11:45		
9056 IC Anions	Analytical Meth	od: EPA 90	956					
	Pace Analytical							
Chloride	188	mg/L	20.0	20		05/29/24 01:09	16887-00-6	
Fluoride	1.0	mg/L	0.20	1		05/29/24 00:48		N2
Sulfate	397	mg/L	100	100		05/29/24 01:30		



Project: 60731303 PRPA CCR

Pace Project No.: 60452578

Date: 06/19/2024 12:47 PM

Sample: BAT-02-CCR	Lab ID: 6045	2578004	Collected: 05/08/2	4 15:05	Received: 05	5/09/24 09:05 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Metho	od: EPA 60	110 Preparation Meth	nod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Boron	1000	ug/L	100	1	05/16/24 14:24	05/28/24 10:25	7440-42-8	
Calcium	342000	ug/L	200	1	05/16/24 14:24	05/28/24 10:25	7440-70-2	
_ithium	211	ug/L	10.0	1	05/16/24 14:24	05/28/24 10:25	7439-93-2	
6020 MET ICPMS	Analytical Metho	od: EPA 60	20 Preparation Meth	nod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Antimony	ND	ug/L	2.0	2	05/17/24 07:40	06/18/24 16:44	7440-36-0	D3
Arsenic	ND	ug/L	2.0	2	05/17/24 07:40	06/18/24 16:44	7440-38-2	D3
Barium	16.8	ug/L	3.0	3	05/17/24 07:40	06/18/24 15:11	7440-39-3	
Beryllium	ND	ug/L	1.0	2	05/17/24 07:40	06/18/24 16:44	7440-41-7	D3
Cadmium	ND	ug/L	1.0	2	05/17/24 07:40	06/18/24 16:44	7440-43-9	D3
Chromium	ND	ug/L	2.0	2	05/17/24 07:40	06/18/24 16:44	7440-47-3	D3
Cobalt	ND	ug/L	2.0	2	05/17/24 07:40	06/18/24 16:44	7440-48-4	D3
₋ead	ND	ug/L	2.0	2	05/17/24 07:40	06/18/24 16:44	7439-92-1	D3
Molybdenum	ND	ug/L	2.0	2	05/17/24 07:40	06/18/24 16:44	7439-98-7	D3
Selenium	ND	ug/L	2.0	2	05/17/24 07:40	06/18/24 16:44	7782-49-2	D3
Thallium	ND	ug/L	2.0	2	05/17/24 07:40	06/18/24 16:44	7440-28-0	D3
470 Mercury	Analytical Metho	od: EPA 74	70 Preparation Meth	nod: EP	A 7470			
	Pace Analytical	Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	05/20/24 12:41	05/21/24 13:05	7439-97-6	
2540C Total Dissolved Solids	Analytical Metho	od: SM 254	40C					
	Pace Analytical	Services -	Kansas City					
Total Dissolved Solids	2310	mg/L	66.7	1		05/10/24 11:46		
0056 IC Anions	Analytical Metho	od: EPA 90	56					
	Pace Analytical	Services -	Kansas City					
Chloride	259	mg/L	50.0	50		05/29/24 02:12	16887-00-6	
Fluoride	ND	mg/L	0.20	1		05/29/24 01:51	16984-48-8	N2
Sulfate	1770	mg/L	200	200		05/29/24 02:32	14808-79-8	



Project: 60731303 PRPA CCR

Pace Project No.: 60452578

Date: 06/19/2024 12:47 PM

QC Batch: 894580 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452578001, 60452578002, 60452578003, 60452578004

METHOD BLANK: 3540364 Matrix: Water
Associated Lab Samples: 60452578001, 60452578002, 60452578003, 60452578004

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Mercury ug/L ND 0.20 05/21/24 12:17

LABORATORY CONTROL SAMPLE: 3540365

Spike LCS LCS % Rec Conc. % Rec Limits Parameter Units Result Qualifiers Mercury 5 5.0 101 80-120 ug/L

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3540366 3540367

MS MSD

60452178001 Spike Spike MS MSD MS MSD % Rec Max Units Result Result **RPD** RPD Parameter Result Conc. Conc. % Rec % Rec Limits Qual ND 5 20 Mercury ug/L 5 4.9 4.8 97 97 75-125 0

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3540368 3540369

MS MSD

60452636007 MS MSD MS MSD Spike Spike % Rec Max RPD Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD Qual 5 5 20 Mercury ND 4.9 4.8 97 96 75-125 ug/L

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3540370 3540371

MS MSD

60452423002 Spike Spike MS MSD MS MSD % Rec Max Result Parameter Units Conc. Result Result % Rec % Rec **RPD** RPD Conc. Limits Qual Mercury ug/L ND 5 5 5.0 5.2 101 104 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.



Project: 60731303 PRPA CCR

Pace Project No.: 60452578

QC Batch: 894743 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452578001, 60452578002, 60452578003, 60452578004

METHOD BLANK: 3541037 Matrix: Water
Associated Lab Samples: 60452578001, 60452578002, 60452578003, 60452578004

ated Lab Samples: 60452578001, 60452578002, 60452578003, 60452578004

Blank Reporting

Parameter Units Result Limit

Parameter	Units	Result	Limit	Analyzed	Qualifiers
Boron	ug/L	ND	100	05/28/24 09:41	
Calcium	ug/L	ND	200	05/28/24 09:41	
Lithium	ug/L	ND	10.0	05/28/24 09:41	

LABORATORY CONTROL SAMPLE: 3541038

Date: 06/19/2024 12:47 PM

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	978	98	80-120	
Calcium	ug/L	10000	10600	106	80-120	
Lithium	ug/L	1000	1060	106	80-120	

MATRIX SPIKE & MATRIX SF	PIKE DUPLIC	CATE: 3541	039		3541040							
			MS	MSD								
	6	0452782024	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Boron	ug/L	102	1000	1000	1030	1070	93	96	75-125	3	20	
Calcium	ug/L	72800	10000	10000	77500	82900	46	100	75-125	7	20	M1
Lithium	ug/L	69.9	1000	1000	1050	1110	98	104	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.



Project: 60731303 PRPA CCR

Pace Project No.: 60452578

Date: 06/19/2024 12:47 PM

QC Batch: 894799 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452578001, 60452578002, 60452578003, 60452578004

METHOD BLANK: 3541350 Matrix: Water
Associated Lab Samples: 60452578001, 60452578002, 60452578003, 60452578004

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	06/18/24 11:48	
Arsenic	ug/L	ND	1.0	06/18/24 11:48	
Barium	ug/L	ND	1.0	06/18/24 11:48	
Beryllium	ug/L	ND	0.50	06/18/24 11:48	
Cadmium	ug/L	ND	0.50	06/18/24 11:48	
Chromium	ug/L	ND	1.0	06/18/24 11:48	
Cobalt	ug/L	ND	1.0	06/18/24 11:48	
Lead	ug/L	ND	1.0	06/18/24 11:48	
Molybdenum	ug/L	ND	1.0	06/18/24 11:48	
Selenium	ug/L	ND	1.0	06/18/24 11:48	
Thallium	ug/L	ND	1.0	06/18/24 11:48	

LABORATORY CONTROL SAMPL	E: 3541351					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	ug/L	40	40.1	100	80-120	
Arsenic	ug/L	40	41.9	105	80-120	
Barium	ug/L	40	39.7	99	80-120	
Beryllium	ug/L	40	43.0	108	80-120	
Cadmium	ug/L	40	42.7	107	80-120	
Chromium	ug/L	40	41.3	103	80-120	
Cobalt	ug/L	40	41.7	104	80-120	
Lead	ug/L	40	39.4	98	80-120	
Molybdenum	ug/L	40	41.4	103	80-120	
Selenium	ug/L	40	43.3	108	80-120	
Thallium	ug/L	40	37.6	94	80-120	

MATRIX SPIKE & MATRIX	SPIKE DUPLI	CATE: 3541			3541353							
	,	CO 4E 0 40 20 00	MS	MSD	MC	MCD	MC	MCD	0/ Doo		May	
_		60452423002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	ug/L	ND	40	40	37.8	38.2	94	95	75-125	1	20	
Arsenic	ug/L	ND	40	40	42.6	42.4	105	104	75-125	0	20	
Barium	ug/L	25.1	40	40	63.1	61.6	95	91	75-125	2	20	
Beryllium	ug/L	ND	40	40	35.8	36.7	89	92	75-125	3	20	
Cadmium	ug/L	ND	40	40	35.2	34.9	88	87	75-125	1	20	
Chromium	ug/L	ND	40	40	39.4	39.7	97	97	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.



Project: 60731303 PRPA CCR

Pace Project No.: 60452578

Date: 06/19/2024 12:47 PM

MATRIX SPIKE & MATRIX	SPIKE DUPL	ICATE: 3541	352		3541353							
		60452423002	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Cobalt	ug/L		40	40	39.6	39.7	98	98	75-125	0	20	
Lead	ug/L	ND	40	40	35.7	35.7	89	89	75-125	0	20	
Molybdenum	ug/L	1.0	40	40	43.7	43.8	107	107	75-125	0	20	
Selenium	ug/L	23.2	40	40	63.5	64.7	101	104	75-125	2	20	
Thallium	ug/L	ND	40	40	35.4	35.6	89	89	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.



Project: 60731303 PRPA CCR

Pace Project No.: 60452578

QC Batch: 893941 Analysis Method: SM 2540C

QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452578001, 60452578002, 60452578003, 60452578004

METHOD BLANK: 3537622 Matrix: Water

Associated Lab Samples: 60452578001, 60452578002, 60452578003, 60452578004

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Total Dissolved Solids mg/L ND 5.0 05/10/24 11:44

LABORATORY CONTROL SAMPLE: 3537623

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units **Total Dissolved Solids** mg/L 1000 1190 119 80-120

SAMPLE DUPLICATE: 3537624

60452537001 Dup Max Parameter Units Result Result **RPD RPD** Qualifiers 3950 **Total Dissolved Solids** mg/L 3 3850 10

SAMPLE DUPLICATE: 3537625

Date: 06/19/2024 12:47 PM

60452591003 Dup Max RPD RPD Parameter Units Result Result Qualifiers Total Dissolved Solids 4230 10 D6 mg/L 4800 13

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.



Chloride Fluoride Sulfate

QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60452578

LABORATORY CONTROL SAMPLE:

Date: 06/19/2024 12:47 PM

QC Batch: 895864 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452578001, 60452578002, 60452578003, 60452578004

METHOD BLANK: 3545640 Matrix: Water
Associated Lab Samples: 60452578001, 60452578002, 60452578003, 60452578004

3545641

Parameter	Units	Blank Result	Limit	Analyzed	Qualifiers
	mg/L	ND	1.0	05/28/24 14:52	
	mg/L	ND	0.20	05/28/24 14:52	N2
	mg/L	ND	1.0	05/28/24 14:52	

Parameter Units Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers

Chloride mg/l 5 51 102 80-120

Chloride 5 5.1 102 80-120 mg/L Fluoride 2.5 2.5 100 80-120 N2 mg/L Sulfate mg/L 5.0 100 80-120 5

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3545642 3545643 MS MSD MSD 60452423002 Spike Spike MS MS MSD % Rec Max Qual Parameter Conc. % Rec % Rec **RPD** RPD Units Result Conc. Result Result Limits Chloride 15 M1 63.2 250 250 333 371 108 123 80-120 11 mg/L 15 M1, N2, Fluoride ND 2.5 2.5 0.98 39 50 80-120 mg/L 1.2 23 R1 15 M1,R1 Sulfate 794 2500 2500 7660 6020 275 209 80-120 mg/L 24

SAMPLE DUPLICATE: 3545644 60452423002 Dup Max Parameter Units Result Result **RPD RPD** Qualifiers Chloride 63.2 15 D6 mg/L 76.7 19 Fluoride mg/L ND ND 15 N2 794 Sulfate mg/L 1620 68 15 D6

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.



QUALIFIERS

Project: 60731303 PRPA CCR

Pace Project No.: 60452578

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

Date: 06/19/2024 12:47 PM

D3	Sample was diluted due to the p	presence of high levels of non-targ	et analytes or other matrix interference.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A

complete list of accreditations/certifications is available upon request.

R1 RPD value was outside control limits.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731303 PRPA CCR

Pace Project No.: 60452578

Date: 06/19/2024 12:47 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60452578001	BAT-05-CCR	EPA 3010	894743	EPA 6010	894820
60452578002	BAT-12-CCR	EPA 3010	894743	EPA 6010	894820
60452578003	DUP-02-CCR	EPA 3010	894743	EPA 6010	894820
60452578004	BAT-02-CCR	EPA 3010	894743	EPA 6010	894820
60452578001	BAT-05-CCR	EPA 3010	894799	EPA 6020	894981
60452578002	BAT-12-CCR	EPA 3010	894799	EPA 6020	894981
60452578003	DUP-02-CCR	EPA 3010	894799	EPA 6020	894981
60452578004	BAT-02-CCR	EPA 3010	894799	EPA 6020	894981
60452578001	BAT-05-CCR	EPA 7470	894580	EPA 7470	895142
60452578002	BAT-12-CCR	EPA 7470	894580	EPA 7470	895142
60452578003	DUP-02-CCR	EPA 7470	894580	EPA 7470	895142
60452578004	BAT-02-CCR	EPA 7470	894580	EPA 7470	895142
60452578001	BAT-05-CCR	SM 2540C	893941		
60452578002	BAT-12-CCR	SM 2540C	893941		
60452578003	DUP-02-CCR	SM 2540C	893941		
60452578004	BAT-02-CCR	SM 2540C	893941		
60452578001	BAT-05-CCR	EPA 9056	895864		
60452578002	BAT-12-CCR	EPA 9056	895864		
60452578003	DUP-02-CCR	EPA 9056	895864		
60452578004	BAT-02-CCR	EPA 9056	895864		



Pace ANALYTICAL SERVICES

DC#_Title: ENV-FRM-LENE-0009_Sample Co

ANALYTICAL SERVICES Revision: 2	ffective Date: 01/12/2022	Issued By: Lenexa
Client Name: A eow		
Courier: FedEx VIPS VIA Clay	PEX □ ECI □ Pace	1.
Custody Seal on Cooler/Box Present: Yes D No D	Seals intact: Yes N	No 🗆
Packing Material: Bubble Wrap Bubble Bag Thermometer Used: Type	of Ice: Web Blue None	None □ Other □
Cooler Temperature (°C): As-read S, Corr. Fa	actor 0.0 Corrected	Date and initials of person examining contents:
remperature should be above freezing to 6°C		AF519
Chain of Custody present:	ØYes □No □N/A	* · /
Chain of Custody relinquished:	De Pes □No □N/A	
Samples arrived within holding time:	Yes ONO ON/A	
Short Hold Time analyses (<72hr):	□Yes Mo □N/A	
Rush Turn Around Time requested:	□Yes □No □N/A	
Sufficient volume:	Yes ONO ON/A	
Correct containers used:	Ores □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 □WA 7	
Filtered volume received for dissolved tests?	□Yes □No □NA	
Sample labels match COC: Date / time / ID / analyses	Dyes DNO DN/A	
Samples contain multiple phases? Matrix: Matrix:	□Yes □No □N/A	
Containers requiring pH preservation in compliance?		sample IDs, volumes, lot #'s of preservative and the
HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	T#: 6709010	/time added.
Cyanide water sample checks:		
ead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	□Yes □No	ž.
·	☐Yes ☐No	
rip Blank present:	☐Yes ☐No ☐N/A	
leadspace in VOA vials (>6mm):	□Yes □No ♣N/A	
Samples from USDA Regulated Area: State:	□Yes □No ▶NA	
additional labels attached to 5035A / TX1005 vials in the fie		Fild But Bernindo V / N
		Field Data Required? Y / N
Person Contacted: Date Comments/ Resolution:	e/Time:	
Onlinents/ Nesolution.		
roject Manager Review:	Date:	



CHAIN-OF-CUSTODY / Analytical Request Document

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

Pace Analytical

DRINKING WATER OTHER OTHER ō NPDES GROUND WATER Page: REGULATORY AGENCY RCRA Requested Analysis Filtered (Y/N) STATE: Site Location UST Same as Section A Reference:
Pace Project Heather Wilson Manager:
Pace Profile #: 11033, 3 Accounts Payable Company Name: AECOM 42700 Invoice Information: Attention: Acc Section C Pace Quote Address: Project Name: 60709371 PRPA CCR ourchase Order No: NEED PO # Report To: Vasanta Kalluri Sopy To: Jamie Herman Project Number: 60709371 Section B Required Project Information: Greenwood Village, CO 80111 standard jamie.herman@aecom.com 6200 South Quebec St энопе: (303) 740-2614 Requested Due Date/TAT: Section A Required Client Information: AECOM ompany. Email To: ddress;

															100				-			
	Section D Valid Matrix Codes Required Client Information MATRIX COD	code			COLLECTED	ΉED			7	reser	Preservatives		1 N /A			^						
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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

Pace Analytical Services, LLC

16oz unpresserved plstic

Qualtrax Document ID: 30422

Wipe/Swab 120mL Coliform Na Thiosulfate Other Non-aqueous Liquid SPLC Matrix **Drinking Water** Air Cassettes Terracore Kit Summa Can Ziploc Bag WPDU Air Filter Water Wipe Solid **BP3Z** 등 ВЬ3С ZPLC SP5T BP3S WP NA SP 2 ΑF Ole **BP3F** 250mL HNO3 plastic - field filtered 250mL HNO3 plastic **BP3N** 250mL unpreserved plastic 500mL unpreserved plastic 125mL unpreserved plastic 250mL NaOH, Zn Acetate 500mL NaOH, Zn Acetate BP1N 1L unpreserved plastic 125mL H2SO4 plastic 500mL H2SO4 plastic 1L NaOH, Zn Acetate 500mL NAOH plastic 500mL HNO3 plastic 250mL H2SO4 plastic 125mL HNO3 plastic 250mL NaOH plastic 1L H2SO4 plastic **BP3U** BP2U BP1U Medn BP2Z BP3C BP3F BP3N BP3U BP1Z BP2C **BP2N** BP1U BP2S BP2U BP3S BP3Z BP4U Mekn netn 1L Na Thiosulfate clear/amber glass **VG5U** 4oz unpreserved amber wide 500mL HNO3 amber glass 500mL H2SO4 amber glass 250mL H2SO4 amber glass 500mL unpres amber glass 100mL unores amber glass 250mL unpres amber glass 125mL unpres amber glass 100mL unpres amber glass 1liter unpres amber glass U49A 1L H2SO4 amber glass 1L HCl amber glass **YG32** 8oz clear soil jar 4oz clear soil jar 2oz clear soil jar **VG2U** UreA **HIDA** WGKU WG2U JGFU AG0U AG1H AG1S AG1T AG1U AG2N AG2S AG3S AG2U AG3U AG4U AG5U BG10 Glass DC98 DC9M 40mL unpreserved clear vial 250mL HCL Clear glass 250mL Unpres Clear glass 40mL amber unpreserved 40mL bisulfate clear vial 40mL HCl amber voa vial 40mL Na Thio amber vial 40mL Na Thio. clear vial 40mL H2SO4 amber vial 1liter H2SO4 clear glass DC90 40mL MeOH clear vial 40mL TSP amber vial 40mL HCI clear vial 1liter unpres glass 16oz clear soil jar **N69**/ DG90 DC9H H69A DG9M 0690 DG9S DG90 BG1S VG9H VG9U ВСЗН DG9T BG1U Container Codes VG9T Matrix COC ine Item 10 Ţ 12 4 S 9 00 ო 7 σ

Profile #

Notes

60709371PRPA

Site

DC#_Title: ENV-FRM-LENE-0001_Sample Container Count Revision: 3 | Effective Date: | Issued by: Lenexa

Client:

Work Order Number:





June 13, 2024

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

RE: Project: 60731303 PRPA CCR

Pace Project No.: 60452588

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 09, 2024. 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 Wilson

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

Databa m. Wilson

Enclosures

cc: Ann Cinabro, AECOM Jamie Herman, AECOM Jeremy Hurshman, AECOM



9608 Loiret Blvd. Lenexa, KS 66219 (913)599-5665



CERTIFICATIONS

Project: 60731303 PRPA CCR

Pace Project No.: 60452588

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



SAMPLE SUMMARY

Project: 60731303 PRPA CCR

Pace Project No.: 60452588

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60452588001	BAT-05-CCR	Water	05/08/24 10:15	05/09/24 10:30
60452588002	BAT-12-CCR	Water	05/08/24 12:40	05/09/24 10:30
60452588003	DUP-02-CCR	Water	05/08/24 00:00	05/09/24 10:30
60452588004	BAT-02-CCR	Water	05/08/24 15:05	05/09/24 10:30



SAMPLE ANALYTE COUNT

Project: 60731303 PRPA CCR

Pace Project No.: 60452588

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60452588001	BAT-05-CCR	EPA 903.1	 LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	LAL	1	PASI-PA
60452588002	BAT-12-CCR	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	LAL	1	PASI-PA
60452588003	DUP-02-CCR	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	LAL	1	PASI-PA
60452588004	BAT-02-CCR	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	LAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg



Project: 60731303 PRPA CCR

Pace Project No.: 60452588

Sample: BAT-05-CCR PWS:	Lab ID: 60452 Site ID:	2588001 Collected: 05/08/24 10:15 Sample Type:	Received:	05/09/24 10:30	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 903.1	0.627 ± 0.626 (0.992) C:NA T:86%	pCi/L	05/29/24 15:26	6 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 904.0	0.456 ± 0.320 (0.608) C:89% T:81%	pCi/L	05/23/24 14:05	5 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	1.08 ± 0.946 (1.60)	pCi/L	05/31/24 11:26	7440-14-4	



Project: 60731303 PRPA CCR

Pace Project No.: 60452588

Sample: BAT-12-CCR PWS:	Lab ID: 6045258 Site ID:	8002 Collected: 05/08/24 12:40 Sample Type:	Received:	05/09/24 10:30 I	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Ser	vices - Greensburg				
Radium-226	EPA 903.1	-0.628 ± 0.498 (1.22) C:NA T:85%	pCi/L	05/29/24 15:26	3 13982-63-3	
	Pace Analytical Serv	vices - Greensburg				
Radium-228	EPA 904.0	0.0693 ± 0.282 (0.643) C:85% T:86%	pCi/L	05/23/24 14:05	5 15262-20-1	
	Pace Analytical Serv	vices - Greensburg				
Total Radium	Total Radium Calculation	0.0693 ± 0.780 (1.86)	pCi/L	05/31/24 11:26	7440-14-4	



Project: 60731303 PRPA CCR

Pace Project No.: 60452588

Sample: DUP-02-CCR PWS:	Lab ID: 6045 Site ID:	2588003 Collected: 05/08/24 00:00 Sample Type:	Received:	05/09/24 10:30	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 903.1	0.000 ± 0.500 (0.973) C:NA T:96%	pCi/L	05/29/24 15:20	6 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 904.0	0.778 ± 0.399 (0.699) C:84% T:79%	pCi/L	05/23/24 12:20	6 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	0.778 ± 0.899 (1.67)	pCi/L	05/31/24 11:26	6 7440-14-4	



Project: 60731303 PRPA CCR

Pace Project No.: 60452588

Sample: BAT-02-CCR PWS:	Lab ID: 6045258 Site ID:	8004 Collected: 05/08/24 15:05 Sample Type:	Received:	05/09/24 10:30	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Serv	vices - Greensburg				
Radium-226	EPA 903.1	-0.326 ± 0.614 (1.31) C:NA T:88%	pCi/L	05/29/24 15:26	3 13982-63-3	
	Pace Analytical Serv	vices - Greensburg				
Radium-228	EPA 904.0	0.739 ± 0.371 (0.652) C:86% T:88%	pCi/L	05/23/24 12:26	5 15262-20-1	
	Pace Analytical Serv	vices - Greensburg				
Total Radium	Total Radium Calculation	0.739 ± 0.985 (1.96)	pCi/L	05/31/24 11:26	7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60452588

QC Batch: 668073 Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60452588001, 60452588002, 60452588003, 60452588004

METHOD BLANK: 3252923 Matrix: Water

Associated Lab Samples: 60452588001, 60452588002, 60452588003, 60452588004

 Parameter
 Act ± Unc (MDC) Carr Trac
 Units
 Analyzed
 Qualifiers

 Radium-226
 0.000 ± 0.229 (0.496) C:NA T:94%
 pCi/L
 05/28/24 15:56

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.



QUALITY CONTROL - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60452588

QC Batch: 668074 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: 60452588001, 60452588002, 60452588003, 60452588004

METHOD BLANK: 3252928 Matrix: Water

Associated Lab Samples: 60452588001, 60452588002, 60452588003, 60452588004

Parameter Act ± Unc (MDC) Carr Trac Units Analyzed Qualifiers

Radium-228 0.208 ± 0.306 (0.658) C:82% T:88% pCi/L 05/23/24 14:04

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.



QUALIFIERS

Project: 60731303 PRPA CCR

Pace Project No.: 60452588

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

Date: 06/13/2024 06:34 PM

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731303 PRPA CCR

Pace Project No.: 60452588

Date: 06/13/2024 06:34 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60452588001	BAT-05-CCR	EPA 903.1	668073		
60452588002	BAT-12-CCR	EPA 903.1	668073		
60452588003	DUP-02-CCR	EPA 903.1	668073		
60452588004	BAT-02-CCR	EPA 903.1	668073		
60452588001	BAT-05-CCR	EPA 904.0	668074		
60452588002	BAT-12-CCR	EPA 904.0	668074		
60452588003	DUP-02-CCR	EPA 904.0	668074		
60452588004	BAT-02-CCR	EPA 904.0	668074		
60452588001	BAT-05-CCR	Total Radium Calculation	672366		
60452588002	BAT-12-CCR	Total Radium Calculation	672366		
60452588003	DUP-02-CCR	Total Radium Calculation	672366		
60452588004	BAT-02-CCR	Total Radium Calculation	672366		



Зотрапу:

Address:

Email To:

Phone:

DRINKING WATER OTHER ☐ GROUND WATER Page: REGULATORY AGENCY RCRA L Site Location NPDES CHAIN-OF-CUSTODY / Analytical Request Document UST The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. Same as Section A Accounts Payable Heather Wilson Company Name: AECOM 42700 Invoice Information: Pace Quote Reference: Pace Project Manager: Section C Address: Attention: Project Name 60709371 PRPA CCR Purchase Order No.: NEED PO # Report To: Vasanta Kalluri Copy To: Jamie Herman Section B Required Project Information: Greenwood Village, CO 80111 jamie.herman@aecom.com 6200 South Quebec St (303) 740-2614 Section A Required Client Information: AECOM

Preservatives 1033, 3 Preservatives Na26203 Na16 And Preservatives NacePTED BY AFFILIAN Redium-226 Redium-228							91.00			Manager:									Site	Site Location	uo						
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SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: MICKPINIT (MINIDDITY): 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0														İ	li.				+					-			
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F-ALL-Q-020rev.08, 12-Oct-2007

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.

Internal Transfer Chain of Custody -

			Rush Mi	Rush Multiplier X			Staf	State Of Origin: CO	gin: (0			- Lace
Wo	Workorder: 60452588	III Workorder Name:		Samples Pre-Logged into eCOC 60709371 PRPA CCR	nto eCO	O	Cer	Cert. Needed:	<u>:</u>	Yes	×		
Rep	Report To		Ñ	ot To			5	Owilei Necelveu Dale.		Jale.	Pauliet	PIZUZ4 Results Requested By:	By: 5/31/2024
Hea Pac 9600 Pho	Heather Wilson Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 1(913)563-1407		Pace / 1638 F Suites Green Phone	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600	righ 1	President	Precented Containers	di organi	82S muibe A	82S muibeA muibeA muS le3			
		Sample	Sample Collect			EON				οT			
Item	Sample ID	Type	Date/Time	Lab ID	Matrix	Н							LAB USE ONLY
_	BAT-05-CCR	PS	5/8/2024 10:15	60452588001	Water	2			×	×			700
2	BAT-12-CCR	PS	5/8/2024 12:40	60452588002	Water	2			×	×	-		000000000000000000000000000000000000000
3	DUP-02-CCR	PS	5/8/2024 00:00	60452588003	Water	2			×	-	-		100
4	BAT-02-CCR	PS	5/8/2024 15:05	60452588004	Water	2			×	+			100
5										+	-		too
								TANKS I	7	KARALE		Comments	
Tran	Transfers Released By		Date/Time	Received By	_			Date/Time	ne	*Please	Provide OC	*Please Provide OC sheets with report	
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읭	Cooler Temperature on Receipt	Receipt	Sno o.	Custody Seal (Y	or N		Rec	Received on Ice	<u> </u>	Y or (Z	Samples Intack V	V or M
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***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.

MO#:30682937



CHAIN-OF-CUSTODY / Analytical Request Document

355

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

500 200 00 400 Pace Project No./ Lab I.D. DRINKING WATER SAMPLE CONDITIONS OTHER of Custody Sealed \geq ☐ GROUND WATER Page: Residual Chlorine (Y/N) REGULATORY AGENCY 00 RCRA 1030 Requested Analysis Filtered (Y/N) TIME STATE: 5/4/24 Site Location NPDES DATE UST ACCEPTED BY / AFFILIATION Lebrate - Pace muibeA leto Z 822-muibe5 322-muibes N/A Test Test Same as Section A Other Accounts Payable Methanol Heather Wilson Preservatives Na₂S₂O₃ Sompany Name: AECOM HOBN ace Profile #: 11033, 3 42700 HCI nvoice Information; HNO³ OS2H Reference: Pace Project Section C ace Quote TIME D Unpreserved Address: Manager: # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION 587 DATE 25 205 100 TIME COMPOSITE END/GRAB 5/8/2 DATE COLLECTED RELINQUISHED BY / AFFILIATION Project Name: 60709371 PRPA CCR TIME 1 N COMPOSITE NEED PO# DATE Report To: Vasanta Kalluri Copy To: Jamie Herman Required Project Information: 6070937 CN Due Date: 05/31/24 Purchase Order No.: SAMPLE TYPE (G=GRAB C=COMP) Project Number: (see valid codes to left) **MATRIX CODE** Section B MO#: 30682937 Valid Matrix Codes

MATRIX
DRINKING WATER
WATER WW
PRODUCT
P SOIL/SOLID
SL P St AR AR OIL WIPE AIR OTHER TISSUE Greenwood Village, CO 80111 jamie.herman@aecom.com ADDITIONAL COMMENTS Requested Due Date/TAT: STUIN (IC) (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE 6200 South Quebec St SAMPLE ID Required Client Information PM: MAR Phone: (303) 740-2614 Required Client Information Section D Email To: Address: 9 7 12 # M3TI 6

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

(N/A)

COOIST (Y/N)

(N/Y) eal

De ni qmeT

76

DATE Signed (MM/DD/YY): 109

3

PRINT Name of SAMPLER: SIGNATURE of SAMPLER: 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.

Page 15 of 18

CLIENT: PACE_60_LEKS

Client Name: Pace - Lenexa	l ,	(5		PM: MAR Due Date: 05/31/24 CLIENT: PACE_60_LEKS
Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client	_		rial [Pace Other Initial/Date
Tracking Number: 7146 2378	76	10	L	Examined By: 2 5/9/24
Custody Seal on Cooler/Box Present:	Yes 🛭 I	No Ice:	Wet	Blue (None)
Cooler Temperature: Observed Temp		_°C	Cor	rection Factor: °C Final Temp: °C
Temp should be above freezing to 6°C				D. D. D. Daviduel Chloring Let #
			T	pH paper Lot# D.P.D. Residual Chlorine Lot #
Comments:	Yes	No	NA	
Chain of Custody Present				1. Received IRWO via email
Chain of Custody Filled Out:		1_	_	2.
-Were client corrections present on COC		/	1	
Chain of Custody Relinquished	/			3.
Sampler Name & Signature on COC:	/			4.
Sample Labels match COC:			1	5. The confiners for sample 004 have sample time at 13:05, 8
-Includes date/time/ID				Sample time at 15,00,00
Matrix: VO (
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr		_	1	7.
remaining):				
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:			/	15:
All containers checked for preservation:				16.
exceptions: VOA, coliform, TOC, O&G,			350	pH <z< td=""></z<>
Phenolics, Radon, non-aqueous matrix		ren e sil		
All containers meet method preservation				Initial when Date/Time of Preservation
requirements:				completed Preservation
The state of the supplied had		*		Preservative
2260C/D: Headspace in VOA Vials (> 6mm)			_	17.
24.1: Headspace in VOA Vials (0mm)			/	18.
adon: Headspace in RAD Vials (0mm)				19.
adon: neauspace in NAD viais (onin)			\rightarrow	
rip Blank Present:				Trip blank custody seal present? YES or NO
ad Samples Screened <.05 mrem/hr.				Initial when completed Date: 5/9/84 Survey Meter SN:250/4380
omments:			.59	

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Pace Analytical

Ra-226 LL1 5/13/2024 79152 DW 3252923 0.000 0.229 0.496 0.00 N/A Pass MB Sample ID
MB concentration:
M/B Counting Uncertainty:
MB MDC: Test:
Analyst:
Date:
Batch ID:
Matrix: MB Numerical Performance Indicator: MB Status vs Numerical Indicator: MB Status vs. MDC: Method Blank Assessment

	1 MS/MSD 2																													
Sample Matrix Spike Control Assessment Sample Collection Date: Sample MS I.D. Sample MSD I.D. Sample MSD I.D. Sample MSD I.D. Spike Volume Used in MSD II.D. Spike Volume Used in MSD III. MSD Miquot (L. g. F): MSD Spike Uncertainty (calculated): Sample Result: Matrix Spike Result Counting Uncertainty (pCi/L. g. F): Sample Matrix Spike Duplicate Result: MSD Numerical Performance Indicator: MSD Numerical Performance Indicator: MSD Numerical Performance Indicator: MSD Numerical Performance Indicator: MSD Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MSD Status vs Recovery: MSD MATRIX Spike Recovery: MSD MATRIX Spike Recovery: MSD MATRIX Spike Recovery: MSD Status vs Recovery: MSD MATRIX Spike Recovery: MSD MATRIX	MS/MSD 1																													
	Sample Matrix Spike Control Assessment	Sample Collection Date:	Sample I.D. Sample MS I.D.	Sample MSD I.D.	Spike I.D.:	MS/MSD Decay Corrected Spike Concentration (pCi/mL):	Spike Volume Used in MS (mL):	Spike Volume Used in MSD (mL):	MS Aliquot (L, g, F):	MS Target Conc.(pCi/t, g, F):	MSD Aliquot (L, g, F):	MSD Target Conc. (pCi/L, g, F):	MS Spike Uncertainty (calculated):	MSD Spike Uncertainty (calculated):	Sample Result:	Sample Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Result:	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	MS Numerical Performance Indicator:	MSD Numerical Performance Indicator:	MS Percent Recovery:	MSD Percent Recovery:	MS Status vs Numerical Indicator:	MSD Status vs Numerical Indicator:	MS Status vs Recovery:	MSD Status vs Recovery:	MS/MSD Upper % Recovery Limits:	MACANON CONTRACTOR CON

1		2	Sample F		Matrix Spike F		Matrix Spike Duplicate F									_		Matrix Spike/Matrix Spik	ate				ow. Matrix Spike I		Matrix Spike Duplicate	<u></u>	(Based on the Perce	MS/ MSC		
,		LCSD79152	5/28/2024	23-063	32.299	0.10	0.652	4.956	0.233	5.641	1.013	1.29	113.83%	N/A	Pass	133%	73%		Enter Duplicate	sample IDs if	other than	LCS/LCSD in	the space below.							_
	LCSD (Y or N)?	LCS79152	5/28/2024	23-063	32.299	0.10	0.652	4.951	0.233	4.844	906.0	-0.22	97.84%	A/N	Pass	133%	73%		LCS79152	LCSD79152	4.844	906.0	5.641	1.013	2	-1.149	15.11%	N/A	Pass	05.70
	Laboratory Control Sample Assessment		Count Date:	Spike I.D.:	Spike Concentration (pCi/mL):	Volume Used (mL):	Aliquot Volume (L, g, F):	Target Conc. (pCi/L, g, F):	Uncertainty (Calculated):	Result (pCi/L, g, F):	LCS/LCSD Counting Uncertainty (pCi/L, g, F):	Numerical Performance Indicator:	Percent Recovery:	Status vs Numerical Indicator:	Status vs Recovery:	Upper % Recovery Limits:	Lower % Recovery Limits:	Duplicate Sample Assessment	Sample I.D.:	Duplicate Sample 1.D.	Sample Result (pCi/L, g, F):	Sample Result Counting Uncertainty (pCi/L, g, F):	Sample Duplicate Result (pCi/L, g, F):	Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	Are sample and/or duplicate results below RL?	Duplicate Numerical Performance Indicator:	(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	Duplicate Status vs Numerical Indicator:	Duplicate Status vs RPD:	אווא ס הוווגי

Matrix Spike/Matrix Spike Duplicate Sample Assessment	Sample I.D.	Sample MS I.D.	Sample MSD 1.D.	Sample Matrix Spike Result:	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	Duplicate Numerical Performance Indicator:	(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	MS/ MSD Duplicate Status vs Numerical Indicator:	MS/ MSD Duplicate Status vs RPD:	% RPD Limit:
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Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the RL.

Comments:



Ra-226 NELAC QC Printed: 5/30/2024 12:44 PM

Quality Control Sample Performance Assessment

Ra-228 JJS1 5/16/2024

79153 WT

Worklist: Matrix:

Test: Analyst: Date:

Pace Analytical"

3252928

MB Sample ID

Method Blank Assessment

0.208 0.306 0.658 1.33 Pass Pass

MB Numerical Performance Indicator:

MB Status vs Numerical Indicator: MB Status vs. MDC:

MB concentration: M/B 2 Sigma CSU: MB MDC:

Analyst Must Manually Enter All Fields Highlighted in Yellow.

	Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
	Sample Collection Date:		
	Sample I.D.		
	Sample MS I.D.		
	Sample MSD I.D.		
	Spike I.D.:		
	MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
	Spike Volume Used in MS (mL):		
	Spike Volume Used in MSD (mL):		
	MS Aliquot (L, g, F):		
	MS Target Conc.(pCi/L, g, F):		
	MSD Aliquot (L. g, F):		
	MSD Target Conc. (pCi/L, g, F):		
	MS Spike Uncertainty (calculated):		
>	MSD Spike Uncertainty (calculated):		
LCSD79153	Sample Result:		
5/23/2024	Sample Result 2 Sigma CSU (pCi/L, g, F):		
23-043	Sample Matrix Spike Result:		
36.647	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
0.10	Sample Matrix Spike Duplicate Result:		
0.819	Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
4.476	MS Numerical Performance Indicator:		
0.219	MSD Numerical Performance Indicator:		
3.554	MS Percent Recovery:		
0.799	MSD Percent Recovery:		
-2.18	MS Status vs Numerical Indicator:		
79.40%	MSD Status vs Numerical Indicator:		
N/A	MS Status vs Recovery:		
Pass	MSD Status vs Recovery:		
135%	MS/MSD Upper % Recovery Limits:		
%09	MS/MSD Lower % Recovery Limits:		

>	LCSD79153	5/23/2024	23-043	36.647	0.10	0.819	4.476	0.219	3.554	0.799	-2.18	79.40%	N/A	Pass	135%	%09
LCSD (Y or N)?	LCS79153	5/23/2024	23-043	36.647	0.10	0.822	4.461	0.219	3.043	0.742	-3.59	68.22%	N/A	Pass	135%	%09
Laboratory Control Sample Assessment		Count Date:	Spike I.D.:	Decay Corrected Spike Concentration (pCi/mL):	Volume Used (mL):	Aliquot Volume (L, g, F):	Target Conc. (pCi/L, g, F):	Uncertainty (Calculated):	Result (pCi/L, g, F):	LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	Numerical Performance Indicator:	Percent Recovery:	Status vs Numerical Indicator:	Status vs Recovery:	Upper % Recovery Limits:	Lower % Recovery Limits:

Matrix Spike/Matrix Spike Duplicate Sample Assessment	Sample I.D. Sample MS. I.D. Sample MS. I.D. Sample MSD. I.D. Sample MSD. I.D. Sample Matrix Spike Result Sample Matrix Spike Result Sample Matrix Spike Duplicate Result Matrix Spike Duplicate Result Duplicate Result 2 Sigma CSU (pCi/L. g. F): Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/ MSD Duplicate RPD: MS/ MSD Duplicate Status vs Numerical Indicator: MS/ MSD Duplicate Status vs RPD: MS/ MSD Duplicate Status Vs RPD: %RPD Duplicate Status Vs RPD:
	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
	LCS79153 LCSD73153 2.043 0.742 0.742 0.799 NO -0.918 15.15% Pass Pass 36%
Duplicate Sample Assessment	Sample I.D.: Duplicate Sample I.D. Sample Result (DC/II. g. F): Sample Duplicate Result 2 Sigma CSU (DC/II. g. F): Sample Duplicate Result 2 Sigma CSU (DC/II. g. F): Are sample and/or duplicate results below RL? Duplicate Numerical Performance Indicator: (Based on the LCS/LCSD Percent Recoveries) Duplicate RPD: Duplicate Status vs Numerical Indicator: Duplicate Status vs Numerical Indicator: Duplicate Status vs RPD: SARD:

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Comments:

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Ra-228_79153_W Ra-228 (ENV-FRM-GBUR-0295 03).xls

1 of 1

Ra-228 NELAC DW2 Printed: 5/24/2024 2:02 PM





June 14, 2024

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

RE: Project: 60731303 PRPA CCR

Pace Project No.: 60452675

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 10, 2024. 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 Wilson

Databa m. Wilson

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

Enclosures

cc: Ann Cinabro, AECOM Jamie Herman, AECOM Jeremy Hurshman, AECOM







CERTIFICATIONS

Project: 60731303 PRPA CCR

Pace Project No.: 60452675

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



SAMPLE SUMMARY

Project: 60731303 PRPA CCR

Pace Project No.: 60452675

Lab ID	Sample ID	Matrix	Date Collected	Date Received	
60452675001	BAT-11-CCR	Water	05/09/24 09:05	05/10/24 10:00	
60452675002	BAT-10-CCR	Water	05/09/24 11:15	05/10/24 10:00	
60452675003	BAT-01-CCR	Water	05/09/24 14:30	05/10/24 10:00	



SAMPLE ANALYTE COUNT

Project: 60731303 PRPA CCR

Pace Project No.: 60452675

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60452675001	BAT-11-CCR	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60452675002	BAT-10-CCR	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60452675003	BAT-01-CCR	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60452675

Sample: BAT-11-CCR PWS:	Lab ID: 6045 Site ID:	2675001 Collected: 05/09/24 09:05 Sample Type:	Received:	05/10/24 10:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 903.1	0.352 ± 0.630 (1.10) C:NA T:84%	pCi/L	05/30/24 14:53	3 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 904.0	1.05 ± 0.434 (0.688) C:77% T:90%	pCi/L	05/29/24 12:16	5 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	1.40 ± 1.06 (1.79)	pCi/L	06/05/24 08:15	7440-14-4	



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60452675

Sample: BAT-10-CCR PWS:	Lab ID: 6045 Site ID:	2675002 Collected: 05/09/24 11:15 Sample Type:	Received:	05/10/24 10:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 903.1	0.250 ± 0.490 (0.880) C:NA T:91%	pCi/L	05/30/24 14:53	3 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 904.0	1.32 ± 0.481 (0.708) C:77% T:89%	pCi/L	05/29/24 12:17	7 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	1.57 ± 0.971 (1.59)	pCi/L	06/05/24 08:15	7440-14-4	



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60452675

Sample: BAT-01-CCR PWS:	Lab ID: 6045 Site ID:	2675003 Collected: 05/09/24 14:30 Sample Type:	Received:	05/10/24 10:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 903.1	0.240 ± 0.471 (0.846) C:NA T:89%	pCi/L	05/30/24 14:53	3 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 904.0	1.36 ± 0.471 (0.670) C:80% T:89%	pCi/L	05/29/24 12:17	7 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	1.60 ± 0.942 (1.52)	pCi/L	06/05/24 08:1	5 7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60452675

QC Batch: 668296 Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60452675001, 60452675002, 60452675003

METHOD BLANK: 3254028 Matrix: Water

Associated Lab Samples: 60452675001, 60452675002, 60452675003

ParameterAct \pm Unc (MDC) Carr TracUnitsAnalyzedQualifiersRadium-226-0.0889 \pm 0.203 (0.479) C:NA T:87%pCi/L05/30/24 14:38

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.



QUALITY CONTROL - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60452675

QC Batch: 668298 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: 60452675001, 60452675002, 60452675003

METHOD BLANK: 3254031 Matrix: Water

Associated Lab Samples: 60452675001, 60452675002, 60452675003

 Parameter
 Act ± Unc (MDC) Carr Trac
 Units
 Analyzed
 Qualifiers

 Radium-228
 0.333 ± 0.329 (0.675) C:81% T:89%
 pCi/L
 05/29/24 14:36

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.



QUALIFIERS

Project: 60731303 PRPA CCR

Pace Project No.: 60452675

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

Date: 06/14/2024 06:50 PM

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731303 PRPA CCR

Pace Project No.: 60452675

Date: 06/14/2024 06:50 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60452675001	BAT-11-CCR	EPA 903.1	668296		
60452675002	BAT-10-CCR	EPA 903.1	668296		
60452675003	BAT-01-CCR	EPA 903.1	668296		
60452675001	BAT-11-CCR	EPA 904.0	668298		
60452675002	BAT-10-CCR	EPA 904.0	668298		
60452675003	BAT-01-CCR	EPA 904.0	668298		
60452675001	BAT-11-CCR	Total Radium Calculation	673286		
60452675002	BAT-10-CCR	Total Radium Calculation	673286		
60452675003	BAT-01-CCR	Total Radium Calculation	673286		

Pace Analytical "

CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

DRINKING WATER CC R RA PA ☐ GROUND WATER REGULATORY AGENCY 00 RCRA STATE: NPDES Site Location UST Same as Section A Invoice Information:
Attention: Accounts Payable Heather Wilson Company Name. AECOM ace Profile #: 11033, 3 42700 Pace Quote Reference: Pace Project Manager: Section C Address: Project Name: 60709371 PRPA CCR Purchase Order No.: NEED PO # Report To: Vasanta Kalluri Section B Required Project Information: Copy To: Jamie Herman roject Number: 60709371 Greenwood Village, CO 80111 jamie.herman@aecom.com 6200 South Quebec St Requested Due Date/TAT: STOINC Required Client Information: Phone: (303) 740-2614 AECOM Section D Company: Address: Email To:

		Chlorine (Y/V)	Residual Of Pace Project No./ Lab I.D.			SAMPLE CONDITIONS	Geceived on Cooler (Y/N) Samples Intact Cooler (Y/N) Samples Intact
Requested Analysis Filtered (Y/N)	GN CHILD	M 22.6	0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	> -> -> -> -> -> -> -> -> -> -> -> -> ->		BBY AFFILIATION DATE TIME	DATE Signed (MM/IDD/YY): 05/69/22
	Preservatives	E TEMP AT COLLECTION Served 2 Published Served Served Served Served	Other Methanic Massacian Machanic Macha	>		DATE TIME ACCEPTED BY AFFILIATION	MPLER: MOCCT NOTE (M) FF month for any invoices not paid within 30 days.
(ye	el of sebi	COMPOSITE COMPOSITE START STAR	SAMP DATE DATE			RELINQUISHED BY / AFFILIATION	SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: SIGNATURE of SAMPLER: 30 day payment terms and agreeing to late charges of 1.5% per month for ar
atrix Co		SAMPLE ID WHE WAS WANTER WANTE	2 BAT-11-CCK 2 Bat-10-CCK 3 Bat-01-CCR	5 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	10 11 12	Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TI 'B, Ca, Li	SAMPLER NAME AND SIG PRINT Name of SAM Signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per 18

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

ENV-FRM-GBUR-0088 v07_Sample Co	ondition Upon Receipt-Greensburg
Effective Date: 01/04/2024	
Client Name:	Project #:

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client	□ Com	merci	al 🗆 P	ace 🗆 Other		Initial / Date
Tracking Number:						Examined By:
Custody Seal on Cooler/Box Present: Type Thermometer Used: Type	es □N oe of Io	e: W	/et Bl	ue None	'es □No	Labeled By: Temped By: •C Final Temp:•C
Cooler Temperature: Observed Temp Temp should be above freezing to 6°C			COITE			
Temp should be above freezing to o-c				pH paper Lot	#	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					2/4	
Matrix:						
Samples Arrived within Hold Time:				6.		
Short Hold Time Analysis (<72hr				7.		
remaining):						
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:		- 1760
Filtered volume received for dissolved tests:				15:		
All containers checked for preservation:				16.		
exceptions: VOA, coliform, TOC, O&G,						
Phenolics, Radon, non-aqueous matrix		191 193	- 200		3 74 - 10 74	The attractor (6.6)
All containers meet method preservation				Initial when completed		Date/Time of Preservation
requirements:				Lot# of added		7,000,744,000
				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:				PARTICIPATION OF THE PARTICIPATION		eal present? YES or NO
Rad Samples Screened <.05 mrem/hr.				nitial when completed	Date:	5/10/24 Survey Meter SN: 250/(1380
Comments:				W		155

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.

Updated CoC received your

LAB USE ONLY 907 6/3/2024 Z Samples Intact (Y) or 5/10/2024 Results Requested By: *Please Provide QC sheets with report Requested Analysis × 3 Yes × × × Radium Sum Total Owner Received Date: State Of Origin: CO Radium 228 Received on Ice × × × Radium 226 Date/Time Cert. Needed: Preserved Containers 7976 7 2 7 ниоз Samples Pre-Logged into eCOC Z Matrix Water Water Water Custody Seal (N) or Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600 Received By 60709371 PRPA CCR my 60452675003 60452675002 60452675001 Rush Multiplier Lab ID Subcontract To Internal Transfer Chain of Custody Date/Time 5/9/2024 09:05 5/9/2024 11:15 5/9/2024 14:30 Date/Time Collect Workorder Name: ပ Sample Type PS PS PS Cooler Temperature on Receipt Workorder: 60452675 Released By Pace Analytical Kansas Lenexa, KS 66219 Phone 1(913)563-1407 9608 Loiret Blvd. Heather Wilson Item | Sample ID BAT-10-CCR BAT-11-CCR BAT-01-CCR **Transfers** Report To

***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.

MO#:30683331 30683331 Page 1 of 1

ENV-FRM-GBUR-0088 v07_Sample Condition Upon Receipt

Effective Date: 01/04/2024

WO#:30683331

PM: MAR

Due Date: 06/03/2

CLIENT: PACE_60_LEKS

Client Name: Pack-KS (AROM)). ο _ј ευι π.
	oce Other Initial / Date
Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pa	Examined By: VB 5-10-24

Tracking Number: 7140 L510 UM6 Labeled By: _ Lの S-1いと Yes □No Seals Intact: ☑ Yes □No Custody Seal on Cooler/Box Present: Temped By: _ Type of Ice: Wet Blue None Thermometer Used: Final Temp: Cooler Temperature: Observed Temp ______ °C Correction Factor: _ Temp should be above freezing to 6°C D.P.D. Residual Chlorine Lot # pH paper Lot# 100293 NA No Yes received the small on 5-10-14 Comments: Chain of Custody Present 2. Chain of Custody Filled Out: -Were client corrections present on COC 3. Only on original Col Chain of Custody Relinquished Sampler Name & Signature on COC: Sample Labels match COC: -Includes date/time/ID WT Matrix: 6. Samples Arrived within Hold Time: 7. Short Hold Time Analysis (<72hr remaining): 8. Rush Turn Around Time Requested: 9. Sufficient Volume: 10. Correct Containers Used: -Pace Containers Used 11. Containers Intact: × 12. Orthophosphate field filtered: 13. Hex Cr Aqueous samples field filtered: × Organic Samples checked for dechlorination 14: X 15: Filtered volume received for dissolved tests: 16. All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix Date/Time of Initial when All containers meet method preservation Preservation completed requirements: Lot# of added Preservative 17. 8260C/D: Headspace in VOA Vials (> 6mm) 18. 624.1: Headspace in VOA Vials (0mm) X 19. Radon: Headspace in RAD Vials (0mm) X Trip blank custody seal present? YES or NO X Trip Blank Present: Survey Meter SN: 2 SOL 1380 Initial when Rad Samples Screened <.05 mrem/hr. completed 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.

MO#: 40684441

PM: MAR

CLIENT: PACE_60_LEKS

Due Date: 06/03/24

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section C

RA PA PA

DRINKING WATER 520 B Pace Project No./ Lab I.D. SAMPLE CONDITIONS of L 2 **GROUND WATER** Page: Residual Chlorine (Y/N) N/N 00 REGULATORY AGENCY RCRA TIME 1000 Requested Analysis Filtered (Y/N) MAIDE Site Location STATE: PC/01/2 NPDES DATE Kadlum UST 2 SCHOC LDS 470 Total Mercury ACCEPTED BY / AFFILIATION ** slstaM lstoT 0 r 0 č Lord - Have 3 N/A tast zisylsnA1 Same as Section A Other Accounts Payable Methanol Heather Wilson Preservatives Na₂S₂O₃ Company Name. AECOM ace Profile #: 11033, 3 HOBN 42700 HCI Invoice Information: HNO3 OSZH Reference: Pace Project Manager: Pace Quote Unpreserved TIME Address: # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION 50 DATE 1430 Philips 0905 TIME COMPOSITE END/GRAB DATE COLLECTED RELINQUISHED BY / AFFILIATION 60709371 PRPA CCR TIME COMPOSITE NEED PO# DATE Report To: Vasanta Kalluri Copy To: Jamie Herman Project Number: 60709371 Required Project Information 'urchase Order No.: 0 NP) (G=GRAB C=COMP) SAMPLE TYPE (see valid codes to left) MATRIX CODE Project Name: Valid Matrix Codes TS AWP TS MATRIX
DRINKING WATER
WATER
WASTE WATER
PRODUCT
SOIL/SOLID OIL WIPE AJR OTHER TISSUE Greenwood Village, CO 80111 jamie.herman@aecom.com ADDITIONAL COMMENTS Requested Due Date/TAT: CHOING 6200 South Quebec St (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE 'Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TI SAMPLE ID Required Client Information (303) 740-2614 Required Client Information: AECOM Section D B, Ca, Li Company: Email To: Address. -hone: 10 7 12 9 8 6 # MaTI 1

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

(MM/DD/YY): 05/69

(V/V)

Cooler (Y/N)

Custody Sealed

ICE (Y/N) Received on

J° ni qma⊤

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.

Page 16 of 18

PRINT Name of SAMPLER: SIGNATURE of SAMPLER:

Pace Analytical"

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Ra-226 LL1 5/14/2024

79174 DW Test:
Analyst:
Date:
Batch ID:
Matrix:

3254028 -0.089 0.174 0.479 -1.00 MB Sample ID MB concentration: WB Counting Uncertainty: MB MDC: MB Numerical Performance Indicator: Method Blank Assessment

N/A Pass

MB Status vs Numerical Indicator: MB Status vs. MDC:

Laboratory Control Sample Assessment

	Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
	Sample Collection Date:		
	Sample I.D.		
	Sample MS 1:0		
	Spike I.D.:		
	MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
	Spike Volume Used in MS (mL):		
	Spike Volume Used in MSD (mL):		
	MS Aliquot (L, 9, F):		
	MS Target Conc.(pCi/L, g, F):		
	MSD Aliquot (L, g, F):		
	MSD Target Conc. (pCi/L, g, F):		
	MS Spike Uncertainty (calculated):		
	MSD Spike Uncertainty (calculated):		
LCSD79174	Sample Result:		
6/4/2024	Sample Result Counting Uncertainty (pCi/L, g, F):		
23-063	Sample Matrix Spike Result:		
32.299	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
0.10	Sample Matrix Spike Duplicate Result:		
0.656	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
4.925	MS Numerical Performance Indicator:		
0.231	MSD Numerical Performance Indicator:		
83	MS Percent Recovery:		
1.469	MSD Percent Recovery:		
-0.10	MS Status vs Numerical Indicator:		
98.53%	MSD Status vs Numerical Indicator:		
N/A	MS Status vs Recovery:		
Pass	MSD Status vs Recovery:		
133%	MS/MSD Upper % Recovery Limits:		
73%	MS/MSD Lower % Recovery Limits:		

LCS79174 6/4/2024 23-063 32.299 0.10 0.652 4.957 0.233 4.143

Count Date: Spike I.D.:

Spike Concentration (pCi/mL): Volume Used (mL):

Aliquot Volume (L. g. F):
Target Conc. (pCi/L. g. F):
Uncertainty (Calculated):
Result (pCi/L. g. F):
LCS/LCSD Counting Uncertainty (pCi/L. g. F):
Numerical Performance Indicator:

Status vs Recovery: Upper % Recovery Limits: Lower % Recovery Limits:

Percent Recovery: Status vs Numerical Indicator

Duplicate Sample Assessment			Matrix Spi
Sample I.D.:	LCS79174	Enter Duplicate	
Duplicate Sample I.D.	LCSD79174	sample IDs if	
Sample Result (pCi/L, g, F):	4.143	other than	
Sample Result Counting Uncertainty (pCi/L, g, F):	1.254	LCS/LCSD in	
Sample Duplicate Result (pCi/L, g, F):	4.853	the space below.	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	1.469		
Are sample and/or duplicate results below RL?	2		Matrix Sp
Duplicate Numerical Performance Indicator:	-0.720		
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	16.41%		(Base
Duplicate Status vs Numerical Indicator:	N/A		
Duplicate Status vs RPD:	Pass		
% RPD Limit:	32%		

Spike/Matrix Spike Duplicate Sample Assessment Sample 1.D. Sample 1.D. Sample 1.D. Sample MS 1.D. Sample MSD 1.D. Sample MSD 1.D. Sample MSD 1.D. Sample MSD 1.D. Sample Matrix Spike Result: Sample Matrix Spike Duplicate Result: C Spike Duplicate Result Counting Uncertainty (DCI/L, g, F): Duplicate Result Counting Uncertainty (DCI/L, g, F): Duplicate Numerical Performance Indicator: assed on the Percent Recoveries) MS/ MSD Duplicate RPD: MS/ MSD Duplicate Status vs Numerical Indicator: MS/ MSD Duplicate Status vs Rumerical Indicator:					
Spike/Matrix Spike Duplicate Sample Assessment Sample 1.D. Sample MS 1.D. MS 1.D.					
Matrix (B	Matrix Spike Duplicate Result Counting Uncertainty (pCiV., g. F); Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/ MSD Duplicate RPD: MS/ MSD Duplicate Status vs Numerical Indicator: MS/ MSD Duplicate Status vs Numerical Indicator: MS/ MSD Duplicate Status vs RPD: MS/ MSD Duplicate Status vs RPD:	Matrix Spike Result Counting Uncertainty (pCl/L, g, F): Sample Matrix Spike Duplicate Result:	Sample MSD I.D. Sample Matrix Spike Result:	Sample I.D. Sample MS I.D.	Matrix Spike/Matrix Spike Duplicate Sample Assessment

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

Comments:

در مه مه سه DINC WIS 124

Pace Analytical"

Quality Control Sample Performance Assessment

JJS1 5/17/2024 79175 WT Date: Worklist: Matrix: Analyst:

MS/MSD 2

MS/MSD 1

Sample I.D. Sample MS I.D.

Sample Collection Date:

Sample Matrix Spike Control Assessment

Sample MSD 1.D. Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL):

Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc.(pCi/L, g, F):

MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F):

Sample Result:

Analyst Must Manually Enter All Fields Highlighted in Yellow

0.333 0.329 0.675 1.99 Pass MB Sample ID M/B 2 Sigma CSU: MB MDC: MB Numerical Performance Indicator: MB Status vs Numerical Indicator: MB Status vs. MDC: MB concentration: Wethod Blank Assessment

Sample Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator MSD Percent Recovery MS Status vs Numerical Indicator MSD Status vs Numerical Indicator MS Status vs Recovery MS Spike Uncertainty (calculated) MSD Spike Uncertainty (calculated) CSD79175 -0.90 90.30% 23-043 36.575 0.10 0.820 4.461 0.219 4.028 0.919 N/A Pass 135% 60% LCS79175 5/29/2024 23-043 36.575 CSD (Y or N) 0.85 110.68% 0.10 0.818 4.470 0.219 1.083 4.947 Ϋ́

> Target Conc. (pCi/L, g, F): Result (pCi/L, g, F):

LCS/LCSD 2 Sigma CSU (pCi/L, g, F): Numerical Performance Indicator:

Percent Recovery: Status vs Numerical Indicator Status vs Recovery: Upper % Recovery Limits: Lower % Recovery Limits:

Count Date:

Laboratory Control Sample Assessment

Spike I.D.

Decay Corrected Spike Concentration (pCi/mL):

Volume Used (mL): Aliquot Volume (L, g, F): Uncertainty (Calculated):

MS Percent Recovery

Matrix Spike Result 2 Sigma CSU (pCi/L, g, F). Matrix Spike/Matrix Spike Duplicate Sample Assessment other than LCS/LCSD in Enter Duplicate ne space below sample IDs if LCS79175 LCSD79175 4.947 NO 1.268 20.28% 1.083 4.028 0.919 Pass Pass 36%

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?

Duplicate Numerical Performance Indicator

(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:

Duplicate Status vs Numerical Indicator

Sample I.D.: Duplicate Sample I.D.

Duplicate Sample Assessmen

Sample I.D. Sample MS I.D.

MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits

MSD Status vs Recovery

Sample MSD I.D.

Sample Matrix Spike Result:

MS/ MSD Duplicate Status vs RPD: % RPD Limit: Sample Matrix Spike Duplicate Result. Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): Duplicate Numerical Performance Indicator. (Based on the Percent Recoveries) MS/ MSD Duplicate RPD MS/ MSD Duplicate Status vs Numerical Indicator. 19/24

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

Duplicate Status vs RPD: % RPD Limit:

Comments:

Ra-228 NELAC DW2 Printed: 6/3/2024 1:26 PM

6 of 11





June 27, 2024

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

RE: Project: 60731303 PRPA CCR

Pace Project No.: 60452741

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 11, 2024. 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 Wilson

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

Databa m. Wilson

Enclosures

cc: Ann Cinabro, AECOM Jamie Herman, AECOM Jeremy Hurshman, AECOM







CERTIFICATIONS

Project: 60731303 PRPA CCR

Pace Project No.: 60452741

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219 Arkansas Inorganic Drinking Water Certification

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



SAMPLE SUMMARY

Project: 60731303 PRPA CCR

Pace Project No.: 60452741

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60452741001	BAT-13-CCR	Water	05/10/24 14:20	05/11/24 09:15

(913)599-5665



SAMPLE ANALYTE COUNT

Project: 60731303 PRPA CCR

Pace Project No.: 60452741

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60452741001	BAT-13-CCR	EPA 6010	JXD	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JXD	1	PASI-K
		EPA 9056	PL	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City



ANALYTICAL RESULTS

Project: 60731303 PRPA CCR

Pace Project No.: 60452741

Date: 06/27/2024 09:28 AM

Sample: BAT-13-CCR	Lab ID: 604	52741001	Collected: 05/10/2	24 14:20	Received: 05	5/11/24 09:15 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Meth	od: EPA 60	10 Preparation Met	hod: EP	A 3010			
	Pace Analytica	Services -	Kansas City					
Boron	1470	ug/L	100	1	05/21/24 14:52	05/30/24 10:10	7440-42-8	
Calcium	245000	ug/L	200	1	05/21/24 14:52	05/30/24 10:10	7440-70-2	
Lithium	273	ug/L	10.0	1	05/21/24 14:52	05/30/24 10:10	7439-93-2	
6020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Met	hod: EP	A 3010			
	Pace Analytica	Services -	Kansas City					
Antimony	ND	ug/L	3.0	3	05/20/24 10:32	06/25/24 12:20	7440-36-0	D3
Arsenic	8.6	ug/L	3.0	3	05/20/24 10:32	06/25/24 12:20	7440-38-2	
Barium	223	ug/L	3.0	3	05/20/24 10:32	06/25/24 12:20	7440-39-3	
Beryllium	ND	ug/L	1.5	3	05/20/24 10:32	06/25/24 12:20	7440-41-7	D3
Cadmium	ND	ug/L	1.5	3	05/20/24 10:32	06/25/24 12:20	7440-43-9	D3
Chromium	29.4	ug/L	3.0	3	05/20/24 10:32	06/25/24 12:20	7440-47-3	
Cobalt	12.8	ug/L	3.0	3	05/20/24 10:32	06/25/24 12:20	7440-48-4	
Lead	16.1	ug/L	3.0	3	05/20/24 10:32	06/25/24 12:20	7439-92-1	
Molybdenum	61.0	ug/L	3.0	3	05/20/24 10:32	06/25/24 12:20	7439-98-7	
Selenium	14.6	ug/L	3.0	3	05/20/24 10:32	06/25/24 12:20	7782-49-2	
Thallium	ND	ug/L	3.0	3	05/20/24 10:32	06/25/24 12:20	7440-28-0	D3
7470 Mercury	Analytical Meth	od: EPA 74	70 Preparation Met	hod: EP	A 7470			
	Pace Analytica	Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	05/20/24 12:41	05/21/24 13:18	7439-97-6	
9056 IC Anions	Analytical Meth	od: EPA 90	56					
	Pace Analytica	Services -	Kansas City					
Chloride	31.4	mg/L	10.0	10		05/29/24 06:22	16887-00-6	
Fluoride	0.83	mg/L	0.20	1		05/29/24 06:01		N2
Sulfate	2800	mg/L	200	200		05/29/24 06:43	14808-79-8	



Mercury

Date: 06/27/2024 09:28 AM

QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60452741

QC Batch: 894580 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452741001

METHOD BLANK: 3540364 Matrix: Water

Associated Lab Samples: 60452741001

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Mercury ug/L ND 0.20 05/21/24 12:17

LABORATORY CONTROL SAMPLE: 3540365

Spike LCS LCS % Rec Conc. % Rec Limits Parameter Units Result Qualifiers Mercury 5 5.0 101 80-120 ug/L

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3540366 3540367

MS MSD 60452178001 Spike Spike MS MSD MS MSD % Rec Max Units Conc. Result Result **RPD** RPD Parameter Result Conc. % Rec % Rec Limits Qual ND 5 20

Mercury ug/L ND 5 5 4.9 4.8 97 97 75-125 0 20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3540368 3540369

MS MSD

5

60452636007 MS MSD MS MSD % Rec Max Spike Spike RPD Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD Qual 5 5 4.9 20 Mercury ND 4.8 97 96 75-125 ug/L

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3540370 3540371

ND

ug/L

MSD MS 60452423002 Spike Spike MS MSD MS MSD % Rec Max Result Parameter Units Conc. Conc. Result Result % Rec % Rec **RPD** RPD Qual Limits

5

5.0

5.2

101

104

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.



Lithium

Date: 06/27/2024 09:28 AM

QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60452741

QC Batch: 895256 Analysis Method: QC Batch Method: EPA 3010 Analysis Description:

6010 MET Laboratory: Pace Analytical Services - Kansas City

EPA 6010

Associated Lab Samples: 60452741001

METHOD BLANK: Matrix: Water

3543208

ug/L

Associated Lab Samples: 60452741001

Blank Reporting Qualifiers Parameter Units Result Limit Analyzed Boron ND 100 05/30/24 09:37 ug/L Calcium ND 200 05/30/24 09:37 ug/L Lithium ND 05/30/24 09:37 ug/L 10.0

LABORATORY CONTROL SAMPLE: Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Boron 1000 970 97 80-120 ug/L

1000

10000 10400 Calcium ug/L 104 80-120 Lithium ug/L 1000 1040 104 80-120

24.2

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3543209 3543210 MS MSD 60452938007 MSD MSD Spike Spike MS MS % Rec Max Qual Parameter Conc. Result % Rec % Rec **RPD** RPD Units Result Conc. Result Limits ug/L 1050 20 Boron ND 1000 1000 1020 97 100 75-125 3 Calcium 370000 10000 374000 367000 ug/L 10000 37 -31 75-125 2 20 M1

1000

1080

1110

105

109

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.



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60452741

Date: 06/27/2024 09:28 AM

QC Batch: 895054 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452741001

METHOD BLANK: 3542472 Matrix: Water

Associated Lab Samples: 60452741001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	06/25/24 10:23	
Arsenic	ug/L	ND	1.0	06/25/24 10:23	
Barium	ug/L	ND	1.0	06/25/24 10:23	
Beryllium	ug/L	ND	0.50	06/25/24 10:23	
Cadmium	ug/L	ND	0.50	06/25/24 10:23	
Chromium	ug/L	ND	1.0	06/25/24 10:23	
Cobalt	ug/L	ND	1.0	06/25/24 10:23	
Lead	ug/L	ND	1.0	06/25/24 10:23	
Molybdenum	ug/L	ND	1.0	06/25/24 10:23	
Selenium	ug/L	ND	1.0	06/25/24 10:23	
Thallium	ug/L	ND	1.0	06/25/24 10:23	

LABORATORY CONTROL SAMPLE:	3542473					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	ug/L	40	37.7	94	80-120	
Arsenic	ug/L	40	35.7	89	80-120	
Barium	ug/L	40	40.0	100	80-120	
Beryllium	ug/L	40	36.0	90	80-120	
Cadmium	ug/L	40	37.8	95	80-120	
Chromium	ug/L	40	43.3	108	80-120	
Cobalt	ug/L	40	39.4	99	80-120	
Lead	ug/L	40	41.1	103	80-120	
Molybdenum	ug/L	40	39.3	98	80-120	
Selenium	ug/L	40	33.3	83	80-120	
Thallium	ug/L	40	39.1	98	80-120	

MATRIX SPIKE & MATRIX S	SPIKE DUPL	ICATE: 3542	474		3542475							
			MS	MSD								
		60452753001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	ug/L	ND	40	40	37.4	38.1	93	95	75-125	2	20	
Arsenic	ug/L	ND	40	40	35.8	36.9	88	90	75-125	3	20	
Barium	ug/L	51.0	40	40	94.9	94.5	110	109	75-125	0	20	
Beryllium	ug/L	ND	40	40	35.5	34.7	89	87	75-125	2	20	
Cadmium	ug/L	ND	40	40	35.6	36.1	89	90	75-125	2	20	
Chromium	ug/L	1.6	40	40	41.8	43.1	100	104	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.



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60452741

Date: 06/27/2024 09:28 AM

MATRIX SPIKE & MATRIX S	SPIKE DUPLIC	CATE: 3542	474 MS	MSD	3542475							
	6	0452753001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Cobalt	ug/L	ND	40	40	38.5	39.7	95	98	75-125	3	20	
Lead	ug/L	ND	40	40	37.5	37.9	93	94	75-125	1	20	
Molybdenum	ug/L	4.8	40	40	46.9	47.8	105	107	75-125	2	20	
Selenium	ug/L	3.1	40	40	35.2	35.9	80	82	75-125	2	20	
Thallium	ug/L	ND	40	40	37.7	38.1	94	95	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.



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60452741

QC Batch: 895864 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452741001

METHOD BLANK: 3545640 Matrix: Water

Associated Lab Samples: 60452741001

Blank Reporting Parameter Units Limit Qualifiers Result Analyzed Chloride mg/L ND 1.0 05/28/24 14:52 Fluoride mg/L ND 0.20 05/28/24 14:52 N2 Sulfate mg/L ND 05/28/24 14:52 1.0

LABORATORY CONTROL SAMPLE: 3545641

Date: 06/27/2024 09:28 AM

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	5	5.1	102	80-120	_
Fluoride	mg/L	2.5	2.5	100	80-120 I	N2
Sulfate	mg/L	5	5.0	100	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.



QUALIFIERS

Project: 60731303 PRPA CCR

Pace Project No.: 60452741

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

Date: 06/27/2024 09:28 AM

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.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A

complete list of accreditations/certifications is available upon request.

(913)599-5665



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731303 PRPA CCR

Pace Project No.: 60452741

Date: 06/27/2024 09:28 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60452741001	BAT-13-CCR	EPA 3010	895256	EPA 6010	895387
60452741001	BAT-13-CCR	EPA 3010	895054	EPA 6020	895169
60452741001	BAT-13-CCR	EPA 7470	894580	EPA 7470	895142
60452741001	BAT-13-CCR	EPA 9056	895864		

WO#:60452741

DC#_Title: EN	V-FRM-LENE-0009_Sample C	60452741
Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa
- A - WA		

Client Name: A ecom Ourier: FedEx D UPS UPS UPS UPS UPS UPS UPS UPS UPS UPS	EX 🗆 ECI		Pace □ Xroads □ Client □ Other □
ourier: TedEx 010 E	e Shipping Lab	el Used	
sustody Seal on Cooler/Box Present: Yes No	Seals intact:	Yes/2	
acking Material: Bubble Wrap 🖫 Bubble Bags 🗆	Foa	am 🗆	None ☐ Other ☐
doming many	Ice: Wet Blu	ue Non	e Date and initials of person
coler Temperature (°C): As-read 1, D Corr. Factor	or O O	Correct	
emperature should be above freezing to 6°C			AF 9/13
COLUMN TO THE PARTY OF THE PART	Nes □No	□N/A	
Chain of Custody present:	Yes ONo	□N/A	
Chain of Custody relinquished:	-/		
Samples arrived within holding time:	☑Yes □No	□N/A	
Short Hold Time analyses (<72hr):	□Yes DNo	□N/A	
Rush Turn Around Time requested:	□Yes □ No	□n/a	
	Yes □No	□n/a	
Sufficient volume:	Yes □No	□n/a	
Correct containers used:			
Pace containers used:	LYes □No	□N/A	
Containers intact:	ØYes □No	□N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	□Yes □No	DNIA	
	□Yes □No	DN/A	
Filtered volume received for dissolved tests?			
Sample labels match COC: Date / time / ID / analyses	DYES DNo		
Samples contain multiple phases? Matrix: W	□Yes □No		List sample IDs, volumes, lot #'s of preservative and the
Containers requiring pH preservation in compliance?	IØYes □No	□N/A	date/time added.
(HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide)	# 63090N)	
(Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# Cyanide water sample checks:			
Lead acetate strip turns dark? (Record only)	□Yes ŪMo		
Potassium iodide test strip turns blue/purple? (Preserve)	□Yes INO		•
Trip Blank present:	□Yes □No	DINIA	
Headspace in VOA vials (>6mm):	□Yes □No	□ N/A	
	□Yes □No	BN/A	
Samples from USDA Regulated Area: State:		1/	
Additional labels attached to 5035A / TX1005 vials in the field	d? □Yes □No		Field Data Required? Y / N
Client Notification/ Resolution: Copy COC		/ IN	Field Bala (184-1919)
Person Contacted: Date/	/Time:		
Comments/ Resolution:			
		Da	te:
Project Manager Review:	_	20	

CHAIN-OF-CUSTODY / Analytical Request Document

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

Pace Analytical www.paceenus.com

ent

DRINKING WATER ✓ OTHER GROUND WATER Page: 00 REGULATORY AGENCY RCRA Site Location NPDES STATE □ UST Same as Section A Reference:
Pace Project Heather Wilson Manager:
Pace Profile #: 11033, 3 Accounts Payable Company Name: AECOM 42700 Invoice Information: Section C ace Quote Attention: Address: Project Name: 60709371 PRPA CCR Purchase Order No: NEED PO# Report To: Vasanta Kalluri Copy To: Jamie Herman Project Number: 60709371 Section B Required Project Information: Greenwood Village, CO 80111 jamie.herman@aecom.com 6200 South Quebec St Fax: hone: (303) 740-2614 Section A Required Client Information: Requested Due Date/TAT: AECOM отрапу: Email To: Address:

nedres	vequested Due Date/ I.A.I.	Figlect Number: 60709377	. Del.	201033	-				ני ט	Tace Piolife #.	11033, 3	ئ						STATE:	TE:					
														Ц	Req	Requested Analysis Filtered (Y/N)	Anal	ysis Fi	Itered	(V/N)				
	Section D Valid M Required Client Information MATRIX	Valid Matrix Codes		(awc	_	COLLECTED	TED			,	Preservatives	atives		⊉ N/A	1	1								
		DRINKING WATER DW WATER WT WASTE WW PRODUCT P SCILSOLID SL OIL	see valid codes	=GRAB C=CC	COMPOSITE	ш	COMPOSITE	OLLECTION								**8	f va						1428409	142
	SAMPLE ID WIPE WRE ARE (A-Z, 0-9.1) OTHER Sample IDS MUST BE UNIQUE TISSUE			ED) BAYT				TEMP AT	ЯЗИІАТИ	pəvie		C		tesT eis	F, SO4	stal Meta						ıl Chlorine		
# MƏTİ		×	XIATAM	SAMPLE	DATE	TIME	DATE	TIME SAMPLE	# OE CC	Unprese	HCI HNO ³	HObN O _S S ₂ 6N	Methan	(IsnA↓		T 0108	5240C						ace Project	Pace Project No./ Lab I.D.
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	ADDITIONAL COMMENTS		RELIP	NQUISHE	ED BY / AF	RELINQUISHED BY / AFFILIATION		DATE	F	TIME		AC	ACCEPTED BY / AFFILIATION	ED BY	AFFIL	IATION		DATE	щ	TIME	_		SAMPLE CONDITIONS	SNOILIO
7Sb, A	≁Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tī	Z	CIC	Marcher	Jri F	FINS 4 IN	Y	10124	1550	0.6				6	SAPale	16		pt/11/8		Sylva	<u>ရ</u>	7	7	
8, Ca, ⊔	a. Li																		,		-			
-	F																							
aye	Page				0,	AMPLER	SAMPLER NAME AND SIGNATURE	SIGNATL	IRE												J) 1)	
, 1 4 Ul	e 14 of					P. P.	PRINT Name of SAMPLER:	SAMPLE	R: M0	900	CHIS	30	+17	t	DAT	E Signed	12	1111	3 6		ui qmə	eceived	Ice (Y/N stody Se soler (Y	il səlqm (N\Y)
. 13	f 15					Tr	SIGNATURE of SAMPLER:	of SAMPLE			0	3	Di		(MM	(MM/DD/YY):	3	2	5				Cus	PS .

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

"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.

Pace Analytical Services, LLC

Qualtrax Document ID: 30422

DC# Title: ENV-FRM-LENE-0001_Sample Container Count Revision: 3 | Effective Date: | Issued by: Lenexa

Client

Site

Notes

Profile #

	\neg	-1			Т	Т	Т	_	Т	1	Т	
		4	-		4	4		4	-	4		_
			4		_							4
Other												
SPLC												
WPDU												
SP3Z												
BP3C												
BP3S												
HE9 E												
ВРЗИ												
NIA8	1											
USP3U	1											
BP2U												
Urqa												
MeDn												
мекп												
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VG5U												
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SE50A												
USDA												
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Bein												
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D690												
H69Cl												
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Matrix	1											
COC Line Item	-	2	ю	4	2	9	7	00	თ	10	1-	12

		Glass			Plastic		Misc.
DG9B	40ml hisulfate clear vial	IWGKU	8oz clear soil iar	BP1C	11L NAOH plastic		Wipe/Swab
H650	40mL HCl amber voa vial	WGFU	4oz clear soil jar	BP1N	1L HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag
0690	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic	AF	Air Filter
DG9S	40mL H2SO4 amber vial	AGOU	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate	ပ	Air Cassettes
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2C	500mL NAOH plastic	꼰	Terracore Kit
DG90	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic	n	Summa Can
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic		
VG9T	40mL Na Thio. clear vial	AG10	1liter unpres amber glass	BP2U	500mL unpreserved plastic		
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate		Matrix
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3C	250mL NaOH plastic		
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered	<u></u> ∧	Water
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic	SL	Solid
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic	NAL	Non-aqueous Liquid
WGDU	16oz clear soil iar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic	<u>ا</u>	OIL
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate	WP	Wipe
				BP4U	125mL unpreserved plastic	DW	Drinking Water
				BP4N	125mL HNO3 plastic		
				BP4S	125mL H2SO4 plastic		
					A Charles Languages and Aller		

Work Order Number:





June 27, 2024

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

RE: Project: 60731303 PRPA CCR

Pace Project No.: 60452754

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 10, 2024. 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 Wilson

Databa m. Wilson

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

Enclosures

cc: Ann Cinabro, AECOM Jamie Herman, AECOM Jeremy Hurshman, AECOM



9608 Loiret Blvd. Lenexa, KS 66219 (913)599-5665



CERTIFICATIONS

Project: 60731303 PRPA CCR

Pace Project No.: 60452754

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219 Arkansas Inorganic Drinking Water Certification

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



SAMPLE SUMMARY

Project: 60731303 PRPA CCR

Pace Project No.: 60452754

Lab ID	Sample ID	Matrix	Date Collected	Date Received	
60452754001	BAT-11-CCR	Water	05/09/24 09:05	05/10/24 08:50	
60452754002	BAT-10-CCR	Water	05/09/24 11:15	05/10/24 08:50	
60452754003	BAT-01-CCR	Water	05/09/24 14:30	05/10/24 08:50	



SAMPLE ANALYTE COUNT

Project: 60731303 PRPA CCR

Pace Project No.: 60452754

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60452754001	BAT-11-CCR	EPA 6010	JXD	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JXD	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 9056	PL	3	PASI-K
60452754002	BAT-10-CCR	EPA 6010	JXD	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JXD	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 9056	PL	3	PASI-K
60452754003	BAT-01-CCR	EPA 6010	JXD	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JXD	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 9056	PL	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City



ANALYTICAL RESULTS

Project: 60731303 PRPA CCR

Pace Project No.: 60452754

Date: 06/27/2024 09:29 AM

Sample: BAT-11-CCR	Lab ID: 6045	2754001	Collected: 05/09/2	24 09:05	Received: 05	5/10/24 08:50 N	fatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Met	hod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Boron	398	ug/L	100	1	05/20/24 10:32	05/31/24 12:38	7440-42-8	
Calcium	97500	ug/L	200	1	05/20/24 10:32	05/31/24 12:38	7440-70-2	
Lithium	69.8	ug/L	10.0	1	05/20/24 10:32	05/31/24 12:38	7439-93-2	
6020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Met	hod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Antimony	ND	ug/L	1.0	1	05/20/24 10:32	06/25/24 12:06	7440-36-0	
Arsenic	ND	ug/L	1.0	1	05/20/24 10:32	06/25/24 12:06	7440-38-2	
Barium	41.4	ug/L	1.0	1	05/20/24 10:32	06/25/24 12:06	7440-39-3	
Beryllium	ND	ug/L	0.50	1	05/20/24 10:32	06/25/24 12:06	7440-41-7	
Cadmium	ND	ug/L	0.50	1	05/20/24 10:32	06/25/24 12:06	7440-43-9	
Chromium	ND	ug/L	1.0	1	05/20/24 10:32	06/25/24 12:06	7440-47-3	
Cobalt	ND	ug/L	1.0	1	05/20/24 10:32	06/25/24 12:06	7440-48-4	
Lead	ND	ug/L	1.0	1	05/20/24 10:32	06/25/24 12:06	7439-92-1	
Molybdenum	4.2	ug/L	1.0	1	05/20/24 10:32	06/25/24 12:06	7439-98-7	
Selenium	5.4	ug/L	1.0	1	05/20/24 10:32	06/25/24 12:06	7782-49-2	
Thallium	ND	ug/L	1.0	1	05/20/24 10:32	06/25/24 12:06	7440-28-0	
7470 Mercury	Analytical Meth	od: EPA 74	70 Preparation Met	hod: EP	A 7470			
	Pace Analytical	Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	05/20/24 12:41	05/21/24 13:12	7439-97-6	
2540C Total Dissolved Solids	Analytical Meth	od: SM 25	40C					
	Pace Analytical							
Total Dissolved Solids	667	mg/L	13.3	1		05/14/24 10:27		
9056 IC Anions	Analytical Meth	od: EPA 90	056					
	Pace Analytical	Services -	Kansas City					
Chloride	8.6	mg/L	1.0	1		05/29/24 02:53	16887-00-6	
Fluoride	ND	mg/L	0.20	1		05/29/24 02:53		N2
Sulfate	180	mg/L	50.0	50			14808-79-8	



ANALYTICAL RESULTS

Project: 60731303 PRPA CCR

Pace Project No.: 60452754

Date: 06/27/2024 09:29 AM

Sample: BAT-10-CCR	Lab ID: 6045	52754002	Collected: 05/09/2	4 11:15	Received: 05	5/10/24 08:50 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	od: EPA 60	10 Preparation Meth	nod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Boron	815	ug/L	100	1	05/20/24 10:32	05/31/24 12:46	7440-42-8	
Calcium	425000	ug/L	200	1	05/20/24 10:32	05/31/24 12:46	7440-70-2	
_ithium	230	ug/L	10.0	1	05/20/24 10:32	05/31/24 12:46	7439-93-2	
6020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Meth	nod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Antimony	ND	ug/L	3.0	3	05/20/24 10:32	06/25/24 11:49	7440-36-0	D3
Arsenic	ND	ug/L	3.0	3	05/20/24 10:32	06/25/24 11:49	7440-38-2	D3
Barium	14.4	ug/L	3.0	3	05/20/24 10:32	06/25/24 11:49	7440-39-3	
Beryllium	ND	ug/L	1.5	3	05/20/24 10:32	06/25/24 11:49	7440-41-7	D3
Cadmium	ND	ug/L	1.5	3	05/20/24 10:32	06/25/24 11:49	7440-43-9	D3
Chromium	ND	ug/L	3.0	3	05/20/24 10:32	06/25/24 11:49	7440-47-3	D3
Cobalt	ND	ug/L	3.0	3	05/20/24 10:32	06/25/24 11:49	7440-48-4	D3
₋ead	ND	ug/L	3.0	3	05/20/24 10:32	06/25/24 11:49	7439-92-1	D3
Molybdenum	5.0	ug/L	3.0	3	05/20/24 10:32	06/25/24 11:49	7439-98-7	
Selenium	136	ug/L	3.0	3	05/20/24 10:32	06/25/24 11:49	7782-49-2	
- Thallium	ND	ug/L	3.0	3	05/20/24 10:32	06/25/24 11:49	7440-28-0	D3
470 Mercury	Analytical Meth	od: EPA 74	70 Preparation Meth	nod: EP	A 7470			
	Pace Analytical	Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	05/20/24 12:41	05/21/24 13:14	7439-97-6	
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	10C					
	Pace Analytical	Services -	Kansas City					
Total Dissolved Solids	1860	mg/L	100	1		05/15/24 10:59		
0056 IC Anions	Analytical Meth	od: EPA 90	56					
	Pace Analytical	Services -	Kansas City					
Chloride	29.3	mg/L	1.0	1		05/29/24 03:35	16887-00-6	
Fluoride	ND	mg/L	0.20	1		05/29/24 03:35		N2
Sulfate	3100	mg/L	200	200		05/29/24 04:59		



ANALYTICAL RESULTS

Project: 60731303 PRPA CCR

Pace Project No.: 60452754

Date: 06/27/2024 09:29 AM

Sample: BAT-01-CCR	Lab ID: 6045	52754003	Collected: 05/09/2	4 14:30	Received: 05	5/10/24 08:50 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	od: EPA 60	10 Preparation Meth	nod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Boron	1740	ug/L	100	1	05/20/24 10:32	05/31/24 12:48	7440-42-8	
Calcium	117000	ug/L	200	1	05/20/24 10:32	05/31/24 12:48	7440-70-2	
_ithium	190	ug/L	10.0	1	05/20/24 10:32	05/31/24 12:48	7439-93-2	
6020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Meth	nod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Antimony	ND	ug/L	2.0	2	05/20/24 10:32	06/25/24 11:57	7440-36-0	D3
Arsenic	ND	ug/L	2.0	2	05/20/24 10:32	06/25/24 11:57	7440-38-2	D3
Barium	38.2	ug/L	2.0	2	05/20/24 10:32	06/25/24 11:57	7440-39-3	
Beryllium	ND	ug/L	1.0	2	05/20/24 10:32	06/25/24 11:57	7440-41-7	D3
Cadmium	ND	ug/L	1.0	2	05/20/24 10:32	06/25/24 11:57	7440-43-9	D3
Chromium	ND	ug/L	2.0	2	05/20/24 10:32	06/25/24 11:57	7440-47-3	D3
Cobalt	ND	ug/L	2.0	2	05/20/24 10:32	06/25/24 11:57	7440-48-4	D3
₋ead	ND	ug/L	2.0	2	05/20/24 10:32	06/25/24 11:57	7439-92-1	D3
Molybdenum	3.7	ug/L	2.0	2	05/20/24 10:32	06/25/24 11:57	7439-98-7	
Selenium	ND	ug/L	2.0	2	05/20/24 10:32	06/25/24 11:57	7782-49-2	D3
- Thallium	ND	ug/L	2.0	2	05/20/24 10:32	06/25/24 11:57	7440-28-0	D3
470 Mercury	Analytical Meth	od: EPA 74	70 Preparation Meth	nod: EP	A 7470			
	Pace Analytical	Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	05/20/24 12:41	05/21/24 13:16	7439-97-6	
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	10C					
	Pace Analytical	Services -	Kansas City					
Total Dissolved Solids	1570	mg/L	66.7	1		05/15/24 10:59		
0056 IC Anions	Analytical Meth	od: EPA 90	56					
	Pace Analytical	Services -	Kansas City					
Chloride	686	mg/L	100	100		05/29/24 05:40	16887-00-6	
Fluoride	0.71	mg/L	0.20	1		05/29/24 05:19		N2
Sulfate	1050	mg/L	100	100		05/29/24 05:40		



Project: 60731303 PRPA CCR

Pace Project No.: 60452754

Date: 06/27/2024 09:29 AM

QC Batch: 894580 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452754001, 60452754002, 60452754003

METHOD BLANK: 3540364 Matrix: Water

Associated Lab Samples: 60452754001, 60452754002, 60452754003

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Mercury ug/L ND 0.20 05/21/24 12:17

LABORATORY CONTROL SAMPLE: 3540365

Spike LCS LCS % Rec Conc. % Rec Limits Parameter Units Result Qualifiers Mercury 5 5.0 101 80-120 ug/L

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3540366 3540367

MS MSD 60452178001 Spike Spike

60452178001 Spike Spike MS MSD MS MSD % Rec Max Units Conc. Result Result **RPD** RPD Parameter Result Conc. % Rec % Rec Limits Qual ND 5 20 Mercury ug/L 5 4.9 4.8 97 97 75-125 0

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3540368 3540369

MS MSD 60452636007 MS MSD MS MSD Spike Spike % Rec Max RPD Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD Qual

Mercury ug/L ND 5 5 4.9 4.8 97 96 75-125 1 20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3540370 3540371

MS MSD

60452423002 Spike Spike MS MSD MS MSD % Rec Max Result Parameter Units Conc. Result Result % Rec % Rec **RPD** RPD Conc. Limits Qual Mercury ug/L ND 5 5 5.0 5.2 101 104 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.



Project: 60731303 PRPA CCR

Pace Project No.: 60452754

QC Batch: 895060 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452754001, 60452754002, 60452754003

METHOD BLANK: 3542495 Matrix: Water

Associated Lab Samples: 60452754001, 60452754002, 60452754003

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Boron	ug/L	ND ND	100	05/31/24 12:23	
Calcium	ug/L	ND	200	05/31/24 12:23	
Lithium	ug/L	ND	10.0	05/31/24 12:23	

LABORATORY CONTROL SAMPLE: 3542496

Date: 06/27/2024 09:29 AM

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Boron	ug/L	1000	1000	100	80-120	
Calcium	ug/L	10000	10800	108	80-120	
Lithium	ug/L	1000	1090	109	80-120	

MATRIX SPIKE & MATRIX SP	IKE DUPL	JCATE: 3542	497		3542498							
			MS	MSD								
		60452886008	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Boron	ug/L	ND	1000	1000	995	1070	95	103	75-125	7	20	
Calcium	ug/L	239000	10000	10000	228000	252000	-104	133	75-125	10	20	M1
Lithium	ug/L	37.4	1000	1000	1060	1150	102	111	75-125	8	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.



Project: 60731303 PRPA CCR

Pace Project No.: 60452754

Date: 06/27/2024 09:29 AM

QC Batch: 895054 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452754001, 60452754002, 60452754003

METHOD BLANK: 3542472 Matrix: Water

Associated Lab Samples: 60452754001, 60452754002, 60452754003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	06/25/24 10:23	
Arsenic	ug/L	ND	1.0	06/25/24 10:23	
Barium	ug/L	ND	1.0	06/25/24 10:23	
Beryllium	ug/L	ND	0.50	06/25/24 10:23	
Cadmium	ug/L	ND	0.50	06/25/24 10:23	
Chromium	ug/L	ND	1.0	06/25/24 10:23	
Cobalt	ug/L	ND	1.0	06/25/24 10:23	
Lead	ug/L	ND	1.0	06/25/24 10:23	
Molybdenum	ug/L	ND	1.0	06/25/24 10:23	
Selenium	ug/L	ND	1.0	06/25/24 10:23	
Thallium	ug/L	ND	1.0	06/25/24 10:23	

LABORATORY CONTROL SAMPLE:	3542473					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	ug/L	40	37.7	94	80-120	
Arsenic	ug/L	40	35.7	89	80-120	
Barium	ug/L	40	40.0	100	80-120	
Beryllium	ug/L	40	36.0	90	80-120	
Cadmium	ug/L	40	37.8	95	80-120	
Chromium	ug/L	40	43.3	108	80-120	
Cobalt	ug/L	40	39.4	99	80-120	
Lead	ug/L	40	41.1	103	80-120	
Molybdenum	ug/L	40	39.3	98	80-120	
Selenium	ug/L	40	33.3	83	80-120	
Thallium	ug/L	40	39.1	98	80-120	

MATRIX SPIKE & MATRIX	SPIKE DUPLI	CATE: 3542	474		3542475							
	,	60452752004	MS Spiles	MSD	MC	MCD	MC	MCD	0/ D oo		Mov	
_		60452753001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	ug/L	ND	40	40	37.4	38.1	93	95	75-125	2	20	
Arsenic	ug/L	ND	40	40	35.8	36.9	88	90	75-125	3	20	
Barium	ug/L	51.0	40	40	94.9	94.5	110	109	75-125	0	20	
Beryllium	ug/L	ND	40	40	35.5	34.7	89	87	75-125	2	20	
Cadmium	ug/L	ND	40	40	35.6	36.1	89	90	75-125	2	20	
Chromium	ug/L	1.6	40	40	41.8	43.1	100	104	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.



Project: 60731303 PRPA CCR

Pace Project No.: 60452754

Date: 06/27/2024 09:29 AM

MATRIX SPIKE & MATRIX S			MS	MSD	3542475							
	6	0452753001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Cobalt	ug/L	ND	40	40	38.5	39.7	95	98	75-125	3	20	
Lead	ug/L	ND	40	40	37.5	37.9	93	94	75-125	1	20	
Molybdenum	ug/L	4.8	40	40	46.9	47.8	105	107	75-125	2	20	
Selenium	ug/L	3.1	40	40	35.2	35.9	80	82	75-125	2	20	
Thallium	ug/L	ND	40	40	37.7	38.1	94	95	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.



Project: 60731303 PRPA CCR

Pace Project No.: 60452754

QC Batch: 894321 Analysis Method: SM 2540C

QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452754001

METHOD BLANK: 3539167 Matrix: Water

Associated Lab Samples: 60452754001

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Total Dissolved Solids mg/L ND 5.0 05/14/24 10:24

LABORATORY CONTROL SAMPLE: 3539168

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units **Total Dissolved Solids** mg/L 1000 945 94 80-120

SAMPLE DUPLICATE: 3539169

60452564004 Dup Max Parameter Units Result Result **RPD RPD** Qualifiers 411 **Total Dissolved Solids** mg/L 411 0 10

SAMPLE DUPLICATE: 3539170

Date: 06/27/2024 09:29 AM

60452564002 Dup Max RPD RPD Parameter Units Result Result Qualifiers Total Dissolved Solids 447 10 mg/L 467 4

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.



Project: 60731303 PRPA CCR

Pace Project No.: 60452754

QC Batch: 894428 Analysis Method: SM 2540C

QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452754002, 60452754003

METHOD BLANK: 3539742 Matrix: Water

Associated Lab Samples: 60452754002, 60452754003

Blank Reporting Parameter Units Result Limit Analyzed Qualifiers

Total Dissolved Solids mg/L ND 5.0 05/15/24 10:58

LABORATORY CONTROL SAMPLE: 3539743

Spike LCS LCS % Rec
Parameter Units Conc. Result % Rec Limits Qualifiers

Total Dissolved Solids mg/L 1000 983 98 80-120

SAMPLE DUPLICATE: 3539744

60452876001 Dup Max Parameter Units Result Result **RPD RPD** Qualifiers 1620 **Total Dissolved Solids** mg/L 23 10 D6,H3 2050

SAMPLE DUPLICATE: 3539745

Date: 06/27/2024 09:29 AM

60452766008 Dup Max RPD RPD Parameter Units Result Result Qualifiers 10 Total Dissolved Solids 753 749 mg/L 1

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.

(913)599-5665



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60452754

QC Batch: 895864 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452754001, 60452754002, 60452754003

METHOD BLANK: 3545640 Matrix: Water

Associated Lab Samples: 60452754001, 60452754002, 60452754003

Blank Reporting Limit Qualifiers Parameter Units Result Analyzed Chloride mg/L ND 1.0 05/28/24 14:52 Fluoride mg/L ND 0.20 05/28/24 14:52 N2 Sulfate mg/L ND 05/28/24 14:52 1.0

LABORATORY CONTROL SAMPLE: 3545641

Date: 06/27/2024 09:29 AM

Parameter	Units	Spike Conc.	Result	% Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.1	102	80-120	
Fluoride	mg/L	2.5	2.5	100	80-120	N2
Sulfate	mg/L	5	5.0	100	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.



QUALIFIERS

Project: 60731303 PRPA CCR

Pace Project No.: 60452754

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

Date: 06/27/2024 09:29 AM

D3	Sample was diluted due to the p	presence of high levels of non-targ	et analytes or other matrix interference.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

H3 Sample was received or analysis requested beyond the recognized method holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A

complete list of accreditations/certifications is available upon request.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731303 PRPA CCR

Pace Project No.: 60452754

Date: 06/27/2024 09:29 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60452754001	BAT-11-CCR	EPA 3010	895060	EPA 6010	895170
60452754002	BAT-10-CCR	EPA 3010	895060	EPA 6010	895170
60452754003	BAT-01-CCR	EPA 3010	895060	EPA 6010	895170
60452754001	BAT-11-CCR	EPA 3010	895054	EPA 6020	895169
60452754002	BAT-10-CCR	EPA 3010	895054	EPA 6020	895169
60452754003	BAT-01-CCR	EPA 3010	895054	EPA 6020	895169
60452754001	BAT-11-CCR	EPA 7470	894580	EPA 7470	895142
60452754002	BAT-10-CCR	EPA 7470	894580	EPA 7470	895142
60452754003	BAT-01-CCR	EPA 7470	894580	EPA 7470	895142
60452754001	BAT-11-CCR	SM 2540C	894321		
60452754002	BAT-10-CCR	SM 2540C	894428		
60452754003	BAT-01-CCR	SM 2540C	894428		
60452754001	BAT-11-CCR	EPA 9056	895864		
60452754002	BAT-10-CCR	EPA 9056	895864		
60452754003	BAT-01-CCR	EPA 9056	895864		

Pace

DC#_Title: ENV-FRM-LENE-0009_Sampl

WO#:60452754

Revision: 2 Effective Date: 01/12/202

Client Name: AECOM			
Courier: FedEx UPS UPS VIA Clay F	PEX 🗆 ECI 🗆	Pace □ Xroads □ Client	□ Other □
Tracking #: 714623781598 Pace	e Shipping Label Use	d? Yes□ NoД	
Custody Seal on Cooler/Box Present: Yes ☐ No □	Seals intact: Yes		
Packing Material: Bubble Wrap ☐ Bubble Bags ☐	Foam 🗆	None □ Other 🗹	791(
Thermometer Used: T499 Type of		ne	and initials of person
Cooler Temperature (°C): As-read Corr. Factor Temperature should be above freezing to 6°C	orCorrec	ted 2.(nining contents:
Chain of Custody present:	Z Yes □No □N/A		
Chain of Custody relinquished:	Yes Ono On/A		
Samples arrived within holding time:	✓Yes □No □N/A		
Short Hold Time analyses (<72hr):	□Yes ZNo □N/A		
Rush Turn Around Time requested:	□Yes ØNo □N/A		
Sufficient volume:			
Correct containers used:		-	
	Yes No N/A		
Pace containers used:	7Yes □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	AYes □No □N/A		
Samples contain multiple phases? Matrix: W	□Yes Tho □N/A		
Containers requiring pH preservation in compliance?	✓Yes □No □N/A	List sample IDs, volumes, lot # date/time added.	s of preservative and the
(HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#:	1.7187	date/time added.	
Cyanide water sample checks:	<u> </u>		
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 ØN/A		
Additional labels attached to 5035A / TX1005 vials in the field?			
Client Notification/ Resolution: Copy COC to	Client? Y / N	Field Data Required? Y	/ N
Person Contacted: Date/Tir	me:		
Comments/ Resolution:			
Project Manager Review:	Date		



CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT, All relevant fields must be completed accurately.

Consecution Consecution	March Marc	Section A	Section B	Section C	2
Company to the company Company to the company t	Commonweight Comm	Combanue Arcons	Required Project Information:	Invoice Information:	
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Pace Analytical Services, LLC

DC#_Tritle: ENV-FRM-LENE-0001_Sample Container Count Revision: 3 | Effective Date: | Issued by: Lenexa

Client:

AECOM

14565409

Profile #

Notes

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	COC Line Item	1	2	ъ	4	5	9	7	00	6	10	11	12	Container Codes

	Glass Misc.	ital WGKU 8oz clear soil jar BP1C IL NAOH plastic I Wipe/Swab	al WGFU 4oz clear soil ar BP1N	WG2U 2oz clear soil jar BP1S 1L H2SO4 plastic ZPLC	JGFU 4oz unpreserved amber wide BP1U 1L unpreserved plastic AF	AG0U 100mL unores amber glass BP1Z 1L NaOH, Zn Acetate C	AG1H 1L HCl amber glass BP2C 500mL NAOH plastic R	rved AG1S 1L H2SO4 amber glass BP2N 500mL HNO3 plastic U Summa Can	AG1T 1L Na Thiosulfate clear/amber glass BP2S 500mL H2SO4 plastic	AG1U 1liter unpres amber glass BP2U	AG2N 500mL HNO3 amber glass BP2Z 500mL NaOH, Zn Acetate	AG2S	AG3S 250mL H2SO4 amber glass BP3F 250mL HNO3 plastic - field filtered WT Water	AG2U 500mL unpres amber glass BP3N	AG3U 250mL unpres amber glass BP3U	AG4U 125mL unpres amber glass BP3S 250mL H2SO4 plastic OL OL	AG5U 100mL unpres amber glass BP3Z 250mL NaOH, Zn Acetate WP Wipe	BP4U 125mL unpreserved plastic DW Drinking Water	BP4N 125mL HNO3 plastic	BP4S 125mL H2SO4 plastic	
	Glass																				
		40mL bisulfate clear vial	40mL HCI amber voa vial	40mL MeOH clear vial	40mL TSP amber vial	40mL H2SO4 amber vial	40mL Na Thio amber vial	40mL amber unpreserved	40mL HCI clear vial	40mL Na Thio. clear vial	40mL unpreserved clear vial	1liter H2SO4 clear glass	1 liter unpres glass	250mL HCL Clear glass	250mL Unpres Clear glass	16oz clear soil jar					
ner Codes		DG9B	DG9H	DG9M	DG90	DG9S	DG9T	DG9N	VG9H	VG9T	VG9U	BG1S	BG1U	ВСЗН	BG3U	WGDU					

Work Order Number:





June 14, 2024

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

RE: Project: 60731303 PRPA CCR

Pace Project No.: 60452817

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 14, 2024. 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 Wilson

heather.wilson@pacelabs.com 1(913)563-1407

Databa m. Wilson

Project Manager

Enclosures

cc: Ann Cinabro, AECOM Jamie Herman, AECOM Jeremy Hurshman, AECOM



9608 Loiret Blvd. Lenexa, KS 66219 (913)599-5665



CERTIFICATIONS

Project: 60731303 PRPA CCR

Pace Project No.: 60452817

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
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

Oregon/TNI Certification #: PA200002-015 Pennsylvania/TNI Certification #: 65-00282 Puerto Rico Certification #: PA01457 Rhode Island Certification #: 65-00282

South Dakota Certification

Ohio EPA Rad Approval: #41249

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



SAMPLE SUMMARY

Project: 60731303 PRPA CCR

Pace Project No.: 60452817

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60452817001	BAT-03-CCR	Water	05/13/24 10:05	05/14/24 09:45
60452817002	ERB-02-CCR	Water	05/13/24 10:20	05/14/24 09:45



SAMPLE ANALYTE COUNT

Project: 60731303 PRPA CCR

Pace Project No.: 60452817

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60452817001	BAT-03-CCR	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60452817002	ERB-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



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60452817

Sample: BAT-03-CCR PWS:	Lab ID: 604528 1 Site ID:	17001 Collected: 05/13/24 10:05 Sample Type:	Received:	05/14/24 09:45	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Se	rvices - Greensburg				
Radium-226	EPA 903.1	0.655 ± 0.507 (0.715) C:NA T:96%	pCi/L	05/30/24 13:55	5 13982-63-3	
	Pace Analytical Se	rvices - Greensburg				
Radium-228	EPA 904.0	0.821 ± 0.444 (0.797) C:83% T:77%	pCi/L	05/29/24 15:33	3 15262-20-1	
	Pace Analytical Se	rvices - Greensburg				
Total Radium	Total Radium Calculation	1.48 ± 0.951 (1.51)	pCi/L	06/05/24 10:30	7440-14-4	



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60452817

Sample: ERB-02-CCR PWS:	Lab ID: 604528 ^o Site ID:	17002 Collected: 05/13/24 10:20 Sample Type:	Received:	05/14/24 09:45	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Se	rvices - Greensburg				
Radium-226	EPA 903.1	0.000 ± 0.502 (1.01) C:NA T:92%	pCi/L	05/30/24 13:55	5 13982-63-3	
	Pace Analytical Se	rvices - Greensburg				
Radium-228	EPA 904.0	0.427 ± 0.415 (0.853) C:82% T:74%	pCi/L	05/29/24 15:33	3 15262-20-1	
	Pace Analytical Se	rvices - Greensburg				
Total Radium	Total Radium Calculation	0.427 ± 0.917 (1.86)	pCi/L	06/05/24 10:30	7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60452817

QC Batch: 669505 Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60452817001, 60452817002

METHOD BLANK: 3260259 Matrix: Water

Associated Lab Samples: 60452817001, 60452817002

 Parameter
 Act ± Unc (MDC) Carr Trac
 Units
 Analyzed
 Qualifiers

 Radium-226
 0.0473 ± 0.216 (0.440) C:NA T:88%
 pCi/L
 05/30/24 13:55

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.



QUALITY CONTROL - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60452817

QC Batch: 669507 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: 60452817001, 60452817002

METHOD BLANK: 3260266 Matrix: Water

Associated Lab Samples: 60452817001, 60452817002

 Parameter
 Act ± Unc (MDC) Carr Trac
 Units
 Analyzed
 Qualifiers

 Radium-228
 0.807 ± 0.490 (0.912) C:79% T:71%
 pCi/L
 05/29/24 15:32

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.



QUALIFIERS

Project: 60731303 PRPA CCR

Pace Project No.: 60452817

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

Date: 06/14/2024 06:43 PM

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731303 PRPA CCR

Pace Project No.: 60452817

Date: 06/14/2024 06:43 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60452817001	BAT-03-CCR	EPA 903.1	669505		
60452817002	ERB-02-CCR	EPA 903.1	669505		
60452817001	BAT-03-CCR	EPA 904.0	669507		
60452817002	ERB-02-CCR	EPA 904.0	669507		
60452817001	BAT-03-CCR	Total Radium Calculation	673358		
60452817002	ERB-02-CCR	Total Radium Calculation	673358		

CHAIN-OF-CUSTODY / Analytical Request Document

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

Pace Analytical

DRINKING WATER
OTHER CC/2 T OTHER o GROUND WATER Page: 00 REGULATORY AGENCY RCRA Site Location STATE NPDES UST Same as Section A Accounts Payable Heather Wilson Company Name: AECOM Manager. Pace Profile #: 11033, 3 42700 Invoice Information: Pace Quote Reference: Pace Project Section C Attention: Address. Project Name: 60709371 PRPA CCR Purchase Order No.: NEED PO # Report To: Vasanta Kalluri Copy To: Jamie Herman Project Number: 60709371 Section B Required Project Information: Standard Greenwood Village, CO 80111 jamie.herman@aecom.com 6200 South Quebec St Fax: Phone: (303) 740-2614 Requested Due Date/TAT: Section A Required Client Information: AECOM Company: Email To: Address:

Sequired Client Information SAMPLE ID (A-2, 0-91, -) Sample IDs MUST BE UNIQUE ERT-03-CCR	Valid Matrix Codes MATRIX CODE ORNANICAMEN WA WASTE WATER WW PRODUCT SCUSOLID SL OIL WPE WPE WPE WPE WPE WPE WPE WPE WPE WPE	1 100000 62	(д																200000		Company of the Compan	William Contract Cont
AMPLE ID (A-Z, 0-91,-) Ds MUST BE UNIQUE - 07 - CCR			IMO		COLLECTED	ŒD.			σ.	Preservatives	atives		Z TN/A	9								
AWIPLE ID (A-2, 0-91,-) Ds MUST BE UNIQUE -02 - CCR -02 - CCR		see valid codes	0=0 8ARD=	COMPOSITE		COMPOSITE	ОГГЕСТІОЙ	S				and the state of t	1:						(N/Y)			
BAT-03-CCR ERB-02-CCR) BOOD XIRTAM		DATE	LL SE	DATE	ZAMPLE TEMP AT C	# OF CONTAINER	Unpreserved P ₂ SO ₄	HCI HNO ³	HOBV SO _S O _S Iogetial	Vethanol Jehto	Analysis Test 325-muibs	82S-muibs muibsЯ lst <u>o</u>					Posidual Chlorine	d		-
ERB-02-CCR		M	2	-		1	+	\top						D	t				1 2	Lace	roject	race Project No./ Lab I.D.
		>	4	>	7	\leftarrow	9	2	1,4	12			\times	X					2			
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ADDITIONAL COMMENTS		REL	INQUISH	RELINQUISHED BY / AFFILIATION	FILIATION		DATE	TIME	Ē		ACCI	ACCEPTED BY / AFFILIATION	BY / AF	FILIATIO	z	DATE		TIME	L	SAME	SAMPLE CONDITIONS	SNOI
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				(S)	SAMPLER NAME AND	AME AND S	SIGNATURE	Œ			,						i		0)DE
					PRIN	PRINT Name of S	SAMPLER:		ath	tara Hoppres	5 8	Mád	- 1	ensiesmi	Swit	7			, uị di	bevie N/Y)	98 yt 14) 18	(N/A)
					SIG	SIGNATURE of S	SAMPLER:	/	N	1	1			DATE Signed		15/13	12/		nəT			() dwe:

"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

-
Custody
of
Chain
Transfer
Internal

			Rush Multiplie	Altiplier X		0,	State Of	State Of Origin: CO	8			1	Jace
Mo	Workorder: 60452817	Workorder Name:		Samples Pre-Logged into eCOC 60709371 PRPA CCR	nto eCOC		Cert. Needed: Owner Receiv	Cert. Needed: Yes	Yes Date:	X No 5/14/2024	Results Reguested Bv.		6/5/2024
Rep	Report To		Subcontract To	it To	3					Requeste	9		17071
Hea 9600 Pho Pho	Heather Wilson Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 1(913)563-1407		Pace/ 1638 I Suites Green Phone	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600				925 muibe9	8SS muibeA muibeA mu2 le:				
		-			1	Preserve	Preserved Containers	T					
ltem	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	EONH						LAB	LAB USE ONLY
-	BAT-03-CCR	PS	5/13/2024 10:05	60452817001	Water	2		×	×			100	1
2	ERB-02-CCR	PS	5/13/2024 10:20	60452817002	Water	2		×	×			600	6
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4													
2													
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Tran	Transfers Released By		Date/Time	Received By	المعطد المقلم	. 400	Ď	Date/Time	*Plea	e Provide QC	*Please Provide QC sheets with report		
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7									_				
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ပိ	Cooler Temperature on Receipt	Receipt	sno ၁	Custody Seal Y	or (N)		Receiv	Received on Ice	Y or	(Ne	Samples Intact	t() or	z

***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.



CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical

ENV-FRM-GBUR-0088 v07_Sample Condition Upon Receipt-G

Effective Date: 01/04/2024

WO#: 30683965

PM: MAR

Due Date: 06/05/24

CLIENT: PACE_60_LEKS

Client Name: Pace KS / AEC	COM	(Projec	p & 11 ·		K
Tod Ev □ UPS □ USPS □ Client	□ Com	nmerc	ial 🗆 F	Pace 🗆 Other			Initial / Date
Tracking Number: 7146 2378	00	127	L	1,3-2		1	y: 53 S/14/24
Custody Seal on Cooler/Box Present:	es ⊠N oe of lo	lo	Seals	Intact:	P No	Labeled By: Temped By:	<u>ज्</u> राय विप
Illetinomete.				ection Factor:	<u>. </u>		mp: °C
Cooler Temperature: Observed Temp		_°C	Corre	ection Factor.		C Intaire	
Temp should be above freezing to 6°C				pH paper Lot#	T	D.P.D. Resid	ual Chlorine Lot #
	T	N1 -	TALA	100,2531.	- 1	-	
Comments:	Yes	No	NA	The second secon			
Chain of Custody Present	/		-	1.			
Chain of Custody Filled Out:		L		2.			
-Were client corrections present on COC		/					
Chain of Custody Relinquished				3.			
Sampler Name & Signature on COC: •				4.			
Sample Labels match COC:		<u></u>		5.			
-Includes date/time/ID		WI		•			
Matrix:							
Samples Arrived within Hold Time:	/			6.			
Short Hold Time Analysis (<72hr		/		7.			ae a
remaining):							
Rush Turn Around Time Requested:		/		8.			
Sufficient Volume:	/			9.			
Correct Containers Used:	/			10.			
-Pace Containers Used	/						
Containers Intact:	/	e• 1 ₁		11.			
Orthophosphate field filtered:			/	12.			
Hex Cr Aqueous samples field filtered:			-	13.			
Organic Samples checked for dechlorination			/	14:			
Filtered volume received for dissolved tests:				15:			
All containers checked for preservation:	/			16.			
				0.1			
exceptions: VOA, coliform, TOC, O&G,	7.14			PH.	2		2 34 3 9 93 93 199999
Phenolics, Radon, non-aqueous matrix				Initial when		Date/Time of	
All containers meet method preservation	/.	П		completed		Preservation	
requirements:		N		Lot# of added Preservative			*
				17.			
8260C/D: Headspace in VOA Vials (> 6mm)			/				
624.1: Headspace in VOA Vials (0mm)			/	18.			
Radon: Headspace in RAD Vials (0mm)				19. Trip blank cus	toduca	nal precent?	YES or NO
Trip Blank Present:						ai presenti	
Rad Samples Screened <.05 mrem/hr.	/			Initial when completed 31	Date:	4-24	Survey Meter SN: 25014380
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.

Pace Analytical

Quality Control Sample Performance Assessment

Ra-226 CLM 5/20/2024 79274 DW

Test: Analyst: Date:

Batch ID: Matrix:

3260259

MB Sample ID

Method Blank Assessment

MB concentration:

M/B Counting Uncertainty:

MB MDC:

0.047 0.207 0.440 0.45 N/A Pass

MB Numerical Performance Indicator: MB Status vs Numerical Indicator: MB Status vs. MDC:

Analyst Must Manually Enter All Fields Highlighted in Yellow.

MS/MSD 2																														
MS/MSD 1																														
Sample Matrix Spike Control Assessment	Sample Collection Date:	Sample I.D.	Sample MS I.D.	Sample MSD I.D.	Spike I.D.:	MS/MSD Decay Corrected Spike Concentration (pCi/mL):	Spike Volume Used in MS (mL):	Spike Volume Used in MSD (mL):	MS Aliquot (L, g, F):	MS Target Conc.(pCi/L, g, F):	MSD Aliquot (L, g, F):	MSD Target Conc. (pCi/L, g, F):	MS Spike Uncertainty (calculated):	MSD Spike Uncertainty (calculated):	Sample Result:	Sample Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Result:	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	MS Numerical Performance Indicator:	MSD Numerical Performance Indicator:	MS Percent Recovery:	MSD Percent Recovery:	MS Status vs Numerical Indicator:	MSD Status vs Numerical Indicator:	MS Status vs Recovery:	MSD Status vs Recovery:	MS/MSD Upper % Recovery Limits:	MS/MSD Lower % Recovery Limits:
														٨	LCSD79274	5/30/2024	23-063	32.299	0,10	0.652	4.952	0.233	4.952	1.124	00:00	100.01%	N/A	Pass	133%	73%

						Matri		_						_		
>	LCSD79274	5/30/2024	23-063	32.299	0.10	0.652	4.952	0.233	4.952	1.124	00:00	100.01%	A/N	Pass	133%	73%
LCSD (Y or N)?	LCS79274	5/30/2024	23-063	32.299	0.10	0.651	4.959	0,233	4.027	0.886	-1.99	81.21%	N/A	Pass	133%	73%
Laboratory Control Sample Assessment		Count Date:	Spike I.D.:	Spike Concentration (pCi/mL):	Volume Used (mL.):	Aliquot Volume (L, g, F):	Target Conc. (pCi/L, g, F):	Uncertainty (Calculated):	Result (pCi/L, g, F):	LCS/LCSD Counting Uncertainty (pCi/L, g, F):	Numerical Performance Indicator:	Percent Recovery:	Status vs Numerical Indicator:	Status vs Recovery:	Upper % Recovery Limits:	Lower % Recovery Limits:

Matrix Spike/Matrix Spike Duplicate Sample Assessment	Enter Duplicate Sample I.D. Sample ID.		LCS/LCSD in Sample Matrix Spike Result:	Matrix Spike Re	Sample Matrix Spike Duplicate Result:	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	Duplicate Numerical Performance Indicator:	(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	MS/ MSD Duplicate Status vs Numerical Indicator:	MS/ MSD Duplicate Status vs RPD:	% RPD Limit:
	Enter Dupii sample ID	other the	LCS/LCSI	the space below.							

LCS79274 LCSD79274

4.027 0.886 4.952 1.124 NO -1.267 20.75%

Duplicate Numerical Performance Indicator:

(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD: Duplicate Status vs Numerical Indicator:

Sample I.D.:

Duplicate Sample I.D.:

Sample Result (DG/IL, g, F):

Sample Result Counting Uncertainty (pG/IL, g, F):

Sample Duplicate Result (pG/IL, g, F):

Sample and/or duplicate results (pG/IL, g, F):

Are sample and/or duplicate results below RL?

Duplicate Sample Assessment

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

N/A Pass 32%

Duplicate Status vs RPD: % RPD Limit:

Comments:

Ra-226 NELAC QC Printed: 6/3/2024 2:48 PM

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

MS/MSD 2

MS/MSD 1

Spike I.D.:

Ra-228

Test:

Pace Analytical

Method Blank Assessmen

MSD Ailquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): Sample I.D. Sample MS I.D. Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
MS Numerical Performance Indicator:
MSD Numerical Performance Indicator: Sample Collection Date: Sample MSD I.D. MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): MS Aliquot (L, g, F): MS Target Conc.(pCi/L, g, F): Sample Result Sample Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result MS Percent Recovery MS Status vs Numerical Indicator MSD Status vs Numerical Indicator Spike Volume Used in MSD (mL) MSD Spike Uncertainty (calculated) MSD Percent Recovery Sample Matrix Spike Control Assessment VAL 5/21/2024 79275 WT 0.807 0.490 0.912 3.23 Fail* Pass MB concentration: M/B 2 Sigma CSU: MB MDC: Analyst: Worklist: Matrix: Date: MB Sample ID MB Numerical Performance Indicator: MB Status vs Numerical Indicator: MB Status vs. MDC:

Laboratory Control Sample Assessment	LCSD (Y or N)?	>
	LCS79275	LCSD79275
Count Date:	5/29/2024	5/29/2024
Spike I.D.:	23-043	23-043
Decay Corrected Spike Concentration (pCi/mL):	36.575	36.575
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.821	0.817
Target Conc. (pCi/L, g, F):		4.477
Uncertainty (Calculated):	0.218	0.219
Result (pCi/L, g, F):	4.564	3.995
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.102	0.999
Numerical Performance Indicator:	0.19	-0.92
Percent Recovery:	102.45%	89.23%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	%09	%09

Matrix Spike/Matrix Spike Duplicate Sample Assessment	Sample I.D.	Sample MS I.D.	Sample MSD I.D.	Sample Matrix Spike Result:	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:	Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	Duplicate Numerical Performance Indicator:	(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	MS/ MSD Duplicate Status vs Numerical Indicator:	MS/ MSD Duplicate Status vs RPD:	% RPD Limit:

other than LCS/LCSD in the space below.

4.564 1.102 3.995 0.999

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?

Duplicate Numerical Performance Indicator:

(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:

Duplicate Status vs Numerical Indicator

NO 0.749 13.79%

Pass Pass 36%

Duplicate Status vs RPD: % RPD Limit:

Enter Duplicate sample IDs if

LCS79275 LCSD79275

Sample I.D.: Duplicate Sample I.D.

Duplicate Sample Assessment

MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:

MS Status vs Recovery MSD Status vs Recovery

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

*# the lowest activity samp

Comments:

between is greater than ten times the blank weters, the blank ris acceptable, otherwise this batch must be re-prepage. Must a chart 4 < Must Palls

6 of 11

Ra-228_79275_W Ra-228 (ENV-FRM-GBUR-0295 03).xls





June 18, 2024

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

RE: Project: 60731455 PRPA CDPHE

Pace Project No.: 60452818

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 14, 2024. 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 Wilson

Databa m. Wilson

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

Enclosures

cc: Ann Cinabro, AECOM Jamie Herman, AECOM Jeremy Hurshman, AECOM







CERTIFICATIONS

Project: 60731455 PRPA CDPHE

Pace Project No.: 60452818

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

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



SAMPLE SUMMARY

Project: 60731455 PRPA CDPHE

Pace Project No.: 60452818

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60452818001	BAT-13-CDPHE	Water	05/10/24 14:20	05/14/24 09:45

(913)599-5665



SAMPLE ANALYTE COUNT

Project: 60731455 PRPA CDPHE

Pace Project No.: 60452818

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60452818001	BAT-13-CDPHE	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



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60731455 PRPA CDPHE

Pace Project No.: 60452818

Sample: BAT-13-CDPHE PWS:	Lab ID: 604528 Site ID:	18001 Collected: 05/10/24 14:20 Sample Type:	Received:	05/14/24 09:45	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Se	ervices - Greensburg				
Radium-226	EPA 903.1	1.04 ± 0.852 (1.30) C:NA T:87%	pCi/L	05/30/24 13:55	5 13982-63-3	
	Pace Analytical Se	ervices - Greensburg				
Radium-228	EPA 904.0	2.74 ± 0.759 (0.842) C:84% T:74%	pCi/L	05/29/24 15:32	2 15262-20-1	
	Pace Analytical Se	ervices - Greensburg				
Total Radium	Total Radium Calculation	3.78 ± 1.61 (2.14)	pCi/L	06/05/24 10:30	7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project: 60731455 PRPA CDPHE

Pace Project No.: 60452818

QC Batch: 669505 Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60452818001

METHOD BLANK: 3260259 Matrix: Water

Associated Lab Samples: 60452818001

 Parameter
 Act ± Unc (MDC) Carr Trac
 Units
 Analyzed
 Qualifiers

 Radium-226
 0.0473 ± 0.216 (0.440) C:NA T:88%
 pCi/L
 05/30/24 13:55

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.



QUALITY CONTROL - RADIOCHEMISTRY

Project: 60731455 PRPA CDPHE

Pace Project No.: 60452818

QC Batch: 669507 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: 60452818001

METHOD BLANK: 3260266 Matrix: Water

Associated Lab Samples: 60452818001

 Parameter
 Act ± Unc (MDC) Carr Trac
 Units
 Analyzed
 Qualifiers

 Radium-228
 0.807 ± 0.490 (0.912) C:79% T:71%
 pCi/L
 05/29/24 15:32

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.



QUALIFIERS

Project: 60731455 PRPA CDPHE

Pace Project No.: 60452818

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

Date: 06/18/2024 03:48 PM

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731455 PRPA CDPHE

Pace Project No.: 60452818

Date: 06/18/2024 03:48 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60452818001	BAT-13-CDPHE	EPA 903.1	669505		
60452818001	BAT-13-CDPHE	EPA 904.0	669507		
60452818001	BAT-13-CDPHE	Total Radium Calculation	673358		

CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

CDPHEQCCK BAT PA

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Address:	6200 South Quebec St	Copy To: Jar	mie	Jamie Herman	man				Com	Company Name:		AECOM	MO						REGULATORY AGENCY	LATO	RY AG	ENCY					
	Greenwood Village, CO 80111								Address:	ess:	Sa	me a	Same as Section A	tion A	_				Ž	NPDES	L	GROUND WATER	D WAT	ER	DRIF	DRINKING WATER	۱۱
Email To:	jamie.herman@aecom.com	Purchase Order No.:	No.:		NEED PO#	#			Pace	Pace Quote Reference:	73	73141							ž L	UST	L	RCRA		2	OTHER		の世代の
Phone:	(303) 740-2614 Fax:	Project Name.		0709	60709418 PRPA CDPHE	A CDPH	E		Pace Pro Manager:	Pace Project Manager:	H	ather	Heather Wilson	uc					Site L	Site Location	E	5					
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"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.

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***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.



Page 1 of 1

CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

CDPHEQCCK BAT PA

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0#:30683964 ENV-FRM-GBUR-0088 v07_Sample Condition Upon Receipt-Gre-Due Date: 06/05/24 Effective Date: 01/04/2024 CLIENT: PACE_60_LEKS Pace KS/AECOM Client Name: Proie Courier: Fed Ex UPS USPS Client Commercial Pace Other Tracking Number: 7146 2378 6227 Initial / Date Examined By: _ 33 \$/14/24 Labeled By: 3 Slu 24 ☐ Yes ®No Custody Seal on Cooler/Box Present: ☐ Yes ☑No Seals Intact: Temped By: __ Type of Ice: Wet Blue None Thermometer Used: Final Temp: ____ Correction Factor: _____ Cooler Temperature: Observed Temp Temp should be above freezing to 6°C D.P.D. Residual Chlorine Lot # pH paper Lot# 1002931 NA No Yes Comments: 1. Chain of Custody Present 2. Chain of Custody Filled Out: -Were client corrections present on COC Chain of Custody Relinquished 31424 -3. 4. Sampler Name & Signature on COC: . 5. Sample Labels match COC: -Includes date/time/ID Matrix: 6. Samples Arrived within Hold Time: 7. Short Hold Time Analysis (<72hr remaining): 8. Rush Turn Around Time Requested: 9. Sufficient Volume: 10. Correct Containers Used: -Pace Containers Used 11. Containers Intact: 12. Orthophosphate field filtered: 13. Hex Cr Aqueous samples field filtered: Organic Samples checked for dechlorination 14: 15: Filtered volume received for dissolved tests: 16. All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix Date/Time of Initial when All containers meet method preservation Preservation completed Lot# of added requirements: Preservative 8260C/D: Headspace in VOA Vials (> 6mm) 17. 18. 624.1: Headspace in VOA Vials (0mm) 19. Radon: Headspace in RAD Vials (0mm) YES or NO Trip blank custody seal present? Trip Blank Present: Survey Meter Initial when Rad Samples Screened <.05 mrem/hr. SN: 25014380 completed | 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.

Pace Analytical"

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Ra-226 CLM 5/20/2024 79274 DW 0.047 0.207 0.440 0.45 N/A Pass Test: Analyst: Date: Batch ID: Matrix: MB Numerical Performance Indicator:
MB Status vs Numerical Indicator:
MB Status vs. MDC: MB Sample ID MB concentration: M/B Counting Uncertainty: MB MDC: Method Blank Assessment

MS/MSD 2																														
MS/MSD 1																														
Sample Matrix Spike Control Assessment	Sample Collection Date:	Sample I.D.	Sample MS I.D.	Sample MSD I.D.	Spike I.D.:	MS/MSD Decay Corrected Spike Concentration (pCi/mL):	Spike Volume Used in MS (mL):	Spike Volume Used in MSD (mL):	MS Aliquot (L, g, F):	MS Target Conc.(pCi/L, g, F):	MSD Aliquot (L, g, F):	MSD Target Conc. (pCi/L, g, F):	MS Spike Uncertainty (calculated):	MSD Spike Uncertainty (calculated):	Sample Result:	Sample Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Result:	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	MS Numerical Performance Indicator:	MSD Numerical Performance Indicator:	MS Percent Recovery:	MSD Percent Recovery:	MS Status vs Numerical Indicator:	MSD Status vs Numerical Indicator:	MS Status vs Recovery:	MSD Status vs Recovery:	MS/MSD Upper % Recovery Limits:	MS/MSD Lower % Recovery Limits:
														\	LCSD79274	5/30/2024	23-063	32.299	0,10	0.652	4.952	0.233	4.952	1.124	0.00	100.01%	A/A	Pass	133%	73%

LCS79274 5/30/2024 23-063 32.299 0.10 0.651 4.959 0.233 4.027 0.886

Volume Used (mL): Aliquot Volume (L, g, F): Target Conc. (pCi/L, g, F):

Uncertainty (Calculated):

Result (pCi/L, g, F): LCS/LCSD Counting Uncertainty (pCi/L, g, F):

Numerical Performance Indicator:

Count Date:
Spike I.D.:
Spike Concentration (pCi/mL):

Percent Recovery:
Status vs Numerical Indicator:
Status vs Recovery:
Upper % Recovery Limits:
Lower % Recovery Limits:

CSD (Y or N)?

Laboratory Control Sample Assessment

Duplicate Sample Assessment			Matrix Spike/Matrix
Sample I.D.:	LCS79274	Enter Duplicate	
Duplicate Sample I.D.	LCSD79274	sample IDs if	
Sample Result (pCi/L, g, F):	4.027	other than	
Sample Result Counting Uncertainty (pCI/L, g, F):	0.886	LCS/LCSD in	
Sample Duplicate Result (pCi/L, g, F):	4.952	the space below.	Matrix St
Sample Duplicate Result Counting Uncertainty (pCI/L, g, F):	1.124		
Are sample and/or duplicate results below RL?	9		Matrix Spike Duplic
Duplicate Numerical Performance Indicator:	-1.267		
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	20.75%		(Based on the F
Duplicate Status vs Numerical Indicator:	N/A		/SW
Duplicate Status vs RPD:	Pass		
% RPD Limit:	32%		

Matrix Spike/Matrix Spike Duplicate Sample Assessment	Sample I.D.	Sample MS I.D.	Sample MSD I.D.	Sample Matrix Spike Result:	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	Duplicate Numerical Performance Indicator:	(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	MS/ MSD Duplicate Status vs Numerical Indicator:	MS/ MSD Duplicate Status vs RPD:	% RPD Limit:
	ate	<u></u>		<u></u>	ow.					ĺ		

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

Comments:

Ra-226 NELAC QC Printed: 6/3/2024 2:48 PM

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Pace Analytical

VAL 5/21/2024 79275 WT Date: Worklist: Matrix: Analyst:

0.807 0.490 0.912 3.23 Fail* Pass M/B 2 Sigma CSU: MB MDC: MB Sample ID MB concentration MB Numerical Performance Indicator: MB Status vs Numerical Indicator: MB Status vs. MDC: Method Blank Assessmen

MS/MSD 2 MS/MSD 1 Sample I.D. Sample MS I.D. Sample MSD I.D. MSD Target Conc. (pCi/L, g, F): Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
MS Numerical Performance Indicator:
MSD Numerical Performance Indicator: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits: Spike I.D. MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): MS Aliquot (L, g, F): MS Target Conc.(pCi/L, g, F): MS Spike Uncertainty (calculated): Sample Result Sample Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result MS Percent Recovery MS Status vs Numerical Indicator MSD Status vs Numerical Indicator MS Status vs Recovery MSD Status vs Recovery Sample Collection Date Spike Volume Used in MSD (mL) MSD Spike Uncertainty (calculated) MSD Percent Recovery Sample Matrix Spike Control Assessment

> LCSD79275 5/29/2024 23-043 36.575 0.10 0.817 4.477 0.219 3.995 0.999 -0.92 N/A Pass 135% 60% CSD (Y or N) 23-043 02.45% 0.821 4.454 0.218 4.564 1.102 0.10 0.19 Š Result (pCi/L, g, F): LCS/LCSD 2 Sigma CSU (pCi/L, g, F): Numerical Performance Indicator; Aliquot Volume (L, g, F): Target Conc. (pCi/L, g, F): Uncertainty (Calculated): Upper % Recovery Limits: Lower % Recovery Limits: Count Date Spike I.D. Decay Corrected Spike Concentration (pCi/mL): Volume Used (mL): Percent Recovery: Status vs Numerical Indicator Status vs Recovery: Laboratory Control Sample Assessmen

Sample I.D. Sample MS I.D. Sample MSD I.D. MS/ MSD Duplicate Status vs RPD: % RPD Limit: Sample Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/ MSD Duplicate RPD MS/ MSD Duplicate Status vs Numerical Indicator Matrix Spike/Matrix Spike Duplicate Sample Assessment Enter Duplicate other than LCS/LCSD in the space below sample IDs if

LCS79275 LCSD79275

Sample I.D.: Duplicate Sample I.D.

Duplicate Sample Assessmen

4.564

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC. NO 0.749 13.79% 1.102 3.995 0.999 Pass Pass 36% 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? Duplicate Numerical Performance Indicator: (Based on the LCS/LCSD Percent Recoveries) Duplicate RPD: Duplicate Status vs RPD: % RPD Limit: Duplicate Status vs Numerical Indicator

this better is greater than len lines the blank weter; the blank is acceptable; otherwise this batch must be re-propped. WB alch with < 1000 C, Palls *If the lowest activity sample in

Comments:

Ra-228_79275_W Ra-228 (ENV-FRM-GBUR-0295 03).xls





June 27, 2024

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

RE: Project: 60731303 PRPA CCR

Pace Project No.: 60452841

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 14, 2024. 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 Wilson

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

Databa m. Wilson

Enclosures

cc: Ann Cinabro, AECOM Jamie Herman, AECOM Jeremy Hurshman, AECOM



9608 Loiret Blvd. Lenexa, KS 66219 (913)599-5665



CERTIFICATIONS

Project: 60731303 PRPA CCR

Pace Project No.: 60452841

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219 Arkansas Inorganic Drinking Water Certification

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



SAMPLE SUMMARY

Project: 60731303 PRPA CCR

Pace Project No.: 60452841

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60452841001	BAT-03-CCR	Water	05/13/24 10:05	05/14/24 08:25
60452841002	ERB-02-CCR	Water	05/13/24 10:20	05/14/24 08:25



SAMPLE ANALYTE COUNT

Project: 60731303 PRPA CCR

Pace Project No.: 60452841

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60452841001	BAT-03-CCR	EPA 6010	JXD	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JXD	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 9056	PL	3	PASI-K
60452841002	ERB-02-CCR	EPA 6010	JXD	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JXD	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		EPA 9056	PL	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City



ANALYTICAL RESULTS

Project: 60731303 PRPA CCR

Pace Project No.: 60452841

Date: 06/27/2024 02:56 PM

Sample: BAT-03-CCR	Lab ID: 6045	52841001	Collected: 05/13/2	4 10:05	Received: 05	5/14/24 08:25 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Meth	od: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Boron	1240	ug/L	100	1	05/22/24 15:38	05/30/24 13:03	7440-42-8	
Calcium	452000	ug/L	200	1	05/22/24 15:38	05/30/24 13:03	7440-70-2	
_ithium	282	ug/L	10.0	1	05/22/24 15:38	05/30/24 13:03	7439-93-2	
6020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Meth	od: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Antimony	ND	ug/L	1.0	1	05/22/24 11:07	06/26/24 12:46	7440-36-0	
Arsenic	ND	ug/L	1.0	1	05/22/24 11:07	06/26/24 12:46	7440-38-2	
Barium	15.6	ug/L	1.0	1	05/22/24 11:07	06/26/24 12:46	7440-39-3	B,B0
Beryllium	ND	ug/L	0.50	1	05/22/24 11:07	06/26/24 12:46	7440-41-7	
Cadmium	ND	ug/L	0.50	1	05/22/24 11:07	06/26/24 12:46	7440-43-9	
Chromium	ND	ug/L	1.0	1	05/22/24 11:07	06/26/24 12:46	7440-47-3	M1
Cobalt	1.4	ug/L	1.0	1	05/22/24 11:07	06/26/24 12:46	7440-48-4	
.ead	ND	ug/L	1.0	1	05/22/24 11:07	06/26/24 12:46	7439-92-1	
Nolybdenum	ND	ug/L	1.0	1	05/22/24 11:07	06/26/24 12:46	7439-98-7	
Selenium	ND	ug/L	1.0	1	05/22/24 11:07	06/26/24 12:46	7782-49-2	
- Thallium	ND	ug/L	1.0	1	05/22/24 11:07	06/26/24 12:46	7440-28-0	
470 Mercury	Analytical Meth	od: EPA 74	70 Preparation Meth	od: EP	A 7470			
	Pace Analytical	Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	05/16/24 12:32	05/20/24 11:42	7439-97-6	
2540C Total Dissolved Solids	Analytical Meth	od: SM 25	40C					
	Pace Analytical	Services -	Kansas City					
Total Dissolved Solids	2360	mg/L	100	1		05/16/24 15:22		
0056 IC Anions	Analytical Meth	od: EPA 90	056					
	Pace Analytical	Services -	Kansas City					
Chloride	17.5	mg/L	1.0	1		05/29/24 07:04	16887-00-6	
Fluoride	1.1	mg/L	0.20	1		05/29/24 07:04		N2
Sulfate	3420	mg/L	50.0	50		05/29/24 07:25		



ANALYTICAL RESULTS

Project: 60731303 PRPA CCR

Pace Project No.: 60452841

Date: 06/27/2024 02:56 PM

Sample: ERB-02-CCR	Lab ID: 604	52841002	Collected: 05/13/2	4 10:20	Received: 05	5/14/24 08:25 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	od: EPA 60	10 Preparation Meth	nod: EP	A 3010			
	Pace Analytica	l Services -	Kansas City					
Boron	ND	ug/L	100	1	05/22/24 15:38	05/30/24 13:10	7440-42-8	
Calcium	ND	ug/L	200	1	05/22/24 15:38	05/30/24 13:10	7440-70-2	
Lithium	ND	ug/L	10.0	1	05/22/24 15:38	05/30/24 13:10	7439-93-2	
6020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Meth	nod: EP	A 3010			
	Pace Analytica	l Services -	Kansas City					
Antimony	ND	ug/L	1.0	1	05/22/24 11:07	06/26/24 13:03	7440-36-0	
Arsenic	ND	ug/L	1.0	1	05/22/24 11:07	06/26/24 13:03	7440-38-2	
Barium	ND	ug/L	1.0	1	05/22/24 11:07	06/26/24 13:03	7440-39-3	
Beryllium	ND	ug/L	0.50	1	05/22/24 11:07	06/26/24 13:03	7440-41-7	
Cadmium	ND	ug/L	0.50	1	05/22/24 11:07	06/26/24 13:03	7440-43-9	
Chromium	ND	ug/L	1.0	1	05/22/24 11:07	06/26/24 13:03	7440-47-3	
Cobalt	ND	ug/L	1.0	1	05/22/24 11:07	06/26/24 13:03	7440-48-4	
_ead	ND	ug/L	1.0	1	05/22/24 11:07	06/26/24 13:03	7439-92-1	
Molybdenum	ND	ug/L	1.0	1	05/22/24 11:07	06/26/24 13:03	7439-98-7	
Selenium	ND	ug/L	1.0	1	05/22/24 11:07	06/26/24 13:03	7782-49-2	
- Thallium	ND	ug/L	1.0	1	05/22/24 11:07	06/26/24 13:03	7440-28-0	
7470 Mercury	Analytical Meth	od: EPA 74	70 Preparation Meth	nod: EP	A 7470			
-	Pace Analytica	l Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	05/16/24 12:32	05/20/24 11:44	7439-97-6	
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	40C					
	Pace Analytica	l Services -	Kansas City					
Total Dissolved Solids	16.0	mg/L	5.0	1		05/16/24 15:22		
9056 IC Anions	Analytical Meth	od: EPA 90	956					
	Pace Analytica	l Services -	Kansas City					
Chloride	ND	mg/L	1.0	1		05/29/24 07:46	16887-00-6	
Fluoride	ND	mg/L	0.20	1		05/29/24 07:46		N2
Sulfate	ND	mg/L	1.0	1		05/29/24 07:46		



Project: 60731303 PRPA CCR

Pace Project No.: 60452841

Date: 06/27/2024 02:56 PM

QC Batch: 894585 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452841001, 60452841002

METHOD BLANK: 3540383 Matrix: Water

Associated Lab Samples: 60452841001, 60452841002

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Mercury ug/L ND 0.20 05/20/24 11:05

LABORATORY CONTROL SAMPLE: 3540384

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3540385 3540386

MS MSD

60452938007 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual Result ND 5 4.2 20 Mercury ug/L 5 4.1 83 84 75-125

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.



Project: 60731303 PRPA CCR

Pace Project No.: 60452841

QC Batch: 895495
QC Batch Method: EPA 3010

Analysis Method: EPA 6010
Analysis Description: 6010 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452841001, 60452841002

METHOD BLANK: 3544053 Matrix: Water

Associated Lab Samples: 60452841001, 60452841002

Blank Reporting Limit Qualifiers Parameter Units Result Analyzed Boron ug/L ND 100 05/30/24 12:48 Calcium ug/L ND 200 05/30/24 12:48 Lithium ug/L ND 05/30/24 12:48 10.0

LABORATORY CONTROL SAMPLE: 3544054

Date: 06/27/2024 02:56 PM

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Boron	ug/L	1000	990	99	80-120	
Calcium	ug/L	10000	10800	108	80-120	
Lithium	ug/L	1000	1060	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3544055 3544056												
			MS	MSD								
		60453227004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Boron	ug/L	ND	1000	1000	1090	1110	101	103	75-125	1	20	
Calcium	ug/L	189000	10000	10000	200000	201000	108	124	75-125	1	20	
Lithium	ug/L	24.8	1000	1000	1110	1120	108	110	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.



Project: 60731303 PRPA CCR

Pace Project No.: 60452841

Date: 06/27/2024 02:56 PM

QC Batch: 895432 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452841001, 60452841002

METHOD BLANK: 3543795 Matrix: Water

Associated Lab Samples: 60452841001, 60452841002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	06/26/24 12:40	
Arsenic	ug/L	ND	1.0	06/26/24 12:40	
Barium	ug/L	14.4	1.0	06/26/24 12:40	
Beryllium	ug/L	ND	0.50	06/26/24 12:40	
Cadmium	ug/L	ND	0.50	06/26/24 12:40	
Chromium	ug/L	ND	1.0	06/26/24 12:40	
Cobalt	ug/L	ND	1.0	06/26/24 12:40	
Lead	ug/L	ND	1.0	06/26/24 12:40	
Molybdenum	ug/L	ND	1.0	06/26/24 12:40	
Selenium	ug/L	ND	1.0	06/26/24 12:40	
Thallium	ug/L	ND	1.0	06/26/24 12:40	

LABORATORY CONTROL SAMPLE:	3543796					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	ug/L	40	40.7	102	80-120	
Arsenic	ug/L	40	40.8	102	80-120	
Barium	ug/L	40	40.8	102	80-120	
Beryllium	ug/L	40	41.4	103	80-120	
Cadmium	ug/L	40	41.7	104	80-120	
Chromium	ug/L	40	41.6	104	80-120	
Cobalt	ug/L	40	41.5	104	80-120	
Lead	ug/L	40	41.5	104	80-120	
Molybdenum	ug/L	40	40.3	101	80-120	
Selenium	ug/L	40	40.7	102	80-120	
Thallium	ug/L	40	39.6	99	80-120	

MATRIX SPIKE & MATRIX	SPIKE DUPLIC	CATE: 3543	797		3543798							
			MS	MSD								
	6	60452841001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	ug/L	ND ND	40	40	36.6	36.4	91	91	75-125	1	20	
Arsenic	ug/L	ND	40	40	41.3	41.5	102	103	75-125	0	20	
Barium	ug/L	15.6	40	40	57.5	58.2	105	107	75-125	1	20	
Beryllium	ug/L	ND	40	40	34.2	34.7	85	87	75-125	2	20	
Cadmium	ug/L	ND	40	40	34.4	34.6	86	86	75-125	1	20	
Chromium	ug/L	ND	40	40	29.4	29.9	73	74	75-125	2	20	M1

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.

(913)599-5665



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60452841

Date: 06/27/2024 02:56 PM

MATRIX SPIKE & MATRIX S			MS	MSD	3543798							
	6	0452841001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Cobalt	ug/L	1.4	40	40	43.8	43.9	106	106	75-125	0	20	
Lead	ug/L	ND	40	40	35.1	35.1	87	87	75-125	0	20	
Molybdenum	ug/L	ND	40	40	45.5	45.3	112	111	75-125	0	20	
Selenium	ug/L	ND	40	40	40.2	41.0	99	101	75-125	2	20	
Thallium	ug/L	ND	40	40	35.5	35.6	89	89	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.



Project: 60731303 PRPA CCR

Pace Project No.: 60452841

QC Batch: 894660 Analysis Method: SM 2540C

QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452841001, 60452841002

METHOD BLANK: 3540611 Matrix: Water

Associated Lab Samples: 60452841001, 60452841002

Blank Reporting Parameter Units Result Limit Analyzed Qualifiers

Total Dissolved Solids mg/L ND 5.0 05/16/24 15:21

LABORATORY CONTROL SAMPLE: 3540612

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units **Total Dissolved Solids** mg/L 1000 950 95 80-120

SAMPLE DUPLICATE: 3540613

 Parameter
 Units
 60452814013 Result
 Dup Result
 Max RPD
 RPD
 Qualifiers

 Total Dissolved Solids
 mg/L
 720
 714
 1
 10

SAMPLE DUPLICATE: 3540623

Date: 06/27/2024 02:56 PM

60452886008 Dup Max RPD RPD Parameter Units Result Result Qualifiers Total Dissolved Solids 1340 10 D6 mg/L 2380 55

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.



Project: 60731303 PRPA CCR

Pace Project No.: 60452841

QC Batch: 895864 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60452841001, 60452841002

METHOD BLANK: 3545640 Matrix: Water

Associated Lab Samples: 60452841001, 60452841002

Blank Reporting Limit Qualifiers Parameter Units Result Analyzed Chloride mg/L ND 1.0 05/28/24 14:52 Fluoride mg/L ND 0.20 05/28/24 14:52 N2 Sulfate mg/L ND 05/28/24 14:52 1.0

LABORATORY CONTROL SAMPLE: 3545641

Date: 06/27/2024 02:56 PM

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L		5.1	102	80-120	
Fluoride	mg/L	2.5	2.5	100	80-120	N2
Sulfate	mg/L	5	5.0	100	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.



QUALIFIERS

Project: 60731303 PRPA CCR

Pace Project No.: 60452841

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

Date: 06/27/2024 02:56 PM

В	Analyte was detected in the associated method blank.
---	--

- BO Analyte was detected in an associated blank at a concentration greater than the MDL.
- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A

complete list of accreditations/certifications is available upon request.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731303 PRPA CCR

Pace Project No.: 60452841

Date: 06/27/2024 02:56 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60452841001	BAT-03-CCR	EPA 3010	895495	EPA 6010	895555
60452841002	ERB-02-CCR	EPA 3010	895495	EPA 6010	895555
60452841001	BAT-03-CCR	EPA 3010	895432	EPA 6020	895479
60452841002	ERB-02-CCR	EPA 3010	895432	EPA 6020	895479
60452841001	BAT-03-CCR	EPA 7470	894585	EPA 7470	894776
60452841002	ERB-02-CCR	EPA 7470	894585	EPA 7470	894776
60452841001	BAT-03-CCR	SM 2540C	894660		
60452841002	ERB-02-CCR	SM 2540C	894660		
60452841001	BAT-03-CCR	EPA 9056	895864		
60452841002	ERB-02-CCR	EPA 9056	895864		





DC#_Title: ENV-FRM-LENE-0009_Sample Co

	ANALYTICAL SERVERS	Revision: 2	Effective Dat	te: 01/12/20	22	Issued By: Lene	xa		
Client Nan	ne: AE	COM							
Courier:	FedEx UPS		□ PEX □	ECI □	Pace	□ Xroads □	Client □	Other □	
Tracking #:	2746	18387290	Pace Shippir	ng Label Used	? Y∈	es 🗆 No 🕟			
Custody Sea	l on Cooler/Box	Present: Yes 🕟 N	o 🗆 Seals i	intact: Yes 🗷	> No	o 🗆			
Packing Mate			Bags □	Foam □		lone □ Othe	er @ 300	بن.	
Thermomete	7		Type of Ice: We				_	initials of per	son
		As-read <u>I· 6</u> Co	rr. Factor 20- ¿	Correcte	ed _\	· (contents:	*
Temperature sh	nould be above free	ezing to 6°C		- T			$\angle \lambda$	5	2/12/50
Chain of Cust	ody present:		Yes	□No □N/A					
Chain of Cust	ody relinquished:		€Yes	□No □N/A					
Samples arriv	ed within holding	time:	₽ res	□No □N/A					
Short Hold Ti	ime analyses (<	72hr):	□Yes	□No □N/A					
Rush Turn Aı	round Time requ	uested:	□Yes	□No □N/A					
Sufficient volu	ıme:		Ø Yes	□No □N/A					
Correct contai	iners used:		₫y es	□No □N/A					
Pace containe	ers used:		5 Yes	□No □N/A					
Containers int	act:		⊉ Yes	□No □N/A					
Unpreserved 5	5035A / TX1005/	1006 soils frozen in 48h	rs? □Yes I	□No (Z)1/A					
Filtered volum	e received for dis	ssolved tests?	□Yes	□No Qany/A					
Sample labels	match COC: Da	te / time / ID / analyses	© res l	□No □N/A					
Samples conta	ain multiple phase	es? Matrix: 🕠	[□Yes [∄ No □N/A					
		vation in compliance?	ÆÎYes [mple IDs, volume me added.	s, lot #'s of	preservative	and the
	HCI<2; NaOH>9 Sเ DA, Micro, O&G, Ks	ulfide, NaOH>10 Cyanide) S TPH, OK-DRO)	LOT#: 63087	1	Jale/ III	me added.			
Cyanide water	sample checks:								
21	strip turns dark? (• • • • • • • • • • • • • • • • • • • •	☐Yes [
Potassium logi	ide test strip turn	s blue/purple? (Preserve	e) □Yes [□No					
Trip Blank pres	sent:		□Yes [□No ØN/A					
Headspace in	VOA vials (>6mi	m):	□Yes	□No ØN/A					
Samples from	USDA Regulated	d Area: State:	□Yes [□No ØN/A					
Additional labe	els attached to 50	35A / TX1005 vials in th	ne field? □Yes [□No ØN/A					
Client Notifica	ation/ Resolution	n: Copy	COC to Client?	Y / N	Fi	eld Data Required?	Y / N	N	
Person Contac			Date/Time:						
Comments/ Re	esolution:								
Project Manage	er Review:			Date:					



CHAIN-OF-CUSTODY / Analytical Request Document

			*B, Ca, U	Sb, As, Ba, Be,		12	=	10	9	œ	7	6	Сh	4	ω	2	1	ITEM#		20 CO		Requested	Phone: (3	Email To:		Address:	Company:	Section A Required C	1		
			la, Be, Cd, Cr, Co, Pb, Mo, Se, Tl											10000	RB-	BAT-03	SAMPLE ID (A-Z, 0-91,-) Sample IDs MUST BE UNIQUE		Section D Required Client Information		Requested Due Date/TAT:	(303) 740-2614	jamie.herman@aecom.com	Greenwood Vi	6200 South Quebec St	AECOM	Section A Required Client Information:	www.pacellabs.com			
					ADDITIONAL COMMENTS											CAPIE	CDPHE					Standard	Fax	@aecom.com	Greenwood Village, CO 80111	rebec St			0007		
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				7	RELINQUISHED BY / AFFILIATION												1	DATE	COMPOSITE			60709371	60709371 PRPA CCR	NEED PO		Jamie Herman	\alluri	nation:			
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PRINT Nam	SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER:	017	M	N											1	13/13/24	DATE	COMPOSITE END/GRAB	CTED												
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Receive Ice (Y					SA												00	Pa						V							
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ustody 5	Sealed				S S												32	roje						OTHER	DRINKING WATER			of			
Cooler ((Y/N)				IIDN												7%	ct P			100	1860		Ü	X N						
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ine Item Matrix DC#_Title: ENV-FRM-LENE-0001_Sample Container Count Revision: 3 | Effective Date: | Issued by: Lenexa VG9H DG9H Client DG9Q Site 1L250L09 "AECON VG9U DG9U DG9M DG9B PRPA BG1U AG1H S AG1U AG2U AG3S AG4U AG5U JGFU WGKU WGDU BP1U Profile # 11033 Notes BP2U BP3U BP1N BP3N BP3F BP3S BP3C BP3Z WPDU ZPLC Other

000

Container

Codes

40mL bisulfate clear vial 40mL HCl amber voa vial 40mL MeOH clear vial

Glass WGKU WGFU WG2U

8oz clear soil jar 4oz clear soil jar 2oz clear soil jar

12

10 9 ð

Work Order Number:

VG9U BG1S

1liter H2SO4 clear glass

40mL unpreserved clear vial

40mL Na Thio, clear vial 40mL HCI clear vial 40mL amber unpreserved 40mL Na Thio amber vial 40mL H2SO4 amber vial 40mL TSP amber vial

AG1U

AG1T

1L H2SO4 amber glass 100mL unores amber glass 1L HCl amber glass

1L Na Thiosulfate clear/amber glass

1liter unpres amber glass

BP2U BP2S

500mL unpreserved plastic

500mL HNO3 plastic

500mL NAOH plastic 1L unpreserved plastic
1L NaOH, Zn Acetate

Æ

Summa Can Terracore Kit Air Cassettes Ziploc Bag Wipe/Swab 120mL Coliform

500mL H2SO4 plastic

AG2N AG2S

AG0U AG1H AG1S

JGFU

4oz unpreserved amber wide

BP1Z BP2C BP2N

BP1U

1L H2SO4 plastic Plastic
1L NAOH plastic
1L HNO3 plastic

SP5T ZPLC

Na I hiosulfate

Air Filter

250mL Unpres Clear glass

6oz clear soil jar

250mL HCL Clear glass

AG3S AG2U

500mL unpres amber glass 500mL H2SO4 amber glass 500mL HNO3 amber glass

100mL unpres amber glass 125mL unpres amber glass 250mL unpres amber glass

BP3U BP3S BP3Z

DA A DE SE

Wipe

Drinking Water

Solid Non-aqueous Liquid OIL

Water

Matrix

125mL H2SO4 plastic

16oz unpresserved plstic

125mL HNO3 plastic

125mL unpreserved plastic 250mL NaOH, Zn Acetate 250mL H2SO4 plastic 250mL unpreserved plastic 250mL H2SO4 amber glass

BP2Z BP3C BP3F BP3N

250mL HNO3 plastic 250mL NaOH plastic 500mL NaOH, Zn Acetate

250mL HNO3 plastic - field filtered

liter unpres glass

VG9H VG9T

DG9S DG9T

12825200

Page 1 of 1



January 13, 2025

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

RE: Project: 60731303 PRPA CCR-Revised Report

Pace Project No.: 60455269

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on May 08, 2024. 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 After a complaint from the client about not having a lower dilution for the 9056 Fluoride, we looked at the anion results closer. The results have been corrected.

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

Sincerely,

Heather Wilson

heather.wilson@pacelabs.com

Ditatos m. Wilson

1(913)563-1407 Project Manager

Enclosures

cc: Jamie Herman, AECOM Jeremy Hurshman, AECOM







CERTIFICATIONS

Project: 60731303 PRPA CCR-Revised Report

Pace Project No.: 60455269

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



SAMPLE SUMMARY

Project: 60731303 PRPA CCR-Revised Report

Pace Project No.: 60455269

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60455269001	BAT-09-CCR	Water	05/07/24 11:05	05/08/24 08:55
60455269002	BAT-04R-CCR	Water	05/07/24 12:50	05/08/24 08:55
60455269003	BAT-06-CCR	Water	05/07/24 15:20	05/08/24 08:55



SAMPLE ANALYTE COUNT

Project: 60731303 PRPA CCR-Revised Report

Pace Project No.: 60455269

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60455269001	BAT-09-CCR	EPA 6010	JXD	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JXD	1	PASI-K
		SM 2540C	ECF	1	PASI-K
		EPA 9056	AAA	3	PASI-K
60455269002	BAT-04R-CCR	EPA 6010	JXD	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JXD	1	PASI-K
		SM 2540C	ECF	1	PASI-K
		EPA 9056	AAA	3	PASI-K
60455269003	BAT-06-CCR	EPA 6010	JXD	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JXD	1	PASI-K
		SM 2540C	ECF	1	PASI-K
		EPA 9056	AAA	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City



Project: 60731303 PRPA CCR-Revised Report

Pace Project No.: 60455269

Date: 01/13/2025 10:01 AM

Sample: BAT-09-CCR	Lab ID: 6045	55269001	Collected: 05/07/2	4 11:05	Received: 05	5/08/24 08:55 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Meth	nod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Boron	2110	ug/L	100	1	05/16/24 10:02	05/30/24 21:49	7440-42-8	
Calcium	186000	ug/L	200	1	05/16/24 10:02	05/30/24 21:49	7440-70-2	
Lithium	231	ug/L	10.0	1	05/16/24 10:02	05/30/24 21:49	7439-93-2	
6020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Meth	nod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Antimony	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:07	7440-36-0	
Arsenic	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:07	7440-38-2	
Barium	10.2	ug/L	2.0	2	05/17/24 07:40	06/18/24 11:54	7440-39-3	
Beryllium	ND	ug/L	0.50	1	05/17/24 07:40	06/18/24 16:07	7440-41-7	
Cadmium	ND	ug/L	0.50	1	05/17/24 07:40	06/18/24 16:07	7440-43-9	
Chromium	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:07	7440-47-3	
Cobalt	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:07	7440-48-4	
Lead	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:07	7439-92-1	
Molybdenum	2.3	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:07	7439-98-7	
Selenium	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:07	7782-49-2	
Thallium	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:07	7440-28-0	
7470 Mercury	Analytical Meth	od: EPA 74	170 Preparation Meth	nod: EP	A 7470			
	Pace Analytical	Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	05/20/24 12:41	05/21/24 12:49	7439-97-6	
2540C Total Dissolved Solids	Analytical Meth	od: SM 25	40C					
	Pace Analytical							
Total Dissolved Solids	2610	mg/L	66.7	1		05/09/24 10:38		
9056 IC Anions	Analytical Meth	od: EPA 90	056					
	Pace Analytical	Services -	Kansas City					
Chloride	103	mg/L	10.0	10		05/22/24 14:34	16887-00-6	
Fluoride	ND	mg/L	0.20	1		05/24/24 22:54		N2
Sulfate	1760	mg/L	200	200		05/22/24 14:49		



Project: 60731303 PRPA CCR-Revised Report

Pace Project No.: 60455269

Date: 01/13/2025 10:01 AM

Sample: BAT-04R-CCR	Lab ID: 6045	5269002	Collected: 05/07/2	4 12:50	Received: 05	5/08/24 08:55 N	/latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Meth	nod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Boron	739	ug/L	100	1	05/16/24 10:02	05/30/24 21:51	7440-42-8	
Calcium	455000	ug/L	200	1	05/16/24 10:02	05/30/24 21:51	7440-70-2	M1
Lithium	185	ug/L	10.0	1	05/16/24 10:02	05/30/24 21:51	7439-93-2	
6020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Meth	nod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Antimony	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 15:44	7440-36-0	
Arsenic	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 15:44	7440-38-2	
Barium	25.1	ug/L	2.0	2	05/17/24 07:40	06/18/24 11:57	7440-39-3	
Beryllium	ND	ug/L	0.50	1	05/17/24 07:40	06/18/24 15:44	7440-41-7	
Cadmium	ND	ug/L	0.50	1	05/17/24 07:40	06/18/24 15:44	7440-43-9	
Chromium	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 15:44	7440-47-3	
Cobalt	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 15:44	7440-48-4	
Lead	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 15:44	7439-92-1	
Molybdenum	1.0	ug/L	1.0	1	05/17/24 07:40	06/18/24 15:44	7439-98-7	
Selenium	23.2	ug/L	2.0	2	05/17/24 07:40	06/18/24 11:57	7782-49-2	
Thallium	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 15:44	7440-28-0	
7470 Mercury	Analytical Meth	od: EPA 74	70 Preparation Meth	nod: EP	A 7470			
	Pace Analytical	Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	05/20/24 12:41	05/21/24 12:49	7439-97-6	
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	40C					
	Pace Analytical	Services -	Kansas City					
Total Dissolved Solids	2210	mg/L	100	1		05/09/24 10:38		
9056 IC Anions	Analytical Meth	od: EPA 90	056					
	Pace Analytical	Services -	Kansas City					
Chloride	41.2	mg/L	10.0	10		05/22/24 16:32	16887-00-6	M1
Fluoride	ND	mg/L	0.20	1		05/22/24 15:03		M1, N2
Sulfate	1550	mg/L	500	500		05/24/24 23:09		CL



Project: 60731303 PRPA CCR-Revised Report

Pace Project No.: 60455269

Date: 01/13/2025 10:01 AM

Sample: BAT-06-CCR	Lab ID: 6045	5269003	Collected: 05/07/2	4 15:20	Received: 05	5/08/24 08:55 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Meth	nod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Boron	1800	ug/L	100	1	05/16/24 10:02	05/30/24 21:57	7440-42-8	
Calcium	116000	ug/L	200	1	05/16/24 10:02	05/30/24 21:57	7440-70-2	
Lithium	187	ug/L	10.0	1	05/16/24 10:02	05/30/24 21:57	7439-93-2	
6020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Meth	nod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Antimony	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:13	7440-36-0	
Arsenic	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:13	7440-38-2	
Barium	16.0	ug/L	2.0	2	05/17/24 07:40	06/18/24 14:50	7440-39-3	
Beryllium	ND	ug/L	0.50	1	05/17/24 07:40	06/18/24 16:13	7440-41-7	
Cadmium	ND	ug/L	0.50	1	05/17/24 07:40	06/18/24 16:13	7440-43-9	
Chromium	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:13	7440-47-3	
Cobalt	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:13	7440-48-4	
₋ead	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:13	7439-92-1	
Molybdenum	8.3	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:13	7439-98-7	
Selenium	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:13	7782-49-2	
Thallium	ND	ug/L	1.0	1	05/17/24 07:40	06/18/24 16:13	7440-28-0	
7470 Mercury	Analytical Meth	od: EPA 74	170 Preparation Meth	nod: EP	A 7470			
•	Pace Analytical	Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	05/20/24 12:41	05/21/24 12:55	7439-97-6	
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	40C					
	Pace Analytical							
Total Dissolved Solids	2390	mg/L	66.7	1		05/09/24 10:39		
9056 IC Anions	Analytical Meth	od: EPA 90	056					
	Pace Analytical	Services -	Kansas City					
Chloride	10.9	mg/L	1.0	1		05/22/24 19:01	16887-00-6	
Fluoride	ND	mg/L	0.20	1		05/22/24 19:01		N2
Sulfate	1 550	mg/L	200	200			14808-79-8	CL



Project: 60731303 PRPA CCR-Revised Report

Pace Project No.: 60455269

Date: 01/13/2025 10:01 AM

QC Batch: 899028 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60455269001, 60455269002, 60455269003

METHOD BLANK: 3558560 Matrix: Water

Associated Lab Samples: 60455269001, 60455269002, 60455269003

Blank Reporting
Parameter Units Result Limit

ParameterUnitsResultLimitAnalyzedQualifiersMercuryug/LND0.2005/21/24 12:17

LABORATORY CONTROL SAMPLE: 3558561

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units Mercury ug/L 5.0 101 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3558562 3558563

MS MSD

60455269002 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Conc. Result Result % Rec % Rec **RPD** RPD Qual Result Limits ND 5 101 20 Mercury ug/L 5 5.0 5.2 104 75-125 3

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.



Project: 60731303 PRPA CCR-Revised Report

Pace Project No.: 60455269

QC Batch: 899026 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60455269001, 60455269002, 60455269003

METHOD BLANK: 3558552 Matrix: Water

Associated Lab Samples: 60455269001, 60455269002, 60455269003

Blank Reporting Limit Qualifiers Parameter Units Result Analyzed Boron ND 100 05/30/24 21:45 ug/L Calcium ug/L ND 200 05/30/24 21:45 Lithium ug/L ND 05/30/24 21:45 10.0

LABORATORY CONTROL SAMPLE: 3558553

Date: 01/13/2025 10:01 AM

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
	Office					- Qualificity
Boron	ug/L	1000	933	93	80-120	
Calcium	ug/L	10000	10100	101	80-120	
Lithium	ug/L	1000	977	98	80-120	

MATRIX SPIKE & MATRIX SP	IKE DUPL	ICATE: 3558	554		3558555							
			MS	MSD								
		60455269002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Boron	ug/L	739	1000	1000	1600	1620	86	88	75-125	1	20	
Calcium	ug/L	455000	10000	10000	438000	451000	-172	-37	75-125	3	20	M1
Lithium	ug/L	185	1000	1000	1160	1170	98	99	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.



Project: 60731303 PRPA CCR-Revised Report

Pace Project No.: 60455269

Date: 01/13/2025 10:01 AM

QC Batch: 899027 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60455269001, 60455269002, 60455269003

METHOD BLANK: 3558556 Matrix: Water

Associated Lab Samples: 60455269001, 60455269002, 60455269003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	06/18/24 11:48	
Arsenic	ug/L	ND	1.0	06/18/24 11:48	
Barium	ug/L	ND	1.0	06/18/24 11:48	
Beryllium	ug/L	ND	0.50	06/18/24 11:48	
Cadmium	ug/L	ND	0.50	06/18/24 11:48	
Chromium	ug/L	ND	1.0	06/18/24 11:48	
Cobalt	ug/L	ND	1.0	06/18/24 11:48	
Lead	ug/L	ND	1.0	06/18/24 11:48	
Molybdenum	ug/L	ND	1.0	06/18/24 11:48	
Selenium	ug/L	ND	1.0	06/18/24 11:48	
Thallium	ug/L	ND	1.0	06/18/24 11:48	

LABORATORY CONTROL SAMPLE:	3558557					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	ug/L	40	40.1	100	80-120	
Arsenic	ug/L	40	41.9	105	80-120	
Barium	ug/L	40	39.7	99	80-120	
Beryllium	ug/L	40	43.0	108	80-120	
Cadmium	ug/L	40	42.7	107	80-120	
Chromium	ug/L	40	41.3	103	80-120	
Cobalt	ug/L	40	41.7	104	80-120	
Lead	ug/L	40	39.4	98	80-120	
Molybdenum	ug/L	40	41.4	103	80-120	
Selenium	ug/L	40	43.3	108	80-120	
Thallium	ug/L	40	37.6	94	80-120	

MATRIX SPIKE & MATRIX	SPIKE DUPLI	CATE: 3558		MOD	3558559							
		60455269002	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	ug/L	ND	40	40	37.8	38.2	94	95	75-125	1	20	
Arsenic	ug/L	ND	40	40	42.6	42.4	105	104	75-125	0	20	
Barium	ug/L	25.1	40	40	63.1	61.6	95	91	75-125	2	20	
Beryllium	ug/L	ND	40	40	35.8	36.7	89	92	75-125	3	20	
Cadmium	ug/L	ND	40	40	35.2	34.9	88	87	75-125	1	20	
Chromium	ug/L	ND	40	40	39.4	39.7	97	97	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.



Project: 60731303 PRPA CCR-Revised Report

Pace Project No.: 60455269

Date: 01/13/2025 10:01 AM

MATRIX SPIKE & MATRIX	SPIKE DUPL	ICATE: 3558	558		3558559							
		60455269002	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Cobalt	ug/L	ND	40	40	39.6	39.7	98	98	75-125	0	20	
Lead	ug/L	ND	40	40	35.7	35.7	89	89	75-125	0	20	
Molybdenum	ug/L	1.0	40	40	43.7	43.8	107	107	75-125	0	20	
Selenium	ug/L	23.2	40	40	63.5	64.7	101	104	75-125	2	20	
Thallium	ug/L	ND	40	40	35.4	35.6	89	89	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.



Project: 60731303 PRPA CCR-Revised Report

Pace Project No.: 60455269

QC Batch: 899724 Analysis Method: SM 2540C

QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60455269001, 60455269002, 60455269003

METHOD BLANK: 3561238 Matrix: Water

Associated Lab Samples: 60455269001, 60455269002, 60455269003

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Total Dissolved Solids mg/L ND 5.0 05/09/24 10:34

LABORATORY CONTROL SAMPLE: 3561239

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units **Total Dissolved Solids** mg/L 1000 1140 114 80-120

SAMPLE DUPLICATE: 3561240

Date: 01/13/2025 10:01 AM

60455269002 Dup Max **RPD** Parameter Units Result Result **RPD** Qualifiers 2210 **Total Dissolved Solids** mg/L 0 2210 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.

(913)599-5665



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR-Revised Report

Pace Project No.: 60455269

LABORATORY CONTROL SAMPLE:

Date: 01/13/2025 10:01 AM

QC Batch: 899321 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60455269001, 60455269002, 60455269003

METHOD BLANK: 3559773 Matrix: Water

3559774

Associated Lab Samples: 60455269001, 60455269002, 60455269003

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	05/22/24 09:23	
Fluoride	mg/L	ND	0.20	05/22/24 09:23	N2
Sulfate	mg/L	ND	1.0	05/22/24 09:23	

Spike LCS LCS % Rec
Parameter Units Conc. Result % Rec Limits Qualifiers

Chlorida 99 90 420

Chloride 5 4.4 88 80-120 mg/L Fluoride mg/L 2.5 2.4 98 80-120 N2 Sulfate mg/L 4.5 91 80-120 5

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3559775 3559776 MS MSD MSD MS 60455269002 Spike Spike MS MSD % Rec Max Qual Parameter Units Conc. Result % Rec % Rec **RPD** RPD Result Conc. Result Limits Chloride 41.2 50 243 15 M1 mg/L 50 163 190 298 80-120 15 Fluoride mg/L ND 2.5 2.5 4.4 4.5 172 175 80-120 1 15 M1, N2

Sulfate mg/L 1550 2500 2500 4070 4140 101 104 80-120 2 15 CL

SAMPLE DUPLICATE: 3559777 60455269002 Dup Max Parameter Units Result Result RPD RPD Qualifiers mg/L 41.2 14 15

 Chloride
 mg/L
 41.2
 35.7
 14
 15

 Fluoride
 mg/L
 ND
 ND
 15 N2

 Sulfate
 mg/L
 1550
 1360
 13
 15 CL

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.



QUALIFIERS

Project: 60731303 PRPA CCR-Revised Report

Pace Project No.: 60455269

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

Date: 01/13/2025 10:01 AM

- CL The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731303 PRPA CCR-Revised Report

Pace Project No.: 60455269

Date: 01/13/2025 10:01 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60455269001	BAT-09-CCR	EPA 3010	899026	EPA 6010	899033
60455269002	BAT-04R-CCR	EPA 3010	899026	EPA 6010	899033
60455269003	BAT-06-CCR	EPA 3010	899026	EPA 6010	899033
60455269001	BAT-09-CCR	EPA 3010	899027	EPA 6020	899037
60455269002	BAT-04R-CCR	EPA 3010	899027	EPA 6020	899037
60455269003	BAT-06-CCR	EPA 3010	899027	EPA 6020	899037
60455269001	BAT-09-CCR	EPA 7470	899028	EPA 7470	899031
60455269002	BAT-04R-CCR	EPA 7470	899028	EPA 7470	899031
60455269003	BAT-06-CCR	EPA 7470	899028	EPA 7470	899031
60455269001	BAT-09-CCR	SM 2540C	899724		
60455269002	BAT-04R-CCR	SM 2540C	899724		
60455269003	BAT-06-CCR	SM 2540C	899724		
60455269001	BAT-09-CCR	EPA 9056	899321		
60455269002	BAT-04R-CCR	EPA 9056	899321		
60455269003	BAT-06-CCR	EPA 9056	899321		

FedEx ☑ UPS □

Custody Seal on Cooler/Box Present: Yes ☑

Temperature should be above freezing to 6°C

Bubble Wrap □

VIA 🗆

As-read 2-2

Client Name: AFCOM

Courier:

Tracking #: 7146

Packing Material:

Thermometer Used:

Cooler Temperature (°C):

Chain of Custody present:

Sufficient volume:

Correct containers used:

Pace containers used:

Containers intact:

Chain of Custody relinquished:

Samples arrived within holding time:

Short Hold Time analyses (<72hr):

Rush Turn Around Time requested:

Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?

Sample labels match COC: Date / time / ID / analyses

Containers requiring pH preservation in compliance? (HNO₃, H₂SO₄, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)

Potassium iodide test strip turns blue/purple? (Preserve)

Matrix:

State:

Filtered volume received for dissolved tests?

Lead acetate strip turns dark? (Record only)

Samples contain multiple phases?

Cyanide water sample checks:

Headspace in VOA vials (>6mm):

Samples from USDA Regulated Area:

Trip Blank present:

DC# Title: ENV-FRM-LENE-0010_Sam

Clay □

No □

Bubble Bags

(SCUR_ESI) Revision: 3 Effective Date: 01/12/2

PEX [

Pace Shipping Label U

Type of Ice: Wet BI

☐Yes ☐No

☐Yes ☐No

□Yes □No

□Yes □No 望N/A

MN/A

N/A

Corr. Factor O_ \ Corr

NE-0010_Sampl	W0#:60452423
e Date: 01/12/202	
X 🗆 ECI 🗆	Pace □ Xroads □ Client □ Other □
Shipping Label Used	
Seals intact: Yes	
Foam □	None □ Other □ ZPL C
of Ice: Wet Blue	Date and initials of person C/D/D/L
O_ D Correct	ed 2-) examining contents 14
	1-8
to the the the the the the the the the the	
ØŶes □No □N/A	
Yes No N/A	
□Yes ➡No □N/A	
□Yes □No □N/A	
Yes ONO ON/A	
□Ves □No □N/A	
Wes □No □N/A	
Ayes No N/A	
Yes No ZNA	
Yes No N/A	
⊠Yes □No □N/A	
□Yes ☑ No □N/A	
☑Yes □No □N/A	List sample IDs, volumes, lot #'s of preservative and the
1817	date/time added.
/ 10 /	
□Yes □No	

Additional labels attached to 5035A / TX1005 via	als in the field? □Yes	□No	□•N/A			
Client Notification/ Resolution:	Copy COC to Client?			Field Data Required?	Y / N	
Person Contacted: Comments/ Resolution:	Date/Time:			wh		start and finish times oler, if >20 min, recheck
				Sta	art:	Start:

End: End: Temp: Temp: Project Manager Review: Date:



Section B

Section A

Pace Analytical

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

(COD) (P)

200

Pace Project No./ Lab I.D. DRINKING WATER SAMPLE CONDITIONS OTHER of GROUND WATER Page: Residual Chlorine (Y/N) REGULATORY AGENCY 8 RCRA 25% Requested Analysis Filtered (Y/N) TIME 5/1/29 Site Location STATE NPDES DATE UST **S240C LD2** 470 Total Mercury ACCEPTED BY / AFFILIATION SAPac 6010 Total Metals** 5020 Total Metals* 9026 CI, F, SO4 Test Test Test N/A Other Same as Section A Accounts Payable Methanol Heather Wilson Preservatives $Na_2S_2O_3$ Sompany Name: AECOM NaOH Manager. Pace Profile #: 11033, 3 42700 HCI Invoice Information: HNO3 () DS^zH Reference: Section C Unpreserved TIME ace Quote \ddress. 4 # OF CONTAINERS SAMPLE TEMP AT COLLECTION DATE TIME COMPOSITE END/GRAB ECOM DATE COLLECTED RELINQUISHED BY / AFFILIATION 1570 60709371 PRPA CCR 1250 TIME COMPOSITE NEED PO# DATE Report To: Vasanta Kalluri Sopy To: Jamie Herman Required Project Information: 6070937 1 Mackengle 5 (G=GRAB C=COMP) SAMPLE TYPE Purchase Order No.: Project Number. (see valid codes to left) MATRIX CODE Project Name: CODE DW WT SL SL OL AR AR AR TS Valid Matrix Codes DRINKING WATER
WATER
WASTE WATER
PRODUCT
SOIL/SOLID AJR OTHER TISSUE WIPE Greenwood Village, CO 80111 jamie.herman@aecom.com STANGOO ADDITIONAL COMMENTS (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE 6200 South Quebec St Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TI SAMPLE ID Required Client Information ²hone: (303) 740-2614 Required Client Information: Requested Due Date/TAT: AECOM アイト Section D **B. Ca. Li Company: mail To: Address: 9 = 42 00 # MBTI Ø

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

(N/Y)

Samples Intact

Cooler (Y/N)

Custody Sealed

Ice (Y/N) Received on

Сетр іп °С

DATE Signed (MM/DD/YY): 05/

SIGNATURE of SAMPLER: UNIVERSITY

PRINT Name of SAMPLER: MACK & M

SAMPLER NAME AND SIGNATURE

70-

12C1+

collected

MSMSD

Page 17 of 17

ナベ

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

Data Validation Report

Project/Site: Platte River Power Authority – Rawhide/CCR BAT Event: First Semiannual Groundwater 2024

AECOM Chemist: Sawyer Hunt

Date: 8/6/2024 **AECOM Secondary Reviewer:** Jamie Herman Date: 8/23/2024

Introduction:

This validation report documents the data review through the checklists below. Further identification and explanation of the anomaly are provided following each section of the checklist, as needed.

The data package and sample identifications discussed in this data review are summarized in Table

Laboratory and Sample Delivery Groups (SDGs):

Pace Analytical Services – Lenexa, Kansas: 60452426, 60452578, 60452588, 60452675, 60452741, 60452754, 60452817, 60452841, 60455269

Guidance Documents:

The data validation 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.

Overal	l Assessm	ent:
Overai	1 179969911	ıcıı,

	Data are usable without qualification.
X	Data are usable with qualification (noted below, summarized in Table 2).
	Some or all data are unusable for any purpose (noted below, summarized in Table 2).

Case Narrative Comments:

Any case narrative comments concerning data qualification were addressed as noted in the table below.

Fluoride is not included in Pace Analytical Services laboratory in Kansas City's NELAC certification.

This data validation report includes the evaluation of data package 60452818. This data package includes the BAT-13 well, originally sampled for the Colorado Department of Public Health and Environment. This well frequently dries up and was added to this report per the AECOM project team.

Data package 60455269: The laboratory revised and reissued the data package to provide appropriate dilution results for Method 9056 associated with samples BAT-04R-CCR, BAT-06-CCR, and BAT-09-CCR. The laboratory indicated the originally reported results were potentially switched; as the analysis could not be further confirmed due to sample disposal, the revised results were selected for reporting.

The laboratory noted the continuing calibration was below the lower control limits for sulfate by Method 9056; the associated samples BAT-04R-CCR and BAT-06-CCR were qualified as estimated (J-c).

Data Validation Report

Project/Site: Platte River Power Authority – Rawhide/CCR BAT **Event:** First Semiannual Groundwater 2024

AECOM Chemist: Sawyer Hunt AECOM Secondary Reviewer: Jamie Herman **Date:** 8/16/2024 **Date:** 8/23/2024

Review	Criteria	Comments				
Parameter	Met?	Comments				
Chain of Custody & Sample Receipt	Yes	The samples were received in good condition and were consistent with the accompanying chain of custody (COC). The cooler temperatures upon receipt were within the recommended ≤6 degrees Celsius (°C) temperature range as applicable to the method.				
Holding Times	Yes	The analyses were conducted within the method required holding time.				
Laboratory Blanks • Method Blank (MB)	No	With the exception listed in Table 3, the target analytes were not detected or were reported at concentrations less than the minimum detectable concentration (MDC) within the method blanks.				
Matrix Quality Control	No	Matrix Spike/ Matrix Spike Duplicate (MS/MSD)				
Matrix Spike/ Matrix Spike Duplicate Data Package 60452841 BAT-03-CCR		With the exceptions listed in Table 4, the MS/MSDs performed on project specific samples met QC criteria.				
Data Package 60455269		Laboratory Duplicate				
BAT-04R-CCR • Laboratory Duplicate Data Package 60455269 BAT-04R-CCR (9056)		The laboratory duplicates performed on project specific samples met QC criteria.				
Laboratory Performance • Laboratory Control Sample	Yes	There was one laboratory control sample (LCS) and/or laboratory control sample duplicate (LCSD) per method per analytical method, prepared and analyzed, with the exception of the calculated total radium result. The LCS/LCSD recoveries and/or RPDs were within the laboratory acceptance limits. These results are indicative of an acceptable level of accuracy and precision with respect to the analytical method.				
Field Quality Control	No	Field Blank				
• Field Blank None		A field blank was not submitted with the samples associated with this sampling event.				
 Equipment Blank Data Packages 60452841/60452817 		Equipment Blank				
Field Duplicate Data Packages 60452578/60452588 A.T. J. GOVEN BOX CONTROL OF THE PROPERTY OF THE PRO		With the exception listed in Table 3, the target analytes were not detected or were reported at concentrations <mdc blank.<="" equipment="" td="" the="" within=""></mdc>				
BAT-12-CCR/DUP-02-CCR		Field Duplicate				
		The field duplicate sample results satisfied the evaluation criteria below:				
		• When both the sample and duplicate values are >5xRL acceptable sampling and analytical precision is indicated by a RPD between the results of ≤30%.				
		• Where the result for one or both analytes of the field duplicate pair is <5xRL, satisfactory precision is indicated if the absolute difference between the field duplicate results is <2xRL.				

Data Validation Report

Project/Site: Platte River Power Authority – Rawhide/CCR BAT Event: First Semiannual Groundwater 2024

AECOM Chemist: Sawyer Hunt

Date: 8/16/2024 AECOM Secondary Reviewer: Jamie Herman Date: 8/23/2024

Review	Criteria	Comments
Parameter	Met?	
		• For radiological parameters, the agreement between parent sample results and field duplicate sample results were evaluated. The duplicate error ratio (DER) met the criterion of a DER ≤2.
Tracer and/or Carrier Recovery	Yes	The sample specific recoveries were within the laboratory limits (30-110%).
Reporting Limits	No	For non-radiological parameters, several analytes were reported as non-detect at elevated reporting limits. These non-detect results will need to be evaluated by the end user of the data with respect to project objectives.
		With the exception listed in Table 5, for radiological parameters, if the associated uncertainty was greater than the reported result, then the 2 sigma (σ) uncertainty multiplied by 1.65 was less than or equal to the specified detection limit.
Package Completeness	Yes	The results are usable as qualified for the project objective. The data are considered 100% complete.

°C – Degrees Celsius

% – Percent

≥ – Greater Than or Equal To

≤ – Less Than or Equal To

> - Greater Than

< - Less Than

 $\pm - Plus \ or \ Minus$

 $\sigma-Sigma$

c - Calibration Issue

COC - Chain of Custody

DER - Duplicate Error Ratio

J- - Estimated Result, Bias Low

ID-Identification

LCS - Laboratory Control Sample

LCSD – Laboratory Control Sample Duplicate

MDC – Minimum Detectable Concentration

MDL - Method Detection Limit

MS - Matrix Spike

MSD – Matrix Spike Duplicate

RL – Reporting Limit

RPDs – Relative Percent Differences VOCs - Volatile Organic Compounds **Table 1: Summary of Samples**

	Table 1: Sui	nmary of Samples			Analyses	
					Anaryses	
Field Sample Identification	Sample Type	Laboratory Identification	Matrix	Total Metals	General	Total Radium*
•		ckage 60452426			·	
BAT-09-CCR	N	60452426001	Water			X
BAT-04R-CCR	N	60452426003	Water			X
BAT-06-CCR	N	60452426006	Water			X
	Data Pac	ckage 60452578	_			
BAT-05-CCR	N	60452578001	Water	X	X	
BAT-12-CCR	N	60452578002	Water	X	X	
DUP-02-CCR	FD	60452578003	Water	X	X	
BAT-02-CCR	N	60452578004	Water	X	X	
	Data Pa	ckage 60452588				
BAT-05-CCR	N	60452588001	Water			X
BAT-12-CCR	N	60452588002	Water			X
DUP-02-CCR	FD	60452588003	Water			X
BAT-02-CCR	N	60452588004	Water			X
	Data Pa	ckage 60452675				
BAT-11-CCR	N	60452675001	Water			X
BAT-10-CCR	N	60452675002	Water			X
BAT-01-CCR	N	60452675003	Water			X
		ckage 60452741		1	1	
BAT-13-CCR	N	60452741001	Water	X	X	
		ckage 60452754	T	1		
BAT-11-CCR	N	60452754001	Water	X	X	
BAT-10-CCR	N	60452754002	Water	X	X	
BAT-01-CCR	N	60452754003	Water	X	X	
		ckage 60452817		T	T	
BAT-03-CCR	N	60452817001	Water			X
ERB-02-CCR	EB	60452817002	Water			X
		ckage 60452841	T	1	T	
BAT-03-CCR	N	60452841001	Water	X	X	
ERB-02-CCR	EB	60452841002	Water	X	X	
DATE OF CCD		ckage 60455269	337		***	
BAT-09-CCR	N	60455269001	Water	X	X	
BAT-04R-CCR	N	60455269002	Water	X	X	
BAT-06-CCR	N Data Par	60455269003	Water	X	X	
DAT 12 CDDUE		ckage 60452818	XX7-4			V
BAT-13-CDPHE	N	60452818001	Water			X

Sample Type: -- Not analyzed for this parameter EB - Equipment Blank

FD – Field Duplicate N – Normal Sample General Chemistry – Anions: chloride, fluoride, sulfate (Method 9056), and total dissolved solids (TDS) (SM 2540C). Analyses: Total Metals – Boron, calcium, lithium (6010), antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, lead, molybdenum, selenium, thallium (6020), mercury (7470A)

* – Includes radium-226 (Method 903.1), radium-228 (Method 904.0), and total radium combined (TRC)

Table 2: Summary of Qualified Data

Laboratory	Sample	Sample	Matrix	Analytical	Analyte	Unit	Result	RL	MDC	Dilution	Qualifier	Reason
Identification	Identification	Type		Method								Code
60452841001	BAT-03-CCR	N	Water	6020	Barium	ug/L	15.6	1		1	J+	bl
60452841001	BAT-03-CCR	N	Water	6020	Chromium	ug/L	ND	1		1	UJ	m
60455269002	BAT-04R-CCR	N	Water	9056	Chloride	mg/L	41.2	10		10	J+	m
60455269002	BAT-04R-CCR	N	Water	9056	Sulfate	mg/L	1550	500		500	J-	С
60452426002	BAT-04R-CCR	N	Water	903.1	Radium-226	pCi/L	0.455		0.721	1	J	V
60455269002	BAT-06-CCR	N	Water	9056	Sulfate	mg/L	1550	500		500	J-	С

Definitions

MDC Minimum Detectable Concentration

mg/L Milligrams per Liter
ug/L Micrograms per Liter
N Normal Sample
pCi/L Picocuries per Liter
RL Reporting Limit

Qualifiers

J The result is an estimated quantity. 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 not detected, but the reporting limit is estimated.

Reason Codes

bl Laboratory Blank Contamination

c Calibration Issue

m Matrix Spike/Matrix Spike Duplicate Issue

v Compound identification issue

Table 3: Blank Outliers

Blank Identification/	Analyte	Concentration	Qualification
Associated Samples			
		Data Package 60452841	
MB 3543795 BAT-03-CCR ERB-02-CCR	Barium	14.4 ug/L	The sample result BAT-03-CCR was greater than the blank contamination but less than 10x the blank contamination; therefore it was qualified as estimated (J+ bl) to reflect the high bias indicated by the blank contamination.
ERB-02-CCR BAT-03-CCR	Total Dissolved Solids	16.0 mg/L	The associated sample result for BAT-03-CCR was reported at concentrations >10x the blank contamination; therefore, qualification was not necessary.

^{± –} Plus or Minus

MB – Method Blank

 $\begin{array}{l} mg/L-Milligrams~per~Liter\\ ugL-Micrograms~per~liter \end{array}$

Table 4: Matrix Snike/Matrix Snike Dunlicate Outliers

Table 4. Watth Spike/Watth Spike Duplicate Outliers								
Matrix Spike	Analyte	Recovery	RPD	Qualification				
Identification	·	(Limit)	(Limit)					
Tuelle linearion		(Limit)	(Limit)					
	_							
	J	Data Package 6	0452841					
BAT-03-CCR	Chromium	73/74	2	As the potential bias was low, the				
				sample result was qualified as estimated				
		(75-125)	(20)	(UJ m).				
				(O3 III).				
		Data Package 6	0455269					
BAT-04R-CCR	Fluoride	172/175	1	As the potential bias was high, and the				
				associated sample result was non-				
		(80-120)	(15)	detected, data qualification was not				
				•				
				necessary.				
	Chloride	243/298	15	As the potential bias was high, the				
	Cinoride	2-15/270	13	1				
		(80-120)	(15)	sample result was qualified as estimated				
		()		(J+m).				
ſ	1	I	1					

mg/L – Milligrams per Liter

Table 5: Uncertainty Outliers

Associated Samples	Analyte	Result	2 Sigma (σ)	MDC	Qualification			
		(pCi/L)	Uncertainty	(pCi/L)				
	Data Package 60452426							
BAT-04R-CCR	Radium-226	0.455	± 0.457	0.721	As the 2σ uncertainty multiplied by 1.65 was >MDC, the associated results were qualified as estimated (J v).			

MDC – Minimum Detectable Concentration

< - Less than

bl - Laboratory Blank Contamination

J+ - Estimated, High Bias

ND – Non-detect

J+-Estimated, High Bias

UJ - Analyte not detected in sample, reporitng limit is estimated

m – MS/MSD issue

pCi/L - Picocuries per Liter

AECOM Environment

September/October 2024





November 20, 2024

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

RE: Project: 60731303 PRPA CCR

Pace Project No.: 60462426

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on October 11, 2024. 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 Wilson

Databa m. Wilson

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

Enclosures

cc: Jamie Herman, AECOM Jeremy Hurshman, AECOM







CERTIFICATIONS

Project: 60731303 PRPA CCR

Pace Project No.: 60462426

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



SAMPLE SUMMARY

Project: 60731303 PRPA CCR

Pace Project No.: 60462426

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60462426001	BAT-11-CCR	Water	10/10/24 09:30	10/11/24 09:11
60462426002	ERB-02-CCR	Water	10/10/24 09:40	10/11/24 09:11
60462426003	BAT-09-CCR	Water	10/10/24 11:20	10/11/24 09:11
60462426004	BAT-12-CCR	Water	10/10/24 13:45	10/11/24 09:11



SAMPLE ANALYTE COUNT

Project: 60731303 PRPA CCR

Pace Project No.: 60462426

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60462426001	BAT-11-CCR	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JGP	2	PASI-K
		EPA 7470	MLD	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 9056	AAA	3	PASI-K
60462426002	ERB-02-CCR	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JGP	2	PASI-K
		EPA 7470	MLD	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 9056	AAA	3	PASI-K
60462426003	BAT-09-CCR	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JGP	2	PASI-K
		EPA 7470	MLD	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 9056	AAA	3	PASI-K
60462426004	BAT-12-CCR	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JGP	2	PASI-K
		EPA 7470	MLD	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 9056	AAA	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City



Project: 60731303 PRPA CCR

Pace Project No.: 60462426

Date: 11/20/2024 02:25 PM

Sample: BAT-11-CCR	Lab ID: 604	52426001	Collected: 10/10/2	4 09:30	Received: 10	/11/24 09:11 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Meth	nod: EPA	A 3010			
	Pace Analytica	Services -	Kansas City					
Arsenic	ND	ug/L	10.0	1	10/21/24 10:00	10/30/24 14:17	7440-38-2	
Barium	33.1	ug/L	5.0	1	10/21/24 10:00	10/30/24 14:17	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/21/24 10:00	10/30/24 14:17	7440-41-7	
Boron	354	ug/L	100	1	10/21/24 10:00	10/30/24 14:17	7440-42-8	
Cadmium	ND	ug/L	5.0	1	10/21/24 10:00	10/30/24 14:17	7440-43-9	
Calcium	92000	ug/L	200	1	10/21/24 10:00	10/30/24 14:17	7440-70-2	
Chromium	ND	ug/L	5.0	1	10/21/24 10:00	10/30/24 14:17	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/21/24 10:00	10/30/24 14:17	7440-48-4	
Lead	ND	ug/L	10.0	1	10/21/24 10:00	10/30/24 14:17	7439-92-1	
_ithium	65.5	ug/L	10.0	1	10/21/24 10:00	10/30/24 14:17	7439-93-2	
Molybdenum	ND	ug/L	20.0	1	10/21/24 10:00	10/30/24 14:17	7439-98-7	
Selenium	ND	ug/L	15.0	1	10/21/24 10:00	10/30/24 14:17	7782-49-2	
6020 MET ICPMS	Analytical Meth	od: EPA 60	020 Preparation Meth	nod: EPA	A 3010			
	Pace Analytica	Services -	Kansas City					
Antimony	ND	ug/L	1.0	1	10/21/24 13:42	11/19/24 13:58	7440-36-0	
Γhallium	ND	ug/L	1.0	1	10/21/24 13:42			
7470 Mercury	Analytical Meth	od: EPA 74	170 Preparation Meth	nod: EPA	A 7470			
	Pace Analytica	Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	10/28/24 14:46	10/29/24 11:56	7439-97-6	
2540C Total Dissolved Solids	Analytical Meth	od: SM 25	40C					
	Pace Analytica							
Total Dissolved Solids	732	mg/L	13.3	1		10/17/24 16:03	1	
		ŭ		'		15,1172 - 10.00	•	
9056 IC Anions	Analytical Meth Pace Analytica							
Chloride	5.3	mg/L	1.0	1		10/23/24 14:32	16887-00-6	
Fluoride	0.28	mg/L	0.20	1		10/23/24 14:32		
Sulfate	181	mg/L	50.0	50		10/23/24 14:45		



Project: 60731303 PRPA CCR

Pace Project No.: 60462426

Date: 11/20/2024 02:25 PM

Sample: ERB-02-CCR	Lab ID: 6046	62426002	Collected: 10/10/2	24 09:40	Received: 10	/11/24 09:11 I	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua		
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Meth	nod: EP/	A 3010					
	Pace Analytica	l Services -	Kansas City							
Arsenic	ND	ug/L	10.0	1	10/21/24 10:00	10/30/24 14:19	7440-38-2			
Barium	ND	ug/L	5.0	1	10/21/24 10:00	10/30/24 14:19	7440-39-3			
Beryllium	ND	ug/L	1.0	1	10/21/24 10:00	10/30/24 14:19	7440-41-7			
Boron	ND	ug/L	100	1	10/21/24 10:00	10/30/24 14:19	7440-42-8			
Cadmium	ND	ug/L	5.0	1	10/21/24 10:00	10/30/24 14:19	7440-43-9			
Calcium	ND	ug/L	200	1	10/21/24 10:00	10/30/24 14:19	7440-70-2			
Chromium	ND	ug/L	5.0	1	10/21/24 10:00	10/30/24 14:19	7440-47-3			
Cobalt	ND	ug/L	5.0	1	10/21/24 10:00	10/30/24 14:19	7440-48-4			
₋ead	ND	ug/L	10.0	1	10/21/24 10:00	10/30/24 14:19	7439-92-1			
_ithium	ND	ug/L	10.0	1	10/21/24 10:00	10/30/24 14:19	7439-93-2			
Nolybdenum	ND	ug/L	20.0	1	10/21/24 10:00	10/30/24 14:19	7439-98-7			
Selenium	ND	ug/L	15.0	1	10/21/24 10:00	10/30/24 14:19	7782-49-2			
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010									
	Pace Analytica	l Services -	Kansas City							
Antimony	ND	ug/L	1.0	1	10/21/24 13:42	11/19/24 14:01	7440-36-0			
Fhallium	ND	ug/L	1.0	1	10/21/24 13:42					
7470 Mercury	Analytical Meth	od: EPA 74	170 Preparation Meth	nod: EP/	A 7470					
	Pace Analytica	l Services -	Kansas City							
Mercury	ND	ug/L	0.20	1	10/28/24 14:46	10/29/24 11:58	7439-97-6			
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	40C							
	Pace Analytica									
otal Dissolved Solids	ND	mg/L	13.3	1		10/17/24 16:03	.	PP		
		· ·		•		10,11,2110.00				
0056 IC Anions	Analytical Meth									
	Pace Analytica	l Services -	Kansas City							
Chloride	ND	mg/L	1.0	1		10/23/24 14:58	16887-00-6			
Fluoride	ND	mg/L	0.20	1		10/23/24 14:58				
	ND	mg/L				10/23/24 14:58				



Project: 60731303 PRPA CCR

Pace Project No.: 60462426

Date: 11/20/2024 02:25 PM

Sample: BAT-09-CCR	Lab ID: 604	62426003	Collected: 10/10/2	24 11:20	Received: 10	/11/24 09:11 N	/latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	nod: EPA 60	010 Preparation Metl	nod: EP	A 3010			
	Pace Analytica	l Services -	Kansas City					
Arsenic	ND	ug/L	10.0	1	10/21/24 10:00	10/30/24 14:20	7440-38-2	
Barium	13.8	ug/L	5.0	1	10/21/24 10:00	10/30/24 14:20	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/21/24 10:00	10/30/24 14:20	7440-41-7	
Boron	2230	ug/L	100	1	10/21/24 10:00	10/30/24 14:20	7440-42-8	
Cadmium	ND	ug/L	5.0	1	10/21/24 10:00	10/30/24 14:20	7440-43-9	
Calcium	228000	ug/L	200	1	10/21/24 10:00	10/30/24 14:20	7440-70-2	
Chromium	ND	ug/L	5.0	1	10/21/24 10:00	10/30/24 14:20	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/21/24 10:00	10/30/24 14:20	7440-48-4	
_ead	ND	ug/L	10.0	1	10/21/24 10:00	10/30/24 14:20	7439-92-1	
₋ithium	252	ug/L	10.0	1	10/21/24 10:00	10/30/24 14:20	7439-93-2	
Molybdenum	ND	ug/L	20.0	1	10/21/24 10:00	10/30/24 14:20	7439-98-7	
Selenium	ND	ug/L	15.0	1	10/21/24 10:00	10/30/24 14:20	7782-49-2	
6020 MET ICPMS	Analytical Meth	nod: EPA 60	20 Preparation Metl	nod: EP	A 3010			
	Pace Analytica	l Services -	Kansas City					
Antimony	ND	ug/L	1.0	1	10/21/24 13:42	11/19/24 14:05	7440-36-0	
Гhallium	ND	ug/L	1.0	1		11/19/24 14:05		
7470 Mercury	Analytical Meth	nod: EPA 74	170 Preparation Met	nod: EP	A 7470			
•	Pace Analytica	l Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	10/28/24 14:46	10/29/24 12:00	7439-97-6	
2540C Total Dissolved Solids	Analytical Meth	nod: SM 254	40C					
	Pace Analytica							
Total Dissolved Solids	3140	mg/L	125	1		10/17/24 16:03		
9056 IC Anions	Analytical Meth	nod: EPA 90	056					
	Pace Analytica	l Services -	Kansas City					
Chloride	94.9	mg/L	50.0	50		10/23/24 15:26	16887-00-6	
Fluoride	2.3	mg/L	0.20	1		10/23/24 15:13		
Sulfate	1830	mg/L	200	200		10/23/24 15:38		



Project: 60731303 PRPA CCR

Pace Project No.: 60462426

Date: 11/20/2024 02:25 PM

Sample: BAT-12-CCR	Lab ID: 6046	2426004	Collected: 10/10/2	4 13:45	Received: 10)/11/24 09:11	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua			
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Meth	nod: EPA	A 3010						
	Pace Analytical	Services -	Kansas City								
Arsenic	ND	ug/L	10.0	1	10/21/24 10:00	11/01/24 11:48	7440-38-2				
Barium	31.1	ug/L	5.0	1	10/21/24 10:00	11/01/24 11:48	7440-39-3				
Beryllium	ND	ug/L	1.0	1	10/21/24 10:00	11/01/24 11:48	7440-41-7				
Boron	230	ug/L	100	1	10/21/24 10:00	11/01/24 11:48	7440-42-8				
Cadmium	ND	ug/L	5.0	1	10/21/24 10:00	11/01/24 11:48	7440-43-9				
Calcium	111000	ug/L	200	1	10/21/24 10:00	11/01/24 11:48	7440-70-2	M1			
Chromium	ND	ug/L	5.0	1	10/21/24 10:00	11/01/24 11:48	7440-47-3				
Cobalt	ND	ug/L	5.0	1	10/21/24 10:00	11/01/24 11:48	7440-48-4				
Lead	ND	ug/L	10.0	1	10/21/24 10:00	11/01/24 11:48	7439-92-1				
Lithium	92.8	ug/L	10.0	1	10/21/24 10:00	11/01/24 11:48	7439-93-2				
Molybdenum	ND	ug/L	20.0	1	10/21/24 10:00	11/01/24 11:48	7439-98-7				
Selenium	ND	ug/L	15.0	1	10/21/24 10:00	11/01/24 11:48	7782-49-2				
6020 MET ICPMS	Analytical Meth	Analytical Method: EPA 6020 Preparation Method: EPA 3010									
	Pace Analytical	Services -	Kansas City								
Antimony	ND	ug/L	1.0	1	10/21/24 13:42	11/19/24 13:28	7440-36-0				
Thallium	ND	ug/L	1.0	1		11/19/24 13:28					
7470 Mercury	Analytical Meth	od: EPA 74	170 Preparation Meth	nod: EPA	A 7470						
•	Pace Analytical	Services -	Kansas City								
Mercury	ND	ug/L	0.20	1	10/28/24 14:46	10/29/24 12:02	7439-97-6				
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	40C								
	Pace Analytical										
Total Dissolved Solids	996	mg/L	20.0	1		10/17/24 16:03	.				
		Ŭ		•		15/11/24 10:00	•				
9056 IC Anions	Analytical Meth Pace Analytical										
Shlarida	·		•	10		10/02/04 10:00	16997.00.0				
Chloride	168	mg/L	10.0	10		10/23/24 16:30					
Fluoride	ND	mg/L	0.20	1		10/23/24 15:51					
Sulfate	369	mg/L	50.0	50		10/23/24 16:43	14808-79-8				



Project: 60731303 PRPA CCR

Pace Project No.: 60462426

Date: 11/20/2024 02:25 PM

QC Batch: 914148 Analysis Method: EPA 7470

QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462426001, 60462426002, 60462426003, 60462426004

METHOD BLANK: 3619217 Matrix: Water
Associated Lab Samples: 60462426001, 60462426002, 60462426003, 60462426004

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Mercury ug/L ND 0.20 10/29/24 11:21

LABORATORY CONTROL SAMPLE: 3619218

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units Mercury 5 4.7 95 80-120 ug/L

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3619219 3619220

MS MSD

60462146005 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Result Result % Rec **RPD** RPD Result Conc. % Rec Limits Qual ND 5 20 Mercury ug/L 5 4.9 4.8 97 75-125

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3619221 3619222

MS MSD

60462426004 MS MSD MS MSD % Rec Spike Spike Max **RPD** RPD Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits Qual ND 5 5 4.7 93 92 Mercury 4.6 75-125 20 ug/L

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.



Project: 60731303 PRPA CCR

Pace Project No.: 60462426

Date: 11/20/2024 02:25 PM

QC Batch: 913290 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462426001, 60462426002, 60462426003, 60462426004

METHOD BLANK: 3615924 Matrix: Water
Associated Lab Samples: 60462426001, 60462426002, 60462426003, 60462426004

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	10.0	10/30/24 13:56	
Barium	ug/L	ND	5.0	10/30/24 13:56	
Beryllium	ug/L	ND	1.0	10/30/24 13:56	
Boron	ug/L	ND	100	10/30/24 13:56	
Cadmium	ug/L	ND	5.0	10/30/24 13:56	
Calcium	ug/L	ND	200	10/30/24 13:56	
Chromium	ug/L	ND	5.0	10/30/24 13:56	
Cobalt	ug/L	ND	5.0	10/30/24 13:56	
Lead	ug/L	ND	10.0	10/30/24 13:56	
Lithium	ug/L	ND	10.0	10/30/24 13:56	
Molybdenum	ug/L	ND	20.0	10/30/24 13:56	
Selenium	ug/L	ND	15.0	10/30/24 13:56	

LABORATORY CONTROL SAMPLE:	3615925					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	ug/L	1000	957	96	80-120	
Barium	ug/L	1000	1010	101	80-120	
Beryllium	ug/L	1000	1030	103	80-120	
Boron	ug/L	1000	965	96	80-120	
Cadmium	ug/L	1000	1030	103	80-120	
Calcium	ug/L	10000	10400	104	80-120	
Chromium	ug/L	1000	1050	105	80-120	
Cobalt	ug/L	1000	1070	107	80-120	
Lead	ug/L	1000	1040	104	80-120	
Lithium	ug/L	1000	988	99	80-120	
Molybdenum	ug/L	1000	1050	105	80-120	
Selenium	ug/L	1000	1030	103	80-120	

MATRIX SPIKE & MATRIX SP	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3615926											
			MS	MSD								
		60462426004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	ug/L	ND	1000	1000	999	1020	100	102	75-125	3	20	
Barium	ug/L	31.1	1000	1000	1040	1060	100	103	75-125	3	20	
Beryllium	ug/L	ND	1000	1000	1050	1070	105	107	75-125	2	20	
Boron	ug/L	230	1000	1000	1210	1240	98	101	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.



Project: 60731303 PRPA CCR

Pace Project No.: 60462426

Date: 11/20/2024 02:25 PM

MATRIX SPIKE & MATRIX	SPIKE DUPLI	CATE: 3615	3615927									
Parameter	0 Units	60462426004 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	1010	1030	101	103	75-125	2	20	
Calcium	ug/L	111000	10000	10000	116000	117000	50	68	75-125	2	20	M1
Chromium	ug/L	ND	1000	1000	1030	1060	103	106	75-125	2	20	
Cobalt	ug/L	ND	1000	1000	1030	1060	103	106	75-125	3	20	
Lead	ug/L	ND	1000	1000	999	1020	100	102	75-125	2	20	
Lithium	ug/L	92.8	1000	1000	1120	1140	103	105	75-125	2	20	
Molybdenum	ug/L	ND	1000	1000	1070	1100	106	109	75-125	3	20	
Selenium	ug/L	ND	1000	1000	1050	1090	105	108	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.



Project: 60731303 PRPA CCR

Pace Project No.: 60462426

QC Batch: 913342 Analysis Method: EPA 6020 QC Batch Method: EPA 3010 Analysis Description: 6020 MET

> Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462426001, 60462426002, 60462426003, 60462426004

METHOD BLANK: Matrix: Water Associated Lab Samples:

60462426001, 60462426002, 60462426003, 60462426004 Blank Reporting

Qualifiers Parameter Units Result Limit Analyzed ND 1.0 11/19/24 12:46 ug/L

Antimony Thallium ND 1.0 11/19/24 12:46 ug/L

LABORATORY CONTROL SAMPLE: 3616117

Date: 11/20/2024 02:25 PM

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3616118 3616119 MS MSD 60462426004 Spike Spike MS MSD MS MSD % Rec Max Result Parameter Units Result Conc. Conc. Result % Rec % Rec Limits **RPD** RPD Qual Antimony ug/L ND 100 100 95.2 92.3 95 92 75-125 3 20 Thallium ND 100 100 95.6 96 75-125 2 20 ug/L 93.4 93

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3616120 3616121 MS MSD 60462435004 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec **RPD RPD** Qual Limits 2 20 **Antimony** ug/L ND 100 100 95.6 93.7 95 93 75-125 Thallium ug/L ND 100 100 100 99.0 100 99 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.



Project: 60731303 PRPA CCR

Pace Project No.: 60462426

QC Batch: 912953 Analysis Method: SM 2540C

QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462426001, 60462426002, 60462426003, 60462426004

METHOD BLANK: 3614560 Matrix: Water

Associated Lab Samples: 60462426001, 60462426002, 60462426003, 60462426004

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Total Dissolved Solids mg/L ND 5.0 10/17/24 16:02

LABORATORY CONTROL SAMPLE: 3614561

Spike LCS LCS % Rec
Parameter Units Conc. Result % Rec Limits Qualifiers

Total Dissolved Solids mg/L 1000 1000 100 80-120

SAMPLE DUPLICATE: 3614562

60462426004 Dup Max Parameter Units Result Result **RPD RPD** Qualifiers 996 **Total Dissolved Solids** mg/L 2 976 10

SAMPLE DUPLICATE: 3614563

Date: 11/20/2024 02:25 PM

60462435004 Dup Max RPD RPD Parameter Units Result Result Qualifiers Total Dissolved Solids 960 950 10 mg/L 1

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.



Project: 60731303 PRPA CCR

Pace Project No.: 60462426

QC Batch: 913561 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462426001, 60462426002, 60462426003, 60462426004

METHOD BLANK: 3616728 Matrix: Water
Associated Lab Samples: 60462426001, 60462426002, 60462426003, 60462426004

ssociated Lab Samples: 60462426001, 60462426002, 60462426003, 60462426004

Blank Reporting

Parameter	Units	Result	Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	10/22/24 21:56	
Fluoride	mg/L	ND	0.20	10/22/24 21:56	
Sulfate	mg/L	ND	1.0	10/22/24 21:56	

LABORATORY CONTROL SAMPLE: 3616729

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L		4.9	98	80-120	
Fluoride	mg/L	2.5	2.4	97	80-120	
Sulfate	mg/L	5	4.9	98	80-120	

MATRIX SPIKE & MATRIX	SPIKE DUPL	ICATE: 3616	730		3616731							
Parameter	Units	60462302001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	178	500	500	576	575	80	79	80-120	0	15	M1
Fluoride	mg/L	4.2	2.5	2.5	6.7	6.8	101	103	80-120	0	15	
Sulfate	mg/L	4140	5000	5000	8790	8840	93	94	80-120	1	15	

SAMPLE DUPLICATE: 3616732

Date: 11/20/2024 02:25 PM

		60462302002	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Chloride	mg/L	176	176	0	15	
Fluoride	mg/L	0.71	0.76	7	15	
Sulfate	mg/L	3210	3340	4	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.



QUALIFIERS

Project: 60731303 PRPA CCR

Pace Project No.: 60462426

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

Date: 11/20/2024 02:25 PM

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

PP The mass of dried residue obtained did not meet the test method requirements based on volume used.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731303 PRPA CCR

Pace Project No.: 60462426

Date: 11/20/2024 02:25 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60462426001	BAT-11-CCR	EPA 3010	913290	EPA 6010	913328
60462426002	ERB-02-CCR	EPA 3010	913290	EPA 6010	913328
60462426003	BAT-09-CCR	EPA 3010	913290	EPA 6010	913328
60462426004	BAT-12-CCR	EPA 3010	913290	EPA 6010	913328
60462426001	BAT-11-CCR	EPA 3010	913342	EPA 6020	913408
60462426002	ERB-02-CCR	EPA 3010	913342	EPA 6020	913408
60462426003	BAT-09-CCR	EPA 3010	913342	EPA 6020	913408
60462426004	BAT-12-CCR	EPA 3010	913342	EPA 6020	913408
60462426001	BAT-11-CCR	EPA 7470	914148	EPA 7470	914239
60462426002	ERB-02-CCR	EPA 7470	914148	EPA 7470	914239
60462426003	BAT-09-CCR	EPA 7470	914148	EPA 7470	914239
60462426004	BAT-12-CCR	EPA 7470	914148	EPA 7470	914239
60462426001	BAT-11-CCR	SM 2540C	912953		
60462426002	ERB-02-CCR	SM 2540C	912953		
60462426003	BAT-09-CCR	SM 2540C	912953		
60462426004	BAT-12-CCR	SM 2540C	912953		
60462426001	BAT-11-CCR	EPA 9056	913561		
60462426002	ERB-02-CCR	EPA 9056	913561		
60462426003	BAT-09-CCR	EPA 9056	913561		
60462426004	BAT-12-CCR	EPA 9056	913561		

DC#_Title: ENV-FRM-LENE-0010_Sample C

(SCUR ESI)



Revision: 3 Effective Date: 01/12/2022 Client Name: UPS Courier: VIA 🗆 Clay PEX □ ECI 🗆 Pace □ Xroads ☐ Client ☐ Other Tracking #: 6450 182 Pace Shipping Label Used? Yes No M Custody Seal on Cooler/Box Present: Yes No □ Seals intact: Yes No □ Bubble Wrap □ Bubble Bags Foam **Packing Material:** None □ Other Type of Ice: (Wet) Thermometer Used: Blue None Date and initials of person As-read 6.4 Corr. Factor OL | Corrected OL Cooler Temperature (°C): examining contents: Temperature should be above freezing to 6°C Yes □No □N/A Chain of Custody present: □No □N/A Chain of Custody relinquished: □No □N/A Samples arrived within holding time: □N/A Short Hold Time analyses (<72hr): □N/A Rush Turn Around Time requested: □No □N/A Sufficient volume: ✓Yes □No □N/A Correct containers used: □No □N/A Pace containers used: ☑Yes ☐No □N/A Containers intact: ☐Yes ☑No □N/A Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs? □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: List sample IDs, volumes, lot #'s of preservative and the Containers requiring pH preservation in compliance? ✓Yes □No □N/A date/time added. (HNO₃, H₂\$O₄, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) LOT#: X8+2 (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) Cyanide water sample checks: ☐Yes ☐No Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve) ☐Yes ☐No ☐Yes ☐No Trip Blank present: Headspace in VOA vials (>6mm): ☐Yes ☐No EN/A ☐Yes ☑No □N/A Samples from USDA Regulated Area: State: Additional labels attached to 5035A / TX1005 vials in the field? □N/A **Client Notification/ Resolution:** Copy COC to Client? Field Data Required? Y / N Temp Log: Record start and finish times Person Contacted: Date/Time: when unpacking cooler, if >20 min, recheck Comments/ Resolution: sample temps.

Project Manager Review:

Start:

End:

Temp:

Start:

End:

Temp:

Date:

BATU)

Pace Analytical

K2

TODY / Analytical Request Document CHAIN-OF-C

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

Pace Project No./ Lab I.D. DRINKING WATER SCR. SAMPLE CONDITIONS OTHER MS/MSD GROUND WATER Residual Chlorine (Y/N) 2222 Щ REGULATORY AGENCY 00 RCRA TIME Requested Analysis Filtered (Y/N) Site Location STATE: NPDES DATE UST 2540C TDS 470 Total Mercury ACCEPTED BY / AFFILIATION **slateM letoT 0108 5020 Total Metals* Z 1026 CI, F, SO4 N/A Analysis Test тэчлС Same as Section A Accounts Payable BUTTLE Methanol Heather Wilson Preservatives _EO_SS_SbN AECOM HOBN 'ace Profile # 11033_3 42700 HCI HNO3 3 ompany Name: POS2H Pace Quote Reference: Pace Project Section C TIME Unpreserved 1700 Attention. Address: ww # OF CONTAINERS 42/01/01 SAMPLE TEMP AT COLLECTION DATE 318 0460 60209274 PRPA CCR 6 0731363 10/10/24 0930 02/1 60731303 COMPOSITE END/GRAB DATE COLLECTED \geq AFCOM RELINQUISHED BY / AFFILIATION TIME \geqslant COMPOSITE urchase Order No NEED PO# DATE Report To Vasanta Kalluri Copy To: Jamie Herman Required Project Information Challer P SAMPLE TYPE (G=GRAB C=COMP) 5 Project Number: (see valid codes to left) MATRIX CODE roject Name: Section B DRINKING WATER DW
WATER WT
WASTE WATER WW
PRODUCT P
SOIL/SOLID SL Valid Matrix Codes SL VP VP VP TS Greenwood Village, CO 80111 STANDARP jamie.herman@aecom.com ADDITIONAL COMMENTS (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE 6200 South Quebec St 'Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, TI ERB-01 - CCE BAT-09-CCK 5AT-12-CCR SAMPLE ID BAT- 11 - CCE Section D Required Client Information hone: (303) 740-2614 Required Client Information Requested Due Date/TAT: Section A отралу: B Ca Li ddress; mail To: 위 Ξ 12 # MBTI ø 00 6 m

(N/A)

Samples Intaci

Cooler (Y/N)

Received on Ice (Y/N)

J. ul dwa1

DATE Signed | 11/10/24

Olivia Halinsk

SIGNATURE OF SAMPLER:

SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER:

Page 18 of 19

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

1L Na Thiosulfate clear/amber glass 4oz unpreserved amber wide 250mL H2SO4 amber glass 500mL H2SO4 amber glass 500mL unpres amber glass 125mL unpres amber glass 100mL unores amber glass 1L HCl amber glass 250mL unpres amber glass 100mL unpres amber glass 500mL HNO3 amber glass 1liter unpres amber glass 1L H2SO4 amber glass **∀C32** 8oz clear soil jar 4oz clear soil jar 2oz clear soil jar **Yesn** 007 31303 NESA MO#: 60462426 **H**19∀ WGKU WGFU WG2U AG0U AG1H AG1S AG1T AG1U AG2N AG3S AG2U AG2U AG3U JGFU AG4U Bein Glass DC9B DC9M 40mL unpreserved clear vial 250mL Unpres Clear glass 40mL amber unpreserved 40mL bisulfate clear vial 40mL HCl amber voa vial 40mL H2SO4 amber vial 40mL Na Thio amber via 40mL Na Thio. clear vial 1liter H2SO4 clear glass 250mL HCL Clear glass DC9N 40mL MeOH clear vial 40mL TSP amber vial 40mL HCI clear vial 1liter unpres glass 16oz clear soil jar N69/ Client: Site DC90 D_C Work Order Number

Container Codes

17

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10

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O

7

120mL Coliform Na Thiosulfate

Wipe/Swab Ziploc Bag Air Cassettes Terracore Kit Summa Can

Air Filter

ΑF OR

unpreserved plastic

1L H2SO4 plastic

1L NAOH plastic 1L HNO3 plastic

1L NaOH, Zn Acetate 500mL NAOH plastic

BP1Z BP2B **BP2N** BP2S BP2U

DG9Q DG9M

DG9S DG9T Dean /G9H VG9U BG1U ВСЗН

/G9T

BG1S

ZPLC SP51

Non-aqueous Liquid OIL

Drinking Water

3

125mL unpreserved plastic

16oz unpresserved plstic

Due Date: 11/01/24

CLIENT: RECOM CO

PM: HMW

125mL H2SO4 plastic

125mL HNO3 plastic

250mL NaOH. Zn Acetate

Wipe

Matrix

Water

250mL HNO3 plastic - field filtered

BP2Z BP3B BP3F BP3F BP3N

250mL unpreserved plastic

250mL HNO3 plastic 250mL NaOH plastic

250mL H2SO4 plastic

BP3U BP3S BP3Z BP4U

500mL unpreserved plastic

500mL H2SO4 plastic

500mL HNO3 plastic

500mL NaOH, Zn Acetate

Solid

Other

SPLC

WPDU

BP3Z

BP3B

BP35

BP3F

BP3N

BP1N

BP3U

BP2U

UIAB

Medn

MCKN

neen

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H69/

XintelV

COC Line Item

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e

Notes

Profile/EZ#

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

M

Pace® Analytical Services, LLC

Qualtrax ID: 30422





November 04, 2024

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

RE: Project: 60731303 PRPA CCR

Pace Project No.: 60462512

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on October 11, 2024. 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 Wilson

Databa m. Wilson

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

Enclosures

cc: AECOM, AECOM CO Jamie Herman, AECOM Jeremy Hurshman, AECOM



9608 Loiret Blvd. Lenexa, KS 66219 (913)599-5665



CERTIFICATIONS

Project: 60731303 PRPA CCR

Pace Project No.: 60462512

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
Iowa Certification #: 391
Kansas Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221

Louisiana DHH/TNI Certification #: LA010 Louisiana DEQ/TNI Certification #: 04086

Maine Certification #: 2023021 Maryland Certification #: 308

KY WW Permit #: KY0000221

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

Oregon/TNI Certification #: PA200002-015 Pennsylvania/TNI Certification #: 65-00282 Puerto Rico Certification #: PA01457 Rhode Island Certification #: 65-00282

South Dakota Certification

Ohio EPA Rad Approval: #41249

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



SAMPLE SUMMARY

Project: 60731303 PRPA CCR

Pace Project No.: 60462512

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60462508007	BAT-11-CCR	Water	10/10/24 09:30	10/11/24 09:05
60462508008	ERB-02-CCR	Water	10/10/24 09:40	10/11/24 09:05
60462508009	BAT-09-CCR	Water	10/10/24 11:20	10/11/24 09:05
60462508010	BAT-12-CCR	Water	10/10/24 13:45	10/11/24 09:05
60462508011	BAT-12-CCR MS	Water	10/10/24 13:45	10/11/24 09:05
60462508012	BAT-12-CCR MSD	Water	10/10/24 13:45	10/11/24 09:05



SAMPLE ANALYTE COUNT

Project: 60731303 PRPA CCR

Pace Project No.: 60462512

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60462508007	BAT-11-CCR	EPA 903.1	 LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60462508008	ERB-02-CCR	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60462508009	BAT-09-CCR	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60462508010	BAT-12-CCR	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60462508011	BAT-12-CCR MS	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
60462508012	BAT-12-CCR MSD	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg



Project: 60731303 PRPA CCR

Pace Project No.: 60462512

Sample: BAT-11-CCR Lab ID: 60462508007 Collected: 10/10/24 09:30 Received: 10/11/24 09:05 Matrix: Water

PWS: Site ID: Sample Type:

Comments: • The sampler's name and signature were not listed on the COC.
• MS/MSD not labeled on bottles; needed updated COC/IRWO - received 10/15/24.

	,					
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytica	ll Services - Greensburg		•		
Radium-226	EPA 903.1	0.122 ± 0.653 (1.22) C:NA T:93%	pCi/L	10/29/24 14:22	13982-63-3	
	Pace Analytica	ll Services - Greensburg				
Radium-228	EPA 904.0	0.625 ± 0.348 (0.614) C:83% T:91%	pCi/L	10/30/24 14:18	15262-20-1	
	Pace Analytica	ll Services - Greensburg				
Total Radium	Total Radium Calculation	0.747 ± 1.00 (1.83)	pCi/L	10/31/24 15:39	7440-14-4	



Project: 60731303 PRPA CCR

Pace Project No.: 60462512

Sample: ERB-02-CCR PWS:	Lab ID: 6046 Site ID:	2508008 Collected: 10/10/24 09:40 Sample Type:	Received:	10/11/24 09:05	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 903.1	-0.551 ± 0.533 (1.21) C:NA T:93%	pCi/L	10/29/24 14:49	9 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 904.0	0.397 ± 0.318 (0.628) C:83% T:91%	pCi/L	10/30/24 14:18	3 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	0.397 ± 0.851 (1.84)	pCi/L	10/31/24 15:39	9 7440-14-4	



Project: 60731303 PRPA CCR

Pace Project No.: 60462512

Sample: BAT-09-CCR PWS:	Lab ID: 6046 Site ID:	2508009 Collected: 10/10/24 11:20 Sample Type:	Received:	10/11/24 09:05	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 903.1	0.650 ± 0.410 (0.176) C:NA T:86%	pCi/L	10/29/24 14:4	9 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 904.0	1.22 ± 0.458 (0.674) C:83% T:87%	pCi/L	10/30/24 14:18	8 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	1.87 ± 0.868 (0.850)	pCi/L	10/31/24 15:39	9 7440-14-4	



Project: 60731303 PRPA CCR

Pace Project No.: 60462512

Sample: BAT-12-CCR PWS:	Lab ID: 6046250 Site ID:	O8010 Collected: 10/10/24 13:45 Sample Type:	Received:	10/11/24 09:05	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Ser	rvices - Greensburg				
Radium-226	EPA 903.1	0.470 ± 0.297 (0.127) C:NA T:88%	pCi/L	10/29/24 14:49	9 13982-63-3	
	Pace Analytical Ser	rvices - Greensburg				
Radium-228	EPA 904.0	0.000364 ± 0.266 (0.630) C:84% T:87%	pCi/L	10/30/24 14:18	8 15262-20-1	
	Pace Analytical Ser	rvices - Greensburg				
Total Radium	Total Radium Calculation	0.470 ± 0.563 (0.757)	pCi/L	10/31/24 15:39	9 7440-14-4	



Radium-228

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60462512

Lab ID: 60462508011 Sample: BAT-12-CCR MS Collected: 10/10/24 13:45 Received: 10/11/24 09:05 Matrix: Water

PWS: Site ID: Sample Type:

EPA 904.0

Method Act ± Unc (MDC) Carr Trac Units CAS No. **Parameters** Analyzed Qual Pace Analytical Services - Greensburg EPA 903.1 107.31 %REC ± NA (NA) Radium-226 pCi/L 10/29/24 14:49 13982-63-3 C:NA T:NA Pace Analytical Services - Greensburg

pCi/L

10/30/24 14:18 15262-20-1

64.04 %REC ± NA (NA)

C:NA T:NA



Project: 60731303 PRPA CCR

Pace Project No.: 60462512

Sample: BAT-12-CCR MSD Lab ID: 60462508012 Collected: 10/10/24 13:45 Received: 10/11/24 09:05 Matrix: Water

PWS: Site ID: Sample Type:

Pace Analytical Services - Greensburg

Radium-228 EPA 904.0 **79.68 %REC 21.76RPD ±** pCi/L 10/30/24 14:18 15262-20-1

NA (NA) C:NA T:NA



QUALITY CONTROL - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60462512

QC Batch: 703258 Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60462508007, 60462508008, 60462508009, 60462508010, 60462508011, 60462508012

METHOD BLANK: 3424648 Matrix: Water

Associated Lab Samples: 60462508007, 60462508008, 60462508009, 60462508010, 60462508011, 60462508012

 Parameter
 Act ± Unc (MDC) Carr Trac
 Units
 Analyzed
 Qualifiers

 Radium-226
 0.000 ± 0.655 (1.06) C:NA T:33%
 pCi/L
 10/29/24 14:26

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.



QUALITY CONTROL - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60462512

QC Batch: 703259 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: 60462508007, 60462508008, 60462508009, 60462508010, 60462508011, 60462508012

METHOD BLANK: 3424650 Matrix: Water

Associated Lab Samples: 60462508007, 60462508008, 60462508009, 60462508010, 60462508011, 60462508012

 Parameter
 Act ± Unc (MDC) Carr Trac
 Units
 Analyzed
 Qualifiers

 Radium-228
 0.564 ± 0.375 (0.711) C:82% T:87%
 pCi/L
 10/30/24 14:17

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.



QUALIFIERS

Project: 60731303 PRPA CCR

Pace Project No.: 60462512

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

Date: 11/04/2024 12:21 PM

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731303 PRPA CCR

Pace Project No.: 60462512

Date: 11/04/2024 12:21 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60462508007	BAT-11-CCR	EPA 903.1	703258		
60462508008	ERB-02-CCR	EPA 903.1	703258		
60462508009	BAT-09-CCR	EPA 903.1	703258		
60462508010	BAT-12-CCR	EPA 903.1	703258		
60462508011	BAT-12-CCR MS	EPA 903.1	703258		
60462508012	BAT-12-CCR MSD	EPA 903.1	703258		
60462508007	BAT-11-CCR	EPA 904.0	703259		
60462508008	ERB-02-CCR	EPA 904.0	703259		
60462508009	BAT-09-CCR	EPA 904.0	703259		
60462508010	BAT-12-CCR	EPA 904.0	703259		
60462508011	BAT-12-CCR MS	EPA 904.0	703259		
60462508012	BAT-12-CCR MSD	EPA 904.0	703259		
60462508007	BAT-11-CCR	Total Radium Calculation	706618		
60462508008	ERB-02-CCR	Total Radium Calculation	706618		
60462508009	BAT-09-CCR	Total Radium Calculation	706618		
60462508010	BAT-12-CCR	Total Radium Calculation	706618		

LUK DIII III

Pace Analytical

CHAIN-OF-CUS I UDY / Analytical Request Document

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

Pace Project No./ Lab I.D. DRINKING WATER OTHER ō NS/M5D GROUND WATER Page: Residual Chlorine (Y/N) ZZZ REGULATORY AGENCY 8 RCRA Requested Analysis Filtered (Y/N) Site Location STATE L NPDES □ UST Sum Radium-226 & 228 ACCEPTED BY / AFFILIATION otal Radium-228 Ż Total Radium-226 ↓Analysis Test N/A Same as Section A Other Pace Cuote 73141
Reference:
Pace Project Heather Wilson Manager:
Pace Profile #: 11033, 8 Accounts Payable Methanol Preservatives Na₂S₂O₃ Company Name: AECOM HOEN HCI HNO3 NN H²SO Section C Address: Attention: Unpreserved TIME # OF CONTAINERS 9 SAMPLE TEMP AT COLLECTION 130 DATE TIME 040 0690 Helill 01 CONTROL PRPA GORNIE COR COLLECTED DATE Project Number: 607084768 00731363 RELINQUISHED BY / AFFILIATION TIME START Jurchase Order No.: 1599461 DATE Report To: Vasanta Kalluri Sopy To: Jamie Herman Section B Required Project Information (G=GRAB C=COMP) 6 SAMPLE TYPE roject Name; (see valid codes to left) **BUOD XINTAM** Valid Matrix Codes MATRIX CODE DRIHKINS WATER IN WATER WASTE WATER WASTE WATER WASTE SOULSOLD SOULSOLD Greenwood Village, CO 80111 iamie, herman@aecom.com ADDITIONAL COMMENTS 15 Day TAT 6200 South Quebec St (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE BAT-12-CCR 3AT-09-CCR SAMPLE ID BAT-11-CCR RB-62-CCR Section D Required Clent Information (303) 740-2614 Section A Required Client Information: Requested Due Date/TAT: AECOM Company: Email To: Address: 6 80 ITEM # 7 ۲ 3 4 2 9 10 7

DATE Signed (MM/DD/YY): MIIDSK NIVIA PRINT Name of SAMPLER: SIGNATURE of SAMPLER:

SAMPLER NAME AND SIGNATURE

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

(YW) Samples Intact

Cooler (Y/N)

Custody Seale

(NIY) BOI

Received on

Temp in °C

SAMPLE CONDITIONS

905 TIME

10/11/24

hoh

1760

NZ/01/01

AECOM

DATE

2 Updated 1840/1000 recented 10113/107 vm coment

2	Internal Transfer Chain of Custody	ir Chain	Ofo	Listody												-	\mathcal{C}
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				Rush Multiplier	tiplierX			Stat	State Of Origin: CO	igin:	င္ပု		[_	なってなっ
			22		Samples Pre-Logged into eCOC	nto eCOC		Cert	Cert. Needed:		×	S	×			_	
Š	Workorder: 60462512	Workorder Name:	r Name:		3 PRPACCE	~		OWI	Owner Received Date:	eived	Date		10/11/2024		Results Requested By:	sted By:	11/1/2024
Rep	Report To			Subcontract To	To								Request	Requested Analysis	sis		
Hei Par 960 Ler Phr	Heather Wilson Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 1(913)563-1407			Pace Analytical 1638 Roseytow Suites 2,3, & 4 Greensburg, PA Phone (724)85	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600	urgh d 1				3SS-muibe	8SS-muibe	muibe.A mi					
							Pre	Preserved Containers	intainers	otal Ra	s A leto	otal Su					
Item	Sample ID	Samp	e	ae L	Lab ID	Matrix	EONH				L	L					LAB USE ONLY
-	BAT-11-CCR	PS	10/10	10/10/2024 09:30 60462508007	60462508007	Water	2			×	×	×					700
7	ERB-02-CCR	PS	10/10	10/10/2024 09:40	60462508008	Water	2			×	×	×					208
က	BAT-09-CCR	PS	10/10	10/10/2024 11:20 60462508009	60462508009	Water	2			×	×	×					6 00
4	BAT-12-CCR	PS	10/10	10/10/2024 13:45	60462508010	Water	2			×	×	×					010
rC	BAT-12-CCR MS	PS	10/10	10/10/2024 13:45 60462508011	60462508011	Water	2			×	×	×					110
9	BAT-12-CCR MSD	PS	10/10	10/10/2024 13:45 60462508012	60462508012	Water	2			×	×	×					210
															Comments		
Tra	Transfers Released By			Date/Time	Received By	>			Date/Time	ime							
-					Inde	2 Mes	13		42/11/01	h2/	9:	9:05					
7																	
က											\vdash						
Č	Cooler Temperature on Receipt	Paraint /	ړ	Tall C	Custody Soal	7		Po	Received on Ice	201 00	>) r	(Z	L	Samples	Samples Intact (V	Z.

This chain of custody is considered complete as is since this information is available in the owner laboratory.



FMT-ALL-C-002rev.00 24March2009

^{***}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.

	DC# Title: ENV-FRM	1-GBI	JR-00	88	v07_Sample	Condition Upon Receipt
	Greensburg					00706211
0	Gleensburg					WO#: 30726214
Pace.	Effective Date: 01/04/202	4				Due Date: 11/01
Client Name:	AECOM					CLIENT: PACE_60_LEKS
	x UPS USPS Client	ПСо	mmerc	ial [Pace Othe	
Courier: Fed E	14.22 LUSA 773	0				Examined By: QS 10114104
Tracking Number	1: 4033 6450 773	_	Control of the Contro			TYES No Labeled By: P5 10/15/124
Custody Seal on	- I In Dunnanti	100 11	۷o	Sea	ils Intact:	Temped By: PS 10115124
Thermometer Us	ed: Ty	pe of I	ce: V	Vet	Blue (Notie)	°C Final Temp:°C
Cooler Temperat	ed: Ty ure: Observed Temp		_•C	Cor	rection Factor:	
Temp should be above	e freezing to 6°C					
·			т	LALI	pH paper L 1001 04	
Comments:		Yes	No	N/	10010-1	Lupdated IRWOLCOC 10/15/24 Via Pri
Chain of Custody	Present	/	 	-	2.	L OPONICAL TITLESTONE TO THE CONTRACT OF THE C
Chain of Custody	Filled Out:	_	1	-	5 1014124	
-Were client of	orrections present on GOL	-	X	1-	3.	
Chain of Custody	Relinquished	/	-	-	4.	
Sampler Name & S	Signature on COC:	/	-	-	+	
Sample Labels mat	tch COC:		/		me Imen) NOT labeled on bottles
-Includes date	/time/ID		WT	_	-14011406	, , , , , , , , , , , , , , , , , , , ,
Matrix:			00.1		6.	
Samples Arrived w	ithin Hold Time:		-		7.	
Short Hold Time A	nalysis (<72hr		L 1		1.	
remaining):					8.	
Rush Turn Around	Time Requested:		-	-	9.	
Sufficient Volume:		-	-		10.	
Correct Containers	Used:	1	-			
-Pace Containe	rs Used	1			11.	
Containers Intact:	1150	-		/	12.	
Orthophosphate fie	id filtered:			/	13.	
Hex Cr Aqueous san	nples field littered.	$\neg \uparrow$	1.	_	14:	
Organic Samples Chi	ecked for dichlorination eived for dissolved tests:			/	15:	
Filtered volume rece	ed for preservation:	/	Marine Commence		16.	
All containers check	coliform TOC 0&G.				PHCD	
exceptions: VOA	, coliform, TOC, O&G, n, non-aqueous matrix				1710	
Phenolics, Rado	n, non-aductors meaning	1	T		Initial when	Date/Time of Preservation
All containers meet	method preservation			\dashv	Lot# of added	Picsersans
requirements:			125		Preservative	
eacht /n: Headspace	in VOA Vials (> 6mm)		-		17.	
624.1: Headspace in	VOA Vials (0mm)		1	-	18.	
Radon: Headspace in		\dashv	1-		19.	
	1	-	-	-	Trip blank	custody seal present? YES or NO
Trip Blank Present:	d a DE mrom/hr	, 	+	\dashv	Initial when PS	Date: /// 24 Survey Meler SN: 25014380
Rad Samples Screene	1 1 1	-	0, 50		completed 1	
Comments: 🚁 N	veded updated CO	C/1	awu.			

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

Page 1 of 1

CUR BAT PA

Face Analytical

CHAIN-OF-CUS I ODY / Analytical Request Document

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

DRINKING WATER OTHER of OTHER GROUND WATER Page: 8 REGULATORY AGENCY RCRA Requested Analysis Filtered (Y/N) Site Location NPDES STATE: TSU T Same as Section A Pace Guote 73141
Reference:
Pace Project Heather Wilson Manager:
Pace Profice #: 11033, 8 Accounts Payable Company Name: AECOM Invoice Information; Attention: Acco Section C Address. Project Name: 621054118 PRPA 6406148 CCZ Project Number: 601054148 60131303 urchase Order No.: 1599461 Report To: Vasanta Kalluri Copy To: Jamie Herman Section B Roquired Project Information: Greenwood Village, CO 80111 jamie.herman@aecom.com 15 Day TAT 6200 South Quebec St Phone: (303) 740-2614 Required Client Information: Requested Due Date/TAT: AECOM Section A Email To: 4ddress:

0	DRINKING WATER WATER WASTE WATER PRODUCT SOIL/SOLID OIL.	Sample IDs MUST BE UNIQUE TISSUE TS	BAT-11-CCR	ERB-02-CCR	8AT-09-CCR	BAT-12-CCR	ADDITIONAL COMMENTS	<i>A</i>	JO#:30726214	PM: MAR Due Date: 11/01/24 CLIENT: PACE_60_LEKS
_	ee valid codes		MTG				RELINGUI	m 2400		01/24
	COMPOSITE	DATE		_		€	RELINQUISHED BY / AFFILIATION			
COLLECTE	SITE	TIME	1	_		→	VFFILIATION	AECOM	SAMPLER NAM	g 20
CIED	COMPOSITE	DATE	10)11/24 0	9	-	1	100		NAME AN	PRINT Name of SAMPLER: SIGNATURE of SAMPLER:
		D TA 9MPLE TEMP AT	0430	0460	021	346	DATE	10 110 24	E AND SIGNATURE	lame of SAMPLER: URE of SAMPLER:
	S	# OF CONTAINERS	2	2	7	9	TIME	994		100
Pre		HMO ³ H ⁵ 2O ⁴	1	2	7	0	iii	0	+	≥0%
Preservatives		HCI MgOH						1/2		<u> </u>
sə		Na ₂ S ₂ O ₃ Methanol Other	F				ACCEPTE	7		Niki
人		JesT aisylsis Test Total Radium-22	_	_ ×	īΧ	×	D BY / AF	N		
	8	SS-muibsЯ lstoT SS-muibsЯ mu8	×	X	X	XX	ACCEPTED BY / AFFILIATION	0		DATE Signed (MM/DD/YY);
				E			70	101		KZ) 01/01
							DATE	5 4211101		N2
							TIME	905		
	(N/N)	Residual Chlorine	2	z	Z	2			+	ni qmaT
		Pace Pro				NS/MSE	SAMPLEC	>	(1	Received Ice (Y/N
		Pace Project No./ Lab I.D.				2	SAMPLE CONDITIONS	2-	(N/	Cooler (Y

Pace Analytical

Quality Control Sample Performance Assessment

LL1 10/17/2024 Ra-226 Test

81838 DW Analyst: Date: Batch ID: Matrix:

60462508010 60462508011

60462508004 60462508005 60462508006

Sample I.D. Sample MS I.D.

Sample MSD I.D.

Spike I.D.:

MS/MSD Decay Corrected Spike Concentration (pCi/mL):

Spike Volume Used in MS (mL): MS Target Conc.(pCi/l., g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):

Spike Volume Used in MSD (mL):

10/10/2024

Sample Collection Date:

Sample Matrix Spike Control Assessment

MS/MSD

Analyst Must Manually Enter All Fields Highlighted in Yellow.

MS/MSD 2 10/10/2024 60462508012

23-063

23-063 32.294 0.20 0.20 0.652 9.910

32.294 0.20 0.20 0.656 9.849 0.463 0.463 0.463 0.292 11.039 11.039 11.039 11.303 0.914 -1.393 0.914 0.014 0.0292 0.0292 0.0292 0.0304 0.031 0.032 0.031 0.03

ank Assessment		
MB Sample ID	3424648	
MB concentration:	0.000	
M/B Counting Uncertainty:	0.655	
MB MDC:	1.062	
MB Numerical Performance Indicator.	00.00	
MB Status vs Numerical Indicator.	¥N X	
MR Status vs MDC	Dass	

Method Bla

Laboratory (

Control Sample Assessment	CSD (Y or N)?
	LCS81838
Count Date:	10/29/2024
Spike I.D.:	23-063
Spike Concentration (pCi/mL):	32.294
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.654
Target Conc. (pCi/L, g, F):	4.936
Uncertainty (Calculated):	0.232
Result (pCi/L, g, F):	5.076
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.014
Numerical Performance Indicator:	0.26
Percent Recovery:	102.83%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	133%
Lower % Recovery Limits:	73%

	- () () () () () () () () () (20.00	2
	MSD Aliquot (L, g, F):	0.654	0.657
	MSD Target Conc. (pCi/L, g, F):	9.879	9.838
	MS Spike Uncertainty (calculated):	0.466	0.463
z	MSD Spike Uncertainty (calculated):	0.464	0.462
LCSD81838	Sample Result.	-0.132	0.470
	Sample Result Counting Uncertainty (pCi/L, g, F):	0.464	0.292
	Sample Matrix Spike Result:	9.564	11.039
	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	1.321	1.443
	Sample Matrix Spike Duplicate Result:	10.782	9.300
	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	1.488	1.303
	MS Numerical Performance Indicator.	-0.285	0.914
	MSD Numerical Performance Indicator.	1.247	-1.399
	MS Percent Recovery:	97.83%	107.31%
	MSD Percent Recovery:	110.48%	89.75%
	MS Status vs Numerical Indicator:	N/A	N/A
	MSD Status vs Numerical Indicator:	N/A	N/A
	MS Status vs Recovery:	Pass	Pass
	MSD Status vs Recovery:	Pass	Pass
	MS/MSD Upper % Recovery Limits:	136%	136%
	MS/MSD Lower % Recovery Limits:	71%	71%
	Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Enter Duplicate	Sample I.D.	60462508004	60462508010
sample IDs if	Sample MS I.D.	60462508005	60462508011
other than	Sample MSD I.D.	60462508006	60462508012
LCS/LCSD in	Sample Matrix Spike Result:	9.564	11.039
the space below.	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	1.321	1.443
	Sample Matrix Spike Duplicate Result:	10.782	9.300
	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	1.488	1.303
	Duplicate Numerical Performance Indicator:	-1.200	1.754
	(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	12.14%	17.82%
	MS/ MSD Duplicate Status vs Numerical Indicator.	N/A	N/A
	MS/ MSD Duplicate Status vs RPD:	Pass	Pass
	% RPD Limit	32%	32%

Sample I.D.

Duplicate Sample I.D.
Sample Result (pCiVL. g. F):
Sample Result Counting Uncertainty (pCiVL. g. F):
Sample Duplicate Result (pCiVL. g. F):
Sample Duplicate Result (pCiVL. g. F):
Are sample and/or duplicate results below R.I.

Duplicate Sample Assessment

See Below ##

Duplicate RPD:

Duplicate Numerical Performance Indicator

	licate results are below the RL.
Duplicate Status vs Numerical Indicator: Duplicate Status vs RPD: % RPD Limit;	## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the RL.

Comments:

LU 10 31.24

REH 10/30/24

Arizona DHES requires qualification for any AZ DW samples reported where the QC does not meet the recommended limits of the Manual for the Certification of Labs Analyzing Drinking Waters, 5th Edition, section 7.7 of Chapter VI.

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Quality Control Sample Performance Assessment

Ra-228

Test:

Pace Analytical"

Analyst Must Manually Enter All Fields Highlighted in Yellow.

MS/MSD 2 10/10/2024

MS/MSD 1 10/10/2024

		9	_	9							_	_	
Sample Matrix Spike Control Assessment	Sample Collection Date:	Sample I.D.	Sample MS I.D.	Sample MSD I.D.	Spike I.D.:	MS/MSD Decay Corrected Spike Concentration (pCi/mL):	Spike Volume Used in MS (mL):	Spike Volume Used in MSD (mL):	MS Aliquot (L, g, F):	MS Target Conc.(pCi/L, g, F):	MSD Aliquot (L, g, F):	MSD Target Conc. (pCi/L, g, F):	Mental Colors Andrews Colors
JJS1	10/24/2024	81839	W			3424650	0.564	0.375	0.711	2.95	Warning	Pass	
Analyst:	Date:	Worklist:	Matrix:			MB Sample ID	MB concentration:	M/B 2 Sigma CSU:	MB MDC:	MB Numerical Performance Indicator:	MB Status vs Numerical Indicator:	MB Status vs. MDC:	
-					Method Blank Assessment								

6000 6000 6000 6000 6000 6000 6000 600
Sample MS I.D. Sample MS I.D. Sample MS I.D. Sample MS I.D. Spike Volume Used in MS (mL): Spike Volume Used in MS (mL): Spike Volume Used in MS (mL): Spike Volume Used in MS (mL): MS Target Conc. (pCi/L. g, F): MSD Target Conc. (pCi/L. g, F): MSD Target Conc. (pCi/L. g, F): MSD Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Sample Result 2 Sigma CSU (pCi/L. g, F): Sample Matrix Spike Result Sample Matrix Spike Result MSD Numerical Performance Indicator: MSD Numerical Performance Indicator: MSD Numerical Performance Indicator: MSD Numerical Performance Indicator: MSD Numerical Performance Indicator: MSD Numerical Performance Indicator: MSD Status vs Numerical Indicator: MS Status vs Numerical Indicator: MSD Status vs Recovery: MSD Status vs Rec
MS/MSD Decay Corrected Spike Volge V
N LCSD81839

LCS81839 10/30/2024 23-043 34-763 0.10 0.821 4.233 0.207 2.588 0.662 4.65 61.13%

Aliquot Volume (L, g, F): Farget Conc. (pCi/L, g, F):

Uncertainty (Calculated):

Volume Used (mL):

LCS/LCSD 2 Sigma CSU (pCi/L, g, F).

Numerical Performance Indicator:

A/N

Percent Recovery: Status vs Numerical Indicator:

Upper % Recovery Limits: Lower % Recovery Limits:

Status vs Recovery

LCSD (Y or N)?

Laboratory Control Sample Assessment

Count Date: Spike I.D.:

Decay Corrected Spike Concentration (pCi/mL):

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

	Matrix Spike/Matrix Spike Duplicate Sample Assessment		
ate	Sample 1.D.	60462508004	60462508010
<u></u>	Sample MS 1.D.	60462508005	60462508011
_	Sample MSD I.D.	60462508006	60462508012
.⊆	Sample Matrix Spike Result:	7.736	5.588
low.	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.574	1.210
Ī	Sample Matrix Spike Duplicate Result:	6.838	6.896
	Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.410	1.450
Г	Duplicate Numerical Performance Indicator:	0.833	-1.357
	(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	14.30%	21.76%
	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:

18-15-01

1 of 1

Ra-228 (ENV-FRM-GBUR-0295 03).xls





November 25, 2024

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

RE: Project: 60731303 PRPA CCR

Pace Project No.: 60462558

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on October 15, 2024. 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 Wilson heather.wilson@pacelabs.com

Databa m. Wilson

1(913)563-1407 Project Manager

Enclosures

cc: Jamie Herman, AECOM Jeremy Hurshman, AECOM







CERTIFICATIONS

Project: 60731303 PRPA CCR

Pace Project No.: 60462558

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



SAMPLE SUMMARY

Project: 60731303 PRPA CCR

Pace Project No.: 60462558

Lab ID	Sample ID	Matrix	Date Collected	Date Received	
60462558001	BAT-05-CCR	Water	10/14/24 09:35	10/15/24 09:10	
60462558002	BAT-06-CCR	Water	10/14/24 11:45	10/15/24 09:10	
60462558003	BAT-01-CCR	Water	10/14/24 14:15	10/15/24 09:10	



SAMPLE ANALYTE COUNT

Project: 60731303 PRPA CCR

Pace Project No.: 60462558

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60462558001	BAT-05-CCR	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JGP	2	PASI-K
		EPA 7470	MLD	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 9056	AAA	3	PASI-K
60462558002	BAT-06-CCR	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JGP	2	PASI-K
		EPA 7470	MLD	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 9056	AAA	3	PASI-K
60462558003	BAT-01-CCR	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JGP	2	PASI-K
		EPA 7470	MLD	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 9056	AAA	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City



ANALYTICAL RESULTS

Project: 60731303 PRPA CCR

Pace Project No.: 60462558

Date: 11/25/2024 12:58 PM

Sample: BAT-05-CCR	Lab ID: 6046	2558001	Collected: 10/14	24 09:35	Received: 10	/15/24 09:10	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	od: EPA 60	10 Preparation Me	thod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Arsenic	ND	ug/L	10.0	1	10/21/24 13:42	11/02/24 01:56	7440-38-2	
Barium	16.6	ug/L	5.0	1	10/21/24 13:42	11/02/24 01:56	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/21/24 13:42	11/02/24 01:56	7440-41-7	
Boron	1170	ug/L	100	1	10/21/24 13:42	11/02/24 01:56	7440-42-8	
Cadmium	ND	ug/L	5.0	1	10/21/24 13:42	11/02/24 01:56	7440-43-9	
Calcium	453000	ug/L	200	1	10/21/24 13:42	11/02/24 01:56	7440-70-2	
Chromium	ND	ug/L	5.0	1	10/21/24 13:42	11/02/24 01:56	7440-47-3	
Cobalt	6.2	ug/L	5.0	1	10/21/24 13:42	11/02/24 01:56	7440-48-4	
Lead	ND	ug/L	10.0	1	10/21/24 13:42	11/02/24 01:56	7439-92-1	
_ithium	231	ug/L	10.0	1	10/21/24 13:42	11/02/24 01:56	7439-93-2	
Molybdenum	ND	ug/L	20.0	1	10/21/24 13:42	11/02/24 01:56	7439-98-7	
Selenium	ND	ug/L	15.0	1	10/21/24 13:42	11/02/24 01:56	7782-49-2	
6020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Me	thod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Antimony	ND	ug/L	1.0	1	10/30/24 09:18	11/19/24 15:48	3 7440-36-0	
Thallium	ND	ug/L	1.0	1	10/30/24 09:18			
7470 Mercury	Analytical Meth	od: EPA 74	70 Preparation Me	thod: EP	A 7470			
	Pace Analytical	Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	10/31/24 09:28	10/31/24 14:06	7439-97-6	
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	10C					
	Pace Analytical							
Total Dissolved Solids	4350	mg/L	125	1		10/17/24 15:31	I	
9056 IC Anions	Analytical Meth	od: EPA 90	56					
	Pace Analytical							
Chloride	53.2	mg/L	10.0	10		10/23/24 17:08	3 16887-00-6	
Fluoride	1.4	mg/L	0.20	1		10/23/24 16:56		
	2370	mg/L				10/23/24 17:2		



ANALYTICAL RESULTS

Project: 60731303 PRPA CCR

Pace Project No.: 60462558

Date: 11/25/2024 12:58 PM

Sample: BAT-06-CCR	Lab ID: 6046	2558002	Collected: 10/14/	24 11:45	Received: 10	/15/24 09:10	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	od: EPA 60	10 Preparation Met	hod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Arsenic	ND	ug/L	10.0	1	10/21/24 13:42	11/02/24 01:58	3 7440-38-2	
Barium	22.8	ug/L	5.0	1	10/21/24 13:42	11/02/24 01:58	3 7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/21/24 13:42	11/02/24 01:58	3 7440-41-7	
Boron	1810	ug/L	100	1	10/21/24 13:42	11/02/24 01:58	3 7440-42-8	
Cadmium	ND	ug/L	5.0	1	10/21/24 13:42	11/02/24 01:58	7440-43-9	
Calcium	106000	ug/L	200	1	10/21/24 13:42	11/02/24 01:58	3 7440-70-2	
Chromium	ND	ug/L	5.0	1	10/21/24 13:42	11/02/24 01:58	3 7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/21/24 13:42	11/02/24 01:58	3 7440-48-4	
₋ead	ND	ug/L	10.0	1	10/21/24 13:42	11/02/24 01:58	7439-92-1	
_ithium	173	ug/L	10.0	1	10/21/24 13:42	11/02/24 01:58	7439-93-2	
Molybdenum	ND	ug/L	20.0	1	10/21/24 13:42	11/02/24 01:58	7439-98-7	
Selenium	ND	ug/L	15.0	1	10/21/24 13:42	11/02/24 01:58	7782-49-2	
6020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Met	hod: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Antimony	ND	ug/L	1.0	1	10/22/24 15:06	11/12/24 16:57	7440-36-0	
Гhallium	ND	ug/L	1.0	1	10/22/24 15:06			
7470 Mercury	Analytical Meth	od: EPA 74	70 Preparation Met	hod: EP	A 7470			
	Pace Analytical	Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	11/01/24 10:47	11/01/24 13:43	7439-97-6	
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	10C					
	Pace Analytical							
Total Dissolved Solids	2480	mg/L	100	1		10/17/24 15:32	2	
9056 IC Anions	Analytical Meth	od: EPA 90	56					
	Pace Analytical							
Chloride	11.7	mg/L	1.0	1		10/23/24 17:34	1 16887-00-6	
Fluoride	1.4	mg/L	0.20	1		10/23/24 17:34		
Sulfate	1540	mg/L	200	-				



ANALYTICAL RESULTS

Project: 60731303 PRPA CCR

Pace Project No.: 60462558

Date: 11/25/2024 12:58 PM

Sample: BAT-01-CCR	Lab ID: 6046	2558003	Collected: 10/14/2	24 14:15	Received: 10	/15/24 09:10 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	od: EPA 60	10 Preparation Met	hod: EP/	A 3010			
	Pace Analytical	Services -	Kansas City					
Arsenic	ND	ug/L	10.0	1	10/21/24 13:42	11/02/24 02:00	7440-38-2	
Barium	30.8	ug/L	5.0	1	10/21/24 13:42	11/02/24 02:00	7440-39-3	
Beryllium	ND	ug/L	1.0	1	10/21/24 13:42	11/02/24 02:00	7440-41-7	
Boron	1600	ug/L	100	1	10/21/24 13:42	11/02/24 02:00	7440-42-8	
Cadmium	ND	ug/L	5.0	1	10/21/24 13:42	11/02/24 02:00	7440-43-9	
Calcium	104000	ug/L	200	1	10/21/24 13:42	11/02/24 02:00	7440-70-2	
Chromium	ND	ug/L	5.0	1	10/21/24 13:42	11/02/24 02:00	7440-47-3	
Cobalt	ND	ug/L	5.0	1	10/21/24 13:42	11/02/24 02:00	7440-48-4	
_ead	ND	ug/L	10.0	1	10/21/24 13:42	11/02/24 02:00	7439-92-1	
_ithium	177	ug/L	10.0	1	10/21/24 13:42	11/02/24 02:00	7439-93-2	
Molybdenum	ND	ug/L	20.0	1	10/21/24 13:42	11/02/24 02:00	7439-98-7	
Selenium	ND	ug/L	15.0	1	10/21/24 13:42	11/02/24 02:00	7782-49-2	
6020 MET ICPMS	Analytical Meth	od: EPA 60	20 Preparation Met	hod: EP/	A 3010			
	Pace Analytical	Services -	Kansas City					
Antimony	ND	ug/L	1.0	1	10/22/24 15:06	11/12/24 16:59	7440-36-0	
Thallium	ND	ug/L	1.0	1	10/22/24 15:06			
7470 Mercury	Analytical Meth	od: EPA 74	70 Preparation Met	hod: EP/	A 7470			
-	Pace Analytical	Services -	Kansas City					
Mercury	ND	ug/L	0.20	1	11/01/24 10:47	11/01/24 13:50	7439-97-6	
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	40C					
	Pace Analytical							
Total Dissolved Solids	1850	mg/L	66.7	1		10/17/24 15:33	3	
9056 IC Anions	Analytical Meth	od: EPA 90	956					
	Pace Analytical							
Chloride	393	mg/L	50.0	50		10/23/24 18:26	16887-00-6	
Fluoride	0.90	mg/L	0.20	1		10/23/24 18:13		
	675	mg/L	0.20	•				



Project: 60731303 PRPA CCR

Pace Project No.: 60462558

Date: 11/25/2024 12:58 PM

QC Batch: 914620 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462558001

METHOD BLANK: 3621126 Matrix: Water

Associated Lab Samples: 60462558001

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Mercury ug/L ND 0.20 10/31/24 13:50

LABORATORY CONTROL SAMPLE: 3621127

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units Mercury ug/L 5.2 104 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3621128 3621129

MS MSD

60462558001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual Result ND 5 4.7 20 Mercury ug/L 5 4.4 89 95 75-125

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.



Project: 60731303 PRPA CCR

Pace Project No.: 60462558

Date: 11/25/2024 12:58 PM

QC Batch: 914830 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462558002, 60462558003

METHOD BLANK: 3621878 Matrix: Water

Associated Lab Samples: 60462558002, 60462558003

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Mercury ug/L ND 0.20 11/01/24 13:38

LABORATORY CONTROL SAMPLE: 3621879

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units Mercury ug/L 5.2 104 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3621880 3621881

MS MSD

60462558002 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual Result ND 5 100 20 Mercury ug/L 5 5.0 5.3 106 75-125 6

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.



Project: 60731303 PRPA CCR

Pace Project No.: 60462558

Date: 11/25/2024 12:58 PM

QC Batch: 913331 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462558001, 60462558002, 60462558003

METHOD BLANK: 3616069 Matrix: Water

Associated Lab Samples: 60462558001, 60462558002, 60462558003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	10.0	11/02/24 01:47	
Barium	ug/L	ND	5.0	11/02/24 01:47	
Beryllium	ug/L	ND	1.0	11/02/24 01:47	
Boron	ug/L	ND	100	11/02/24 01:47	
Cadmium	ug/L	ND	5.0	11/02/24 01:47	
Calcium	ug/L	ND	200	11/02/24 01:47	
Chromium	ug/L	ND	5.0	11/02/24 01:47	
Cobalt	ug/L	ND	5.0	11/02/24 01:47	
Lead	ug/L	ND	10.0	11/02/24 01:47	
Lithium	ug/L	ND	10.0	11/02/24 01:47	
Molybdenum	ug/L	ND	20.0	11/02/24 01:47	
Selenium	ug/L	ND	15.0	11/02/24 01:47	

LABORATORY CONTROL SAMPLE:	3616070					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	ug/L	1000	920	92	80-120	
Barium	ug/L	1000	994	99	80-120	
Beryllium	ug/L	1000	1010	101	80-120	
Boron	ug/L	1000	955	95	80-120	
Cadmium	ug/L	1000	1010	101	80-120	
Calcium	ug/L	10000	10200	102	80-120	
Chromium	ug/L	1000	1030	103	80-120	
Cobalt	ug/L	1000	1050	105	80-120	
Lead	ug/L	1000	1050	105	80-120	
Lithium	ug/L	1000	972	97	80-120	
Molybdenum	ug/L	1000	1020	102	80-120	
Selenium	ug/L	1000	975	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3616071 3616072												
			MS	MSD								
		60462435004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	ug/L	ND	1000	1000	961	961	96	96	75-125	0	20	
Barium	ug/L	30.1	1000	1000	1030	1030	100	100	75-125	0	20	
Beryllium	ug/L	ND	1000	1000	1030	1010	103	101	75-125	1	20	
Boron	ug/L	215	1000	1000	1200	1190	99	98	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.



Project: 60731303 PRPA CCR

Pace Project No.: 60462558

Date: 11/25/2024 12:58 PM

MATRIX SPIKE & MATRIX	SPIKE DUPLI	CATE: 3616	• • •		3616072							
		60462435004	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Cadmium	ug/L	ND	1000	1000	1000	993	100	99	75-125	1	20	
Calcium	ug/L	97500	10000	10000	110000	108000	125	101	75-125	2	20	
Chromium	ug/L	ND	1000	1000	1030	1010	103	101	75-125	2	20	
Cobalt	ug/L	ND	1000	1000	1020	1020	102	102	75-125	1	20	
Lead	ug/L	ND	1000	1000	1010	1010	101	101	75-125	0	20	
Lithium	ug/L	83.2	1000	1000	1070	1060	99	98	75-125	0	20	
Molybdenum	ug/L	ND	1000	1000	1040	1030	104	103	75-125	1	20	
Selenium	ug/L	ND	1000	1000	1000	1000	100	100	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.



Thallium

Date: 11/25/2024 12:58 PM

QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60462558

QC Batch: 913390 Analysis Method: EPA 6020 QC Batch Method: EPA 3010 Analysis Description: 6020 MET

> Laboratory: Pace Analytical Services - Kansas City

60462558002, 60462558003 Associated Lab Samples:

METHOD BLANK: Matrix: Water

Associated Lab Samples: 60462558002, 60462558003

Blank Reporting Qualifiers Parameter Units Result Limit Analyzed Antimony ND 1.0 11/12/24 16:11 ug/L ND 1.0 11/12/24 16:11 ug/L

LABORATORY CONTROL SAMPLE: 3616196

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Antimony 40 38.3 96 80-120 ug/L ug/L Thallium 40 39.2 98 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3616197 3616198 MS MSD 60462719006 Spike Spike MS MSD MS MSD % Rec Max RPD Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** Qual Antimony ug/L 0.20J 40 40 38.5 38.5 96 75-125 0 20 Thallium ND 40 40 38.7 38.6 97 96 75-125 0 20 ug/L

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.



Antimony

Thallium

Date: 11/25/2024 12:58 PM

QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60462558

QC Batch: 914434 QC Batch Method: EPA 3010 Analysis Method: EPA 6020
Analysis Description: 6020 MET

6020 MET
Pace Analytical Services - Kansas City

Associated Lab Samples: 60462558001

METHOD BLANK: 3620398 Matrix: Water

Associated Lab Samples: 60462558001

Blank Reporting Qualifiers Parameter Units Result Limit Analyzed ND 1.0 11/19/24 15:43 ug/L ND 1.0 11/19/24 15:43 ug/L

Laboratory:

LABORATORY CONTROL SAMPLE: 3620399

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Antimony 40 35.4 88 80-120 ug/L Thallium ug/L 40 43.7 109 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3620400 3620401 MS MSD 60462558001 Spike Spike MS MSD MS MSD % Rec Max RPD Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** Qual Antimony ug/L ND 40 40 35.9 36.2 89 75-125 20 Thallium ug/L ND 40 40 42.4 42.2 106 105 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.



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60462558

QC Batch: 913310 Analysis Method: SM 2540C

QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462558001, 60462558002, 60462558003

METHOD BLANK: 3616004 Matrix: Water

Associated Lab Samples: 60462558001, 60462558002, 60462558003

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Total Dissolved Solids mg/L ND 5.0 10/17/24 15:27

LABORATORY CONTROL SAMPLE: 3616005

Spike LCS LCS % Rec
Parameter Units Conc. Result % Rec Limits Qualifiers

Total Dissolved Solids mg/L 1000 997 100 80-120

SAMPLE DUPLICATE: 3616007

60462775003 Dup Max Parameter Units Result Result **RPD RPD** Qualifiers 1160 **Total Dissolved Solids** mg/L 1140 2 10

SAMPLE DUPLICATE: 3616220

Date: 11/25/2024 12:58 PM

60462533002 Dup Max RPD RPD Parameter Units Result Result Qualifiers 10 Total Dissolved Solids 2890 mg/L 2840 1

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.



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60462558

Date: 11/25/2024 12:58 PM

QC Batch: 913561 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462558001, 60462558002, 60462558003

METHOD BLANK: 3616728 Matrix: Water

Associated Lab Samples: 60462558001, 60462558002, 60462558003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND ND	1.0	10/22/24 21:56	
Fluoride	mg/L	ND	0.20	10/22/24 21:56	
Sulfate	ma/L	ND	1.0	10/22/24 21:56	

LABORATORY CONTROL SAMPLE: 3616729 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Chloride 4.9 98 mg/L 5 80-120 Fluoride 2.5 2.4 97 80-120 mg/L Sulfate 4.9 98 mg/L 5 80-120

MATRIX SPIKE & MATRIX SP	IKE DUPL	ICATE: 3616	730		3616731							
			MS	MSD								
		60462302001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	178	500	500	576	575	80	79	80-120	0	15	M1
Fluoride	mg/L	4.2	2.5	2.5	6.7	6.8	101	103	80-120	0	15	
Sulfate	mg/L	4140	5000	5000	8790	8840	93	94	80-120	1	15	

SAMPLE DUPLICATE: 3616732 60462302002 Dup Max Parameter Units Result Result RPD RPD Qualifiers Chloride mg/L 176 176 0 15 Fluoride mg/L 0.71 0.76 7 15 Sulfate mg/L 3210 3340 4 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.



QUALIFIERS

Project: 60731303 PRPA CCR

Pace Project No.: 60462558

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

Date: 11/25/2024 12:58 PM

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731303 PRPA CCR

Pace Project No.: 60462558

Date: 11/25/2024 12:58 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60462558001	BAT-05-CCR	EPA 3010	913331	EPA 6010	913409
60462558002	BAT-06-CCR	EPA 3010	913331	EPA 6010	913409
60462558003	BAT-01-CCR	EPA 3010	913331	EPA 6010	913409
60462558001	BAT-05-CCR	EPA 3010	914434	EPA 6020	914518
60462558002	BAT-06-CCR	EPA 3010	913390	EPA 6020	913555
60462558003	BAT-01-CCR	EPA 3010	913390	EPA 6020	913555
60462558001	BAT-05-CCR	EPA 7470	914620	EPA 7470	914635
60462558002	BAT-06-CCR	EPA 7470	914830	EPA 7470	914843
60462558003	BAT-01-CCR	EPA 7470	914830	EPA 7470	914843
60462558001	BAT-05-CCR	SM 2540C	913310		
60462558002	BAT-06-CCR	SM 2540C	913310		
60462558003	BAT-01-CCR	SM 2540C	913310		
60462558001	BAT-05-CCR	EPA 9056	913561		
60462558002	BAT-06-CCR	EPA 9056	913561		
60462558003	BAT-01-CCR	EPA 9056	913561		



Pace MALVITAL SERVICES

DC#_Title: ENV-FRM-LENE-0009_Sample

ANALYTICAL SERVICE	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa	
Client Name:	AECOM		<u>JL</u>	
	1	Pace Shipping Label Used?	ace	
	bble Wrap Bubble E		None ☐ Other □	
<u> </u>		ype of Ice; Well Blue None	Note in Strict in	
		Factor _ O· Corrected	2.4/1.9 Date and initials of examining content	
Temperature should be above to			PVIOLIS	hy
Chain of Custody present:		ZYes □No □N/A	<i></i>	
Chain of Custody relinquish	ed:	Yes □No □N/A		
Samples arrived within hold	ing time:	ZYes □No □N/A		
Short Hold Time analyses	(<72hr):	□Yes No □N/A		
Rush Turn Around Time re		□Yes ØNo □N/A		
Sufficient volume:		ØYes □No □N/A		
Correct containers used:		✓Yes □No □N/A		
Pace containers used:		☐Yes ☐No ☐N/A		
Containers intact:		ŽÍYes □No □N/A		
Unpreserved 5035A / TX100	05/1006 soils frozen in 48hrs	s? □Yes □No ☑N/A		
Filtered volume received for		□Yes □No □N/A		
Sample labels match COC:		AYes □No □N/A		
Samples contain multiple ph		T □Yes ☑No □N/A		
Containers requiring pH pre		ZYes □No □N/A List	t sample IDs, volumes, lot #'s of preserv	ative and the
HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9	1700 1700 1700 170	Belon-	e/time added.	
Exceptions: VOA, Micro, O&G Cyanide water sample check		LOT#: 8E717		
ead acetate strip turns dark		□Yes □No		
Potassium iodide test strip to	urns blue/purple? (Preserve)	Yes No		
Frip Blank present:		□Yes □No □N/A		
Headspace in VOA vials (>6	6mm):	□Yes □No □N/A		
Samples from USDA Regula	nted Area: State:	□Yes □No □N/A		
	5035A / TX1005 vials in the			
Client Notification/ Resolu		COC to Client? Y / N	Field Data Required? Y / N	
Person Contacted:		Date/Time:	_	
Comments/ Resolution:				
Project Manager Review:		Date:		

CHAIN-OF-CI -ODY / Analytical Request Document

Pace lytical

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

.67558 Project No./ Lab I.D. (N/A) DR!NKING WATER Sel Samples intact SAMPLE CONDITIONS OTHER of Cooler (Y/N) Sustody Sealer Ice (Y/V) Received on GROUND WATER Page: Residual Chlorine (Y/N) 222 2.5 à О° пі qmөТ REGULATORY AGENCY 00 RCRA 8/0 Requested Analysis Filtered (Y/N) TIME STATE: Site Location R/h1/01 10/15 NPDES DATE UST S240C LDS VIDO Total Mercury DATE Signed (MM/DD/YY): ACCEPTED BY / AFFILIATION 6010 Total Metals** *sla19M latoT 0208 8026 CI, F, SO4 Ż Analysis Test N/A Same as Section A отрес Accounts Payable Methanol Heather Wilson Olivia Helinski Preservatives _EO_SS_SbN AECOM HOBN 11033, 42700 HCI nation HNO³ company Name Manager Pace Profile #: OS2H Reference. Pace Project Section C ace Quote Unpreserved TIME Address NUN 78 # OF CONTAINERS 5 SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: SIGNATURE of SAMPLER: SAMPLE TEMP AT COLLECTION h2/h1/01 DATE 68-09371 PRPA CCR 60731303 1915 10/14/27 0935 602131363 COLLECTED MECON RELINQUISHED BY / AFFILIATION TIME COMPOSITE urchase Order No. NEED PO # DATE Report To Vasanta Kalluri Jamie Herman 50709371 Ranh Required Project Information (G=GRAB C=COMP) **34YT 3J4MAS** roject Number (see valid codes to left) **BOOD XIRTAM** roject Name: Section B oby To Valid Matrix Codes SL OC TS DRINKING WATER
WATER
WASTE WATER
PRODUCT
SOIUSOLID Greenwood Village, CO 80111 STANDARD jamie herman@aecom.com ADDITIONAL COMMENTS 6200 South Quebec St (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE Cd, Cr, Co, Pb, Mo, Se, TI BAT-06-CCR BAT-01-CCR SAMPLE ID BAT-05-CCR Required Client Information hone: (303) 740-2614 Required Client Information Requested Due Date/TAT: Section D *Sb, As, Ba, Be, Section A Company. mail To: B. Ca. LI Address 우 Ξ 12 # MBTI 7 က LO. 9 ~ 00 0 Page 19 of 20

'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

Pace® Analytical Services, LLC

MECOM

Client:

Site

Profile/EZ#

Notes

Other SPLC MPDU **BP3Z** 8648 **BP3S** Bb3E **BP3N** BP1N DP3U BP2U Urqa Medn MCKN **JGFU** AG5U V64U ¥G32 **NZSA** NEIU **H**ID∀ Bein **DC9B** DC9M DG90 NG9N DC90 DC9H H6Đ∧ Matrix COC Line Item Containe 10 Ξ 12 4 3 9 7 ∞ ന တ

MGKU Boz clear soil jar BP1B 1L NAOH plastic I P5T MGSU 2oz clear soil jar BP1N 1L HNO3 plastic ZPLC MG2U 2oz clear soil jar BP1S 1L HSO3 plastic ZPLC JGFU 4oz unpreserved amber wide BP1Z 1L MOH, Zn Acetate ZPLC I AG0U 100mL unores amber glass BP2B 500mL NAOH plastic R AG1H 1L HZSO4 amber glass BP2B 500mL NAOH plastic U AG1 1L IL Na Thiosulfate clear/amber glass BP2B 500mL HNO3 plastic U AG2N 500mL HNO3 amber glass BP2B 500mL NAOH plastic U AG2N 500mL HXSO4 amber glass BP3B 250mL NAOH plastic NAL AG2N 500mL HXSO4 amber glass BP3B 250mL NAOH plastic NAL AG2U 500mL LASO4 amber glass BP3B 250mL HNO3 plastic NAL AG2U 500mL unpres amber glass BP3B 250mL LASO4 plastic DA AG3U 250mL unpreserved plastic BP4N <			Glass			Plastic		Misc.
40mL HCI amber voa vial WGFU 40z clear soil jar BPTN 11 HNO3 plastic SP5T 1 40mL McOH olear vial WGEU 2cz clear soil jar BPTS 11 H2SO4 plastic ZPLC 4 0mL McOH olear vial JGFU 4cz unpreserved amber wide BPTU 11 LNDH_ZCA damber vial AF 4 0mL Na Thio amber vial AG1H 11 LHCI amber glass BP2B 500mL NAOH plastic C 4 0mL Na Thio amber vial AG1H 11 LHZSO4 amber glass BP2B 500mL NAOH plastic R 4 0mL Na Thio amber vial AG1T 11 LHZSO4 amber glass BP2B 500mL NAOH plastic U 4 0mL Na Thio amber vial AG1T 11 LNa Thiosulfate clear/amber glass BP2B 500mL Unpreserved plastic U 4 0mL Worth clear vial AG2T 500mL HNO3 amber glass BP2D 500mL Unpreserved plastic NA 1 liter unpres glass AG2S 500mL HNO3 plastic SOmL HNO3 plastic NA 2 50mL HCL Clear glass AG3U 500mL unpreserved plastic NA NA 2 50mL Unprese Clear glass AG3U 100m	G9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1B	1L NAOH plastic	_	Wipe/Swab
40mL MeOH clear vial WG2U 2oz clear soil jar BP1S 1L H2SO4 plastic ZPLC 40mL TSP amber vial JGFU 4oz unpreserved amber wide BP1U 1L unpreserved plastic AF 40mL TSP amber vial AG1H 1L H2SO4 amber glass BP1Z 500mL NAOH plastic C 40mL ATRIO amber vial AG1H 1L H2SO4 amber glass BP2B 500mL NAOH plastic U 40mL HCI clear vial AG1T 1L Na Thiosulfate clear/amber glass BP2N 500mL NAOH plastic U 40mL HCI clear vial AG1U 1fliter unpres amber glass BP2D 500mL NAOH, Zn Acetate 40mL Na Thio. clear vial AG2N 500mL HNO3 amber glass BP2D 500mL NAOH, Zn Acetate 40mL unpreserved clear vial AG2N 500mL HNO3 amber glass BP2D 500mL NAOH, Zn Acetate 1flier unpreserved clear vial AG2N 500mL H2SO4 amber glass BP3E 250mL HNO3 plastic NAL 250mL Unpres All vial AG3S 250mL H2SO4 amber glass BP3E 250mL H000A NAL 350mL Unpres Clear glass AG3U 250mL un	G9H	40mL HCI amber voa vial	WGFU	4oz clear soil jar	BP1N	1L HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate
4 Oml. TSP amber vial JGFU 4oz unpreserved amber wide BP1U 1L unpreserved plastic AF 4 Oml. H2SO4 amber vial AG0U 100mL unores amber glass BP2B 500mL NAOH plastic C 4 Oml. Na Thio amber vial AG1H 1L H2SO4 amber glass BP2B 500mL NAOH plastic N 4 Oml. Amber unpreserved AG1T 1L H2SO4 amber glass BP2B 500mL NAOH plastic U 4 Oml. Locar vial AG1T 1L Na Thiosulfate clear/amber glass BP2B 500mL H2SO4 plastic U 4 Oml. Locar vial AG2N 1 Ilter unpres amber glass BP2D 500mL H2SO4 plastic U 4 Oml. Locar vial AG2N 500mL HNO3 amber glass BP2D 500mL NaOH, Zh Acetate WT 4 Oml. Locar glass AG2N 500mL H2SO4 amber glass BP3B 250mL NAOH, Zh Acetate WT 1 flier unpres glass AG3S 250mL H2SO4 amber glass BP3N 250mL HNO3 plastic OL 2 floar Locar glass AG3U 250mL unpreseaved plastic OL OL 2 floar Locar glass AG3U <t< td=""><td>G9M</td><td>40mL MeOH clear vial</td><td>WG2U</td><td>2oz clear soil jar</td><td>BP1S</td><td>1L H2SO4 plastic</td><td>ZPLC</td><td>Ziploc Bag</td></t<>	G9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag
40mL H2SO4 amber vial AG0U 100mL unores amber glass BP1Z 11 NaOH, Zn Acetate C 40mL Na Thio amber vial AG1H 11 HCl amber glass BP2B 500mL NAOH plastic R 40mL amber unpreserved AG1T 11 L H2SO4 amber glass BP2N 500mL HNO3 plastic U 40mL Na Thio. clear vial AG1T 11 L Na Thiosulfate clear/amber glass BP2D 500mL NaOH, Zn Acetate U 40mL Unpreserved clear vial AG2N 500mL HNO3 amber glass BP2D 500mL NaOH, Zn Acetate MT 40mL Unpreserved clear vial AG2N 500mL HNO3 amber glass BP3D 250mL NaOH, Zn Acetate MT 40mL Locar glass AG2N 500mL HXSO4 amber glass BP3B 250mL HNO3 plastic MT 1 liter unpres glass AG3S 250mL H2SO4 amber glass BP3B 250mL HNO3 plastic MT 2 50mL HCL Clear glass AG3U 500mL unpres amber glass BP3B 250mL Unpreserved plastic NAL 2 50mL Unpreserved plastic AG4U 1125mL unpreserved plastic DW AG5U 500mL unpreserved glass	G90	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic	AF	Air Filter
40mL Na Thio amber vial AG1H 1L HCI amber glass BP2B 500mL NAOH plastic R 40mL amber unpreserved AG1S 1L H2SO4 amber glass BP2N 500mL HNO3 plastic U 40mL HCI clear vial AG1T 1L Na Thiosulfate clear/amber glass BP2S 500mL H2SO4 plastic U 40mL Na Thio. clear vial AG2U 1liter unpres amber glass BP2D 500mL naOH, Zn Acetate ACCA 40mL unpreserved clear vial AG2N 500mL HNO3 amber glass BP3E 500mL naOH, Zn Acetate ACCA 40mL unpreserved clear vial AG2N 500mL H2SO4 amber glass BP3E 500mL NaOH, Zn Acetate ACCA 40mL unpreserved clear vial AG2S 500mL H2SO4 amber glass BP3E 250mL HNO3 plastic SL 550mL HCL Clear glass AG3U 500mL unpres amber glass BP3D 250mL HNO3 plastic NAL J 16c clear soil jar AG3U 125mL unpreserved plastic DW AG3U 100mL unpres amber glass BP3Z 250mL HNO3 plastic DW AG3U 100mL unpres amber glass BP4N <	G9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate	ပ	Air Cassettes
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40mL Na Thio. clear vial AG1U Iliter unpres amber glass BP2U 500mL unpreserved plastic 40mL unpreserved clear vial AG2N 500mL HNO3 amber glass BP2Z 500mL NaOH, Zn Acetate 1 liter H2SO4 clear glass AG2S 500mL H2SO4 amber glass BP3B 250mL NaOH plastic WT 250mL HCL Clear glass AG3S 250mL H2SO4 amber glass BP3F 250mL HNO3 plastic SL 250mL HCL Clear glass AG2U 500mL unpres amber glass BP3N 250mL HNO3 plastic NAL J f6oz clear soil jar AG3U 250mL unpres amber glass BP3D 250mL H2SO4 plastic OL J f6oz clear soil jar AG4U 125mL unpres amber glass BP4U 125mL unpreserved plastic DW BP4N 125mL HNO3 plastic BP4U 125mL HNO3 plastic DW BP4S 125mL H2SO4 plastic BP4S 125mL H2SO4 plastic DW	G9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic		
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125mL unpreserved plastic DW 125mL HNO3 plastic 125mL H2SO4 plastic J6oz unpresserved plstic			AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate	WP	Wipe
					BP4U	125mL unpreserved plastic	DW	Drinking Water
					BP4N	125mL HNO3 plastic		
					BP4S	125mL H2SO4 plastic		
		į			WPDU	16oz unpresserved plstic		

Work Order Number:

(Don/62 858





November 06, 2024

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

RE: Project: 60731303 PRPA CCR

Pace Project No.: 60462579

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on October 15, 2024. 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 Wilson heather.wilson@pacelabs.com

Databa m. Wilson

1(913)563-1407 Project Manager

Enclosures

cc: Jamie Herman, AECOM Jeremy Hurshman, AECOM







CERTIFICATIONS

Project: 60731303 PRPA CCR

Pace Project No.: 60462579

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



SAMPLE SUMMARY

Project: 60731303 PRPA CCR

Pace Project No.: 60462579

Lab ID	Sample ID	Matrix	Date Collected	Date Received	
60462579001	BAT-05-CCR	Water	10/14/24 09:35	10/15/24 09:40	
60462579002	BAT-06-CCR	Water	10/14/24 11:45	10/15/24 09:40	
60462579003	BAT-01-CCR	Water	10/14/24 14:15	10/15/24 09:40	



SAMPLE ANALYTE COUNT

Project: 60731303 PRPA CCR

Pace Project No.: 60462579

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60462579001	BAT-05-CCR	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60462579002	BAT-06-CCR	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60462579003	BAT-01-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



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60462579

Sample: BAT-05-CCR PWS:	Lab ID: 60462579 Site ID:	001 Collected: 10/14/24 09:35 Sample Type:	Received:	10/15/24 09:40	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Serv	ices - Greensburg				
Radium-226		0.641 ± 0.633 (1.01) C:NA T:87%	pCi/L	10/31/24 14:13	3 13982-63-3	
	Pace Analytical Serv	ices - Greensburg				
Radium-228		0.709 ± 0.364 (0.623) C:80% T:86%	pCi/L	10/31/24 11:24	15262-20-1	
	Pace Analytical Serv	ices - Greensburg				
Total Radium	Total Radium Calculation	1.35 ± 0.997 (1.63)	pCi/L	11/01/24 14:21	7440-14-4	



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60462579

Sample: BAT-06-CCR PWS:	Lab ID: 6046 Site ID:	2579002 Collected: 10/14/24 11:45 Sample Type:	Received:	10/15/24 09:40	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 903.1	0.559 ± 0.681 (1.13) C:NA T:101%	pCi/L	11/05/24 11:44	13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 904.0	0.373 ± 0.344 (0.695) C:77% T:83%	pCi/L	10/31/24 11:24	4 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	0.932 ± 1.03 (1.83)	pCi/L	11/05/24 16:3	8 7440-14-4	



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60462579

Sample: BAT-01-CCR PWS:	Lab ID: 6046 . Site ID:	2579003 Collected: 10/14/24 14:15 Sample Type:	Received:	10/15/24 09:40	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 903.1	0.642 ± 0.405 (0.174) C:NA T:89%	pCi/L	10/31/24 14:27	7 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 904.0	0.524 ± 0.369 (0.706) C:77% T:84%	pCi/L	10/31/24 11:24	15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	1.17 ± 0.774 (0.880)	pCi/L	11/01/24 14:21	7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60462579

QC Batch: 703576 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: 60462579001, 60462579002, 60462579003

METHOD BLANK: 3426166 Matrix: Water

Associated Lab Samples: 60462579001, 60462579002, 60462579003

 Parameter
 Act ± Unc (MDC) Carr Trac
 Units
 Analyzed
 Qualifiers

 Radium-228
 0.278 ± 0.305 (0.632) C:74% T:91%
 pCi/L
 10/31/24 11:23

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.



QUALITY CONTROL - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60462579

QC Batch: 703575 Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60462579001, 60462579002, 60462579003

METHOD BLANK: 3426164 Matrix: Water

Associated Lab Samples: 60462579001, 60462579002, 60462579003

 Parameter
 Act ± Unc (MDC) Carr Trac
 Units
 Analyzed
 Qualifiers

 Radium-226
 0.340 ± 0.335 (0.510) C:NA T:95%
 pCi/L
 10/31/24 14:13

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.



QUALIFIERS

Project: 60731303 PRPA CCR

Pace Project No.: 60462579

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

Date: 11/06/2024 09:01 AM

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731303 PRPA CCR

Pace Project No.: 60462579

Date: 11/06/2024 09:01 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60462579001	BAT-05-CCR	EPA 903.1	703575		,
60462579002	BAT-06-CCR	EPA 903.1	703575		
60462579003	BAT-01-CCR	EPA 903.1	703575		
60462579001	BAT-05-CCR	EPA 904.0	703576		
60462579002	BAT-06-CCR	EPA 904.0	703576		
60462579003	BAT-01-CCR	EPA 904.0	703576		
60462579001	BAT-05-CCR	Total Radium Calculation	706823		
60462579002	BAT-06-CCR	Total Radium Calculation	707492		
60462579003	BAT-01-CCR	Total Radium Calculation	706823		

Pace Analytical"

CHAIN-OF-CUS I ODY / Analytical Request Document

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

200 200 100 Pace Project No./ Lab I.D. SCR. DRINKING WATER SAMPLE CONDITIONS OTHER ō GROUND WATER Page: Residual Chlorine (Y/N) ZZZ REGULATORY AGENCY 00 RCRA 046 Requested Analysis Filtered (Y/N) TIME Site Location STATE: H2/5/101 NPDES DATE LIST Sum Radium-226 & 228 ACCEPTED BY / AFFILIATION 82S-muibeA lato Fotal Radium-226 **1** N / A Analysis Test Same as Section A Other Accounts Payable Heather Wilson Methanol Preservatives Na₂S₂O₃ Company Name: AECOM Pace Quote 73141
Reference:
Pace Project Heather Wi NaOH HCI H₁ONH 11/11 PSSC4 Section C Attention: Address: Unpreserved TIME 1700 # OF CONTAINERS 2 6 2 SAMPLE TEMP AT COLLECTION 42/H/01 DATE 0935 INS TIME 1415 CCR 10/12/20 COLLECTED DATE RELINQUISHED BY / AFFILIATION MECOM TIME START Purchase Order No.: 1599461 DATE Report To: Vasanta Kalluri Sopy To: Jamie Herman Required Project Information: anda (G=GRAB C=COMP) Ф SAMPLE TYPE Project Number. Project Name: (see valid codes to left) E MATRIX CODE Section B 0 Greenwood Village, CO 80111 jamie.herman@aecom.com ADDITIONAL COMMENTS 15 Day TAT 6200 South Quebec St (A-Z, 0-91,-) Sample IDs MUST BE UNIQUE Fax: SAMPLE ID BAT-05-CCK PAT-06- CCR BAJ-01-CCR Section D Required Clent Information (303) 740-2614 Section A Required Client Information: Requested Due Date/TAT: AECOM Company: Address: Email To: 3 2 9 80 10 F 15 7 o

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

Samples Intact (V/V)

Cooler (Y/N)

(N/A) ear

Received on

J. ui dwaT

h2/h1/01

DATE Signed (MM/DD/YY):

PRINT Name of SAMPLER: OTIVED, HELLINSKI

SAMPLER NAME AND SIGNATURE

SIGNATURE OF SAMPLER: Collins

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

Page 12 of 18

DC#_Title: EN	IV-FRM-G	BU	R-00	88 v	v07_Sample Condition Upon Receipt-
Greensburg	<u>at</u>				
Pace Effective Date: 0	1/04/2024				
AULIVITICAL SERVICES				-	Project #:
Client Name: AECOM					
Courier: Fed Ex UPS USPS	□ Client □ (om	merci	ial 🗆	Pace Other Initial / Date
Tracking Number: 7146 2	331 7	27	29		Examined By: 210/15/3
Tracking Number: 7770 2	011	•			8/10/15/
Custody Seal on Cooler/Box Presen Thermometer Used:	t: Yes	□N of Ic	o e: V	vet	Blue Mone
Cooler Temperature: Observed T				Corr	rection Factor: °C Final Temp: °
Temp should be above freezing to 6°C					
Temp should be above meaning					pH paper Lot# D.P.D. Residual Chlorine Lot
Comments:	Y	es	No	NA	A 10D1041 -
Chain of Custody Present		/			1.
Chain of Custody Filled Out:		$\overline{}$	-		2.
-Were client corrections present	on COC			1	
Chain of Custody Relinquished		/	_		3.
Sampler Name & Signature on COC:					4.
Sample Labels match COC:					5.
-Includes date/time/ID	_			er anno	
Matrix:	Wī				4
					6.
Samples Arrived within Hold Time:					7.
Short Hold Time Analysis (<72hr					
remaining): Rush Turn Around Time Requested:					8.
Sufficient Volume:		7			9.
Correct Containers Used:		-			10.
-Pace Containers Used		7			
Containers Intact:		7			11.
Orthophosphate field filtered:					12.
Hex Cr Aqueous samples field filtered	:	\neg		/	13.
Organic Samples checked for dichlorin	nation		1	/	14:
Filtered volume received for dissolved	tests:		1	_	15:
All containers checked for preservation	on:				16.
exceptions: VOA, coliform, TOC, C Phenolics, Radon, non-aqueous m)&G,				pHZ
		7	$\neg \tau$	_	Initial when Date/Time of
All containers meet method preserva requirements:		1		\dashv	completed Preservation
					Preservative
8260C/D: Headspace in VOA Vials (> 6	mm)				17.
524.1: Headspace in VOA Vials (0mm)					18.
Radon: Headspace in RAD Vials (0mm)					19.
rip Blank Present:		I		1	Trip blank custody seal present? YES or NO
and Samples Screened <.05 mrem/hr.		-			() () () () () () () () () ()
ad Samples Screened <.05 Illieniyiii.					completed SN. 2017 380

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

Internal Transfer Chain of Custody ————

Second S				Rush Multiplier	IltiplierX		0,	State Of Origin: CO	ii.	0			Pa	Jace
Subcontract To Pace Analytical Pittsburgh Subcontract Pittsburgh Subcontract To Pace Analytical Pittsburgh Subcontract To Pace Analytical Pittsburgh Subcontract Pittsburgh Subcontract Pittsburgh Subcontract Pittsburgh Subcontract Pittsburgh Subcontract Pittsburgh Subcontract Pittsburgh Subcontract Pittsburgh Subcontract Pittsburgh Subcontract Pittsburgh Subcontract Pittsburgh Subcontract Pittsburgh Subcontract Pittsburgh Subcontract Pittsburgh Subcontract Pittsburgh	Mo	rkorder: 60462579	III Workorder N		Pre-Logged i	nto eCO0		Sert. Needed	Ш! 	Yes	×		ı	
Pace Analytical Pittsburgh	Rep	ort To		Į.	To			Jwner Recei	ved L	ate:	10/15/2024	Results Request		/2024
1638 Roseytown Road Suites 2.3, & 4 Greensburg, PA 15601 Sample Collect Phone (724)850-5600 Sample Collect Type Date/Time Lab ID Matrix FS 10/14/2024 11:45 60462579002 Water 2 X X X X X FS 10/14/2024 14:15 60462579003 Water 2 X X X X X X X X X										THE REAL PROPERTY.	Requested A	nalysis		
Sample Collect Collect Matrix Sample Date/Time Lab ID Matrix Matrix Sample Date/Time Lab ID Matrix Matrix Sample Date/Time Lab ID Mater Date/Time Lab ID Mater Date/Time Lab ID Mater Date/Time Lab ID Mater Date/Time Lab ID Lab I	Pac 960 960 Pho	ither Wilson e Analytical Kansas 8 Loiret Blvd. exa, KS 66219 ne 1(913)563-1407		Pace A 1638 R Suites Greens Phone	nalytical Pittsbu toseytown Road 2,3, & 4 sburg, PA 1560 (724)850-5600	fg" -	Preserved	Containers	200 May 100 May 100 May 100 May 100 May 100 May 100 May 100 May 100 May 100 May 100 May 100 May 100 May 100 May					
Sample Date/Time Lab ID Matrix \$\frac{2}{2}\$ X X X X X X X X A X X X X A X X X X A X X X X X A X X X X X X X A X X X X X X X X X X X X X X X X X X X										-				
PS 10/14/2024 08:35 60462579001 Water 2 X	Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	EONH						91	> 100
PS 10/14/2024 11:45 60462579002 Water 2 X <t< td=""><td>~</td><td>BAT-05-CCR</td><td>PS</td><td>10/14/2024 09:35</td><td>60462579001</td><td>Water</td><td>2</td><td></td><td>-</td><td>+</td><td></td><td></td><td></td><td>1 2 1</td></t<>	~	BAT-05-CCR	PS	10/14/2024 09:35	60462579001	Water	2		-	+				1 2 1
PS 10/14/2024 14:15 60462579003 Water 2	2	BAT-06-CCR	PS	10/14/2024 11:45	60462579002	Water	2		+	+				300
Date/Time Received By Date/Time IR-30 *Rad QC sheets required	3	BAT-01-CCR	PS	10/14/2024 14:15	60462579003	Water	2		+	-				250
Date/Time Received By Date/Time Received By Date/Time IR-30 *Rad QC sheets required IR-30 Page I	4								+	+				563
Date/Time Received By Date/Time IR-30 *Rad QC sheets require	2								\perp	+				
Date/Time Received By Date/Time IR-30 *Rad QC sheets required By Sate/Time Ind/974 940		-										Comments		
and highly - 10/19/19 mile	Tran			Date/Time	Received By			Date/Tim	٥	IR-30 *R	ad QC sheets r	eauired		
	-				narz	1	11/1/2	10/1494	OTHE					
	7					D		100	-					
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***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.



Page 1 of 1

CHAIN-OF-CUS I ODY / Analytical Re

Section C

Required Project Information

Section B

Section A Required Client Information:

Face Analytical

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The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields m

MO#: 30726549

PM: MAR

Due Date: 11/05/24 CLIENT: PACE_60_LEKS

200 200 00 Pace Project No./ Lab I.D. SCR. DRINKING WATER SAMPLE CONDITIONS OTHER o 4 L GROUND WATER Page: Residual Chlorine (Y/N) Z REGULATORY AGENCY 00 RCRA 046 Requested Analysis Filtered (Y/N) TIME STATE Site Location NPDES H251/01 DATE UST L 8SS & 8SS-mulbsA mus ACCEPTED BY / AFFILIATION otal Radium-228 Otal Radium-226 N/A JasaT sisylanA I Same as Section A Other Accounts Payable Methanol Heather Wilson Na₂S₂O₃ Company Name: AECOM Pace Project Heather Wi Manager: Pace Profeet: 11033, 8 HOBN 73141 HCI nvoice Information: HNO3 2 PS2H Pace Quote Attention: ddress: Unpreserved TIME 1700 # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION 42/h1/01 DATE 0935 111/15 TIME 1415 COMPOSITE CCR 四三月 COLLECTED DATE CONTRACTOR CONTRACTOR RELINQUISHED BY / AFFILIATION 2 answ IAECOM TIME START 1599461 DATE Report To: Vasanta Kalluri Copy To: Jamie Herman Purchase Order No.: (G=GRAB C=COMP) SAMPLE TYPE Ф Project Number. MATRIX CODE Project Name: Greenwood Village, CO 80111 jamie.herman@aecom.com ADDITIONAL COMMENTS 6200 South Quebec St 15 Day TAT (A-Z, 0-91,-) Sample IDs MUST BE UNIQUE SAMPLEID BAT-05-CCK PAT-06- CCR BAT-01-CCK Section D Required Client Information Phone: (303) 740-2614 Requested Due Date/TAT: AECOM Sompany: 4ddress: Email To: 6 ITEM # 2 9 60 10 H 12

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

Samples Intaci

Cooler (Y/N) Sustody Seale

ICB (Y/N)

Received on

J. ni qmaT

h2/h1/01

DATE Signed (MM/DD/YY):

PRINT Name of SAMPLER: ONVIN HELLINSKI

SIGNATURE OF SAMPLER: Collection

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.

Page 15 of 18

DC#_Title: ENV-FR Greensburg	M-GB	JR-00)88 v	07_Sample Cc	W0#:30726549
Pace Effective Date: 01/04/20	24				PM: MAR Due Date: 11/ CLIENT: PACE_60_LEKS
Client Name: $AFCOM$				Prc	THEE_60_LEKS
					Initial / Date
Courier: Fed Ex UPS USPS Clier	nt ∐CQ	mmerc 79	ial 📙	Pace Uther	Examined By: 210/15/24
Tracking Number: 7/46 238/	,,,	/ /			61:01:50
Custody Seal on Cooler/Box Present: Thermometer Used:	Yes 🗆 Type of	No Ice: \	Net	s Intact: Yes Blue None	Temped By:
Cooler Temperature: Observed Temp		_∘C	Corr	ection Factor:	ec Filial Temp=c
Temp should be above freezing to 6°C		_		pH paper Lot#	D.P.D. Residual Chlorine Lot #
Comments:	Yes	No	NA	The second secon	
Chain of Custody Present	_/		+-	1.	
Chain of Custody Filled Out:		1	1	2.	
-Were client corrections present on CO	C		-	3.	
Chain of Custody Relinquished		-	+-	4.	
Sampler Name & Signature on COC:		_	-	5.	
Sample Labels match COC:		1		J	
-Includes date/time/ID	NT				U ²
1.0.2000 (10.00)	<i>\(\)</i>	4	_	6.	
Samples Arrived within Hold Time:	_	-		7.	
Short Hold Time Analysis (<72hr	1	/		7.	
remaining):	+		_	8.	
Rush Turn Around Time Requested:	+			9.	
Sufficient Volume: 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.	3
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix				PHZZ	_
All containers meet method preservation				Initial when	Date/Time of
requirements:				Lot# of added Preservative	Preservation
260C/D: Headspace in VOA Vials (> 6mm)				17.	
24.1: Headspace in VOA Vials (0mm)			-	18.	
adon: Headspace in RAD Vials (0mm)				19.	
ip Blank Present:			1		ody seal present? YES or NO
ad Samples Screened <.05 mrem/hr.				Initial when completed	Date: 10/15/24 Survey Meter 4380
omments:				- Y	

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

Quality Control Sample Performance Assessment

Must	
Analyst	
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	Ra-226

Pace Analytical"

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			Analyst Must manually Enter All Fleius mignifeld in Tellow.	renow.	
rw.pecelsdos.com Test:	Ra-226			CC.	
Analyst:	CLM		Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Date:			Sample Collection Date:	10/14/2024	
Batch ID:	81854		Sample I.D.	50384959002	
Wallx.	^		Sample MSD LD.	50384959004	
essment			Spike I.D.:	23-063	
MB Sample ID	3426164		MS/MSD Decay Corrected Spike Concentration (pCi/mL):	32.294	
MB concentration:	0.340		Spike Valume Used in MS (mL):	0.20	
M/B Counting Uncertainty:	0.333		Spike Volume Used in MSD (mL):	0.20	
MB MDC:	0.510		MS Aliquot (L, g, F):	0.652	
MB Numerical Performance Indicator.	2:00		MS Target Conc.(pCi/l., g, F):	9.905	
MB Status vs Numerical Indicator:	N/A		MSD Aliquot (L, g, F):	0.651	
MB Status vs. MDC:	Pass		MSD Target Conc. (pCi/L, g, F):	9.920	
			MS Spike Uncertainty (calculated):	0.466	
ol Sample Assessment	LCSD (Y or N)?	z	MSD Spike Uncertainty (calculated):	0.466	
	LCS81854	LCSD81854	Sample Result:	0.129	
Count Date:	10/31/2024		Sample Result Counting Uncertainty (pCi/L, g, F):	0.367	
Spike I.D.:	23-063		Sample Matrix Spike Result:	10.566	
Spike Concentration (pCi/mL):	32.294		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	1.513	
Volume Used (mL):	0.10		Sample Matrix Spike Duplicate Result:	8.774	
Aliquot Volume (L, g, F):	0.652		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	1.336	
Target Conc. (pCi/L, g, F):	4.954		MS Numerical Performance Indicator:	0.641	
Uncertainty (Calculated):	0.233		MSD Numerical Performance Indicator.	-1.711	
Result (pCi/L, g, F):	5.693		MS Percent Recovery:	105.37%	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.081		MSD Percent Recovery:	87.14%	
Numerical Performance Indicator:	1.31		MS Status vs Numerical Indicator.	N/A	
Percent Recovery:	114.92%		MSD Status vs Numerical Indicator:	N/A	
Chafrie or Alimonian Indicator	VIV		MO Status ve Decovery	0350	

Method Blank Assessment

Laboratory Control Sample Assessment

N/A Pass Pass 136% 71%	50384959002 50384959003 50384959004 10.568 1.513 8.774 1.336 1.740 18.94% NIA NIA PASS 32%
MSD Status vs Numerical Indicator. MS Status vs Recovery: MSD Status vs Recovery: MSMSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:	Matrix Spilke/Matrix Spike Duplicate Sample Assessment Sample I.D. Sample MS I.D. Sample MS I.D. Sample MS I.D. Sample MSD I.D. Sample MSD I.D. Sample Matrix Spike Result Matrix Spike Duplicate Result Matrix Spike Duplicate Result Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/ MSD Duplicate RPD: MS/ MSD Duplicate Status vs Numerical Indicator: MS/ MSD Duplicate Status vs RPD: % RPD Inmit
	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
114.92% N/A Pass 133% 73%	See Below ##
Percent Recovery: Status vs Numerical Indicator: Status vs Recovery: Upper % Recovery Limits: Lower % Recovery Limits:	Duplicate Sample Assessment Sample I.D.: Duplicate Sample I.D.: Sample Result (pCi/L. g, F): Sample Duplicate Result (pCi/L. g, F): Sample Duplicate Result (pCi/L. g, F): Are sample and/or duplicate results below RL? Duplicate Numerical Performance Indicator: Duplicate Status vs Numerical Indicator: Duplicate Status vs RPD: Duplicate Status vs RPD: Duplicate Status vs RPD: Duplicate Status vs RPD:

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

Comments:

REH 10/31/24

Arizona DHES requires qualification for any AZ DW samples reported where the QC does not meet the recommended limits of the Manual for the Certification of Labs Analyzing Drinking Waters, 5th Edition, section 7.7 of Chapter VI.

Page 17 of 18

Quality Control Sample Performance Assessment

Pace Analytical

Analyst Must Manually Enter All Fields Highlighted in Yellow.

MS/MSD 2

50384959002 50384959003 50384959004

Sample I.D. Sample MS I.D.

Sample MSD I.D. Spike I.D.:

MS/MSD Decay Corrected Spike Concentration (pCi/mL):

Spike Volume Used in MS (mL):

Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc.(pCi/L, g, F):
MSD Aliquot (L, g, F):
MSD Target Conc. (pCi/L, g, F):

10/14/2024 MS/MSD

Sample Collection Date:

Sample Matrix Spike Control Assessment

23-043 34.948 0.20 0.20 0.802 8.714 0.427 0.427 0.427 0.367 1.933 1.933 1.933 1.933 1.933 1.933 1.933 1.933 1.933 8.709

Sample Result 2 Sigma CSU (pCi/L, g, F): Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):

Sample Matrix Spike Result

Sample Matrix Spike Duplicate Result:

Sample Result:

MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Pass

Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
MS Numerical Performance Indicator:
MSD Numerical Performance Indicator:

MS Percent Recovery. MSD Percent Recovery: MS Status vs Numerical Indicator MSD Status vs Numerical Indicator MS Status vs Recovery. MSD Status vs Recovery. MS/MSD Upper % Recovery Limits MS/MSD Lower % Recovery Limits

Ra-228 VAL 10/25/2024 81855 WT Worklist: Matrix: Analyst: Date:

John Diank Assessment	
Method Digili Assessingli	
MB Sample ID	3426166
MB concentration:	0.278
M/B 2 Sigma CSU:	0.305
MB MDC:	0.632
MB Numerical Performance Indicator:	1.79
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

-aboratory

z	LCSD81855															
LCSD (Y or N)?	LCS81855	10/31/2024	23-043	34.753	0.10	0.818	4.250	0.208	3.954	0.941	09.0	93.03%	A/A	Pass	135%	%09
Control Sample Assessment		Count Date:	Spike I.D.:	Decay Corrected Spike Concentration (pCi/mL):	Volume Used (mL):	Aliquot Volume (L, g, F):	Target Conc. (pCi/L, g, F):	Uncertainty (Calculated):	Result (pCi/L, g, F):	LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	Numerical Performance Indicator:	Percent Recovery:	Status vs Numerical Indicator:	Status vs Recovery:	Upper % Recovery Limits:	Lower % Recovery Limits:

	50384959002	50384959003 50384959004	9.578	1.933	7.407	1.509	1.736	25.28%	Pass	Pass	36%
Matrix Spike/Matrix Spike Duplicate Sample Assessment	Sample I.D.	Sample MS I.D. Sample MSD I.D.	Sample Matrix Spike Result:	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:	Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):	Duplicate Numerical Performance Indicator:	(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	MS/ MSD Duplicate Status vs Numerical Indicator:	MS/ MSD Duplicate Status vs RPD:	S BBD I imit
	Enter Duplicate	sample IDs if other than	LCS/LCSD in	the space below.							

See Below ##

Sample Result (pCi/L, g, F):
Sample Result Z Sigma CSU (pCi/L, g, F):
Sample Duplicate Result (pCi/L, g, F):
Sample Duplicate Result Z Sigma CSU (pCi/L, g, F):
Are sample and/or duplicate results below RL?

Duplicate Numerical Performance Indicator.

Duplicate RPD:

Duplicate Status vs Numerical Indicator:

Duplicate Status vs RPD: % RPD Limit:

Sample I.D.: Duplicate Sample I.D.

Juplicate Sample Assessment

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

Comments:

Ra-228_81855_W Ra-228 (ENV-FRM-GBUR-0295 03).xls





November 25, 2024

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

RE: Project: 60731303 PRPA CCR

Pace Project No.: 60462655

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on October 16, 2024. 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 Wilson heather.wilson@pacelabs.com

Databa m. Wilson

1(913)563-1407 Project Manager

Enclosures

cc: Jamie Herman, AECOM Jeremy Hurshman, AECOM



9608 Loiret Blvd. Lenexa, KS 66219 (913)599-5665



CERTIFICATIONS

Project: 60731303 PRPA CCR

Pace Project No.: 60462655

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



SAMPLE SUMMARY

Project: 60731303 PRPA CCR

Pace Project No.: 60462655

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60462655001	BAT-13-CCR	Water	10/15/24 08:40	10/16/24 09:07
60462655002	BAT-02-CCR	Water	10/15/24 10:55	10/16/24 09:07
60462655003	BAT-03-CCR	Water	10/15/24 13:15	10/16/24 09:07
60462655004	BAT-10-CCR	Water	10/15/24 14:45	10/16/24 09:07



SAMPLE ANALYTE COUNT

Project: 60731303 PRPA CCR

Pace Project No.: 60462655

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60462655001	BAT-13-CCR	EPA 9056	AAA	3	PASI-K
60462655002	BAT-02-CCR	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JXD	2	PASI-K
		EPA 7470	MLD	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 9056	AAA	3	PASI-K
60462655003	BAT-03-CCR	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JXD	2	PASI-K
		EPA 7470	MLD	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 9056	AAA	3	PASI-K
60462655004	BAT-10-CCR	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JXD	2	PASI-K
		EPA 7470	MLD	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 9056	AAA	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City



Project: 60731303 PRPA CCR

Pace Project No.: 60462655

Date: 11/25/2024 12:58 PM

Sample: BAT-13-CCR	Lab ID: 604	62655001	Collected: 10/15/2	24 08:40	Received: 1	0/16/24 09:07	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Metl	nod: EPA 90	56					
	Pace Analytica	I Services -	Kansas City					
Chloride	25.8	mg/L	10.0	10		10/23/24 19:17	7 16887-00-6	
Fluoride	2.2	mg/L	0.20	1		10/23/24 19:04	1 16984-48-8	
Sulfate	2370	mg/L	200	200		10/23/24 19:29	14808-79-8	



Project: 60731303 PRPA CCR

Pace Project No.: 60462655

Date: 11/25/2024 12:58 PM

Sample: BAT-02-CCR	Lab ID: 6046	2655002	Collected: 10/15/2	24 10:55	Received: 10	/16/24 09:07 N	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua			
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010										
	Pace Analytical Services - Kansas City										
Arsenic	ND	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:00	7440-38-2				
Barium	13.8	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:00	7440-39-3				
Beryllium	ND	ug/L	1.0	1	10/24/24 11:57	11/01/24 22:00	7440-41-7				
Boron	1130	ug/L	100	1	10/24/24 11:57	11/01/24 22:00	7440-42-8				
Cadmium	ND	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:00	7440-43-9				
Calcium	359000	ug/L	200	1	10/24/24 11:57	11/01/24 22:00	7440-70-2				
Chromium	ND	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:00	7440-47-3				
Cobalt	ND	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:00	7440-48-4				
Lead	ND	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:00	7439-92-1				
Lithium	197	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:00	7439-93-2				
Molybdenum	ND	ug/L	20.0	1	10/24/24 11:57	11/01/24 22:00	7439-98-7				
Selenium	ND	ug/L	15.0	1	10/24/24 11:57	11/01/24 22:00	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	10/24/24 14:28	11/23/24 15:53	7440-36-0				
Thallium	ND	ug/L	1.0	1		11/23/24 15:53					
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470										
	Pace Analytical	Services -	Kansas City								
Mercury	ND	ug/L	0.20	1	11/01/24 10:47	11/01/24 13:52	7439-97-6				
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	40C								
	Pace Analytical Services - Kansas City										
Total Dissolved Solids	3010	mg/L	100	1		10/17/24 15:46					
9056 IC Anions	Analytical Meth	od: EPA 90	056								
	Pace Analytical	Services -	Kansas City								
Chloride	181	mg/L	50.0	50		10/23/24 19:55	16887-00-6				
Fluoride	0.51	mg/L	0.20	1		10/23/24 19:42	16984-48-8				
Sulfate	1400	mg/L	200	200		10/23/24 20:08					



Project: 60731303 PRPA CCR

Pace Project No.: 60462655

Date: 11/25/2024 12:58 PM

Sample: BAT-03-CCR	Lab ID: 6046	2655003	Collected: 10/15/2	24 13:15	Received: 10	/16/24 09:07	Matrix: Water					
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua				
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010											
	Pace Analytical Services - Kansas City											
Arsenic	ND	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:02	2 7440-38-2					
Barium	34.6	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:02	7440-39-3					
Beryllium	ND	ug/L	1.0	1	10/24/24 11:57	11/01/24 22:02	2 7440-41-7					
Boron	1220	ug/L	100	1	10/24/24 11:57	11/01/24 22:02	7440-42-8					
Cadmium	ND	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:02	2 7440-43-9					
Calcium	442000	ug/L	200	1	10/24/24 11:57	11/01/24 22:02	2 7440-70-2					
Chromium	ND	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:02	2 7440-47-3					
Cobalt	ND	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:02	7440-48-4					
_ead	ND	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:02	7439-92-1					
_ithium	264	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:02	7439-93-2					
Molybdenum	ND	ug/L	20.0	1	10/24/24 11:57	11/01/24 22:02	2 7439-98-7					
Selenium	ND	ug/L	15.0	1	10/24/24 11:57	11/01/24 22:02	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	10/24/24 14:28	11/23/24 15:56	7440-36-0					
Fhallium	ND	ug/L	1.0	1	10/24/24 14:28							
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470											
	Pace Analytical	Services -	Kansas City									
Mercury	ND	ug/L	0.20	1	11/01/24 10:47	11/01/24 13:54	7439-97-6					
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	10C									
	Pace Analytical											
Total Dissolved Solids	4340	mg/L	125	1		10/17/24 15:46	6					
9056 IC Anions	Analytical Meth	od: EPA 90	56									
	Pace Analytical											
Chloride	14.3	mg/L	1.0	1		10/23/24 20:21	1 16887-00-6					
Fluoride	0.92	mg/L	0.20	1		10/23/24 20:21						
	2180	mg/L		200			7 14808-79-8					



Project: 60731303 PRPA CCR

Pace Project No.: 60462655

Date: 11/25/2024 12:58 PM

Sample: BAT-10-CCR	Lab ID: 6046	2655004	Collected: 10/15	24 14:45	Received: 10	/16/24 09:07 N	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua			
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010										
	Pace Analytical Services - Kansas City										
Arsenic	ND	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:04	7440-38-2				
Barium	15.1	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:04	7440-39-3				
Beryllium	ND	ug/L	1.0	1	10/24/24 11:57	11/01/24 22:04	7440-41-7				
Boron	819	ug/L	100	1	10/24/24 11:57	11/01/24 22:04	7440-42-8				
Cadmium	ND	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:04	7440-43-9				
Calcium	404000	ug/L	200	1	10/24/24 11:57	11/01/24 22:04	7440-70-2				
Chromium	ND	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:04	7440-47-3				
Cobalt	ND	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:04	7440-48-4				
₋ead	ND	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:04	7439-92-1				
Lithium	213	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:04	7439-93-2				
Nolybdenum	ND	ug/L	20.0	1	10/24/24 11:57	11/01/24 22:04	7439-98-7				
Selenium	175	ug/L	15.0	1	10/24/24 11:57	11/01/24 22:04	7782-49-2				
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010										
	Pace Analytical	Services - I	Kansas City								
Antimony	ND	ug/L	1.0	1	10/24/24 14:28	11/23/24 15:59	7440-36-0				
hallium -	ND	ug/L	1.0	1		11/23/24 15:59					
470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470										
•	Pace Analytical	Services - I	Kansas City								
Mercury	ND	ug/L	0.20	1	11/01/24 10:47	11/01/24 13:57	7439-97-6				
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	0C								
	Pace Analytical										
Total Dissolved Solids	4060	mg/L	125	1		10/17/24 15:47					
0056 IC Anions	Analytical Meth	od: EPA 905	56								
	Pace Analytical	Services - I	Kansas City								
Chloride	23.4	mg/L	2.0	2		10/23/24 21:38	16887-00-6				
Fluoride	0.62	mg/L	0.20	1		10/23/24 20:59					
Sulfate	2180	mg/L	200	200		10/23/24 21:51					



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60462655

Date: 11/25/2024 12:58 PM

QC Batch: 914830 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462655002, 60462655003, 60462655004

METHOD BLANK: 3621878 Matrix: Water

Associated Lab Samples: 60462655002, 60462655003, 60462655004

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Mercury ug/L ND 0.20 11/01/24 13:38

LABORATORY CONTROL SAMPLE: 3621879

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units Mercury ug/L 5.2 104 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3621880 3621881

MS MSD

60462558002 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual Result ND 5 100 20 Mercury ug/L 5 5.0 5.3 106 75-125 6

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.



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60462655

Date: 11/25/2024 12:58 PM

QC Batch: 913745 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462655002, 60462655003, 60462655004

METHOD BLANK: 3617416 Matrix: Water

Associated Lab Samples: 60462655002, 60462655003, 60462655004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	10.0	11/01/24 21:57	
Barium	ug/L	ND	5.0	11/01/24 21:57	
Beryllium	ug/L	ND	1.0	11/01/24 21:57	
Boron	ug/L	ND	100	11/01/24 21:57	
Cadmium	ug/L	ND	5.0	11/01/24 21:57	
Calcium	ug/L	ND	200	11/01/24 21:57	
Chromium	ug/L	ND	5.0	11/01/24 21:57	
Cobalt	ug/L	ND	5.0	11/01/24 21:57	
Lead	ug/L	ND	10.0	11/01/24 21:57	
Lithium	ug/L	ND	10.0	11/01/24 21:57	
Molybdenum	ug/L	ND	20.0	11/01/24 21:57	
Selenium	ug/L	ND	15.0	11/01/24 21:57	

LABORATORY CONTROL SAMPLE:	3617417					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	ug/L	1000	920	92	80-120	
Barium	ug/L	1000	998	100	80-120	
Beryllium	ug/L	1000	1000	100	80-120	
Boron	ug/L	1000	958	96	80-120	
Cadmium	ug/L	1000	998	100	80-120	
Calcium	ug/L	10000	10300	103	80-120	
Chromium	ug/L	1000	1010	101	80-120	
Cobalt	ug/L	1000	1030	103	80-120	
Lead	ug/L	1000	1030	103	80-120	
Lithium	ug/L	1000	982	98	80-120	
Molybdenum	ug/L	1000	1000	100	80-120	
Selenium	ug/L	1000	982	98	80-120	

MATRIX SPIKE & MATRIX S		3617419										
Parameter	Units	60462959007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	<0.0020 mg/L	1000	1000	899	859	90	86	75-125	5	20	
Barium	ug/L	0.094 mg/L	1000	1000	1030	996	94	90	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.



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60462655

Date: 11/25/2024 12:58 PM

MATRIX SPIKE & MATRIX	SPIKE DUP	LICATE: 3617	418 MS	MSD	3617419							
		60462959007	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Beryllium	ug/L	<0.00012 mg/L	1000	1000	974	927	97	93	75-125	5	20	
Boron	ug/L	0.081J mg/L	1000	1000	989	971	91	89	75-125	2	20	
Cadmium	ug/L	<0.00075 mg/L	1000	1000	937	897	94	90	75-125	4	20	
Calcium	ug/L	123 mg/L	10000	10000	135000	133000	119	97	75-125	2	20	
Chromium	ug/L	<0.0010 mg/L	1000	1000	981	921	98	92	75-125	6	20	
Cobalt	ug/L	<0.0012 mg/L	1000	1000	976	925	98	92	75-125	5	20	
Lead	ug/L	<0.0038 mg/L	1000	1000	952	914	95	91	75-125	4	20	
Lithium	ug/L	0.014J mg/L	1000	1000	931	908	92	89	75-125	3	20	
Molybdenum	ug/L	<0.0010 mg/L	1000	1000	979	927	98	93	75-125	6	20	
Selenium	ug/L	<0.0055 mg/L	1000	1000	942	902	94	90	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.



Antimony

Thallium

Date: 11/25/2024 12:58 PM

QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60462655

QC Batch: 913864 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462655002, 60462655003, 60462655004

METHOD BLANK: 3618010 Matrix: Water

Associated Lab Samples: 60462655002, 60462655003, 60462655004

Blank Reporting Qualifiers Parameter Units Result Limit Analyzed ND 1.0 11/23/24 15:04 ug/L ND 1.0 11/23/24 15:04 ug/L

LABORATORY CONTROL SAMPLE: 3618011

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Antimony 40 39.9 100 80-120 ug/L ug/L Thallium 40 39.1 98 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3618012 3618013 MS MSD 60462558001 Spike Spike MS MSD MS MSD % Rec Max RPD Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** Qual Antimony ug/L ND 40 40 36.6 36.5 91 75-125 0 20 Thallium ND 40 40 37.0 36.5 92 91 75-125 20 ug/L 1

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.



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60462655

QC Batch: 913310 Analysis Method: SM 2540C

QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462655002, 60462655003, 60462655004

METHOD BLANK: 3616004 Matrix: Water

Associated Lab Samples: 60462655002, 60462655003, 60462655004

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Total Dissolved Solids mg/L ND 5.0 10/17/24 15:27

LABORATORY CONTROL SAMPLE: 3616005

Spike LCS LCS % Rec
Parameter Units Conc. Result % Rec Limits Qualifiers

Total Dissolved Solids mg/L 1000 997 100 80-120

SAMPLE DUPLICATE: 3616007

60462775003 Dup Max Parameter Units Result Result **RPD RPD** Qualifiers 1160 **Total Dissolved Solids** mg/L 1140 2 10

SAMPLE DUPLICATE: 3616220

Date: 11/25/2024 12:58 PM

60462533002 Dup Max RPD RPD Parameter Units Result Result Qualifiers 10 Total Dissolved Solids 2890 mg/L 2840 1

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.



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60462655

QC Batch: 913561 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462655001, 60462655002, 60462655003, 60462655004

METHOD BLANK: 3616728 Matrix: Water

Associated Lab Samples: 60462655001, 60462655002, 60462655003, 60462655004

		Diam	reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	10/22/24 21:56	
Fluoride	mg/L	ND	0.20	10/22/24 21:56	
Sulfate	mg/L	ND	1.0	10/22/24 21:56	

LABORATORY CONTROL SAMPLE: 3616729

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L		4.9	98	80-120	
Fluoride	mg/L	2.5	2.4	97	80-120	
Sulfate	mg/L	5	4.9	98	80-120	

MATRIX SPIKE & MATRIX S	SPIKE DUPI	LICATE: 3616	730		3616731							•
Parameter	Units	60462302001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	178	500	500	576	575	80	79	80-120	0	15	M1
Fluoride	mg/L	4.2	2.5	2.5	6.7	6.8	101	103	80-120	0	15	
Sulfate	ma/L	4140	5000	5000	8790	8840	93	94	80-120	1	15	

SAMPLE DUPLICATE: 3616732

Date: 11/25/2024 12:58 PM

		60462302002	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Chloride	mg/L	176	176	0	15	
Fluoride	mg/L	0.71	0.76	7	15	
Sulfate	mg/L	3210	3340	4	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.



QUALIFIERS

Project: 60731303 PRPA CCR

Pace Project No.: 60462655

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

Date: 11/25/2024 12:58 PM

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731303 PRPA CCR

Pace Project No.: 60462655

Date: 11/25/2024 12:58 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60462655002	BAT-02-CCR	EPA 3010	913745	EPA 6010	913925
60462655003	BAT-03-CCR	EPA 3010	913745	EPA 6010	913925
60462655004	BAT-10-CCR	EPA 3010	913745	EPA 6010	913925
60462655002	BAT-02-CCR	EPA 3010	913864	EPA 6020	913919
60462655003	BAT-03-CCR	EPA 3010	913864	EPA 6020	913919
60462655004	BAT-10-CCR	EPA 3010	913864	EPA 6020	913919
60462655002	BAT-02-CCR	EPA 7470	914830	EPA 7470	914843
60462655003	BAT-03-CCR	EPA 7470	914830	EPA 7470	914843
60462655004	BAT-10-CCR	EPA 7470	914830	EPA 7470	914843
60462655002	BAT-02-CCR	SM 2540C	913310		
60462655003	BAT-03-CCR	SM 2540C	913310		
60462655004	BAT-10-CCR	SM 2540C	913310		
60462655001	BAT-13-CCR	EPA 9056	913561		
60462655002	BAT-02-CCR	EPA 9056	913561		
60462655003	BAT-03-CCR	EPA 9056	913561		
60462655004	BAT-10-CCR	EPA 9056	913561		

Revision: 2

DC#_Title: ENV-FRM-LENE-0009_Sample Col

WO#:60462655

		ANALYTICAL SERV	Revis	sion: 2	Effective	Date: 0	1/12/20	022	Issuu.	- ,			Y .
Courier: FedEx UPS VIA Clay PEX EC Pace Xroads Client Other	Client Nar	me:	AFCON	20									
Custody Seal on Cooler/Box Present: Yes	Courier:	FedEx Z		7	- y □ PEX	□ E	CI 🗆	Pace	. □ Xro	ads 🔲	Client □	Other □	
Packing Material: Bubble Wrap Type of Ice: Blue None Cooler Temperature (*C): As-read 0 4 4 Corr. Factor 2	Tracking #:	7146	2381	1274/13	// Pace Sh	ipping La	abel Used	d? Y	es 🗆 🐧	0			
Type of Ice:	Custody Sea	al on Cooler/	Box Presen	t: Yes	No □ Se	als intac	t: Yes Z	√ N	0 🗆				
Cooler Temperature (*C): As-read 0 4 8 Corr. Factor Corrected D-9/4-7 Date and initiate of person examining contemplate. Temperature should be above freezing to 6*C Chain of Custody present: Dres No N/A Samples arrived within holding time: Dres No N/A Samples arrived within holding time: Dres No N/A Short Hold Time analyses (<72hr): Dres No N/A Sufficient volume: eived for dissolved tests? Dres No N/A Sufficient volume received for dissolved tests? Dres No Dres N/A Sumples contain multiple phases? Matrix Dres No Dres No Dres No Dres No Dres No Dres No Dres No Dres No Dres No Dres No Dres No Dres No Dres No Dres No Dres No Dres No Dres Dr	Packing Mate	erial: B	ubble Wrap	□ Bubb	le Bags □	F	oam 🗆	1	None 🗆	Othe	er 🗆		
Corrected C-779-7 examining contents: Corrected C-779-7 Examining contents: Corrected C-779-7 Examining contents: Corrected C-779-7 Examining contents: Corrected C-779-7 Corrected C-779-7 Examining contents: Corrected C-779-7 Corrected C-779	Thermomete	er Used:		- ,					,			1-22-20-2	
Temperature should be above freezing to 6°C Chain of Custody present: Chain of Custody relinquished: Samples arrived within holding time: Short Hold Time analyses (<72hr): Rush Turn Around Time requested: Correct containers used: Correct contain	Cooler Temp	perature (°C):	As-read	1-0/4.80	orr. Factor_	1.0	Correct	ted <u>C</u>	2.914	.7			
Chain of Custody relinquished: Samples arrived within holding time: Short Hold Time analyses (<72hr): Short Hold Time requested: Sh	Temperature sh	hould be above									p	10/16.	24
Samples arrived within holding time: Ves No	Chain of Cust	tody present:				Yes □No	□N/A					#	- 3X
Short Hold Time analyses (<72hr): Ves No N/A No N/A Sufficient volume: Ves No N/A Ves No N/A	Chain of Cust	tody relinquis	hed:		6	Yes □No	□N/A						
Rush Turn Around Time requested: Ves No	Samples arriv	ved within hol	ding time:		6	Yes □No	□N/A						
Rush Turn Around Time requested: Ves No	Short Hold T	ime analyse	s (<72hr):			res No	□N/A						
Correct containers used: Yes No N/A	Rush Turn A	round Time	requested:			res ZNo	□n/a						
Pace containers used: Yes	Sufficient volu	ume:			7	res □No	□N/A						
Containers intact: Yes No N/A Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs? Yes No N/A Containers received for dissolved tests? Yes No N/A Containers requiring pH preservation in compliance? Alloys, H2SO4, HCI<2; NaOH>9 Sulfide, NaOH>10 Cyanide) Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: BE717 Containers requiring the preservation in compliance? Alloys, H2SO4, HCI<2; NaOH>9 Sulfide, NaOH>10 Cyanide) Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: BE717 Containers requiring the preservation in compliance? Alloys, H2SO4, HCI<2; NaOH>9 Sulfide, NaOH>10 Cyanide) Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: BE717 Containers requiring the preservation in compliance? Alloys No N/A Containers requiring the preservation in the field? Yes No N/A Containers requiring the preservation in the field? Yes No N/A Containers requiring the preservation in the field? Yes No N/A Containers requiring the preservation in the field? Yes No N/A Containers requiring the preservation in the field? Yes No N/A Containers requiring the preservation in the field? Yes No N/A Containers requiring the preservation in the field? Yes No N/A Containers requiring the preservation in the field? Yes No N/A Containers requiring the preservation in the field? Yes No N/A Containers requiring the preservation in the field? Yes No N/A Containers requiring the preservation in the field? Yes No N/A Containers requiring the preservation in the field? Yes No N/A Containers requiring the preservation in the field? Yes No N/A Containers requiring the preservation in the field? Yes No N/A Containers requiring the preservation in the field? Yes No N/A Containers requiring the preservation in the field? Yes No N/A Containers requiring the preservation in the field the preservation in the field the p	Correct contai	iners used:				∕es □No	□n/a						
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	Pace containe	ers used:				/es □No	□n/a						
Eiltered volume received for dissolved tests?	Containers int	tact:			1	∕es □No	□N/A						
Sample labels match COC: Date / time / ID / analyses	Unpreserved :	5035A / TX10	005/1006 soi	ls frozen in 48	hrs?	∕es □No	Ø N/A						
Containers requiring pH preservation in compliance? HNO ₃ , H ₂ SO ₄ , HCH-2; NaOH>9 Sulfide, NaOH>10 Cyanide) Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) Cotassium iodide test strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve) In Blank present: In Blank p	Filtered volum	ne received fo	r dissolved t	tests?		es 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) Cyanide water sample checks: ead acetate strip turns dark? (Record only) Cotassium iodide test strip turns blue/purple? (Preserve) Tyes No Trip Blank present: Yes No Ni/A List sample IDs, volumes, lot #'s of preservative and the date/time added. Lot#: Yes No Ni/A List sample IDs, volumes, lot #'s of preservative and the date/time added. Yes No Ni/A List sample IDs, volumes, lot #'s of preservative and the date/time added. Yes No Ni/A List sample IDs, volumes, lot #'s of preservative and the date/time added. Yes No Ni/A List sample IDs, volumes, lot #'s of preservative and the date/time added. Yes No Ni/A List sample IDs, volumes, lot #'s of preservative and the date/time added.	Sample labels	s match COC	: Date / time	/ ID / analyses		res □No	□n/a						
ANO3, H2SO4, HCI<2; NaOH>9 Sulfide, NaOH>10 Cyanide) Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) Cyanide water sample checks: ead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve) Trip Blank present: Yes No N/A	Samples conta	aln multiple p	hases?	Matrlx:	WT '	es 🛮 No	□n/a						
Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: LOT#: Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: LOT#: Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: LOT#	Containers red	quiring pH pre	eservation in	compliance?	/	′es □No					s, lot #'s o	f preserva	tive and the
Cyanide water sample checks: ead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve) Trip Blank present: Yes No DN/A				•	• //	872		date/t	ime addec	1.			
Potassium iodide test strip turns blue/purple? (Preserve)				K-DRO)	LOI#.	0,0,							
rip Blank present: Yes No N/A leadspace in VOA vials (>6mm): Yes No N/A leadspace in VOA vials (>6mm): Yes No N/A leadspace in VOA vials (>6mm): Yes No N/A leadspace in VOA vials (>6mm): Yes No N/A leadspace in VOA vials (>6mm): Yes No N/A leadspace in VOA vials (>6mm): Yes No N/A leadspace in VOA vials (>6mm): Yes No N/A leadspace in VOA vials (>6mm): Yes No N/A leadspace in VOA vials (>6mm): Yes No N/A leadspace in VOA vials (>6mm): Yes No N/A leadspace in VOA vials (>6mm): Yes No N/A leadspace in VOA vials (>6mm): Yes No N/A leadspace in VOA vials (>6mm): Yes No N/A leadspace in VOA vials (>6mm): Yes N/A leadspace in VOA via						′es □No							
leadspace in VOA vials (>6mm):	Potassium iod	lide test strip	turns blue/pu	urple? (Preser	ve)	'es □No							
dditional labels attached to 5035A / TX1005 vials in the field?	Trip Blank pre	sent:				es □No	DN/A						
dditional labels attached to 5035A / TX1005 vials in the field?	Headspace in	VOA vials (>	•6mm):			es □No	Z)N/A						
lient Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N erson Contacted: Date/Time:	Samples from	USDA Regul	ated Area:	State:		es □No	N/A						
erson Contacted: Date/Time:	Additional labe	els attached t	o 5035A / T>	K1005 vials in	the field? □\	es □No	E N/A						
	Client Notifica	ation/ Resolu	ution:	Cop	by COC to Clier	t? Y	/ N	F	ield Data R	lequired?	Υ /	N	
omments/ Resolution:		-			Date/Time:								
	Comments/ Re	esolution:											
roject Manager Review: Date:	Project Manag	er Review:					Date	:					

JAL DOCUMENT, All relevant fields must be completed accurately.

Section C

Attention

Report To: Vasanta Kallur

Required Project Information

Section B

Required Client Information

Section A Company:

CCc KS Face. !ytical

of

Page:

CHAIN-OF-C! ODY / Analytical Request Document The Chain-of-Custody is

Pace Project No./ Lab I.D. CCE (N/A) DRINKING WATER Samples Intact 55979hog SAMPLE CONDITIONS OTHER Cooler (Y/V) Custody Seale Ice (Y/N) по bevieseя GROUND WATER Residual Chlorine (Y/N) O° ni qmeT 00 REGULATORY AGENCY RCRA Requested Analysis Filtered (Y/N) TIME STATE: Site Location 10115/24 NPDES DATE UST **5240C LDS** 1470 Total Mercury DATE Signed (MM/DD/YY): ACCEPTED BY / AFFILIATION 5010 Total Metals** Ormen June *slajaM latoT 0208 9026 CI, F, SO4 1 N /A thnalysis Test Same as Section A Other Accounts Payable Heather Wilson Methanol Preservatives Olivia Helinski COSSEN company Name: AECOM HOBN 11033, 42700 HCI HNO3 Manager. Pace Profile #: *OSZH 2 Address ace Quote Unpreserved TIME 1700 m # OF CONTAINERS Buch SAMPLER NAME AND SIGNATURE SIGNATURE of SAMPLER: PRINT Name of SAMPLER: SAMPLE TEMP AT COLLECTION W 15/24 DATE 0 180 69709374 PRPA CCR \$0731303 5501 1315 1445 606/6109 10/15/14 COLLECTED / RECOM RELINQUISHED BY / AFFILIATION COMPOSITE NEED PO# DATE O'NO Jamie Herman **60709371** P urchase Order No (G=GRAB C=COMP) SAMPLE TYPE roject Number: (see valid codes to left) **3000 XIATAM** roject Name MATRIX COD DRINKING WATER WT WASTE WATER WW PRODUCT P Valid Matrix Codes Greenwood Village, CO 80111 STANDARD jamie.herman@aecom.com ADDITIONAL COMMENTS (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE 6200 South Quebec St BAT-10-COR Sb. As, Ba, Be, Cd. Cr. Co, Pb, Mo. Se. TI BAT-03-CCR SAMPLE ID BAT-02-CCR BAT-13-CCE Required Client Information hone: (303) 740-2614 Requested Due Date/TAT: Section D Address .. B. Ca, U 9) 10 # M∃TI Ŧ 12 3 ~ o 60 Page 18 of 19

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 15% per month for any invoices not paid within 30 days,

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

Pace® Analytical Services, LLC

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

Client:

Site

Profile/EZ#

Notes

11033-3

Other SPLC WPDU BP3Z **BP3B** BP3S **BP3F BP3N** BP1N BP3U BP2U UIA8 + Medn MCKU **IGFU** VG5U VG4U AG38 **NZÐ** UfaA **HIDA** Bein DC9B DC9M **DG9**0 NG9V DC90 DC9H H69A Container Codes Matrix COC Line Item 12 ო 4 2 9 7 00 6 10 7

ser Codes								
		Glass			Plactic		S. N	1
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1B	11L NAOH plastic	-	Wine/Swah	
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil iar	BP1N	1L HNO3 plastic	Sprit	120ml Coliform Na Thiosulfate	
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil iar	BP1S	1L H2SO4 plastic	ZPIC	Zinlor Ban	
DG90	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic	AF	Air Filter	
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate	20	Air Cassettes	
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2B	500mL NAOH plastic	2	Terracore Kit	
DG90	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic	_	Summa Can	
VG9H	40mL HCI clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic			ı
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic			
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH. Zn Acetate			L
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic	T	Matrix	
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered	M	Water	
ВСЗН	250mL HCL Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic	SL	Solid	ı
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic	NAL	Non-aqueous Liquid	
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic	70	OIL	
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate	WP	Wipe	
				BP4U	125mL unpreserved plastic	ΜQ	Drinking Water	
				BP4N	125mL HNO3 plastic			l
				BP4S	125mL H2SO4 plastic			
			Ĩ	WPDU	16oz unpresserved plstic			
Work Order Number	Nimbor							

Work Order Number:





November 08, 2024

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

RE: Project: 60731303 PRPA CCR

Pace Project No.: 60462724

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on October 17, 2024. 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 Wilson

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

Databa m. Wilson

Enclosures

cc: Jamie Herman, AECOM Jeremy Hurshman, AECOM







CERTIFICATIONS

Project: 60731303 PRPA CCR

Pace Project No.: 60462724

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 lowa 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



SAMPLE SUMMARY

Project: 60731303 PRPA CCR

Pace Project No.: 60462724

Lab ID	Sample ID	Matrix	Date Collected	Date Received	
60462724001	BAT-02-CCR	Water	10/15/24 10:55	10/17/24 09:45	
60462724002	BAT-03-CCR	Water	10/15/24 13:15	10/17/24 09:45	
60462724003	BAT-10-CCR	Water	10/15/24 14:45	10/17/24 09:45	
60462724004	BAT-04R-CCR	Water	10/16/24 09:05	10/17/24 09:45	
60462724005	DUP-02-CCR	Water	10/16/24 08:00	10/17/24 09:45	



SAMPLE ANALYTE COUNT

Project: 60731303 PRPA CCR

Pace Project No.: 60462724

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60462724001	BAT-02-CCR	EPA 903.1	REH1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60462724002	BAT-03-CCR	EPA 903.1	REH1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60462724003	BAT-10-CCR	EPA 903.1	REH1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60462724004	BAT-04R-CCR	EPA 903.1	REH1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60462724005	DUP-02-CCR	EPA 903.1	REH1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg



Project: 60731303 PRPA CCR

Pace Project No.: 60462724

Sample: BAT-02-CCR PWS:	Lab ID: 6046 2 Site ID:	2724001 Collected: 10/15/24 10:55 Sample Type:	Received:	10/17/24 09:45	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 903.1	0.245 ± 0.535 (0.954) C:NA T:94%	pCi/L	11/05/24 13:35	5 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 904.0	0.756 ± 0.425 (0.770) C:81% T:86%	pCi/L	11/01/24 15:40	0 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	1.00 ± 0.960 (1.72)	pCi/L	11/06/24 09:02	2 7440-14-4	



Project: 60731303 PRPA CCR

Pace Project No.: 60462724

Sample: BAT-03-CCR PWS:	Lab ID: 6046272 4 Site ID:	4002 Collected: 10/15/24 13:15 Sample Type:	Received:	10/17/24 09:45	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Serv	vices - Greensburg				
Radium-226	EPA 903.1	0.260 ± 0.467 (0.817) C:NA T:96%	pCi/L	11/05/24 13:35	5 13982-63-3	
	Pace Analytical Serv	vices - Greensburg				
Radium-228	EPA 904.0	0.679 ± 0.390 (0.700) C:83% T:86%	pCi/L	11/01/24 15:4	1 15262-20-1	
	Pace Analytical Serv	vices - Greensburg				
Total Radium	Total Radium Calculation	0.939 ± 0.857 (1.52)	pCi/L	11/06/24 09:02	2 7440-14-4	



Project: 60731303 PRPA CCR

Pace Project No.: 60462724

Sample: BAT-10-CCR PWS:	Lab ID: 6046272 Site ID:	4003 Collected: 10/15/24 14:45 Sample Type:	Received:	10/17/24 09:45	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Ser	vices - Greensburg				
Radium-226	EPA 903.1	-0.0908 ± 0.436 (0.885) C:NA T:93%	pCi/L	11/05/24 13:3	5 13982-63-3	
	Pace Analytical Ser	vices - Greensburg				
Radium-228	EPA 904.0	-0.0121 ± 0.253 (0.607) C:83% T:93%	pCi/L	11/01/24 15:4	1 15262-20-1	
	Pace Analytical Ser	vices - Greensburg				
Total Radium	Total Radium Calculation	0.000 ± 0.689 (1.49)	pCi/L	11/06/24 09:02	2 7440-14-4	



Project: 60731303 PRPA CCR

Pace Project No.: 60462724

Sample: BAT-04R-CCR PWS:	Lab ID: 6046272 4 Site ID:	Collected: 10/16/24 09:05 Sample Type:	Received:	10/17/24 09:45	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Serv	vices - Greensburg				
Radium-226	EPA 903.1	0.183 ± 0.524 (0.950) C:NA T:95%	pCi/L	11/05/24 13:35	5 13982-63-3	
	Pace Analytical Serv	rices - Greensburg				
Radium-228	EPA 904.0	0.720 ± 0.396 (0.694) C:84% T:89%	pCi/L	11/01/24 15:4	1 15262-20-1	
	Pace Analytical Serv	rices - Greensburg				
Total Radium	Total Radium Calculation	0.903 ± 0.920 (1.64)	pCi/L	11/06/24 09:02	2 7440-14-4	



Project: 60731303 PRPA CCR

Pace Project No.: 60462724

Sample: DUP-02-CCR PWS:	Lab ID: 6046 Site ID:	2724005 Collected: 10/16/24 08:00 Sample Type:	Received:	10/17/24 09:45	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 903.1	0.403 ± 0.536 (0.900) C:NA T:101%	pCi/L	11/05/24 13:3	5 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 904.0	0.318 ± 0.322 (0.666) C:79% T:99%	pCi/L	11/01/24 15:4	1 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	0.721 ± 0.858 (1.57)	pCi/L	11/06/24 09:0	2 7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60462724

QC Batch: 704229 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: 60462724001, 60462724002, 60462724003, 60462724004, 60462724005

METHOD BLANK: 3429156 Matrix: Water

Associated Lab Samples: 60462724001, 60462724002, 60462724003, 60462724004, 60462724005

 Parameter
 Act ± Unc (MDC) Carr Trac
 Units
 Analyzed
 Qualifiers

 Radium-228
 0.105 ± 0.278 (0.623) C:84% T:87%
 pCi/L
 11/01/24 15:39

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.



QUALITY CONTROL - RADIOCHEMISTRY

Project: 60731303 PRPA CCR

Pace Project No.: 60462724

QC Batch: 704228 Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60462724001, 60462724002, 60462724003, 60462724004, 60462724005

METHOD BLANK: 3429155 Matrix: Water

Associated Lab Samples: 60462724001, 60462724002, 60462724003, 60462724004, 60462724005

 Parameter
 Act ± Unc (MDC) Carr Trac
 Units
 Analyzed
 Qualifiers

 Radium-226
 -0.0664 ± 0.160 (0.399) C:NA T:103%
 pCi/L
 11/05/24 13:11

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.



QUALIFIERS

Project: 60731303 PRPA CCR

Pace Project No.: 60462724

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

Date: 11/08/2024 09:47 AM

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731303 PRPA CCR

Pace Project No.: 60462724

Date: 11/08/2024 09:47 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60462724001	BAT-02-CCR	EPA 903.1	704228		
60462724002	BAT-03-CCR	EPA 903.1	704228		
60462724003	BAT-10-CCR	EPA 903.1	704228		
60462724004	BAT-04R-CCR	EPA 903.1	704228		
60462724005	DUP-02-CCR	EPA 903.1	704228		
60462724001	BAT-02-CCR	EPA 904.0	704229		
60462724002	BAT-03-CCR	EPA 904.0	704229		
60462724003	BAT-10-CCR	EPA 904.0	704229		
60462724004	BAT-04R-CCR	EPA 904.0	704229		
60462724005	DUP-02-CCR	EPA 904.0	704229		
60462724001	BAT-02-CCR	Total Radium Calculation	707586		
60462724002	BAT-03-CCR	Total Radium Calculation	707586		
60462724003	BAT-10-CCR	Total Radium Calculation	707586		
60462724004	BAT-04R-CCR	Total Radium Calculation	707586		
60462724005	DUP-02-CCR	Total Radium Calculation	707586		

Pace Analytical

CHAIN-OF-CUS I ODY / Analytical Request Document

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

Pace Project No./ Lab I.D. CCR DRINKING WATER SAMPLE CONDITIONS OTHER jo □ GROUND WATER Page: 2222 Residual Chlorine (Y/N) Z REGULATORY AGENCY 00 RCRA Requested Analysis Filtered (Y/N) 250 TIME 10/17/24 Site Location STATE NPDES DATE TSU T Sum Radium-226 & 228 ACCEPTED BY / AFFILIATION Fotal Radium-228 F Fotal Radium-226 ↑N/A Trailysis Test Same as Section A Other Pace Ouote 73141
Reference:
Pace Project Heather Wilson Manager:
Pace Profile #: 11033, 8 Accounts Payable Methanol Preservatives Company Name: AECOM Na₂S₂O₃ HOBN HCI Invoice Information HNO3 2002 POSTH Section C Address: Unpreserved 0011 TIME # OF CONTAINERS SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION 10/16/24 1445 DATE 0905 1055 TIME 315 DELT 31303 BARNER COR hZ/91/01 1011574 COLLECTED DATE /A ECOM 60T084786 60731303 RELINQUISHED BY / AFFILIATION TIME START urchase Order No.: 1599461 DATE Report To: Vasanta Kalluri Copy To: Jamie Herman Required Project Information Ь 5 SAMPLE TYPE (G=GRAB C=COMP) \geq 1 Project Number. 1 (see valid codes to left) **BUOD XIMTAM** roject Name: Section B Valid Matrix Codes DAW WAT SIL CAL WAR ARR TS PRINKING WATER WATER WASTER WASTER WASTER WASTER WASTER WASTER WINDER WINDER ARE ATTESSUE Greenwood Village, CO 80111 jamie.herman@aecom.com BAT-04R-CCR ADDITIONAL COMMENTS 15 Day TAT 6200 South Quebec St (A-Z, 0-91,-) Sample IDs MUST BE UNIQUE DUP-02-CCR SAMPLE ID BAT-03-CCK BAT-10-CCR BAT-01-CCR Section D Required Client Information (303) 740-2614 Section A Required Client Information: Requested Due Date/TAT: AECOM Company: Email To Address: 2 4 ITEM # 5 10 9 7

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

Samples Intact (V/V)

Custody Sealer Cooler (Y/N)

ICB (Y/N)

Received on

O. ui qmaT

10115/24

DATE Signed (MM/DD/YY):

Olivia Helinski

PRINT Name of SAMPLER: SIGNATURE of SAMPLER: important Noto: By signing this form ynu are accepting Pace's MET 30 day payment terms and agreeing to late charges of 1,5% per month for any involces not paid within 30 days.

Page 14 of 19

upawaren coullians recental 101171104 via timail 195

7	Pace	Results Reguested By: 1477/2004	o reducated by.						LAB USE ONLY	8	200	3	805	Comments	uired				Samples Intact Or N
	00	s x No 10/17/2024	Requested		1000	uibs A les 7 mu2 les			-	-	< >		+		IR-30 *Rad QC sheets required				Y or N
	State Of Origin: CO	Cert. Needed: Ye			9ZZ-W	rsl Radiu			,	< >	< ×	×	×		Date/Time	1124 945			Received on Ice
	State						rieselved containers	ниоз	c	7 0	2	2	2			1101			Rece
	×	gged into eCOC		Pittsburgh n Road	7 15601 2-5600			Matrix					4005 Water		Received By	monde			ak(Y) or N
stody -	Rush Multiplier_	Samples Pre-Logged ir 60731455 PRPA CCR	Subcontract To	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4	Greensburg, PA 15601 Phone (724)850-5600			de Cl			14:45 60462724003	10/16/2024 09:05 60462724004	10/16/2024 08:00 60462724005		Date/Time Rece				Custody Seal(
n of Cus	<u>⊼</u>	٠,	Sub					Sample Collect		10/15/2024	10/15/2024 14:45	10/16/2024	10/16/2024	-	Date/				ပွ
er Chain		Workorder Name:						Samp	S S	PS	PS	PS	PS						Receipt
Internal Transfer Chain of Custody		Workorder: 60462724		Heather Wilson Pace Analytical Kansas 9608 Loiret Blvd.	Lellexa, NS 002.19 Phone 1(913)563-1407			le ID	CCR	CCR	ccR	R-CCR	CCR		Released By				Cooler Temperature on Receipt
Intern		Workorde	Keport 10	Heather Wilson Pace Analytical K 9608 Loiret Blvd.	Phone 1(913)563-1			Item Sample ID	1 BAT-02-CCR	2 BAT-03-CCR	3 BAT-10-CCR	4 BAT-04R-CCR	5 DUP-02-CCR		Transfers	-	2	3	Cooler Te

***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#:30727160

	DC#_Title: ENV-FR	RM-G	BUF	₹-00	88	v07_Sample	Conditi	on Upon Re	eceipt-	
	Greensburg								1	
Rose							LIO	#:307	<i>'2</i> 716	0
	ffective Date: 01/04/20)24					MO.			
Client Name:	Pace-KS / A	ECC	M			F	PM: M	IAR IT: PACE_60	Due Date: _LEKS	11/07
						75 000				
Courier: Fed Ex	UPS USPS Clien	nt UC	Comn	nerci	al L	Pace U Other		Everningd Ry	1: PS 10/19/2	9
Tracking Number:	6432 13930	300							•	
Custody Seal on Co	oler/Box Present:	Yes	□No		Seal	ls Intact:	Yes □No	Labeled By: _	PS 10/17/	24
Thermometer Used	:1	Гуре о	f Ice:		/et	Blue None				
Cooler Temperature	e: Observed Temp	_	- •0	100	Cori	rection Factor: _		∘C Final Ter	mp:	۰C
Temp should be above for	eezing to 6°C									
	2					pH paper Lot		D.P.D. Residu	ial Chlorine Lot	#
Comments:		Y	25	No	NA					
Chain of Custody Pre	sent		-			1. updates	1 coc/	1 RWO rece	word Mat	M
Chain of Custody Fille		1	1			2.			10/17/24	1
-Were client corr	ections present on GO		-							_
Chain of Custody Reli	nguished	/				3.				-
Sampler Name & Sign	ature on COC:	/	4			4.				-H
Sample Labels match	COC:		1			5.	1 3	26° 124(M.C		\dashv
-Includes date/tir	ne/ID	_			_	time on sar	npe oc	os bottles		1
Matrix:			$\Lambda \Pi$				· ·			\dashv
Samples Arrived within		1	1	+		6.				\dashv
Short Hold Time Analy	ysis (<72hr		1	-		7.				
remaining):		+-	+	_		8.				-
Rush Turn Around Tim	e Requested:	+	+	+		9.				\neg
Sufficient Volume:	d.	-	+	+	-	10.				
Correct Containers Use	¥3 - 0.03	1	+	+	\dashv	10.				\neg
Containers Intact:	SEU	1	+	+	\neg	11.				
Orthophosphate field fi	Itered.		\vdash	+,	-	12.				
Hex Cr Aqueous sample	s field filtered:			1,	7	13.				
Organic Samples checke	ed for dichlorination			1	1	14:				_
Filtered volume receive	d for dissolved tests:			/		15:				4
All containers checked		/			4	16.				-
exceptions: VOA, co	liform, TOC, O&G,				-	PHCD				
Phenolics, Radon, no	on-aqueous matrix				\perp	711				4
All containers meet met	hod preservation	/		Γ		nitial when 5	383.00	ite/Time of eservation		1
requirements:	L				_	ot# of added]
						reservative				1
8260C/D: Headspace in \				/		17.				1
624.1: Headspace in VOA	Vials (0mm)				1	.8.				
Radon: Headspace in RAD) Vials (0mm)				1	9.			NO	
Trip Blank Present:				/				present? YES		
Rad Samples Screened <.	05 mrem/hr.	/				mpleted PS	Date: 17	124 SN:	ey Meler U143	30
Comments:						•	_			
1				-						

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

Pace Analytical

CHAIN-OF-CUS I ODY / Analytical Request Document

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

Pace Project No./ Lab I.D. CCR DRINKING WATER SAMPLE CONDITIONS OTHER of GROUND WATER Page: Residual Chlorine (Y/N) Z REGULATORY AGENCY 8 RCRA Requested Analysis Filtered (Y/N) 25 TIME Voln124 STATE Site Location NPDES DATE TSU T ACCEPTED BY / AFFILIATION Sum Radium-226 & 228 Fotal Radium-228 T Total Radium-226 N/A Transpais Test Same as Section A Other Accounts Payable Heather Wilson Methanol Preservatives Company Name: AECOM Na₂S₂O₃ Reference:
Pace Project Heather Wi HOBN 73141 HCI Invoice Information; HNO3 20000 PS5H Section C ace Guote Address: Unpreserved TIME 0011 NN # OF CONTAINERS 6 SAMPLER NAME AND SIGNATURE SAMPLE TEMP AT COLLECTION 10/16/24 445 DATE 0905 1055 TIME BOT 31403 CCR iolishi 10 16/24 COLLECTED DATE 60708478 60731303 /A ECOM RELINQUISHED BY / AFFILIATION TIME START Purchase Order No.: 1599461 DATE Report To: Vasanta Kalluri Sopy To: Jamie Herman Required Project Information P (G=6RAB C=COMP) SAMPLE TYPE P \rightarrow 1 Project Number: M Project Name: MATRIX CODE Section B MO#:30727160 Greenwood Village, CO 80111 jamie herman@aecom.com BM1-04R-CCR ADDITIONAL COMMENTS 15 Day TAT 6200 South Quebec St (A-Z, 0-91,-) Sample IDs MUST BE UNIQUE - CCR SAMPLE ID BAT-03-CCK BAY-10-CCR BAT-01-CCR Required Client Information DUP-02 (303) 740-2614 Required Client Information; Requested Due Date/TAT: AECOM company. 4ddress: Email To: 5 9 10 ITEM # 1 12

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

(V/V)

Cooler (Y/N)

(NIY) eal

по раучеряя

D. ui dmal

10115/24

DATE Signed (MM/DD/YY):

Olivia Helinski

PRINT Name of SAMPLER;

Due Date: 11/07/24

CLIENT: PACE_60_LEKS

Page 17 of 19

PM: MAR

.. I 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"

Ra-226 REH1 10/22/2024 81909 DW Test: Analyst: Date: Batch ID: Matrix:

3429155 -0.066 0.159 0.399 -0.82 N/A Pass

MB Sample ID
MB concentration:
M/B Counting Uncertainty:
M/B MDC:

Method Blank Assessment

MB Numerical Performance Indicator: MB Status vs Numerical Indicator: MB Status vs. MDC:

Analyst Must Manually Enter All Fields Highlighted in Yellow.

	Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
	Sample Collection Date:		
	Sample I.D.		
	Sample MSD I.D.		
	Spike I.D.:		
	MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
	Spike Volume Used in MS (mL):		
	Spike Volume Used in MSD (mL):		
	MS Aliquot (L, g, F):		
	MS Target Conc.(pCi/L, g, F):		
	MSD Aliquot (L, g, F):		
	MSD Target Conc. (pCi/L, g, F):		
	MS Spike Uncertainty (calculated):		
	MSD Spike Uncertainty (calculated):		
606	Sample Result:		
4	Sample Result Counting Uncertainty (pCi/L, g, F):		
_	Sample Matrix Spike Result:		
	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
	Sample Matrix Spike Duplicate Result:		
	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
	MS Numerical Performance Indicator:		
	MSD Numerical Performance Indicator;		
	MS Percent Recovery:		
	MSD Percent Recovery:		
	MS Status vs Numerical Indicator:		
٠,	MSD Status vs Numerical Indicator:		
	MS Status vs Recovery:		
	MSD Status vs Recovery:		
	MS/MSD Upper % Recovery Limits:		
	MS/MSD Lower % Recovery Limits:		

Laboratory Control Sample Assessment	LCSD (Y or N)?	>-	MSD Spike Un
	LCS81909	LCSD81909	
Count Date:	11/5/2024	11/5/2024	Sample Result Counting Un
Spike I.D.:	23-063	23-063	Sampl
Spike Concentration (pCi/mL):	32.293	32.293	Matrix Spike Result Counting Un
Volume Used (mL):	0.10	0.10	Sample Matrix S
Aliquot Volume (L, g, F):		0.652	Matrix Spike Duplicate Result Counting Un
Target Conc. (pCi/L, g, F):	4.961	4.956	MS Numerical F
Uncertainty (Calculated):	0.233	0.233	MSD Numerical F
Result (pCi/L, g, F):	3.721	4.308	_
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.810	0.853	W
Numerical Performance Indicator:	-2.88	-1.44	MS Status v
Percent Recovery:	75.01%	86.93%	MSD Status v
Status vs Numerical Indicator:	N/A	N/A	- W
Status vs Recovery:	Pass	Pass	MSI
Upper % Recovery Limits:	133%	133%	ddn ds/wsd nbb
Lower % Recovery Limits:	73%	73%	MS/MSD Low

Matrix Spike/Matrix Spike Duplicate Sample Assessment	Sample I.D. Sample MSI.D. Sample MSI.D. Sample MSI.D. SSD in Matrix Spike Result Counting Uncertainty (PCift., g. F): Sample MSI.D. Sample MSI.D. Sample MSI.D. Sample Matrix Spike Result Matrix Spike Duplicate Result Counting Uncertainty (PCift., g. F): Duplicate Numerical Preformance Indicator (Based on the Percent Recoveries) MSI MSD Duplicate RPD: MSI MSD Duplicate Status vs Numerical Indicator MSI MSD Duplicate Status vs Numerical Indicator MSI MSD Duplicate Status vs RPD: MSI MSD Duplicate Status vs RPD: % RPD Limit.
L	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
	LCSB1909 1,721 3,721 0,810 4,308 0,853 NO -0,978 14,72% NIA Pass 32%
Duplicate Sample Assessment	Sample I.D. Sample Result (polit. g. F.) Sample Result (polit. g. F.) Sample Duplicate Result (polit. g. F.) Sample Duplicate Result (polit. g. F.) Are sample andor duplicate results below RL? Duplicate Nurmerical Performance Indicator: Duplicate Status vs Nurmerical Indicator: Duplicate Status vs Nurmerical Indicator: Duplicate Status vs Nurmerical Indicator: Duplicate Status vs RPD: Sample RPD: Outplicate Status vs RPD: Outplicate Status vs RPD: Sample RPD Initit

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

Comments:

My Standard Market and Market of the AC does not meet the recommended limits of the Manual for the Certification of Labs Analyzing Drinking Waters, 5th Edition , section 7.7 of Chapter VI.

Cery (1/5/hy

Ra-226_81909_W Ra-226 (ENV-FRM-GBUR-0294 03).xls

Pace Analytical

Quality Control Sample Performance Assessment

ZPC 10/26/2024 Ra-228 Test: Analyst: Date:

MS/MSD 2

MS/MSD .

Analyst Must Manually Enter All Fields Highlighted in Yellow.

81910 WT Worklist: Matrix:

0.105 0.278 0.623 0.74 Pass Pass MB concentration: M/B 2 Sigma CSU: MB MDC: MB Sample ID MB Numerical Performance Indicator: MB Status vs Numerical Indicator: MB Status vs. MDC: Method Blank Assessment

II CSD (Y or N)?

Sample I.D. Sample MS I.D. MSD Target Conc. (pCi/L, g, F): Matrix Spike Duplicate Result 2 Sigma CSU (pCI/I, g, F): MS Numerical Performance Indicator: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits: Sample Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: MS Percent Recovery MS Status vs Recovery. Sample Collection Date: Sample MSD I.D. MS/MSD Decay Corrected Spike Concentration (pCi/mL): MS Aliquot (L, g, F): MS Target Conc.(pCi/L, g, F): MS Spike Uncertainty (calculated): Sample Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Result: MSD Numerical Performance Indicator MS Status vs Numerical Indicator MSD Status vs Numerical Indicator MSD Status vs Recovery Spike I.D. Spike Volume Used in MS (mL) Spike Volume Used in MSD (mL) MSD Spike Uncertainty (calculated) MSD Percent Recovery Sample Matrix Spike Control Assessment

10281910 11/12024 23-043 34-739 0.10 0.208 2.973 0.753 -3.18 70.10% N/A Pass 135% 60%	Laboratory Control Sample Assessment	LCSD (Y or N)?	٨
11/12024 23-043 23-043 0.10 0.819 4.241 0.208 2.973 0.753 -3.18 70.10% NA Pass 1359% 60%		LCS81910	LCSD81910
23-043 34.739 0.10 0.819 4.241 0.208 2.973 0.753 -3.18 70.10% N/A Pass 135% 60%	Count Date:		11/1/2024
34.739 0.10 0.10 0.2819 4.241 0.208 2.973 0.753 -3.18 70.10% N/A Pass 135% 60%	Spike I.D.:		23-043
0.10 0.819 4.241 0.208 2.973 0.753 -3.18 70.10% N/A Pass 135% 60%	Decay Corrected Spike Concentration (pCi/mL):		34.739
0.819 4.241 0.208 2.973 0.753 -3.18 70.10% N/A Pass 1359% 60%	Volume Used (mL):		0.10
4.241 0.208 2.973 0.753 -3.18 70.10% N/A Pass 135% 60%	Aliquot Volume (L, g, F):		0.820
0.208 2.373 0.753 -3.18 70.10% N/A Pass 135% 60%	Target Conc. (pCi/L, g, F):		4.237
2.973 0.753 -3.18 70.10% N/A Pass 135% 60%	Uncertainty (Calculated):		0.208
0.753 -3.18 70.10% N/A Pass 135% 60%	Result (pCi/L, g, F):		3.632
-3.18 70.10% N/A Pass 135% 60%	LCS/LCSD 2 Sigma CSU (pCi/L, g, F):		0.870
70.10% N/A Pass 135% 60%	Numerical Performance Indicator:		-1.33
N/A Pass 135% 60%	Percent Recovery:		85.72%
Pass 135% 60%	Status vs Numerical Indicator:		N/A
135%	Status vs Recovery:		Pass
%09	Upper % Recovery Limits:	135%	135%
	Lower % Recovery Limits:	%09	%09

uplicate Sample Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:	LCS81910	Enter Duplicate	Sample
Duplicate Sample I.D.	LCSD81910	sample IDs if	Sample Ms
Sample Result (pCi/L, g, F):	2.973	other than	Sample MSI
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.753	LCS/LCSD in	Sample Matrix Spike Re
Sample Duplicate Result (pCi/L, g, F):	3.632	the space below.	Matrix Spike Result 2 Sigma CSU (pCi/L,
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.870		Sample Matrix Spike Duplicate Re
Are sample and/or duplicate results below RL?	9		Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L,
Duplicate Numerical Performance Indicator:	-1.123		Duplicate Numerical Performance India
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	20.06%		(Based on the Percent Recoveries) MS/ MSD Duplicate
Duplicate Status vs Numerical Indicator:	Pass		MS/ MSD Duplicate Status vs Numerical Indic
Duplicate Status vs RPD:	Pass		MS/ MSD Duplicate Status vs
% RPD Limit:	36%		RPD

Duplicate Sample Assessment

Sample I.D. Sample MS I.D. Sample MSD I.D. Duplicate Numerical Performance Indicator:
on the Percent Recoveries) MS/ MSD Duplicate RPD:
MS/ MSD Duplicate Status vs Numerical Indicator:
MS/ MSD Duplicate Status vs RPD:
% RPD Limit: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Result Sample Matrix Spike Duplicate Result: atrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F)

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

Comments:





November 25, 2024

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

RE: Project: 60731303 PRPA CCR

Pace Project No.: 60462790

Dear Vasanta Kalluri:

Enclosed are the analytical results for sample(s) received by the laboratory on October 17, 2024. 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 Wilson

heather.wilson@pacelabs.com 1(913)563-1407

Databa m. Wilson

Project Manager

Enclosures

cc: Jamie Herman, AECOM Jeremy Hurshman, AECOM



9608 Loiret Blvd. Lenexa, KS 66219 (913)599-5665



CERTIFICATIONS

Project: 60731303 PRPA CCR

Pace Project No.: 60462790

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



SAMPLE SUMMARY

Project: 60731303 PRPA CCR

Pace Project No.: 60462790

Lab ID	Sample ID	Matrix	Date Collected	Date Received	
60462790001	BAT-13-CCR	Water	10/16/24 09:40	10/17/24 08:55	
60462790002	BAT-04R-CCR	Water	10/16/24 09:05	10/17/24 08:55	
60462790003	DUP-02-CCR	Water	10/16/24 09:05	10/17/24 08:55	



SAMPLE ANALYTE COUNT

Project: 60731303 PRPA CCR

Pace Project No.: 60462790

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60462790001 BAT-13-CCR	BAT-13-CCR	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JXD	2	PASI-K
		EPA 7470	MLD	1	PASI-K
60462790002 BAT-04R	BAT-04R-CCR	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JXD	2	PASI-K
		EPA 7470	MLD	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 9056	AAA	3	PASI-K
60462790003	DUP-02-CCR	EPA 6010	ARMN	12	PASI-K
		EPA 6020	JXD	2	PASI-K
		EPA 7470	MLD	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 9056	AAA	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City



ANALYTICAL RESULTS

Project: 60731303 PRPA CCR

Pace Project No.: 60462790

Date: 11/25/2024 12:59 PM

Sample: BAT-13-CCR	Lab ID: 604	62790001	Collected: 10/16/	24 09:40	Received: 10	0/17/24 08:55	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua			
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010										
	Pace Analytical Services - Kansas City										
Arsenic	ND	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:20	7440-38-2				
Barium	162	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:20	7440-39-3				
Beryllium	ND	ug/L	1.0	1	10/24/24 11:57	11/01/24 22:20	7440-41-7				
Boron	1560	ug/L	100	1	10/24/24 11:57	11/01/24 22:20	7440-42-8				
Cadmium	ND	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:20	7440-43-9				
Calcium	266000	ug/L	200	1	10/24/24 11:57	11/01/24 22:20	7440-70-2				
Chromium	27.7	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:20	7440-47-3				
Cobalt	11.8	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:20	7440-48-4				
₋ead	15.3	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:20	7439-92-1				
_ithium	260	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:20	7439-93-2				
Molybdenum	38.5	ug/L	20.0	1	10/24/24 11:57	11/01/24 22:20	7439-98-7				
Selenium	ND	ug/L	15.0	1	10/24/24 11:57	11/01/24 22:20	7782-49-2				
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010										
	Pace Analytica	l Services -	Kansas City								
Antimony	ND	ug/L	2.0	2	10/24/24 14:28	11/23/24 16:22	7440-36-0	D3			
Thallium	ND	ug/L	2.0	2	10/24/24 14:28	11/23/24 16:22	7440-28-0	D3			
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470										
-	Pace Analytica										
Mercury	ND	ug/L	0.20	1	11/01/24 10:47	11/01/24 14:06	7439-97-6				



ANALYTICAL RESULTS

Project: 60731303 PRPA CCR

Pace Project No.: 60462790

Date: 11/25/2024 12:59 PM

Sample: BAT-04R-CCR	Lab ID: 6046	2790002	Collected: 10/16/2	24 09:05	Received: 10	/17/24 08:55 N	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	10/24/24 11:57	11/01/24 22:21	7440-38-2			
Barium	12.1	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:21	7440-39-3			
Beryllium	ND	ug/L	1.0	1	10/24/24 11:57	11/01/24 22:21	7440-41-7			
Boron	742	ug/L	100	1	10/24/24 11:57	11/01/24 22:21	7440-42-8			
Cadmium	ND	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:21	7440-43-9			
Calcium	487000	ug/L	200	1	10/24/24 11:57	11/01/24 22:21	7440-70-2			
Chromium	ND	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:21	7440-47-3			
Cobalt	ND	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:21	7440-48-4			
Lead	ND	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:21	7439-92-1			
Lithium	177	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:21	7439-93-2			
Molybdenum	ND	ug/L	20.0	1	10/24/24 11:57	11/01/24 22:21	7439-98-7			
Selenium	ND	ug/L	15.0	1	10/24/24 11:57	11/01/24 22:21	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	10/24/24 14:28	11/23/24 16:17	7440-36-0			
Thallium	ND	ug/L	1.0	1		11/23/24 16:17				
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470									
	Pace Analytical	Services -	Kansas City							
Mercury	ND	ug/L	0.20	1	11/01/24 10:47	11/01/24 14:08	7439-97-6			
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	40C							
20 100 10141 210001104 001140	Pace Analytical Services - Kansas City									
Total Dissolved Solids	3470	mg/L	100	1		10/22/24 15:38				
		Ü		•		10.22,27 10.00				
9056 IC Anions	Analytical Method: EPA 9056 Pace Analytical Services - Kansas City									
Chloride	29.9	mg/L	10.0	10		10/23/24 22:17	16887-00-6			
Fluoride	0.47	mg/L	0.20	1		10/23/24 22:04				
Sulfate	1930	mg/L	200	200		10/23/24 22:29				



ANALYTICAL RESULTS

Project: 60731303 PRPA CCR

Pace Project No.: 60462790

Date: 11/25/2024 12:59 PM

Sample: DUP-02-CCR	Lab ID: 6046	52790003	Collected: 10/16/2	24 09:05	Received: 10	/17/24 08:55 N	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010									
	Pace Analytical	Services - I	Kansas City							
Arsenic	ND	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:23	7440-38-2			
Barium	11.9	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:23	7440-39-3			
Beryllium	ND	ug/L	1.0	1	10/24/24 11:57	11/01/24 22:23	7440-41-7			
Boron	728	ug/L	100	1	10/24/24 11:57	11/01/24 22:23	7440-42-8			
Cadmium	ND	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:23	7440-43-9			
Calcium	480000	ug/L	200	1	10/24/24 11:57	11/01/24 22:23	7440-70-2			
Chromium	ND	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:23	7440-47-3			
Cobalt	ND	ug/L	5.0	1	10/24/24 11:57	11/01/24 22:23	7440-48-4			
_ead	ND	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:23	7439-92-1			
_ithium	172	ug/L	10.0	1	10/24/24 11:57	11/01/24 22:23	7439-93-2			
Molybdenum	ND	ug/L	20.0	1	10/24/24 11:57	11/01/24 22:23	7439-98-7			
Selenium	ND	ug/L	15.0	1	10/24/24 11:57	11/01/24 22:23	7782-49-2			
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010									
	Pace Analytical	Services - I	Kansas City							
Antimony	ND	ug/L	1.0	1	10/24/24 14:28	11/23/24 16:25	7440-36-0			
Гhallium	ND	ug/L	1.0	1		11/23/24 16:25				
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470									
	Pace Analytical	Services - I	Kansas City							
Mercury	ND	ug/L	0.20	1	11/01/24 10:47	11/01/24 14:10	7439-97-6			
2540C Total Dissolved Solids	Analytical Meth	od: SM 254	0C							
	Pace Analytical Services - Kansas City									
Total Dissolved Solids	3460	mg/L	100	1		10/22/24 15:38				
9056 IC Anions	Analytical Meth	od: EPA 905	56							
	Pace Analytical Services - Kansas City									
Chloride	32.6	mg/L	10.0	10		10/23/24 22:55	16887-00-6			
Fluoride	0.76	mg/L	0.20	1		10/23/24 22:42	16984-48-8			
Sulfate	1940	mg/L	100	100		10/23/24 23:08	4 4000 70 0			



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60462790

Date: 11/25/2024 12:59 PM

QC Batch: 914830 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462790001, 60462790002, 60462790003

METHOD BLANK: 3621878 Matrix: Water

Associated Lab Samples: 60462790001, 60462790002, 60462790003

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Mercury ug/L ND 0.20 11/01/24 13:38

LABORATORY CONTROL SAMPLE: 3621879

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units Mercury ug/L 5.2 104 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3621880 3621881

MS MSD

60462558002 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual Result ND 5 100 20 Mercury ug/L 5 5.0 5.3 106 75-125 6

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.



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60462790

Date: 11/25/2024 12:59 PM

QC Batch: 913745 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462790001, 60462790002, 60462790003

METHOD BLANK: 3617416 Matrix: Water

Associated Lab Samples: 60462790001, 60462790002, 60462790003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	10.0	11/01/24 21:57	
Barium	ug/L	ND	5.0	11/01/24 21:57	
Beryllium	ug/L	ND	1.0	11/01/24 21:57	
Boron	ug/L	ND	100	11/01/24 21:57	
Cadmium	ug/L	ND	5.0	11/01/24 21:57	
Calcium	ug/L	ND	200	11/01/24 21:57	
Chromium	ug/L	ND	5.0	11/01/24 21:57	
Cobalt	ug/L	ND	5.0	11/01/24 21:57	
Lead	ug/L	ND	10.0	11/01/24 21:57	
Lithium	ug/L	ND	10.0	11/01/24 21:57	
Molybdenum	ug/L	ND	20.0	11/01/24 21:57	
Selenium	ug/L	ND	15.0	11/01/24 21:57	

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Arsenic	ug/L	1000	920	92	80-120	
Barium	ug/L	1000	998	100	80-120	
Beryllium	ug/L	1000	1000	100	80-120	
Boron	ug/L	1000	958	96	80-120	
Cadmium	ug/L	1000	998	100	80-120	
Calcium	ug/L	10000	10300	103	80-120	
Chromium	ug/L	1000	1010	101	80-120	
Cobalt	ug/L	1000	1030	103	80-120	
_ead	ug/L	1000	1030	103	80-120	
Lithium	ug/L	1000	982	98	80-120	
Nolybdenum	ug/L	1000	1000	100	80-120	
Selenium	ug/L	1000	982	98	80-120	

MATRIX SPIKE & MATRIX S	SPIKE DUPL	ICATE: 3617	418		3617419							
		60462959007	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	ug/L	<0.0020 mg/L	1000	1000	899	859	90	86	75-125	5	20	
Barium	ug/L	0.094 mg/L	1000	1000	1030	996	94	90	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.



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60462790

Date: 11/25/2024 12:59 PM

MATRIX SPIKE & MATRIX	SPIKE DUPI	LICATE: 3617	418 MS	MSD	3617419							
		60462959007	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Beryllium	ug/L	<0.00012 mg/L	1000	1000	974	927	97	93	75-125	5	20	
Boron	ug/L	0.081J mg/L	1000	1000	989	971	91	89	75-125	2	20	
Cadmium	ug/L	<0.00075 mg/L	1000	1000	937	897	94	90	75-125	4	20	
Calcium	ug/L	123 mg/L	10000	10000	135000	133000	119	97	75-125	2	20	
Chromium	ug/L	<0.0010 mg/L	1000	1000	981	921	98	92	75-125	6	20	
Cobalt	ug/L	<0.0012 mg/L	1000	1000	976	925	98	92	75-125	5	20	
Lead	ug/L	<0.0038 mg/L	1000	1000	952	914	95	91	75-125	4	20	
Lithium	ug/L	0.014J mg/L	1000	1000	931	908	92	89	75-125	3	20	
Molybdenum	ug/L	<0.0010 mg/L	1000	1000	979	927	98	93	75-125	6	20	
Selenium	ug/L	<0.0055 mg/L	1000	1000	942	902	94	90	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.



Antimony

Thallium

Date: 11/25/2024 12:59 PM

QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60462790

QC Batch: 913864 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462790001, 60462790002, 60462790003

METHOD BLANK: 3618010 Matrix: Water

Associated Lab Samples: 60462790001, 60462790002, 60462790003

Blank Reporting Qualifiers Parameter Units Result Limit Analyzed ND 1.0 11/23/24 15:04 ug/L ND 1.0 11/23/24 15:04 ug/L

LABORATORY CONTROL SAMPLE: 3618011

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Antimony 40 39.9 100 80-120 ug/L ug/L Thallium 40 39.1 98 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3618012 3618013 MS MSD 60462558001 Spike Spike MS MSD MS MSD % Rec Max RPD Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** Qual Antimony ug/L ND 40 40 36.6 36.5 91 75-125 0 20 Thallium ND 40 40 37.0 36.5 92 91 75-125 20 ug/L 1

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.



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60462790

QC Batch: 913488 Analysis Method: SM 2540C

QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60462790002, 60462790003

METHOD BLANK: 3616467 Matrix: Water

Associated Lab Samples: 60462790002, 60462790003

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Total Dissolved Solids mg/L ND 5.0 10/22/24 15:35

LABORATORY CONTROL SAMPLE: 3616468

Spike LCS LCS % Rec Conc. Result % Rec Limits Qualifiers Parameter Units **Total Dissolved Solids** mg/L 1000 996 100 80-120

SAMPLE DUPLICATE: 3616469

60462775005 Dup Max

ParameterUnitsResultResultRPDRPDQualifiersTotal Dissolved Solidsmg/L968971010

SAMPLE DUPLICATE: 3616470

Date: 11/25/2024 12:59 PM

60462719006 Dup Max RPD RPD Parameter Units Result Result Qualifiers Total Dissolved Solids 511 515 10 mg/L 1

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.



QUALITY CONTROL DATA

Project: 60731303 PRPA CCR

Pace Project No.: 60462790

QC Batch: 913561 QC Batch Method: EPA 9056 Analysis Method: EPA 9056
Analysis Description: 9056 IC A

9056 IC Anions Pace Analytical Services - Kansas City

Associated Lab Samples: 60462790002, 60462790003

METHOD BLANK: 3616728 Matrix: Water

Associated Lab Samples: 60462790002, 60462790003

Blank Reporting Limit Qualifiers Parameter Units Result Analyzed Chloride mg/L ND 1.0 10/22/24 21:56 Fluoride mg/L ND 0.20 10/22/24 21:56 Sulfate mg/L ND 10/22/24 21:56 1.0

Laboratory:

LABORATORY CONTROL SAMPLE: 3616729

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L		4.9	98	80-120	
Fluoride	mg/L	2.5	2.4	97	80-120	
Sulfate	mg/L	5	4.9	98	80-120	

MATRIX SPIKE & MATRIX S	SPIKE DUPL	LICATE: 3616	730		3616731							
Parameter	Units	60462302001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	178	500	500	576	575	80	79	80-120	0	15	M1
Fluoride	mg/L	4.2	2.5	2.5	6.7	6.8	101	103	80-120	0	15	
Sulfate	ma/l	4140	5000	5000	8790	8840	93	94	80-120	1	15	

SAMPLE DUPLICATE: 3616732

Date: 11/25/2024 12:59 PM

		60462302002	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Chloride	mg/L	176	176	0	15	
Fluoride	mg/L	0.71	0.76	7	15	
Sulfate	mg/L	3210	3340	4	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.



QUALIFIERS

Project: 60731303 PRPA CCR

Pace Project No.: 60462790

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

Date: 11/25/2024 12:59 PM

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731303 PRPA CCR

Pace Project No.: 60462790

Date: 11/25/2024 12:59 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60462790001	BAT-13-CCR	EPA 3010	913745	EPA 6010	913925
60462790002	BAT-04R-CCR	EPA 3010	913745	EPA 6010	913925
60462790003	DUP-02-CCR	EPA 3010	913745	EPA 6010	913925
60462790001	BAT-13-CCR	EPA 3010	913864	EPA 6020	913919
60462790002	BAT-04R-CCR	EPA 3010	913864	EPA 6020	913919
60462790003	DUP-02-CCR	EPA 3010	913864	EPA 6020	913919
60462790001	BAT-13-CCR	EPA 7470	914830	EPA 7470	914843
60462790002	BAT-04R-CCR	EPA 7470	914830	EPA 7470	914843
60462790003	DUP-02-CCR	EPA 7470	914830	EPA 7470	914843
60462790002	BAT-04R-CCR	SM 2540C	913488		
60462790003	DUP-02-CCR	SM 2540C	913488		
60462790002	BAT-04R-CCR	EPA 9056	913561		
60462790003	DUP-02-CCR	EPA 9056	913561		

WO#:60462790



DC#_Title: ENV-FRM-LENE-0010_Sample ((SCUR_ESI)

Revision: 3 Issued By: Lenexa Effective Date: 01/12/2022 Client Name: FedEx 🖊 Courier: 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 🗆 Bubble Wrap □ Packing Material: Bubble Bags Foam None □ Other Thermometer Used: Type of Ice: (Wet) Blue None Date and initials of person Cooler Temperature (°C): As-read 9 Corr. Factor -OL | Corrected OLX examining contents: Temperature should be above freezing to 6°C Chain of Custody present: Yes No □N/A Chain of Custody relinquished: PYes □No □N/A Samples arrived within holding time: □No □N/A Short Hold Time analyses (<72hr): □N/A Rush Turn Around Time requested: □N/A Sufficient volume: □No □N/A Correct containers used: ¥Yes □No □N/A Pace containers used: ZYes □No □N/A Yes DNo Containers intact: □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? No □N/A Matrix: Containers requiring pH preservation in compliance? ✓Yes □No List sample IDs, volumes, lot #'s of preservative and the □N/A date/time added. (HNO₃, H₂SO₄, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) 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: N/A □Yes □No N/A Headspace in VOA vials (>6mm): ☐Yes ☐No Samples from USDA Regulated Area: State: ☐Yes ☑No □N/A Additional labels attached to 5035A / TX1005 vials in the field? Yes □N/A Client Notification/ Resolution: Copy COC to Client? Field Data Required? Person Contacted: Temp Log: Record start and finish times Date/Time: when unpacking cooler, if >20 min, recheck Comments/ Resolution: sample temps. Start: Start:

Date:

Project Manager Review:

End:

Temp:

End:

Temp:

CHAIN-OF-CI-TODY / Analytical Request Document

REGULATORY AGENCY JAL DOCUMENT All relevant fields must be completed accurately Same as Section A Accounts Payable ompany Name: AECOM Section C Address: The Chain-of-Custody is Section B
Required Project Information:
Report To: Vasanta Kalluri Sopy To Jamie Herman Greenwood Village, CO 80111 6200 South Quebec St Pace Iytical Section A Required Client Information Address

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

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

Profile/EZ#

Wipe/Swab 120mL Coliform Na Thiosulfate төйтС SPLC Misc. Air Cassettes Terracore Kit Summa Can Ziploc Bag MPDU Air Filter BP3Z BP3B ZPLC SP5T BP3S 22 ¥ BP3F to wh **BP3N** BP1N 1L unpreserved plastic 1L NaOH, Zn Acetate 500mL NAOH plastic 500mL HNO3 plastic 1L NAOH plastic 1L HNO3 plastic 1L H2SO4 plastic **BP3U** Notes BP2U BP1U Mepn BP1Z BP2B BP2N BP1U MCKN NOEN AG5U 4oz unpreserved amber wide 100mL unores amber glass 1L H2SO4 amber glass N≠9∀ 1L HCl amber glass **∀C32** 8oz clear soil jar 4oz clear soil jar 2oz clear soil jar NGSA NEIN **HIDA** WGKU WG2U JGFU AGOU AG1H AG1S Bein Glass DC9B DG9M 40mL amber unpreserved 40mL HCI amber voa vial 40mL Na Thio amber vial 40mL H2SO4 amber vial 40mL bisulfate clear via DG9N 40mL MeOH clear via 40mL TSP amber vial UG9V Site Dead DC9H H69/ DG90 DG90 DG9S DG9U Container Codes VISITIE ine Item 8 10 9 7 12 4 2 ∞ თ n 7

MO#: 60462790

Work Order Number:

Non-aqueous Liquid

WP NAL WT

250mL unpreserved plastic

BP3F BP3N BP3U BP3S BP3Z

Drinking Water

8

125mL unpreserved plastic

BP4U BP4N

125mL HNO3 plastic 125mL H2SO4 plastic

16oz unpresserved plstic

250mL NaOH, Zn Acetate

250mL H2SO4 plastic

Wipe

등

Matrix

Water

250mL HNO3 plastic - field filtered

500mL unpreserved plastic

500mL H2SO4 plastic

BP2S BP2U

1L Na Thiosulfate clear/amber glass

AG1T AG1U

AG2N AG2S

40mL unpreserved clear vial

1liter H2SO4 clear glass 250mL HCL Clear glass

BG1S

ВСЗН

BG10

VG9U

1liter unpres glass

40mL Na Thio. clear vial

40mL HCI clear vial

VG9H

VG9T

500mL NaOH, Zn Acetate

250mL NaOH plastic 250mL HNO3 plastic

BP2Z BP3B

500mL H2SO4 amber glass 250mL H2SO4 amber glass

500mL HNO3 amber glass 1liter unpres amber glass

500mL unpres amber glass 250mL unpres amber glass 125mL unpres amber glass 100mL unpres amber glass

AG3S AG2U AG3U

250mL Unpres Clear glass

16oz clear soil jar

Solid

Due Date: 11/07/24 CLIENT: RECOM CO

Qualtrax ID: 30422

Project/Site: Platte River Power Authority/CCR Event: October Groundwater 2024

AECOM Chemist: Sawyer Hunt

AECOM Secondary Reviewer: Katie Abbott

Date: 12/17/2024

Date: 12/17/2024

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 – 60462426, 60462558, 60462655, 60462790

Pace Analytical Services in Greensburg, Pennsylvania – 60462512, 60462579, 60462724

Analytical Methods Validated:

Total dissolved solids (TDS) by SM2540C, total metals (select lists) by EPA Methods 6010 and 6020, mercury by EPA Method 7470, anions (chloride, sulfate, fluoride) by EPA Method 9056, radium-226 by EPA Method 903.1, radium-228 by EPA Method 904.0, 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.

Project/Site: Platte River Power Authority/CCR **Event:** October Groundwater 2024

AECOM Chemist: Sawyer Hunt

AECOM Secondary Reviewer: Katie Abbott

Date: 12/17/2024

Date: 12/17/2024

1.0 Sample Documentation and Case Narrative

Yes	No	NA
X		
X		
X		
Yes	No	NA
\mathbf{X}^{1}		
	X X X Yes	X X X Yes No

1. **Data Package 60462426:** The laboratory noted that method requirements were not met due to the mass of the dried residue obtained for sample ERB-02-CCR for total dissolved solids analysis. The sample result was qualified as estimated (UJ pr).

Data Package 60462512: The COC submitted to Pace Greensburg, PA listed BAT-12-CCR MS and BAT-12-CCR MSD. These were not individual samples and were meant to be evaluated as the MS/MSD pair for sample BAT-12-CCR. No further action was considered necessary.

Project/Site: Platte River Power Authority/CCR Event: October Groundwater 2024

AECOM Chemist: Sawyer Hunt
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Date: 12/17/2024
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2.0 Quality Control and Performance Checks

Stage 2a				
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 applic	able to the method?	X		
Were LCS/LCSD recoveries and/or RPDs within acceptance	e criteria?	X^1		
Matrix Spike/Matrix Spike Duplicates Criteria		Yes	No	NA
Was an MS/MSD performed on a project specific sample?*		X		
Parent Sample	Method			
Data Packages 60462426, 60462512				
BAT-12-CCR	7470, 6010, 6020, 903	3.1, 90	4.0	
Data Package 60462558				
BAT-05-CCR	7470, 6020			
BAT-06-CCR	7470			
For concentrations <4x the spike concentration, were MS/M	SD recoveries and RPDs	X		
within acceptance criteria?		Λ		
Laboratory Duplicate Criteria – As applicable to the ana	•	Yes	No	NA
Was a laboratory duplicate performed on a project specific s	*	X		
If both the parent sample and duplicate values were >5xRL,	was laboratory duplicate	X		
RPD within laboratory acceptance criteria?		1		
If either the parent sample or duplicate value was <5xRL, w				X
within acceptance criteria of <2xRL for waters, and <3.5xR				
For radiological parameters, was the DER agreement between	en parent sample results and			X
laboratory duplicate sample results \(\leq 2 ? \)		***	3 7	
Tracery/Carrier Recovery - Radiological		Yes	No	NA
The sample specific recoveries were within the laboratory li	mits (30-110%).	X		

^{*} MS/MSD performed on project specific field samples were evaluated.

1. **Data Package 60462512, 60462579:** The LCSD for radium 226 and radium 228 was not reported. The laboratory noted that due to the sample or duplicate result was/were below the MDC, evaluation of duplicate precision was not applicable.

Project/Site: Platte River Power Authority/CCR Event: October Groundwater 2024

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3.0 Field Quality Control Samples

Field Quality Control Samples				
Verification Criteria		Yes	No	NA
Was a trip blank shipped with, and analyzed	with the samples?			X
Were trip blank concentrations reported as no	on-detect for target analytes?			X
Were field and/or equipment blanks collected	d and analyzed with the samples?	X		
Were field QC blank concentrations reported radiological parameters, for the target analyte		X		
Field Duplicate Criteria		Yes	No	NA
Were field duplicate samples collected for the	is sampling event?	X		
Parent Sample	Field Duplicate Sample			
BAT-04R-CCR	DUP-02-CCR			
If both the parent sample and/field duplicate within the acceptance criteria of ≤30%?	sample results were >5xRL were the RPDs	X		
If either the parent sample or duplicate value within the acceptance criteria of <2xRL?	was <5xRL, was the absolute difference	X		
For radiological parameters, was the DER ag field duplicate sample results ≤2?	reement between parent sample results and	X		

Project/Site: Platte River Power Authority/CCR

Event: October Groundwater 2024

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Date: 12/17/2024

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4.0 Sensitivity, Additional Qualification, and Completeness

Sensitivity and Additional Qualification			
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		
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 $\leq 30\%$?			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		

- 1. Several results 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 Method Analyte Identification			Result	2 Sigma (σ) Uncertainty	MDC	Units							
	Data Package 60462512												
BAT-12-CCR	TRC	Total Radium	0.470	0.563	0.757	pCi/L							

TRC: Total Radium Calculation

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

Table 1 – Sample Summary and Laboratory Association

Sample Identification	Collection Date	Laboratory Identification	Sample Type										
	Data Pack	age 60462426											
BAT-11-CCR	10/10/2024	60462426001	Normal										
ERB-02-CCR	10/10/2024	60462426002	Equipment Blank										
BAT-09-CCR	10/10/2024	60462426003	Normal										
BAT-12-CCR	10/10/2024	60462426004	Matrix Spike										
	Data Pack	age 60462512											
BAT-11-CCR	10/10/2024	60462508007	Normal										
ERB-02-CCR 10/10/2024 60462508008 Equipment Blan													
BAT-09-CCR	10/10/2024	60462508009	Normal										
BAT-12-CCR	10/10/2024	60462508010	Matrix Spike										
	Data Pack	age 60462558	_										
BAT-05-CCR													
BAT-06-CCR	10/14/2024	60462558002	Matrix Spike										
BAT-01-CCR	10/14/2024	60462558003	Normal										
	Data Package 60462579												
BAT-05-CCR	10/14/2024	60462579001	Normal										
BAT-06-CCR	10/14/2024	60462579002	Normal										
BAT-01-CCR	10/14/2024	60462579003	Normal										
	Data Pack	age 60462655											
BAT-13-CCR	10/15/2024	60462655001	Normal										
BAT-02-CCR	10/15/2024	60462655002	Normal										
BAT-03-CCR	10/15/2024	60462655003	Normal										
BAT-10-CCR	10/15/2024	60462655004	Normal										
	Data Pack	age 60462724											
BAT-02-CCR	10/15/2024	60462724001	Normal										
BAT-03-CCR	10/15/2024	60462724002	Normal										
BAT-10-CCR	10/15/2024	60462724003	Normal										
BAT-04R-CCR	10/16/2024	60462724004	Normal										
DUP-02-CCR	10/16/2024	60462724005	Field Duplicate										
	Data Pack	age 60462790											
BAT-13-CCR	10/16/2024	60462790001	Normal										
BAT-04R-CCR	10/16/2024	60462790002	Normal										
DUP-02-CCR	10/16/2024	60462790003	Field Duplicate										

Table 2 – Summary of Qualified Sample Results

Sample Identification	Laboratory Identification	Analytical Method	Fraction	2		Qualifier	Reason
ERB-02-CCR	60462426002	2540C	Total	Total Dissolved Solids	YES	UJ	pr
BAT-12-CCR	60462508010	TRC	NA	Total Radium	YES	J	v

TRC: Total Radium Calculation

ATTACHMENT A

DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY

List of Possible Qualifiers Assigned by AECOM Data Review Team

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.

AECOM 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
- 1 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

AECOM Environment

Appendix C

Groundwater Velocity Calculation Sheet

Hydraulic Gradient Calculations BAT Impoundments

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 BAT	Septer	nber BAT
K =	0.029	K =	0.029
dH	16.91	dH	16.04
dL	1120	dL	1120
n _e	0.15	n _e	0.15
GW Velocity =	2.919E-03	GW Velocity =	2.769E-03

Average: 2.844E-03

Notes:

BAT wells gradient between BAT-10 and BAT-05 for dH and dL

Low Hydraulic Conductivity

	· · · · · · · · · · · · · · · · · · ·		
A	pril BAT	Sept	ember BAT
K =	0.0002	K =	0.0002
dH	16.91	dH	16.04
dL	1120	dL	1120
n _e	0.15	n _e	0.15
GW Velocity =	2.013E-05	GW Velocity =	1.910E-05
Average:	1.961E-05	-	_

Max Hydraulic Conductivity

	April BAT	Septem	ber BAT
K =	0.33	K =	0.33
dH	16.91	dH	16.04
dL	1120	dL	1120
n _e	0.15	n _e	0.15
GW Velocity =	3.322E-02	GW Velocity =	3.151E-02

Average: 3.236E-02

Notes:

low = 0.0002 ft/day high = 0.33 ft/day average = 0.029

Gradient	BAT-10 to BAT-05
April 2024	0.015098214
September 2024	0.014321429
Average	0.014709821

AECOM Environment

Appendix D

Statistical Analysis Results and Input/Output Files

Location_ID	Date	Boron D_Bo	oron (Calcium	D_Calcium	Chloride	D_Chloride	e Fluoride	e D_Fluc	oride pH	D_pH	Sulfat	e D_Sulfate	TDS	D_TDS	
BAT-09	9/14/2016	2200	1	220000		1 1	50	1	0.34	1					3100	1
BAT-09	11/30/2016	1900	1	170000		1 1	40	1	0.32	1					2800	1
BAT-09	12/19/2016	2000	1	160000		1 1	10	1	0.97	1					2500	1
BAT-09	4/6/2017	2100	1	140000		1	86	1	0.24	1			1600	1	2600	1
BAT-09	5/11/2017	2300	1	160000		1	92	1	0.2	1	7.49	1	1500	1	2700	1
BAT-09	6/14/2017	2400	1	160000		1 1	00	1	0.22	1	7.26	1	1500	1	2800	1
BAT-09	7/12/2017	•									7.3	1				
BAT-09	2/8/2018	2200	1	140000		1	87	1	0.37	1			1500	1	2600	1
BAT-09	3/27/2018	}							0.2	0	7.35	1				
BAT-09	6/22/2018	2390	1	135000		1 90).5	1	0.24	1	7.56	1	1540	1	1600	1
BAT-09	10/10/2018	2060	1	139000		1 98	3.1	1	0.2	0	7.16	1	1770	1	1550	1
BAT-09	5/1/2019	2110	1	199000		1 29).1	1	0.2	0	7	1	29.5	1	3030	1
BAT-09	7/12/2019)									7	1				
BAT-09	10/15/2019	2220	1	179000		1 1	47	1	0.2	0			1650	1	3530	1
BAT-09	4/17/2020	2240	1	174000		1 1	31	1	0.2	0	7.78	1	1610	1	2790	1
BAT-09	10/7/2020	2220	1	190000		1 1	74	1	0.25	1	7.33	1	1610	1	3470	1
BAT-09	4/14/2021	. 2170	1	161000		1 1	68	1	0.2	0	7.38	1	1	0	2650	1
BAT-09	10/15/2021	2150	1	221000		1 1	88	1	0.2	0	7.34	1	4.3	1	3250	1
BAT-09	5/4/2022	2210	1	187000		1 1	70	1	0.2	0	7.29	1	1590	1	2990	1
BAT-09	10/26/2022	2190	1	215000		1 1	85	1	0.2	0	7.24	1	2700	1	3250	1
BAT-09	5/2/2023	3 2220	1	185000		1 2	26	1	0.2	0	7.21	1	1690	1	2820	1
BAT-09	10/17/2023	2050	1	193000		1 1	60	1	0.2	0	7.21	1	1900	1	3150	1
BAT-09	5/7/2024	2110	1	186000		1 1	03	1	0.2	0	6.89	1	1760	1	2610	1
BAT-09	10/10/2024	2230	1	228000		1 94	l.9	1	2.3	1	7.25	1	1830	1	3140	1
BAT-10	1/24/2019	813	1	363000		1 22	2.2	1	0.53	1	7.7	1	2760	1	3820	1
BAT-10	5/3/2019	875	1	360000		1 45	5.4	1	0.31	1	7	1	2360	1	3620	1
BAT-10	7/22/2019	859	1	392000		1 23	3.8	1	0.21	1	8	1	2490	1	4130	1
BAT-10	10/11/2019	750	1	364000		1 22	2.8	1	0.2	0			2490	1	3830	1
BAT-10	1/14/2020	818	1	343000		1 22	2.1	1	0.23	1	6.7	1	2940	1	4250	1
BAT-10	4/22/2020	889	1	413000		1 22	2.5	1	0.4	1	7.76	1	2630	1	3930	1
BAT-10	7/20/2020	659	1	471000		1 24	.1	1	0.34	1	7.33	1	2550	1	3520	1
BAT-10	10/8/2020	881	1	378000		1 22	2.7	1	0.2	0	7.36	1	2460	1	4020	1
BAT-10	1/7/2021	. 788	1	397000		1 22	2.2	1	0.5	1	7.5	1	2490	1	4270	1
BAT-10	4/21/2021	. 798	1	396000		1 22	2.8	1	0.2	0	7.35	1	14.8	1	3810	1
BAT-10	10/18/2021	. 689	1	431000		1 24	l.5	1	0.2	0	7.33	1	2330	1	3950	1
BAT-10	5/4/2022	837	1	405000		1 22	2.5	1	0.2	0	7.4	1	2360	1	3990	1
BAT-10	10/28/2022	799	1	430000		1 22	2.2	1	0.2	0	7.43	1	2030	1	4010	1
BAT-10	5/2/2023	789	1	404000		1 22	2.5	1	0.2	0	7.27	1	2640	1	3270	1
BAT-10	10/19/2023	864	1	416000		1 22	2.9	1	0.2	0	7.44	1	2660	1	4160	1
BAT-10	5/9/2024	815	1	425000		1 29	0.3	1	0.2	0	6.94	1	3100	1	1860	1
BAT-10	10/15/2024	819	1	404000		1 23	3.4	1	0.62	1	7.31	1	2180	1	4060	1

Location_ID	Date	Antimony D	_Antimony	Arsenic I	D_Arsenic E	Barium	D_Barium	Beryllium	D_Beryllium	Cadmium	D_Cadm	ium C	Chromium	D_Chromium	Cobalt	D_Cobalt	Fluoride	D_Fluoride	Lead	D_Lead	Lithiur	m D_Lithi	ium
BAT-09	9/14/2016	2	1	5	1	46	1	1	(0.:	1	1	2	1	. 3	1	0.34	1	1	1	. 19	94	1
BAT-09	11/30/2016	2	1	3	1	28	1	1	(0.:	1	0	1	C) 2	. 1	0.32	1	1	C	19	92	1
BAT-09	12/19/2016	1	1	4	1	27	1	1	(0.:	1	0	1	C) 1	. 1	0.97	1	1	C	33	30	1
BAT-09	4/6/2017	1	1	3	1	20	1	1	(0.	1	0	1	C) 1	. 1	0.24	1	1	1	. 17	73	1
BAT-09	5/11/2017	1	0	2	1	17	1	1	(0.	1	0	1	C) 1	. 1	0.2	1	1	C	18	87	1
BAT-09	6/14/2017	2	1	3	1	21	1	1	(0.:	1	0	1	C) 2	1	0.22	1	1	C	24	47	1
BAT-09	2/8/2018	1	1	4	1	19	1	1	(0.:	1	0	1	C) 1	. 1	0.37	1	1	C	23	30	1
BAT-09	3/27/2018	1	0	1.6	1	16.3	1	0.5	(0.	5	0	1	C) 1	. 0	0.2	0	1	C	19	92	1
BAT-09	6/22/2018	3	0	3	0	18.1	1	1.5	() 1.	5	0	3	C) 3	0	0.24	1	3	C	20	00	1
BAT-09	10/10/2018	0.5	0	2.5	1	23.7	1	1	(0.0	3	0	2.9	1	1.8	1	0.2	0	1.5	1	. 18	82	1
BAT-09	5/1/2019	1	0	1	0	19.3	1	0.5	(0.	5	0	1.6	1	1.4	. 1	0.2	0	1	C	20	09	1
BAT-09	10/15/2019	1	0	1.1	1	12.6	1	0.5	(0.	5	0	1	C	1.8	1	0.2	0	1	C	20	00	1
BAT-09	4/17/2020	1	0	1	0	11.9	1	0.5	(0.	5	0	1	C) 1	. 0	0.2	0	1	C	21	12	1
BAT-09	10/7/2020	1	0	1	0	10.9	1	0.5	(0.	5	0	1	C) 1	. 0	0.25	1	1	C	21	10	1
BAT-09	4/14/2021	1	0	1	0	13.4	1	0.5	(0.	5	0	1	C) 1	. 0	0.2	0	1	C	19	97	1
BAT-09	10/15/2021	1	0	1	0	13.8	1	0.5	(0.	5	0	1.7	1	. 1	. 0	0.2	0	1	C	26	64	1
BAT-09	5/4/2022	1	0	1.1	1	11.6	1	0.5	(0.	5	0	1.7	1	. 1	. 0	0.2	0	1	C	22	21	1
BAT-09	10/26/2022	5	0	5	0	12	1	2.5	() 2.	5	0	5	C) 5	0	0.2	0	5	C	24	49	1
BAT-09	5/2/2023	1	0	1	0	12.3	1	0.5	(0.	5	0	1	C) 1	. 0	0.2	0	1	C	22	20	1
BAT-09	10/17/2023	2	0	2	0	11.5	1	1	()	1	0	2	C) 2	. 0	0.2	0	2	C	21	15	1
BAT-09	5/7/2024	1	0	1	0	10.2	1	0.5	(0.	5	0	1	C) 1	. 0	0.2	0	1	C	23	31	1
BAT-09	10/10/2024	1	0	10	0	13.8	1	1	() !	5	0	5	C) 5	0	2.3	1	10	C	25	52	1
BAT-10	1/24/2019	1.2	1	2.6	1	34.1	1	0.5	(0.	5	0	1	C	1.1	. 1	0.53	1	1	C	22	21	1
BAT-10	5/3/2019	2	0	2	0	30.9	1	1	()	1	0	2.2	1	_ 2	. 0	0.31	1	2	C	22	27	1
BAT-10	7/22/2019	1	0	1	0	21.5	1	0.5	(0.	5	0	1	C	1.2	1	0.21	1	1	C	22	23	1
BAT-10	10/11/2019	3	0	3	0	25.3	1	1.5	() 1.	5	0	3	C) 3	0	0.2	0	3	C	19	96	1
BAT-10	1/14/2020	1	0	1.2	1	59.2	1	0.5	(0.	5	0	1.5	1	1.5	1	0.23	1	1	C	19	93	1
BAT-10	4/22/2020	1	0	1	0	38.3	1	0.5	(0.	5	0	1.3	C) 1	. 1	0.4	1	1	C	23	36	1
BAT-10	7/20/2020	1	0	1	0	24.9	1	0.5	(0.	5	0	1	C) 1	. 0	0.34	1	1	C	38	83	1
BAT-10	10/8/2020	3	0	3	0	25.8	1	0.5	(0.5	5	0	3	C) 1	. 0	0.2	0	1	C	23	32	1
BAT-10	1/7/2021	1	0	1	0	17.8	1	0.5	(0.5	5	0	1	C) 1	. 0	0.5	1	1	C	19	95	1
BAT-10	4/21/2021	1	0	1	0	18.8	1	0.5	(0.5	5	0	1	C) 1	. 0	0.2	0	1	C	2:	12	1
BAT-10	10/18/2021	1	0	1	0	24.6	1	0.5	(0.	5	0	1.1	1	. 1	. 0	0.2	0	1	C	19	97	1
BAT-10	5/4/2022	1	0	1	0	14.6	1	0.5	(0.	5	0	1	C) 1	. 0	0.2	0	1	C	22	25	1
BAT-10	10/28/2022	10	0	10	0	24.1	1	5	() !	5	0	10	C	10	0	0.2	0	10	C	22	20	1
BAT-10	5/2/2023	1	0	1	0	16.3	1	0.5	(0.9	5	0	1	C) 1	. 0	0.2	0	1	C	22	25	1
BAT-10	10/19/2023	2	0	2	0	16.2	1	1	()	1	0	2	C) 2	. 0	0.2	0	2	C	23	36	1
BAT-10	5/9/2024	3	0	3	0	14.4	1	1.5	() 1.	5	0	3	C) 3	0	0.2	0	3	C	23	30	1
BAT-10	10/15/2024	1	0	10	0	15.1	1	1	() !	5	0	5	C) 5	0	0.62	1	10	C	21	13	1

Location_ID	Date	Mercury	D_Mercury	Molybdenum	D_Molybdenum	Radium	D_Radium	Selenium	D_Selenium	Thallium	D_Thallium
BAT-09	9/14/2016	0.1	0	23	1	. 3.2	1	12	1	. 1	
BAT-09	11/30/2016	0.1	0	40	1	1.6	1	5	1	. 1	
BAT-09	12/19/2016	0.1	0	32	. 1	1.6	1	3	1	. 1	
BAT-09	4/6/2017	0.1	0	26	. 1	0.55	1	4	1	. 1	
BAT-09	5/11/2017	0.1	0	25	1	1.7	1	3	1	. 1	
BAT-09	6/14/2017	0.1	0	18	. 1	0.31	1	5	1	. 1	
BAT-09	2/8/2018	0.1	0	33	. 1	1.4	1	3	1	. 1	
BAT-09	3/27/2018	0.2	0	18.3	. 1	0.947	1	1	0	1	
BAT-09	6/22/2018	0.2	0	17.7	' 1	0.85	1	3	0	3	
BAT-09	10/10/2018	0.2	0	12.7	' 1	0.834	1	2.5	0	0.1	
BAT-09	5/1/2019	0.2	0	9.6	. 1	1.09	1	1.5	1	. 1	
BAT-09	10/15/2019	0.2	0	8.2	. 1	0.497	1	1	0	1	
BAT-09	4/17/2020	0.2	0	4.9) 1	0.451	1	1	0	1	
BAT-09	10/7/2020	0.2	0	4.9) 1	0.913	1	1	0	1	
BAT-09	4/14/2021	0.2	0	5.4	. 1	0.884	1	1	0	1	
BAT-09	10/15/2021	0.2	0	3.8	. 1	2.81	1	1	0	1	
BAT-09	5/4/2022	0.2	0	2.7	' 1	0.785	1	1	0	1	
BAT-09	10/26/2022	0.2	0	5	0	0.242	1	5	0	5	
BAT-09	5/2/2023	0.2	0	3.1	. 1	0.537	1	1	0	1	
BAT-09	10/17/2023			2.3	. 1	0.647	1			2	
BAT-09	5/7/2024	0.2	0	2.3	. 1	0.274	1	1		1	
BAT-09	10/10/2024	0.2	0	20	0	1.87	1	15	0	1	
BAT-10	1/24/2019	0.2	0	36.8	1	_		131	1	. 1	
BAT-10	5/3/2019			32.5			1			. 2	
BAT-10	7/22/2019	0.2	0	20.4	. 1	1.64	1	109	1	. 1	
BAT-10	10/11/2019	0.2	0	19.3	1	0.915	1	115	1	. 3	
BAT-10	1/14/2020	0.2	0	17.4	. 1	0.681	1			. 1	
BAT-10	4/22/2020					0.382	1			. 1	
BAT-10	7/20/2020	0.2	0	12	. 1	0.487	1	90.3	1	. 1	
BAT-10	10/8/2020									. 1	
BAT-10	1/7/2021									. 1	
BAT-10	4/21/2021	0.2	0	8.2	. 1	1.93	1	150	1	. 1	
BAT-10	10/18/2021					0.666	1	213	1	. 1	
BAT-10	5/4/2022									. 1	
BAT-10	10/28/2022										
BAT-10	5/2/2023										
BAT-10	10/19/2023										
BAT-10	5/9/2024							136			
BAT-10	10/15/2024										
-	 -		·		_	·	_	•	_	_	

	Α	В	С	D	E	F	G	Н	I	J	K	L
1		Llaan Calas	-td Oti		Statistics for	or Data Sets	with Non-De	etects				
3	Da	te/Time of Co	cted Options	ProUCL 5.2	1/23/2025 1	·01·55 PM						
4		10, 111110 01 01	From File				ndix III Tota	I 2016-2024.:	xls			
5			II Precision	OFF		•						
6 7		Confidence		95%								
8	Different or	Future K Ob	Coverage	95%								
9		of Bootstrap		2000								
10												
11	TDS											
12 13	General Sta	atietice										
14	General Ot	21131103	Total	Number of C	bservations	38			Numbe	r of Distinct	Observations	35
15									Numbe		Observations	3
16					Minimum						First Quartile	
17 18				Sec	ond Largest Maximum					7	Median Third Quartile	
19					Mean						SD	721.6
20				Coefficient	of Variation						Skewness	-0.558
21				Mean of	logged Data	8.058				SD of	f logged Data	0.252
22 23				Criti	ical Valuos f	or Backgrou	nd Threehel	d Values (B1	Γ//ς\			
24			Tole	rance Factor			iii iiii esii0i	w values (D)	1 43)	d2n	nax (for USL)	2.846
25					, :						,/	
26				N · · · · · · · · ·			OF Test		01			
27 28				Shapiro Wilk T Shapiro Wilk C				Data ann	Shapiro W i ear Normal a	ilk GOF Test		
29			1/0 3		Test Statistic			Data app		GOF Test	Janue Level	
30			1	% Lilliefors C	ritical Value	0.165			ear Normal a		cance Level	
31					Data appe	ar Normal at	1% Signific					
32 33				D.	ackground S	Statistics Acc	umina Nom	nal Distribution	nn .			
34			95% (UTL with 95°			unning Norn	ומו טוטנווטנוני	ווע	90%	Percentile (z)	4173
35					95% UPL (t)	4482					Percentile (z)	
36					95% USL	5302				99%	Percentile (z)	4927
37 38						Gamma (GOF Test					
39				A-D T	est Statistic		GO1 1691	Ande	rson-Darling	Gamma GC	F Test	
40					critical Value	0.747		ata Not Gam	nma Distribut	ted at 5% Sig	gnificance Lev	⁄el
41					est Statistic	-			orov-Smirno			
42 43					Critical Value			ed data appea at 5% Signifi			5% Significan	ce Level
44				Detected dg	na ronow Ap	pr. Ganiilid I	วเอนามนนเปก	at 0 /0 OlyHill	Carice Level			
45						Gamma	Statistics					
46					k hat (MLE)	17.89					rrected MLE)	16.49
47 48					ta hat (MLE) nu hat (MLE)				Theta		rrected MLE) as corrected)	197 1253
49			М	LE Mean (bia							as corrected)	799.9
50					•					. (*)	 /	1
51		050/ 11/11	1196 - 01				uming Gam	ma Distributi	on		10/ D :"	4000
52 53				VH) Approx. C IW) Approx. C							9% Percentile5% Percentile	4306 4666
54	95			UTL with 95°							9% Percentile	
55				UTL with 95°	% Coverage	5185						
56 57				95	5% WH USL	5915				9	95% HW USL	6031
57 58						Lognorma	GOF Test					
59			S	Shapiro Wilk T	est Statistic		- GOI 163L	Shai	piro Wilk Log	normal GOI	F Test	
60				hapiro Wilk C	ritical Value	0.947		Data Not I	Lognormal at	t 10% Signifi	cance Level	
61					est Statistic	0.116			lliefors Logn			
62 63			10	% Lilliefors C Data ar			ormal at 100	Data appea Significan o		at 10% Sign	ificance Leve	
64				Data ap	pour Approx	Amulo LUGIII	ormar at 10	o organicant	~ LUVUI			
65							ming Logno	rmal Distribu	tion			
66 67			95% (UTL with 95°							Percentile (z)	4363
67 68					95% UPL (t) 95% USL						Percentile (z) Percentile (z)	
69					33 /0 USL	07/3				33/0	. 51551111 5 (2)	3073
70				No				round Statis	tics			
71					Data appe	ar Normal at	1% Signific	ance Level				
72 73				Nonna	rametric I les	er l imite for	Backgroup	d Threshold	Values			
74					atistic, order		Dackyrouli	u 1111691101Ü		UTL with 95	5% Coverage	4270
75		Ap	oprox, f used	to compute a		2			nfidence Co	efficient achi	ieved by UTL	0.858
76		•	•	·		40=0		mate Sample	Size neede	d to achieve	specified CC	59
77 78	9.	5% Percentil	e Bootstrap l	UTL with 95°				95% BC	A Bootstrap		5% Coverage 0% Percentile	
78 79				90% Cha	95% UPL byshev UPL	-					D% PercentileD% Percentile	4081 4174
, 5				30 /0 CHE	DYSHEV UFL	UTT I				30	, or crecinite	71/7

	A B C D E	F	G H I J K	L
80 81	95% Chebyshev UPL 95% USL		99% Percentile	4263
82	93 % 03L	4270		
83 84			of BTV, especially when the sample size starts exceeding 20.	
85			e data set represents a background data set free of outliers ed from clean unimpacted locations.	
86	The use of USL tends to provide a balar	nce between	false positives and false negatives provided the data	
87 88	represents a background data set and w	hen many on	site observations need to be compared with the BTV.	
89	Boron			
90 91	General Statistics			
92	Total Number of Observations	38	Number of Distinct Observations	34
93		050	Number of Missing Observations	3
94 95	Minimum Second Largest	659 2390		818.3 2025
96	Maximum	2400		2200
97 98	Mean		-	695.2
99	Coefficient of Variation Mean of logged Data	0.445 7.24	Skewness SD of logged Data	-0.184 0.504
100	-			
101 102	Critical Values fo Tolerance Factor K (For UTL)	or Backgrour 2.132	nd Threshold Values (BTVs) d2max (for USL)	2.846
103	Tolerance Lactor K (LOLOTE)	۷. ۱۷۷	uziliax (ioi USL)	2.040
104		Normal C		
105 106	Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value	0.738 0.916	Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level	
107	Lilliefors Test Statistic	0.281	Lilliefors GOF Test	
108 109	1% Lilliefors Critical Value	0.165	Data Not Normal at 1% Significance Level	
110	Data Not	inomial at 1	% Significance Level	
111			uming Normal Distribution	
112 113	95% UTL with 95% Coverage 95% UPL (t)		90% Percentile (z) 2 95% Percentile (z) 2	2454
114	95% USL		99% Percentile (z)	
115 116		Camma	DOE Took	
117	A-D Test Statistic	Gamma (4.704	Anderson-Darling Gamma GOF Test	
118	5% A-D Critical Value	0.752	Data Not Gamma Distributed at 5% Significance Level	
119 120	K-S Test Statistic 5% K-S Critical Value	0.284 0.144	Kolmogorov-Smirnov Gamma GOF Test Data Not Gamma Distributed at 5% Significance Level	
121			d at 5% Significance Level	
122 123		Commo	Statiation	
124	k hat (MLE)	Gamma 3 4.512	k star (bias corrected MLE)	4.173
125 126 127	Theta hat (MLE)	346.5		374.6
120	nu hat (MLE) MLE Mean (bias corrected)	342.9 1563		317.2 765.3
128			· · · · · · · · · · · · · · · · · · ·	700.0
129 130	Background St 95% Wilson Hilferty (WH) Approx. Gamma UPL	tatistics Assu 3040	uming Gamma Distribution 90% Percentile 2	2589
131	95% Hawkins Wixley (HW) Approx. Gamma UPL	3094		2997
132	95% WH Approx. Gamma UTL with 95% Coverage		99% Percentile 3	3866
133 134	95% HW Approx. Gamma UTL with 95% Coverage 95% WH USL		95% HW USL 4	4800
135	33% WHOCE			
136 137	Shapiro Wilk Test Statistic	Lognormal 0.736	GOF Test Shapiro Wilk Lognormal GOF Test	
138	10% Shapiro Wilk Critical Value	0.736	Data Not Lognormal at 10% Significance Level	
139	Lilliefors Test Statistic	0.289	Lilliefors Lognormal GOF Test	
140 141	10% Lilliefors Critical Value Data Not Lo	0.13 canormal at	Data Not Lognormal at 10% Significance Level 10% Significance Level	
142		_		
143 144	Background Sta 95% UTL with 95% Coverage		ning Lognormal Distribution 90% Percentile (z)	2659
145	95% UTL with 95% Coverage 95% UPL (t)			3193
146	95% USL		99% Percentile (z)	
147 148	Nonnarametric	Distribution	Free Background Statistics	
149			iscernible Distribution	
150 151	Nannaramatria II	or l imita fa-	Rackground Throshold Volume	
152	Order of Statistic, order	er Limits for 38	Background Threshold Values 95% UTL with 95% Coverage 2	2400
153	Approx, f used to compute achieved CC	2	Approximate Actual Confidence Coefficient achieved by UTL	0.858
154 155	95% Percentile Bootstrap UTL with 95% Coverage	2400	Approximate Sample Size needed to achieve specified CC 95% BCA Bootstrap UTL with 95% Coverage 2	59 2400
156	95% UPL	2391		2233
157	90% Chebyshev UPL	3676	95% Percentile 2	2314
158	95% Chebyshev UPL	4633	99% Percentile 2	2396

159	А	В	C	;		D	95% USL	F 2400	G	Н		ı		J	K		L
160									<u>'</u>								
161 162							a conservat imate a BTV										
163		THEIEIGIE	e, one m	lay us			its of observa						uala Se	t iiee o	outilets		
164					L tend	s to pro	ovide a balar	nce between	false positi	ves and fals	se nega	tives p					
165 166		re	present	s a ba	ackgro	und da	ita set and w	hen many o	nsite observ	ations need	to be c	compar	ed with	the BT\	<i>/</i>		
	Calcium																
168																	
169 170	General Sta	itistics		Takal	N I la		bservations	20				N I	af D:a	4i4 Ob			34
171				Total	Numb	ei oi C	bservations	38							servations servations	-	3
172							Minimum								st Quartile	e 175	250
173 174						Sec	ond Largest							Thi	Mediar rd Quartile		
175							Maximum Mean	277211						1111		390	
176							of Variation	0.416							Skewnes	s	0.223
177 178					M	ean of	logged Data	12.44						SD of lo	gged Data	а (0.431
179						Criti	ical Values f	or Backgrou	nd Thresho	ld Values (I	BTVs)						
180				Toler	rance		K (For UTL)				,			d2ma	(for USL) :	2.846
181																	
182 183				Q	haniro	\/\/iI⊾ T	est Statistic	0.828	GOF Test		Sha	niro W	ilk GOF	Toet			
184							critical Value	0.916		Data I				nificanc	e Level		
185							est Statistic	0.218					GOF T				
186 187				19	% Lillie	efors C	Critical Value	0.165 t Normal at	1% Signifies		Not Nor	mal at	1% Sig	nificanc	e Level		
188							Data NO	i Nomiai at	i /o Olgriillo	liice revei							
189							ackground S		suming Nor	nal Distribu	ition						
190 191			(95% L	JTL wi		% Coverage 95% UPL (t)								rcentile (z rcentile (z		
192						•	95% USL								rcentile (z		
193															,	/	
194 195						4 D T	Toot Ctatiatia	Gamma 2.489	GOF Test	And	loroon I	Dorling	Comm	o COE	Toot		
196					5%		Test Statistic Critical Value	0.75		Data Not Ga				na GOF % Signi		evel	
197						K-S T	est Statistic	0.207		Kolmo	ogorov-	Smirno	ov Gam	ma GO	F Test		
198 199					5%		Critical Value			Data Not Ga		Distribu	ted at 5	% Signi	ficance Le	evel	
200						Da	ita Not Gami	ma Distribut	ed at 5% Si	gnificance i	Levei						
201									Statistics								
202							k hat (MLE)	5.795							cted MLE	/	5.355
203 204							ta hat (MLE) nu hat (MLE)					rneta			cted MLE corrected		
205				ML	LE Me		s corrected)								corrected		
206 207							11 0			Distrille							
207		95% Wilso	on Hilfe	rtv (W	/H) An		ackground S Gamma UPL		uming Gar	ima Distribu	Jtion			90%	Percentile	437	507
209							Gamma UPL								Percentile	-	
210							% Coverage							99%	Percentile	e 628	655
211 212	95	% HW Appr	ox. Gan	nma c	J I L WI		% Coverage 5% WH USL							950	6 HW USI	756	261
213 214									1					307		_,,50	
214					ha!	\A/:U- -	Foot Otatiati		I GOF Test		onles 14	//:II- I -		1005			
215 216			1(Test Statistic Critical Value	0.846 0.947						I GOF T Significa	est nce Level		
217			- 11		Lilli	efors T	est Statistic	0.213			Lilliefor	s Logn	ormal C	OF Tes	st		
218				10°	% Lillie	efors C	ritical Value	0.13	100/ 0::4			rmal a	t 10% S	Significa	nce Level		
219 220							Data Not L	ognormal at	10% Signif	icance Leve	H						
220 221 222							ckground Sta		ming Logno	rmal Distrib	oution						
222			(95% L	JTL wi	th 95°	% Coverage	636181							rcentile (z		
223 224							95% UPL (t) 95% USL								rcentile (z rcentile (z		
224 225															30.1010 (2	, , 551	
226						No	nparametric										
227 228							Data do n	ot follow a [Iscernible	STIDUTION							
227 228 229 230 231 232 233							rametric Upp		r Backgrour	nd Threshol	d Value						
230					Orde	er of Sta	atistic, order	38				95%			Coverage		
231 232		Ap	oprox, f	used	to con	npute a	chieved CC	2		ate Actual (imate Samp							0.858 59
233	95	5% Percentil	e Boots	trap L	JTL wi	th 95°	% Coverage	471000	Approx						Coverage		
234			: 2.2	,			95% UPL	433000						90%	Percentile	e 418	700
235 236							byshev UPL								Percentile Percentile		
237					90	⁄₀ cne	byshev UPL 95% USL							99%	rercentile	- 430	200
							20.0 JOL		1								

	A B C D E	F	G H I J K	L
238	Note: The use of LICI tende to viold a sense wetin		of DTV conscients when the complexity shorts averaging 20	
239 240			of BTV, especially when the sample size starts exceeding 20. ne data set represents a background data set free of outliers	
241	and consists of observa	tions collect	ed from clean unimpacted locations.	
242 243			false positives and false negatives provided the data	
243	represents a background data set and wr	nen many on	site observations need to be compared with the BTV.	
245	Chloride			
246 247	One wal Chatistics			
248	General Statistics Total Number of Observations	38	Number of Distinct Observations	33
249			Number of Missing Observations	3
250 251	Minimum Second Lorgest	22.1 188	First Quartile Median	22.83 86.5
252	Second Largest Maximum	226	Third Quartile	137.8
253 254	Mean	82.83	SD	63.33
254 255	Coefficient of Variation Mean of logged Data	0.765 4.072	Skewness SD of logged Data	0.559 0.879
256	Mean of logged Data	4.072	3D 01 logged Data	0.079
257			nd Threshold Values (BTVs)	
258 259	Tolerance Factor K (For UTL)	2.132	d2max (for USL)	2.846
260		Normal C	GOF Test	
261	Shapiro Wilk Test Statistic	0.838	Shapiro Wilk GOF Test	
262 263	1% Shapiro Wilk Critical Value Lilliefors Test Statistic	0.916 0.248	Data Not Normal at 1% Significance Level Lilliefors GOF Test	
264	1% Lilliefors Critical Value	0.248	Data Not Normal at 1% Significance Level	
264 265		Normal at 1	% Significance Level	
266 267	Rackground St	tatistice Ass	uming Normal Distribution	
268	95% UTL with 95% Coverage	217.9	90% Percentile (z)	164
269	95% UPL (t)		95% Percentile (z)	187
270 271	95% USL	263.1	99% Percentile (z)	230.2
272		Gamma (GOF Test	
273	A-D Test Statistic	2.656	Anderson-Darling Gamma GOF Test	-1
274 275	5% A-D Critical Value K-S Test Statistic	0.765 0.246	Data Not Gamma Distributed at 5% Significance Leve Kolmogorov-Smirnov Gamma GOF Test	el e
276	5% K-S Critical Value	0.146	Data Not Gamma Distributed at 5% Significance Leve	el
277 278	Data Not Gamn	na Distribute	ed at 5% Significance Level	
279		Gamma	Statistics	
280	k hat (MLE)	1.595	k star (bias corrected MLE)	1.487
281		51.92 121.3	Theta star (bias corrected MLE)	55.7 113
283	nu hat (MLE) MLE Mean (bias corrected)	82.83	nu star (bias corrected) MLE Sd (bias corrected)	67.92
282 283 284 285 286 287 288	,			
285	Background St 95% Wilson Hilferty (WH) Approx. Gamma UPL	atistics Assu 221.1	uming Gamma Distribution 90% Percentile	173
287	95% Hawkins Wixley (HW) Approx. Gamma UPL	228.7	95% Percentile	216.4
288	95% WH Approx. Gamma UTL with 95% Coverage	279.8	99% Percentile	314.5
289	95% HW Approx. Gamma UTL with 95% Coverage 95% WH USL	296.6 401.2	95% HW USL	444.3
289 290 291	3070 1111 002			
292 293 294 295	Okamina MERI Tara Or et et	Lognormal		
294	Shapiro Wilk Test Statistic 10% Shapiro Wilk Critical Value	0.803 0.947	Shapiro Wilk Lognormal GOF Test Data Not Lognormal at 10% Significance Level	
295	Lilliefors Test Statistic	0.234	Lilliefors Lognormal GOF Test	
296 297	10% Lilliefors Critical Value	0.13	Data Not Lognormal at 10% Significance Level	
298	Data Not Lo	ynomai at	10% Significance Level	
298 299			ning Lognormal Distribution	
300 301	95% UTL with 95% Coverage 95% UPL (t)	382.3 263.6	90% Percentile (z) 95% Percentile (z)	181 249.1
302	95% OPE (t) 95% USL	716.3	95% Percentile (z) 99% Percentile (z)	453.5
303				
304 305			Free Background Statistics iscernible Distribution	
306				
307			Background Threshold Values	226
308 309	Order of Statistic, order Approx, f used to compute achieved CC	38 2	95% UTL with 95% Coverage Approximate Actual Confidence Coefficient achieved by UTL	226 0.858
310			Approximate Sample Size needed to achieve specified CC	59
311	95% Percentile Bootstrap UTL with 95% Coverage	226	95% BCA Bootstrap UTL with 95% Coverage	226
312 313	95% UPL 90% Chebyshev UPL	189.9 275.3	90% Percentile 95% Percentile	171.2 185.5
314	95% Chebyshev UPL	362.5	99% Percentile	211.9
315 316	95% USL	226		
310				

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20	2 21 1 0.2 0.2 53.85% 0.493 0.621 2.857
379 The use of USL tends to provide a balance between false positives and false negatives provided the data and when many onsite observations need to be compared with the BTV. 379 August 1	21 1 0.2 0.2 53.85% 0.493 0.621
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. 323 Fluoride 324 Section 325 Total Number of Distinct Observations 326 Total Number of Distinct Observations 327 Number of Distinct Detacts 328 Number of Distinct Detacts 329 Number of Distinct Detacts 320 Number of Distinct Detacts 321 Number of Distinct Detacts 322 Number of Distinct Detacts 323 Number of Distinct Detacts 324 Number of Distinct Detacts 325 Number of Distinct Detacts 326 Number of Distinct Detacts 327 Number of Distinct Detacts 328 Number of Distinct Detacts 329 Number of Distinct Detacts 320 Number of Distinct Detacts 321 Maximum Detact 322 Maximum Detact 323 Maximum Detact 324 Maximum Detact 325 Maximum Detacts 326 Maximum Detact 327 Maximum Detacts 328 Number of Distinct Detacts 329 Number of Distinct Detacts 320 Number of Distinct Detacts 321 Maximum Detact 322 Maximum Detact 323 Maximum Detacts 324 Maximum Detacts 325 Maximum Detacts 326 Ostal	21 1 0.2 0.2 53.85% 0.493 0.621
	21 1 0.2 0.2 53.85% 0.493 0.621
Section Sect	21 1 0.2 0.2 53.85% 0.493 0.621
325 326 327 328 328 329 329 329 329 329 320 320 320 320 320 320 320 320 320 320	21 1 0.2 0.2 53.85% 0.493 0.621
General Statistics Total Number of Observations Number of Distinct Observations Number of Distinct Observations Number of Distinct Detects Number of Distinct Detects Number of Distinct Detects Number of Distinct Detects Number of Distinct Detects Number of Distinct Detects Number of Distinct Detects Number of Distinct Detects Number of Distinct Detects Number of Distinct Detects Number of Distinct Detects Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Nor-Detect Nor-Detect Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Distinct Nor-Detect Number of Nor-Detect Nor-D	21 1 0.2 0.2 53.85% 0.493 0.621
Total Number of Deservations 39	21 1 0.2 0.2 53.85% 0.493 0.621
Number of Distinct Detects 18	1 0.2 0.2 53.85% 0.493 0.621
Number of Distinct Detects 16	1 0.2 0.2 53.85% 0.493 0.621
Minimum Non-Detect 0.2	0.2 0.2 53.85% 0.493 0.621
Maximum Detect 2.3 Maximum Non-Detect 3332 Variance Detected 0.473 Percent Non-Detect 3334 Mean of Detected 0.477 SD Detected 0.478 SD Detected 0.477 SD Detected 0.478 SD Detected 0.478 SD of Detected 0.478	0.2 53.85% 0.493 0.621
Name	53.85% 0.493 0.621
Mean of Detected Logged Data -0.988 SD of Detected Logged Data -0.988 SD of Detected Logged Data -0.988 SD of Detected Logged Data -0.988 SD of Detected Logged Data -0.988 SD of Detected Logged Data -0.988 SD of Detected Logged Data -0.988 SD of Detected Data -0.988 SD of S	0.621
Critical Values for Background Threshold Values (BTVs)	
Critical Values for Background Threshold Values (BTVs) 337 Tolerance Factor K (For UTL) 2.124 d2max (for USL 338 Normal GOF Test on Detects Only	2.857
	2.857
Normal GOF Test on Detects Only	
Normal GOF Test on Detects Only	
1% Shapiro Wilk Critical Value 0.858 Data Not Normal at 1% Significance Level	
Second Part	
144 Data Not Normal at 1% Significance Level 145 Data Not Normal at 1% Significance Level 146 Data Not Normal at 1% Significance Level 147 Data Not Normal at 1% Significance Level 148 Data Not Normal at 1% Significance Level 148 Data Not Mormal Distribution 148 Data Not RM Mean	
Deta Not Normal at 1% Significance Level	
345	I
Saplan Meier (KM) Background Statistics Assuming Normal Distribution	
95% KM Percentile (2) 0.781 95% KM Percentile (2) 350 99% KM Percentile (2) 1.151 95% KM Percentile (2) 350 99% KM Percentile (2) 1.151 95% KM US 95% KM US 95% KM US 95% KM US 95% KM US 1.151 95% KM US 95% Percentile (2) 95% KM US 95% Percentile (2) 95% KM US 95% Percentile (2) 95% KM US 95% Percentile (2) 95% KM US 95% Percentile (2) 95% KM US 95% LM US 95% Percentile (2) 95% KM US 95% LM US 95% Percentile (2) 95% Percentile	
Span	0.354
Span	0.932 0.91
DL/2 Substitution Background Statistics Assuming Normal Distribution	1.339
DL/2 Substitution Background Statistics Assuming Normal Distribution SI	1.000
95% UTL95% Coverage 1.084 95% UTL 95% UTL95% Coverage 1.084 95% UTL 95% Percentile (z) 9.762 95% Percentile (z) 95% Percentile (z) 95% Percentile (z) 95% US 95% Percentile (z) 95% US	
95% Percentile (z) 95% Percentile (z) 95% Percentile (z) 95% Percentile (z) 95% US	0.381
Section Sect	0.925
DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons	0.901 1.363
Gamma GOF Tests on Detected Observations Only	1.505
A-D Test Statistic 1.537	
Significance Location Sign	
Secondaria Sec	rol .
Solution Statistics Stati	ei
Data Not Gamma Distributed at 5% Significance Level	/el
Gamma Statistics on Detected Data Only	
Residual No. Resi	
Theta hat (MLE) 0.22 Theta star (bias corrected MLE nu hat (MLE) 78.1 nu star (bias corrected MLE nu hat (MLE) 78.1 nu star (bias corrected 0.477 MLE Mean (bias corrected) 0.477 MLE Sd (bias corrected) 0.351 95% Percentile of Chisquare (2kstar 372) Gamma ROS Statistics using Imputed Non-Detects GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs 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) For such situations, GROS method may yield incorrect values of UCLs and BTVs This is especially true when the sample size is small. For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates	1.845
369 nu hat (MLE) 78.1 nu star (bias corrected) 370 MLE Mean (bias corrected) 0.477 371 MLE Sd (bias corrected) 0.351 95% Percentile of Chisquare (2kstar) 372 373 Gamma ROS Statistics using Imputed Non-Detects 374 GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs 375 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)	0.259
370MLE Mean (bias corrected)0.477371MLE Sd (bias corrected)0.35195% Percentile of Chisquare (2kstar372373Gamma ROS Statistics using Imputed Non-Detects374GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs375GROS 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	66.42
372 373 Gamma ROS Statistics using Imputed Non-Detects 374 GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs 375 GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20 376 For such situations, GROS method may yield incorrect values of UCLs and BTVs 377 This is especially true when the sample size is small. 378 For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates	
Gamma ROS Statistics using Imputed Non-Detects GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs 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 For such situations, GROS method may yield incorrect values of UCLs and BTVs This is especially true when the sample size is small. For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates	8.981
374 GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs 375 GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20 376 For such situations, GROS method may yield incorrect values of UCLs and BTVs 377 This is especially true when the sample size is small. 378 For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates	
375 GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20 376 For such situations, GROS method may yield incorrect values of UCLs and BTVs 377 This is especially true when the sample size is small. 378 For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates	
This is especially true when the sample size is small. For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates	
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates	
For garnina distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates 379 Minimum 0.01 Mea	
	0.226
Maximum 2.3 Media	0.220
381 SD 0.406 C	1.798
382 k hat (MLE) 0.447 k star (bias corrected MLE	
Theta hat (MLE) 0.505 Theta star (bias corrected MLE on u hat (MLE) 34.86 nu star (bias corrected MLE nu star (bias corrected MLE on u star (bias corrected MLE nu star (bias corrected MLE on u star (bias corrected ML	0.43
384nu hat (MLE)34.86nu star (bias corrected385MLE Mean (bias corrected)0.226MLE Sd (bias corrected	0.43 0.525
386 95% Percentile of Chisquare (2kstar) 3.482 90% Percentil	0.43 0.525 33.51
387 95% Percentile 0.915 99% Percentile	0.43 0.525 33.51 0.344
The following statistics are computed using Gamma ROS Statistics on Imputed Data	0.43 0.525 33.51 0.344
388 The following statistics are computed using Gamma ROS Statistics on Imputed Data 389 Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods WH HW WH	0.43 0.525 33.51 0.344 0.629
390 WH HW WH 391 95% Approx. Gamma UTL with 95% Coverage 1.224 1.368 95% Approx. Gamma UPL 0.855	0.43 0.525 33.51 0.344 0.629 1.627
392 95% Gamma USL 2.105 2.6	0.43 0.525 33.51 0.344 0.629 1.627
393	0.43 0.525 33.51 0.344 0.629 1.627
Estimates of Gamma Parameters using KM Estimates	0.43 0.525 33.51 0.344 0.629 1.627
395 Mean (KM) 0.328 SD (KM	0.43 0.525 33.51 0.344 0.629 1.627

	A B C D E	F	G	Н				J	K	L
396	Variance (KM)					-		_	Mean (KM)	0.0583
397	k hat (KM)								k star (KM)	0.81
398 399	nu hat (KM)								nu star (KM)	63.2
400	theta hat (KM) 80% gamma percentile (KM)						20% da		ta star (KM) centile (KM)	0.405 0.795
401	95% gamma percentile (KM)								centile (KM)	1.682
402									()	
403	The following statistics are co							3		
404 405	Upper Limits using Wilson WH	HW	H) and Hawk	dins Wixle	y (HW) Meth	ods		WH	HW
406	95% Approx. Gamma UTL with 95% Coverage 0.866	0.846			95%	Appro	x. Gam	ıma UPL	0.716	0.695
407	95% KM Gamma Percentile 0.695	0.674						ıma USL	1.179	1.168
408										
409 410	Lognormal GO Shapiro Wilk Test Statistic		etected Obs	ervations		haniro	Wilk G	OF Test		
411	10% Shapiro Wilk Critical Value			Data No					ance Level	
412	Lilliefors Test Statistic	0.176				Lilliefo	rs GOI	F Test		
413	10% Lilliefors Critical Value							at 10% S	Significance L	evel
414 415	Detected Data appear A	pproximate l	Lognormal a	t 10% Sig	nifica	nce Le	vel			
416	Background Lognormal ROS Statistics	: Assumina L	ognormal D	istribution	Usino	a Impu	ted No	n-Detects	· · · · · · · · · · · · · · · · · · ·	
417	Mean in Original Scale	0.261				gpu		Mean i	n Log Scale	-1.944
418	SD in Original Scale						F0/ F 5		n Log Scale	1.093
419 420	95% UTL95% Coverage 95% Bootstrap (%) UTL95% Coverage					98	5% BC		% Coverage 95% UPL (t)	2.3 0.925
421	95% Bootstrap (%) 01195% Coverage 90% Percentile (z)								ercentile (z)	0.925
422	99% Percentile (z)							, , , , ,	95% USL	3.251
423										
424 425	Statistics using KM estimates		Data and Ass						O/ Covers	0.704
425	KM Mean of Logged Data KM SD of Logged Data				າວ% K	IVI U I L			% Coverage (Lognormal)	0.794 0.641
427	95% KM Percentile Lognormal (z)								(Lognormal)	1.157
428										
429	Background DL/2		suming Logi	normal Dis	stribut	ion			1 0 1	1.000
430 431	Mean in Original Scale SD in Original Scale								n Log Scale n Log Scale	-1.696 0.783
432	95% UTL95% Coverage								95% UPL (t)	0.699
433	90% Percentile (z)							95% P	ercentile (z)	0.665
434	99% Percentile (z)								95% USL	1.719
435 436	DL/2 is not a Recommended Meth	od. DL/2 pro	ovided for co	mparison	s and	histori	cal rea	sons.		
437	Nonparametric	Distribution	Free Backa	round Sta	tistics	<u> </u>				
438		ar to follow a								
439	Nicona con catalo i licona di India del Di	T) /- /		h				\		
440 441	Nonparametric Upper Limits for B Order of Statistic, r		nction made	between	aetec				% Coverage	2.3
442	Approx, f used to compute achieved CC		Approxima	te Actual	Confid				eved by UTL	0.865
443 444	Approximate Sample Size needed to achieve specified CC	59							95% UPL	0.97
444	95% USL	2.3					95%	KM Che	byshev UPL	1.89
445 446	Note: The use of USL tends to yield a conservati	ivo estimate	of RTV pend	acially whe	on the	campl	0 cizo (etarte ave	eeding 20	
447	Therefore, one may use USL to estimate a BTV									
448	and consists of observa	ations collect	ted from clea	ın unimpad	cted lo	ocation	S.			
449	The use of USL tends to provide a balar									
450 451	represents a background data set and w	nen many or	isite observa	ations nee	u to be	e comp	ared w	ntn tne B	ı V.	
452	рН									
453										
454 455	General Statistics Total Number of Observations	34				NI	hor of '	Diction C	bservations	20
456	i otal number of Observations	34							bservations	28 7
457	Minimum								irst Quartile	7.218
458	Second Largest	7.78							Median	7.33
459 460	Maximum							T	nird Quartile	7.423
461	Mean Coefficient of Variation	0.0358							SD Skewness	0.262 0.189
462	Mean of logged Data							SD of	logged Data	0.0357
463										
464 465	Critical Values for		nd Threshol	d Values ((BTVs)		40	ov (for LICI)	2 700
466	Tolerance Factor K (For UTL)	2.166						u∠m	ax (for USL)	2.799
467		Normal (GOF Test							
468	Shapiro Wilk Test Statistic	0.962						OF Test		
469 470	1% Shapiro Wilk Critical Value	0.908		Data a					ance Level	
470 471	Lilliefors Test Statistic 1% Lilliefors Critical Value			Data a			ors GOI		ance Level	
472		ar Normal at	1% Signific				170	. C.g.iiiot		
473			_							
474	Daalamaand C	tatietice Aee	uming Norm	o Dietribu	ution					

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475						% UT		า 95	% Cov	erage	7.8	886							90			ntile (z)	7.	.655
476									95% U			769										ntile (z)		.75
477 478									95%	USL	8.0	052							99	9% F	erce	ntile (z)	/	.928
479											Ga	mma (GOF To	est										
480							-	A-D	Test St	atistic		712			Α	nderso	n-Dar	ling G	amma	GO	F Tes	st		
481									Critical			746	De	tected	data a	ppear (Gamm	a Dist	tributed	d at 5	5% Si	gnifican	ce Le	vel
482 483									Test St			133	_			mogor								
484									Critical		O.		stribute						tributed	a at t	5% Si	gnifican	ce Le	vel
485							Delle	SCIGC	i uata c	appear	Gaiiii	IIIa Di	Suibute	u at J	/o Olgii	ilicalic	C LCVC	<u>, , , , , , , , , , , , , , , , , , , </u>						
486											Ga	amma	Statisti	cs										
487									k hat (807											d MLE)	736	
488 489									eta hat (nu hat (0907					In					d MLE) rected)		00994
490						MLE	Mear		as corre			319										rected)		.27
491								`												,				
492													uming (Gamm	a Distr	ibution								
493 494			Wilse									774 775										rcentile rcentile		.667
495			∕ Hawki ∕H Appr									775 897										rcentile		.769 .962
496			W Appr									899								- 00	70 T CI	Toomalo		302
497									5% WH			073								9	5% H	W USL	8	.076
498											1			Tast										
499 500						Sho	niro V	V/IIV -	Test St	atietio		norma 963	I GOF	ı est		Shapir	0 /Will	Logn	ormal 4	റ്റ⊏	Teet			
501					10%				Critical			963 943		Г								ce Level		
502							Lillie	fors	Test St	atistic	0.	137				Lillie	fors Lo	ognor	mal G0	OF T	est			
503						10%	Lillief		Critical			137	L				ognorr	mal at	: 10% 5	Signi	ficanc	ce Level		
504 505									Data a	ppear	Logno	ormal a	at 10%	Signifi	cance	Level								
506								Ba	ckarou	nd Sta	tistics	assu	ming Lo	oanorm	nal Dist	ributio	n							
507					959	% UT	L with		% Cov			903		9	.u. 5.0.				90	0% F	Percer	ntile (z)	7	.657
508									95% U			778										ntile (z)		.757
509 510									95%	S USL	8.	084							99	9% F	Percer	ntile (z)	7	.949
511								No	nnarai	metric	Distrik	oution	Free B	ackaro	und St	atistic	S							
512													1% Si											
513																								
514													Backg	round	Thresh	old Va		F0/ 1.15	Tlala	0.5	0/ 0-			
515 516			Δ	nnrov	fue				tatistic, achieve		34	789	Annr	ovimate	a Δetus	al Confi						overage by UTL	8 n	.825
517				pprox	, i us	eu io	COM	Jule 6	acineve	u CC		703										fied CC	59	
518		95% P	Percentil	le Boo	otstra	ap UT	L with	า 95			8									95	% Co	verage	8	
519										UPL		835										rcentile		.658
520 521									byshev byshev			116 477										rcentile rcentile		.767 .927
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522 523																								
524 525			ote: The																					
525			herefore	e, one	; may								ne data ted fron						ita set	tree	of ou	tliers		
526 527			т	he us	se of								false p						vided tl	he da	ata			
528													nsite ob											
529																								
530	Sulfate																							
531 532 533 534 535 536 537 538 539											Ge	eneral	Statisti	cs										
533									Observa		35						Nun	nber c	of Missi	ing C	Obser	vations	6	
534					Num	ber o			Observa		29													
535						Nim			er of De		34 28						NI					Detects Detects	1 1	
537						inum	inel 0		tinct De imum E		28 4.3						iNÜ	mber				Detects -Detect	1	
538								Max	imum [Detect	3100)							Maxi	mum	Non-	-Detect	1	
539								ariar/	nce Det	ected	59756	52							Perc			Detects	2	.857%
540 541					N.A	or -1	D-+-		ean Det									CD - 1	f D-#-			etected	773	
541 542					Mea	an of	Detec	cted	Logged	שta	7.	188						2D 01	Detec	ted I	Logge	ed Data		.512
542 543 544 545 546 547 548 549 550								Crit	tical Va	lues fo	or Bac	kgrou	nd Thre	shold	Values	(BTV:	s)							
544					To	olerai	nce Fa		K (For			157					•			d2m	nax (fo	or USL)	2	.812
545										NJ-	-1.00	·												
546 547						Qh-	niro V	V/III-	Test St)F Tes 868	t on De	etects (Jnly		hanir	> \A/iII-	GOE :	Toot				
548					1%				Critical			908			Dat	a Not N			GOF 6 6 Signi			evel		
549									Test St			192							OF Te					
550						1%	Lillief	fors (Critical		0.	175	04.00	10		a Not N	Norma	l at 19	% Signi	ificar	nce Le	evel		
551 552									Da	ta Not	Norm	al at 1	% Sigr	nificano	e Leve	el								
553						k	(anlar	n Mei	ier (KM) Rack	מויוסוייי	nd Stet	tistics <i>F</i>	\ssumi	na Nor	mal Di	strihut	ion						
555						^	whiai	IVIC	1. /1./1A	Jack	yı vul	.u Uldi	uouoð f	เองนเเเ	ilg i VUI	a. Di	วน เมนโ							

	Α		В	1	С		D		Е		l F		Ι (G l	H	1	Т	1		J		K		
554	- / (1					KMN	/lean			,	<u>~</u>	•	•						KM SD	817.8	
555						95	5% UTL	L95%												95	5% K	M UPL (t)		
556							90% KI												(95% KM		centile (z)		
557						(99% KI	М Ре	rcentil	e (z)	3796										95%	6 KM USL	4193	
558 559							N /2 C.	uboti	tution	Pook	arouna	l Ctati	iotico A	\ ooumi	na Noi	rmal l	Dietri	hution	•					
560						L)L/2 SI	udstii			ground 1893		ISUCS F	ASSUMI	ng Nor	rmai i	DISTR	Dution	1			SD	829.7	
561						95	5% UTL	L95%													95	% UPL (t)		
562							909	% Pe	rcentil	e (z)	2957									95%	Per	centile (z)		
563											3824		<u> </u>									95% USL	4226	
564 565					DL/2 is	s not	a reco	mme	ended	meth	od. DL	/2 pro	ovided	for cor	mparis	ons a	and h	istoric	cal rea	asons				
566								Ga	mma	GOF	Tests	on De	atactac	1 Ohea	nyation	ne On	ılv							
567							A-		est Sta			908		1 0030	i vauoi			rson-D	Darling	GOF 1	Test			
568							5% A-					767		Da	ata Not	t Gan	nma	Distrib	outed	at 5% S	ignifi	icance Le	vel	
569									est Sta			106								irnov G				
570 571							5% K-					154	ad at E					Distrib	outed	at 5% S	ignifi	icance Le	vel	
572								Data	a ivot (aam	ma Dis	uibuu	eu at s	7% Siyi	mican	ce Le	evei							
573									Gar	mma	Statist	ics or	n Dete	cted Da	ata On	ly								
574								k	t hat (N		1.4	134										cted MLE)		27
575							1		hat (N									Thet				cted MLE)		
576 577						N41 -	Mess		ı hat (N										n	u star (b	oias d	corrected)	90.25	5
578							Mean LE Sd										QE0	6 Perc	entile	of Chic	ימווסי	re (2kstar)	7.20	16
579						IVII	LL Ju	(nias	COITE	Ji c u)	1032						337	o r C IC	-CIIIIIE	OI CITIS	qual	c (ZNSIAI)	1.20	,5
580								Ga	amma	ROS	Statis	tics u	sing In	nputed	Non-E	Detec	ts							
581								sed v	vhen d	ata s	et has	> 50%	% NDs	with m	any tie	d obs	serva			Itiple DL				
582		GF	ROS may	y not																	(e.g.	., <15-20)		
583 584						ror s	ucn sit				methodially tru							s and	RI VS	<u> </u>				
585			For gar	mma	distrib	outed	detect	ted da	ata BT	TVs a	and UC	l s ma	av be c	compute	ed usir	าต ตลเ	an. mma	distrik	bution	on KM	estir	mates		
586									Mini							3 3-						Mean	1926	
587									Maxii	mum												Median		
588										SD												CV		
589 590									hat (N													cted MLE)		54
591									a hat (N ı hat (N									rnet				cted MLE) corrected)		Ω
592						MLE	Mean															corrected)		5
593				95%			of Chi	isqua	are (2k	star)	7.3	302										Percentile		
594											5192										9% F	Percentile	7642	
595 596					The						mputed Hilfert									ıta				
597						Орр	GI LIIII	iitə u	WH		HW		i ij aliu	Hawki	1119 4417	чеу (1144)	Menic	ous			WH	HW	
598	95% Ap	prox.	Gamma	uTL	with 9	95% (Covera	age	6397		7853					9	5% A	Approx	k. Gar	nma UF	PL 5		5941	
599					95%	% Gar	mma U	JSL	8745		11485	5												
600												_			1/14 =									
601 602											amma 1893		meters	s using	KM E	stima	ites					SD (KM)	817.8	
603											66874									SF	of M	lean (KM)		
604								· ui	k hat			361								- 02		star (KM)		
605								r	nu hat (375.	3										star (KM)		
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607 608											2550 3480											entile (KM) entile (KM)		
609					9	J /o g	ammid	perc	eriule ((LZIVI)	3400							9:	<i>∍ /</i> o ya	анина р	CICE	arure (NIVI)	4419	
610					TI	he fol	llowing	j stat	istics a	are c	ompute	ed usi	ing gar	mma di	istribut	ion a	nd K	M esti	imate	s				
611									sing W	/ilsor	Hilfer	ty (Wł												
612 613	OE0/ A	nr-:-	Ca		,,.:al- 4	OEO/	Ca		WH		HW						VE0/ 4	\ n==-	. 0 -	nm= !!") -	WH	HW	
614	95% Ap	prox.					Covera Percen		7131		9148 6348					9	15% F			nma UF nma US			6686 13968	
615			33	/U f\l	vi Gall	iiiid f	CICCII	ııııC	JZJ I		0040							307	o Gai	ııııa US	,∟ I	0040	13300	
616											F Test	on D	etecte	d Obse	ervatio	ns O								
617							piro Wi	ilk Te	est Sta	tistic	0.4	177					Sha			OF Te				
618					10%		oiro Wi					943			Data	Not I					tican	ice Level		
619 620							Lilliefo Lilliefor					145 137			Data	No+ I				F Test % Signi	fican	ice Level		
621						1U /0 I	LIIII C IOI				ognorn		10% 5	Signific				omidi	at 10	10 SIGIT	ııcdil	ice Level		
622																								
623			Е	Backg	ground								Lognor	rmal Di	stributi	ion U	lsing	Imput	ed No	on-Dete				
624 625						N					1897											Log Scale		
626						QF			ginal S		822. 34770							QF.	% pr			Log Scale Coverage		ŀδ
626 627			Ç	95% F	Bootst		%) UTL											90	, 70 DC	,A UTL		5% UPL (t)		
628											8962									95%		centile (z)		
629											45184											95% USL		
630					<u> </u>	Alc4!	!	- 1/1 ·	-c+!	at	- I -		Date :			1		al D!	unile 4 °					
631 632					Sta		s using Mean				on Log	iged [982	vata a	na Ass	uming						35%	Coverage	6/207	
JJ2						tZIVI	ivicall	OI LC	,gg e u	ےald	0.8	,UZ				307	/U I/IV	IUIL	Logi	ioi iiidi)S	JJ /0	Coverage	U+2U/	

	Α	В	С	D	E	F	G	Н		J	K	L
633				KM SD of L	ogged Data	1.895				95% KM UI	PL (Lognormal)	27774
634			95% KM	Percentile Lo	ognormal (z)	24321				95% KM U	SL (Lognormal)	221982
635												
636				Backg	round DL/2	Statistics As	suming Logn	ormal Distrib	bution			
637				Mean in O	riginal Scale	1893				Mea	an in Log Scale	6.962
638					riginal Scale						SD in Log Scale	
639				95% UTL95	% Coverage	78740					95% UPL (t)	32533
640				90% F	Percentile (z)	13682				959	% Percentile (z)	28282
641					Percentile (z)						95% USL	291360
642			DL/2 is no	ot a Recomn	nended Meth	od. DL/2 pro	ovided for co	mparisons a	nd histori	cal reasons.		
643												
644				No			Free Backgr		ics			
645					Data do n	ot follow a D	iscernible Di	istribution				
646												
647			Nonpara				nction made	between det				
648					of Statistic, r						95% Coverage	
649			prox, f used			1.842	Approxima	te Actual Co	nfidence (Coefficient a	chieved by UTL	
650	Approxim	nate Sample	Size needed	I to achieve s		59					95% UPL	
651					95% USL	3100				95% KM C	hebyshev UPL	5509
652												
653											exceeding 20.	
633 634 635 636 637 638 640 641 642 643 644 645 646 647 650 650 651 652 653 654 655 655 656		Therefore	, one may us								ee of outliers	
655							ed from clear					
656							false positive					
657		re	presents a ba	ackground da	ita set and w	hen many or	isite observa	tions need to	be comp	ared with the	BTV.	
658												

Deer Street Options	1	A B C	D E	F or Data Sets	G H I J K	L
From File ProLUC, Input PRPA CCR BAT Appandix IV Total 2016-2024.sls Full Proteiotics SPA	2	User Selected Options			MILIT NOTE DELECTS	
Full Processon OFF					adiu IV Tatal 2016 2024 ula	
Different or Future N Descriptions 95%				R BAT Appe	101X IV 10tal 2016-2024.XIS	
Number of Bootstrap Operations 1		Confidence Coefficient				
Mumber of Bootstrap Operations 2000						
	9		•			
Total Number of Dissired Observations 39	_	A &				
Total Number of Diservations 3		Antimony				
Number of Detects 7						
Number of Detects 7					Number of Missing Observations	0
Minimum Delect 1	16	INGINISC			Number of Non-Detects	32
		N				
Mean of Detected Logged Data 0.323 SD of Detected Logged Data 0.325	20		Variance Detected	0.263	Percent Non-Detects	82.05%
24		Maan				
		Mean	of Detected Logged Data	0.323	SD of Detected Logged Data	0.352
	24					
Normal COF Test on Detects Only Shapiro Wilk GOF Test		Tole	rance Factor K (For UTL)	2.124	d2max (for USL)	2.857
Shapiro Wilk Test Statistic 0.721 Shapiro Wilk GOF Test	27		Norr	nal GOF Test	t on Detects Only	
Lilliefors Critical Visit Statistics 15 Lilliefors Critical Visit Statistics Control at 1 Statistics	28		hapiro Wilk Test Statistic	0.721	Shapiro Wilk GOF Test	
1		1% S				
Detected Date appear Approximate Normal at 1% Significance Level	31	1	% Lilliefors Critical Value	0.35	Detected Data appear Normal at 1% Significance Leve	<u> </u>
Kaplan Meler (KM) Background Statistics Assuming Normal Distribution KM SD 0.449			Detected Data appear	r Approximate		
MM Mean 0.71 95% UTL95% Coverage 1.665 95% KM De1t (i) 1.478 37 99% KM Percentile (z) 1.286 95% KM De1t (i) 1.478 38 99% KM Percentile (z) 1.286 95% KM De1t (i) 1.458 95% KM De1t (ii) 1.458 95% KM De1t (ii) 1.458 95% KM De1t (ii) 1.458 95% KM De1t (ii) 1.458 95% KM De1t (ii) 1.955 95% KM De1t (ii) 1.955 95% KM De1t (ii) 1.955 95% KM De1t (ii) 1.955 95% KM De1t (ii) 1.955 95% KM De1t (i			Kanlan Meier (KM) Bac	karound Stat	istics Assuming Normal Distribution	
37 90% KM Percentile (z) 1.286 95% KM Percentile (z) 1.756 1.756 95% KM Percentile (z) 1.756 95% KM USL 1.995	35		KM Mean	0.71	KM SD	
Second Color						
DL2 Substitution Background Statistics Assuming Normal Distribution						
Mean	39		`			
90% Percentile (z) 2.08 95% Percentile (z) 2.393						0.863
145 10 10 10 10 10 10 10 1						
Section Camma GOF Tests on Detected Observations Only			· ,		\ /	
A-D Test Statistic 0.988	45	DL/2 is r				0.11
A.D Test Statistic 0.988			Commo COE	Tooto on Do	tootod Observations Only	
Significance Sig					Anderson-Darling GOF Test	
55					Data Not Gamma Distributed at 5% Significance Level	
Detected data follow Appr. Gamma Distribution at 5% Significance Level						a Level
Samma Statistics on Detected Data Only	52					LOVEI
Second Color						
Theta hat (MLE) 0.153 Theta star (bias corrected MLE) 0.263						5.542
58 MLE Mean (bias corrected) 1.457 59 MLE Sd (bias corrected) 0.619 95% Percentile of Chisquare (2kstar) 19.79 60 Genama 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)	56		Theta hat (MLE)	0.153	Theta star (bias corrected MLE)	0.263
MLE Sd (bias corrected) 0.619 95% Percentile of Chisquare (2kstar) 19.79		K.A.I			nu star (bias corrected)	77.59
Gamma ROS Statistics using Imputed Non-Detects GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs 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) For such situations, GROS method may yield incorrect values of UCLs and BTVs This is especially true when the sample size is small. For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates Minimum 0.01 Mean 0.425 Median 0.177 SD 0.581 CV 1.369 CV 1.369 The star (bias corrected MLE) 0.422 The hat (MLE) 0.968 Theta star (bias corrected MLE) 1.006 The star (bias corrected MLE) 0.423 MLE Mean (bias corrected) 0.425 MLE Sd (bias corrected) 0.425 MLE Sd (bias corrected) 0.425 MLE Sd (bias corrected) 0.654 The following statistics are computed using Gamma ROS Statistics on Imputed Data Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods WH HW WH HW		MI			95% Percentile of Chisauare (2kstar)	19.79
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs 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) For such situations, GROS method may yield incorrect values of UCLs and BTVs This is especially true when the sample size is small. For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates Maximum 0.01 Mean 0.425 Maximum 2 Median 0.177 Maximum 2 Median 0.177 SD 0.581 CV 1.369 K hat (MLE) 0.439 K star (bias corrected MLE) 0.422 Theta hat (MLE) 0.968 Theta star (bias corrected MLE) 1.006 Theta hat (MLE) 34.23 nu star (bias corrected) 32.93 MLE Mean (bias corrected) 0.425 MLE Sd (bias corrected) 0.654 MES MES Mercentile of Chisquare (2kstar) 3.443 90% Percentile 1.188 95% Percentile 1.732 99% Percentile 3.092 The following statistics are computed using Gamma ROS Statistics on Imputed Data Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods WH HW	60		•			
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) For such situations, GROS method may yield incorrect values of UCLs and BTVs This is especially true when the sample size is small. For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates Minimum 0.01 Mean 0.425 Maximum 2 Median 0.177 SD 0.581 CV 1.369 70 K hat (MLE) 0.439 K star (bias corrected MLE) 0.422 Theta hat (MLE) 0.968 Theta star (bias corrected MLE) 1.006 72 Theta hat (MLE) 34.23 nu star (bias corrected) 32.93 MLE Mean (bias corrected) 0.425 MLE Sd (bias corrected) 0.654 74 95% Percentile of Chisquare (2kstar) 3.443 90% Percentile 1.188 75 The following statistics are computed using Gamma ROS Statistics on Imputed Data Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods WH HW		CPOS may				
For such situations, GROS method may yield incorrect values of UCLs and BTVs This is especially true when the sample size is small. For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates Minimum 0.01 Mean 0.425 Maximum 2 Median 0.177 SD 0.581 CV 1.369 k hat (MLE) 0.439 k star (bias corrected MLE) 0.422 Theta hat (MLE) 0.968 Theta star (bias corrected MLE) 1.006 nu hat (MLE) 34.23 nu star (bias corrected MLE) 1.006 MLE Mean (bias corrected) 0.425 MLE Sd (bias corrected) 32.93 MLE Mean (bias corrected) 0.425 MLE Sd (bias corrected) 0.654 95% Percentile of Chisquare (2kstar) 3.443 90% Percentile 1.188 75 95% Percentile 1.732 99% Percentile 3.092 The following statistics are computed using Gamma ROS Statistics on Imputed Data Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods WH HW	63					
66 For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates 67 Minimum 0.01 Mean 0.425 68 Maximum 2 Median 0.177 69 SD 0.581 CV 1.369 70 k hat (MLE) 0.439 k star (bias corrected MLE) 0.422 71 Theta hat (MLE) 0.968 Theta star (bias corrected MLE) 1.006 72 nu hat (MLE) 34.23 nu star (bias corrected) 32.93 73 MLE Mean (bias corrected) 0.425 MLE Sd (bias corrected) 0.654 74 95% Percentile of Chisquare (2kstar) 3.443 90% Percentile 1.188 75 95% Percentile 1.732 99% Percentile 3.092 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			or such situations, GROS	method may	yield incorrect values of UCLs and BTVs	
67 Minimum 0.01 Mean 0.425 68 Maximum 2 Median 0.177 69 SD 0.581 CV 1.369 70 k hat (MLE) 0.439 k star (bias corrected MLE) 0.422 71 Theta hat (MLE) 0.968 Theta star (bias corrected MLE) 1.006 72 nu hat (MLE) 34.23 nu star (bias corrected) 32.93 73 MLE Mean (bias corrected) 0.425 MLE Sd (bias corrected) 0.654 74 95% Percentile of Chisquare (2kstar) 3.443 90% Percentile 1.188 75 95% Percentile 1.732 99% Percentile 3.092 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 HW HW HW		For gamma distribut	ted detected data BTVs:	and UCLs ma	n me sample size is small. v be computed using gamma distribution on KM estimates	
69 SD 0.581 CV 1.369 70 k hat (MLE) 0.439 k star (bias corrected MLE) 0.422 71 Theta hat (MLE) 0.968 Theta star (bias corrected MLE) 1.006 72 nu hat (MLE) 34.23 nu star (bias corrected) 32.93 73 MLE Mean (bias corrected) 0.425 MLE Sd (bias corrected) 0.654 74 95% Percentile of Chisquare (2kstar) 3.443 90% Percentile 1.188 75 95% Percentile 1.732 99% Percentile 3.092 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	67	. o. gamma diotribu	Minimum	0.01		
70 k hat (MLE) 0.439 k star (bias corrected MLE) 0.422 71 Theta hat (MLE) 0.968 Theta star (bias corrected MLE) 1.006 72 nu hat (MLE) 34.23 nu star (bias corrected) 32.93 73 MLE Mean (bias corrected) 0.425 MLE Sd (bias corrected) 0.654 74 95% Percentile of Chisquare (2kstar) 3.443 90% Percentile 1.188 75 95% Percentile 1.732 99% Percentile 3.092 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						
71 Theta hat (MLE) 0.968 Theta star (bias corrected MLE) 1.006 72 nu hat (MLE) 34.23 nu star (bias corrected) 32.93 73 MLE Mean (bias corrected) 0.425 MLE Sd (bias corrected) 0.654 74 95% Percentile of Chisquare (2kstar) 3.443 90% Percentile 1.188 75 95% Percentile 1.732 99% Percentile 3.092 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						
73 MLE Mean (bias corrected) 0.425 MLE Sd (bias corrected) 0.654 74 95% Percentile of Chisquare (2kstar) 3.443 90% Percentile 1.188 75 95% Percentile 1.732 99% Percentile 3.092 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	71		Theta hat (MLE)	0.968	Theta star (bias corrected MLE)	1.006
74 95% Percentile of Chisquare (2kstar) 3.443 90% Percentile 1.188 75 95% Percentile 1.732 99% Percentile 3.092 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		K. 41				
75 95% Percentile 1.732 99% Percentile 3.092 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	74					
77 Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods 78 WH HW WH HW	75		95% Percentile	1.732	99% Percentile	
78 WH HW WH HW						
	78					HW
	79	95% Approx. Gamma UTL with 95	% Coverage 2.396	2.796		1.833

	A B C D E	F	G	Н	I	J	K	L
80	95% Gamma USL 4.114	5.347				•		
81 82	Estimates of G	amma Parar	meters usina	KM Estimat	tes			
83	Mean (KM)	0.71					SD (KM)	0.449
84 85	Variance (KM)					SE o	f Mean (KM)	0.0853
86	k hat (KM) nu hat (KM)						k star (KM) nu star (KM)	2.323 181.2
87	theta hat (KM)						eta star (KM)	0.306
88	80% gamma percentile (KM))% gamma per		1.334
89 90	95% gamma percentile (KM)	1.608			99	9% gamma per	centile (KM)	2.21
91	The following statistics are co	omputed usi	ng gamma dis	stribution ar	nd KM esti	mates		
92	Upper Limits using Wilson	Hilferty (Wh						1.047
93 94	95% Approx. Gamma UTL with 95% Coverage 1.626	HW 1.622		Q.F	5% Annrox	. Gamma UPL	WH 1.386	HW 1.375
95	95% KM Gamma Percentile 1.352	1.34				Gamma USL		2.135
96								
97 98	Lognormal GO Shapiro Wilk Test Statistic		etected Obse	rvations On		Vilk GOF Test		
99	10% Shapiro Wilk Critical Value			Data Not L		at 10% Signific	ance Level	
100	Lilliefors Test Statistic	0.282				s GOF Test		
101 102	10% Lilliefors Critical Value		100/ Cignific		ognormal a	at 10% Signific	ance Level	
103	Data Not Lo	ognomial at	10% Significa	ance Level				
104	Background Lognormal ROS Statistics		ognormal Dis	stribution Us	sing Impute			
105 106	Mean in Original Scale						in Log Scale	-0.678
106	SD in Original Scale 95% UTL95% Coverage				959	SD 8 BCA UTL95	in Log Scale % Coverage	0.666 2
108	95% Bootstrap (%) UTL95% Coverage	2					95% UPL (t)	1.582
109 110	90% Percentile (z)					95% F	Percentile (z)	1.518
110	99% Percentile (z)	2.39					95% USL	3.403
112	Statistics using KM estimates		Data and Assi	ıming Logn	ormal Dist	ribution		
113	KM Mean of Logged Data			95%		(Lognormal)95		1.613
114 115	KM SD of Logged Data 95% KM Percentile Lognormal (z)					95% KM UPL 95% KM USL		1.34 2.235
116	30 % RWT Grootiale Logiotima (2)	1.000				30 % TAW OOL	(Lognormar)	2.200
117	Background DL/2		suming Logno	ormal Distrib	bution			0.000
118 119	Mean in Original Scale SD in Original Scale						in Log Scale in Log Scale	-0.262 0.636
120	95% UTL95% Coverage						95% UPL (t)	2.279
121	90% Percentile (z)	1.738					Percentile (z)	2.19
122 123	99% Percentile (z) DL/2 is not a Recommended Meth		wided for con	anaricane a	nd historia	al roseone	95% USL	4.735
124	DL/2 is flot a Recollillerided Meth	lou. DL/2 pic	ovided for con	пранвонь а	na nistorio	ai ieasoiis.		
125	Nonparametric				ics			
126 127	Data appea	r to follow a	Discernible D	istribution				
128	Nonparametric Upper Limits for B	TVs(no distir	nction made b	etween det	ects and n	ondetects)		
129	Order of Statistic, r	39			95	5% UTL with95		10
130 131	Approx, f used to compute achieved CC Approximate Sample Size needed to achieve specified CC	2.053 59	Approximat	e Actual Co	ntidence C	oefficient achie	eved by UTL 95% UPL	0.865 5
132	Approximate Sample Size needed to achieve specified CC 95% USL	10				95% KM Che		2.695
133			(DT)					
134 135	Note: The use of USL tends to yield a conservati Therefore, one may use USL to estimate a BTV							
136	and consists of observa						or oddiolo	
137	The use of USL tends to provide a balar	nce between	false positive	s and false	negatives _l	provided the da		
138 139	represents a background data set and w	nen many on	isite observat	ions need to	be compa	ared with the B	IV.	
140	Arsenic							
141								
142 143	Total Number of Observations	General 3	Statistics		Nimak	or of Missins C	heenvotions	0
143	Number of Observations Number of Distinct Observations	11			UNULLI	er of Missing C	noei valioris	
145	Number of Detects	13					Non-Detects	26
146 147	Number of Distinct Detects	9 1.1			Numl	ber of Distinct		5
147	Minimum Detect Maximum Detect						Non-Detect	10
149	Variance Detected	1.499					Non-Detects	66.67%
150	Mean Detected	2.623					SD Detected	1.224
151 152	Mean of Detected Logged Data	0.853			SI	O of Detected I	Logged Data	0.509
153	Critical Values for	or Backgrou	nd Threshold	Values (BT	Vs)			
154	Tolerance Factor K (For UTL)	2.124				d2m	ax (for USL)	2.857
155 156	Marw	nal GOE Too	t on Detects (Only				
157	Shapiro Wilk Test Statistic		LON DELECTS	Jilly	Shapiro V	Vilk GOF Test		
158	1% Shapiro Wilk Critical Value		De	tected Data		rmal at 1% Sig	nificance Lev	/el
_	· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·			·	

	A B C D	E	F	GHIJK	L
159		Test Statistic	0.148	Lilliefors GOF Test	
160 161	1% Lilliefors C		0.271	Detected Data appear Normal at 1% Significance Level al at 1% Significance Level	el
162	De	lecteu Data	арреат Монт	ial at 1 % Significance Level	
163	Kaplan Mei			tistics Assuming Normal Distribution	
164 165	05% LITL 05	KM Mean % Coverage	1.629 3.873	KM SD 95% KM UPL (t)	1.056 3.432
166		Percentile (z)		95% KM Percentile (z)	3.432
167		Percentile (z)		95% KM USL	4.647
168	DI (0 Ol	ala al a a Da ala		Cation A	
169 170	DL/2 Subs	titution Back Mean	Г	stics Assuming Normal Distribution	1.5
171	95% UTL95	% Coverage	4.933	95% UPL (t)	4.308
172		Percentile (z)	3.669	95% Percentile (z)	4.214
173 174		Percentile (z)		95% USL povided for comparisons and historical reasons	6.032
175	BB2 to flot a reconsti	nonaca mou	od. DDZ pro	And to companion and motorical reasons	
176				etected Observations Only	
177 178		Test Statistic Critical Value	0.366 0.736	Anderson-Darling GOF Test Detected data appear Gamma Distributed at 5% Significance	se Level
179		Test Statistic	0.730	Kolmogorov-Smirnov GOF	e Level
180		Critical Value	0.238	Detected data appear Gamma Distributed at 5% Significance	e Level
181 182	Detected	l data appea	r Gamma Dis	stributed at 5% Significance Level	
183		Gamma	Statistics on	Detected Data Only	
184		k hat (MLE)	4.641	k star (bias corrected MLE)	3.621
185		ta hat (MLE)	0.565	Theta star (bias corrected MLE)	0.724
186 187	r MLE Mean (bia	nu hat (MLE)	120.7 2.623	nu star (bias corrected)	94.14
188		as corrected)	1.378	95% Percentile of Chisquare (2kstar)	14.42
189					
190 191				sing Imputed Non-Detects 6 NDs with many tied observations at multiple DLs	
192				s <1.0, especially when the sample size is small (e.g., <15-20)	
193	For such situati	ions, GROS	method may	yield incorrect values of UCLs and BTVs	
194 195				en the sample size is small. By be computed using gamma distribution on KM estimates	
196	For garrina distributed detected	Minimum		Mean	1.178
197		Maximum	5	Median	0.829
198 199		SD	1.314 0.491	CV k star (bias corrected MLE)	1.116 0.47
200	The	k hat (MLE) ta hat (MLE)	2.399	Theta star (bias corrected MLE)	2.505
201		nu hat (MLE)	38.29	nu star (bias corrected)	36.68
202	MLE Mean (bia		1.178	MLE Sd (bias corrected)	1.718
203 204	95% Percentile of Chisqu	ware (zkstar) % Percentile	3.692 4.624	90% Percentile 99% Percentile	3.227 8.081
205	The following stat	istics are co	mputed using	g Gamma ROS Statistics on Imputed Data	
206	Upper Limits			H) and Hawkins Wixley (HW) Methods	1.1547
207 208	95% Approx. Gamma UTL with 95% Coverage	WH 6.442	HW 7.923	95% Approx. Gamma UPL 4.6	HW 5.295
209	95% Gamma USL		14.76	30% Approx. dumina of E 4.0	0.200
210				water with 1/04 Fatters	
211 212	Es	stimates of G Mean (KM)	amma Parar 1.629	meters using KM Estimates SD (KM)	1.056
213	V	ariance (KM)	1.116	SE of Mean (KM)	0.188
214		k hat (KM)	2.377	k star (KM)	2.211
215 216	4h	nu hat (KM) eta hat (KM)	185.4 0.685	nu star (KM)	172.5 0.737
217	tn 80% gamma per		2.409	theta star (KM) 90% gamma percentile (KM)	3.094
218	95% gamma per		3.744	99% gamma percentile (KM)	5.175
219 220	The fellowing of	otiotico cas	omputed ust	ng gamma distribution and VM astimates	
221				ng gamma distribution and KM estimates H) and Hawkins Wixley (HW) Methods	
222		WH	HW	WH	HW
223 224	95% Approx. Gamma UTL with 95% Coverage		4.003	95% Approx. Gamma UPL 3.349	3.342
225	95% KM Gamma Percentile	3.261	3.251	95% Gamma USL 5.259	5.394
226				etected Observations Only	
227	Shapiro Wilk 7		0.922	Shapiro Wilk GOF Test	
228 229	10% Shapiro Wilk C	Critical Value Test Statistic	0.889 0.165	Detected Data appear Lognormal at 10% Significance Significance	evei
230	10% Lilliefors C	Critical Value	0.215	Detected Data appear Lognormal at 10% Significance Lognormal	evel
231				mal at 10% Significance Level	
232 233	Rackground Lognormal D	OS Statistics	Δeeumina I	ognormal Distribution Using Imputed Non-Detects	
234		riginal Scale		Mean in Log Scale	0.0434
235	SD in O	riginal Scale	1.157	SD in Log Scale	0.761
236 237		% Coverage		95% BCA UTL95% Coverage	4.1
۷۵/	95% Bootstrap (%) UTL95		5	95% UPL (t)	3.826

	Α	В		С		D	\top	Е	ſ	=	G		Н		ı		J	т	K		L
238							Percer	ntile (z)		768							95%	Per	centil		3.648
239								ntile (z)		126									95%		9.172
240																					
241 242				Stat		using K Aean of				ggea i 336	Data and A	Assum			UTL (L			5%	Covo	rago	4.109
243						/ISD of				507			9.	J /0 KIVI			(M UPL				3.326
244				95% KN				mal (z)		222							(M USL				5.958
245																					
246											suming Lo	gnorm	nal Dis	tributio	n						
247 248						ean in C				746							Mean		Log S Log S		0.207 0.849
249						SD in C		verage									30		% UP		5.236
250					337			ntile (z)		648							95%		centil		4.966
251						99%	Percer	ntile (z)	8.8	854									95%		13.89
252				OL/2 is	not a	Recom	mende	ed Meth	ıod. Dl	L/2 pr	ovided for	compa	arisons	and h	istorica	al reas	ons.				
253 254						N	onnar	ametric	Dietrik	ution	Free Back	karour	d Stati	ietice							
255						14					Discernib										
256								. сррос													
257			1	Vonpar	ametri						nction mad	de bet	veen d	letects							
258								atistic, r									_ with9!				10
259 260	Approvin	A nate Sample	Approx	K, f use	a to co	ompute	acniev	red CC	59	053	Approxir	mate A	ctual (ontide	nce Co	efficie	ent acn		95%		0.865 10
261		iale Sallipli	اکاک ت	o needt	,u 10 8	ioi iieve		% USL								95%	KM Ch				6.292
262											<u>'</u>										
263		Note: The	e use	of USL	. tends	to yield	d a cor	nservati	ive est	imate	of BTV, es	special	ly whe	n the s	ample	size s	tarts ex	ксеє	ding	20.	
264		Therefore	re, on	e may ι							he data set					data	set free	e of	outlie	rs	
265 266			The	se of H							ted from cl false posi					rovida	ad the c	data			
267											naise posi nsite obser										
268																					
	Barium																				
270 271	Conoral Cto	Hatlas																			
272	General Sta	usucs		Tots	al Niun	nber of	Ohser	vations	39						Numbe	ar of D	istinct	Ohs	ervat	tions	37
273				1010	ai ivuii	IDCI OI		inimum							IVUITIBO)			st Qua		13.8
274						Se		Largest	46											edian	18.1
275							Ма	aximum									-	Thir	d Qua		24.75
276 277						oofficier	nt of \/.	Mean											Skova	SD	10.16
278						oefficier Mean of				489 944							SDo		Skewr gged [1.951 0.412
279						vicari o	i loggo	a Data		J 1 1							000	1 109	,gca i	Duta	0.412
280											nd Thresh	old Va	lues (E	3TVs)							
281				Tol	erance	e Facto	r K (Fc	or UTL)	2.1	124							d2r	max	(for L	JSL)	2.857
282 283									No	rmal (GOF Test										
284					Shapi	ro Wilk	Test S	Statistic		821	GOI 1631			Sha	piro W	ilk G0	OF Tes	t			
285						ro Wilk				917			Data N	Not No	rmal at	1% S	ignifica		Leve	el	
286						illiefors				149					illiefors						
287					1% Li			l Value		163					ormal a	at 1%	Signific	cand	ce Le	vel	
288 289						Data	a appe	ar Appı	roxima	ite No	rmal at 1%	o Signi	ncanc	e Leve	ı						
290							Backor	round S	tatistic	s Ass	suming No	rmal C	istribu	tion							
291				95%	UTL			verage	42.	.4							90%	Per	centil	e (z)	33.83
292							95% (UPL (t)	38.	.16							95%	Per	centil	le (z)	37.52
293							95%	% USL	49.	.84							99%	Per	centil	e (z)	44.45
294 295									Go	mme	GOF Test										
296						A-D	Test S	Statistic		mma 761	GO1 1881		And	erson-	Darling	ı Gam	ma GC	OF T	est		
297					5	% A-D				751		Data	Not Ga	ımma [Distribu	ited at	5% Si	gnifi	icance		el
298								Statistic	0.1	104			Kolmo	ogorov	-Smirno	ov Ga	mma C	ĞOF	Test	t	
299						% K-S				142							uted at	5%	Signi	ificanc	e Level
300 301					Det	ected d	iata fol	iow Ap	pr. Gai	mma	Distributio	n at 59	% Sign	iricanc	e Level	1					
302									Ga	mma	Statistics										
303								t (MLE)	5.6	671					k	star (bias co	orrec	cted N	ЛLE)	5.252
304								t (MLE)		668					Theta		bias co				3.961
305 306					AL E			t (MLE)									star (bi				409.7
306				N	/ILE IV	ı c an (Di	as cor	rected)	20.	.0						IVILE	Sd (bi	ias C	orrec	Jiea)	9.077
308						E	3ackar	ound S	tatistic	s Ass	uming Ga	mma [Distribu	ition							
309		95% Wils				Approx.	Gamm	na UPL	37.	.9									Perce		32.95
310		95% Hawk	kins V	Vixley (I	HW) A	Approx.	Gamm	na UPL	37.										Perce		37.63
311 312		WH App															99	9% F	Perce	ntile	47.48
312	95	% HW App	лох. С	amma	UIL			verage /H USL									(95%	HW	USI	56.43
314							70 70 VV	11 UUL		. 1 /	1							JU /0		JUL	50.45
315										norma	GOF Tes	st									
316					Shapi	ro Wilk	Test S	Statistic		952			Sh	apiro V	Vilk Log	gnorn	nal GO	F Te	∍st		

	A B C D E	F	G	Н	l I J K I	L
317	10% Shapiro Wilk Critical Value	0.948		Data appea	ar Lognormal at 10% Significance Level	_
318	Lilliefors Test Statistic	0.0807			illiefors Lognormal GOF Test	
319 320	10% Lilliefors Critical Value Data appear	0.129			ar Lognormal at 10% Significance Level	
321	рака арреат	Lognonial	ac 1070 Sigili	ilogrice Lev	OI .	
322	Background Sta		ming Lognor	mal Distribu		
323 324	95% UTL with 95% Coverage				90% Percentile (z)	32.23 37.44
325	95% UPL (t) 95% USL				95% Percentile (z) 99% Percentile (z)	49.58
326	30% 332	01.72			3370 T Groenine (2)	40.00
327	Nonparametric					
328 329	Data appear App	roximate No	rmal at 1% S	Significance	Level	
330	Nonparametric Upp	per Limits for	Background	I Threshold	l Values	
331	Order of Statistic, order	39			95% UTL with 95% Coverage	59.2
332 333	Approx, f used to compute achieved CC	2.053			onfidence Coefficient achieved by UTL e Size needed to achieve specified CC	0.865 59
334	95% Percentile Bootstrap UTL with 95% Coverage	59.2	Approxim		CA Bootstrap UTL with 95% Coverage	59.2
335	95% UPL	46		007020	90% Percentile	31.54
336	90% Chebyshev UPL	51.69			95% Percentile	39.07
337 338	95% Chebyshev UPL	65.67 59.2			99% Percentile	54.18
339	95% USL	59.2				
340	Note: The use of USL tends to yield a conservat	ive estimate	of BTV, espe	ecially when	the sample size starts exceeding 20.	
341	Therefore, one may use USL to estimate a BTV	only when th	ne data set re	epresents a	background data set free of outliers	
342 343	and consists of observa The use of USL tends to provide a balar					
344	represents a background data set and w	hen many or	nsite observa	tions need	to be compared with the BTV.	
345		,				
346 347	Beryllium					
347		General	Statistics			
349	Total Number of Observations	39			Number of Missing Observations	0
350	Number of Distinct Observations	5			-	
351 352	Number of Detects Number of Distinct Detects				Number of Non-Detects Number of Distinct Non-Detects	39 5
353	Minimum Detects Minimum Detects				Minimum Non-Detect	0.5
354	Maximum Detect	N/A			Maximum Non-Detect	5
355	Variance Detected				Percent Non-Detects	100%
356 357	Mean Detected Mean of Detected Logged Data				SD Detected SD of Detected Logged Data	N/A N/A
358	Mean of Detected Logged Data	IN/A			3D of Defected Logged Data	IN/A
359	Warning: All observations are Non-Detect					
360 361	Specifically, sample mean, UCLs, UPLs, and	d other statis	stics are also	NDs lying	below the largest detection limit!	
362	The Project Team may decide to use alternative si	ite specific v	alues to estir	nate enviro	onmental parameters (e.g., EPC, BTV).	
363	The data set for	r variable Be	eryllium was	not process	sed!	
364						
365 366	Cadmium					
367	<u> </u>					
368			Statistics			
369 370	Total Number of Observations	39			Number of Missing Observations	0
370	Number of Distinct Observations Number of Detects				Number of Non-Detects	38
372	Number of Distinct Detects	1			Number of Distinct Non-Detects	7
373	Minimum Detect	0.1			Minimum Non-Detect	0.08
374 375	Maximum Detect Variance Detected				Maximum Non-Detect Percent Non-Detects	5 97.44%
376	Variance Detected Mean Detected				SD Detected	97.44% N/A
377	Mean of Detected Logged Data				SD of Detected Logged Data	N/A
378	Maming Only and distant days	ALD LUCE 1		a of the second	hands as he was a such a few at	
379 380	Warning: Only one distinct data value was detected It is suggested to use alternative site specific values determ					: BTV)
381	Suggested to des diterributes one specific raides determ	ioa by tile	. rejout real		C.I. I. I. C.I. I. C.I. I. I. I. I. I. I. I. I. I. I. I. I.	., _/ .
382	The data set fo	r variable Ca	admium was	not proces	sed!	
383						
384	Chromium					
384 385 386	Chromium					
384 385 386 387			Statistics		N 1 22 22 22 22 22 22 22 22 22 22 22 22 2	
384 385 386 387 388	Total Number of Observations	39	Statistics		Number of Missing Observations	0
384 385 386 387		39 12	Statistics		Number of Missing Observations Number of Non-Detects	0
384 385 386 387 388 389 390 391	Total Number of Observations Number of Distinct Observations	39 12 8 7	Statistics			31 6
384 385 386 387 388 389 390 391 392	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Minimum Detect	39 12 8 7 1.1	Statistics		Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect	31 6 1
384 385 386 387 388 389 390 391 392 393	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect	39 12 8 7 1.1 2.9	Statistics		Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect	31 6 1
384 385 386 387 388 389 390 391 392	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Minimum Detect	39 12 8 7 1.1 2.9 0.291	Statistics		Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect	31 6 1

222	A B		С	1	D		E		F	G	П	Н		ı		J			K	T	L	1
396	•		Mean	of De	etected	Logo	ged Data	a 0	.572					5	SD of I	Detecte	ed Lo	ogge	d Dat	ia	0.286	
397							\	n.	-1		. 1 .1 3 4	-1 /	DT (-)									_
398 399			Tolo	rance			Values For UTL		ckgrou i 2.124	nd Thresho	old V	alues (BIVs)			۹,	2ma	v (fo	r USL	1	2.857	-
400			1016	anic	o i acio	ו) או וע	01011)	124							u,	ZIIIa	א (וט	ii USL	-)	2.007	-
401									OF Tes	t on Detec	ts Or	nly										
402							Statisti		.935							GOF Te						_
403 404			1% S				cal Value Statistic		.749 .226		Dete	cted Da	ata app	ear N	ormal	at 1% : F Test	Sigr	nifica	ince L	.eve	l	-
405			1				al Value		.333		Dete	cted Da				at 1%		nifica	nce I	eve	I	-
406			•	70 =1						al at 1% S					omia	u t 170	o.g.				•	-
407																						
408 409				Kap	olan Me		KM) Ba d (M Meai		nd Stat .223	istics Assu	ımin	y Norm	al Dis	tributio	on				KM SI	D	0.448	-
410				95%	UTI 9		Coverage		.223							9	5%		UPL (1.989	
411							entile (z) 1	.798						,	95% KN					1.96	
412				99	% KM	Perc	entile (z) 2	.266								95	% K	M US	L	2.504	_
413 414				ы	/2 Cub	atitu ıt	ion Boo	karoun	ad Stati	otico Acous	mina	Norma	al Diet	ributio	<u> </u>							-
415				DL	/Z Sub	Sulul	Meaı		.176	stics Assu	ıııııg	INOITIE	ואוט ווג	ibulio	11				SI	D	0.964	-
416				95%	UTL9	5% C	coverage		.224								9	5%	UPL (2.822	-
417					90%	Perc	entile (z) 2	.411							95%		ercer	ntile (z	z)	2.761	1
418 419			DI /0 !- :	not -			entile (z		.418	vided for:		orlo	0 00-4	bictor'	ool	00077		95	% US	L	3.93	-
419			טווע IS I	нот а	recom	meno	ueu mei	noa. D	ı⊔∠ pro	vided for o	omp	anson	s and	IIISTOII	cai re	аѕопѕ						-
421						Gam	ma GO	= Tests	s on De	tected Ob	serva	ations (Only									1
422					A-D	Test	Statisti	0	.255				Ande			g GOF						-
423 424				5			cal Value		.715	Detec	ted d	ata app				ibuted a			gnifica	ance	Level	-
424				5			Statistical Value		.203	Detec	ted d	ata anr				irnov C ibuted a			gnifics	ance	Level	-
426										stributed a								. J OI	gCC			1
427																						1
428 429										Detected	Data	Only			1	. /1-!			-1 8 41 5	-\	0.04	_
430					Th		at (MLE at (MLE		4.01).131					The		r (bias o r (bias o					8.84 0.208	-
431							at (MLE	-						1110		u star (141.4	-
432			М			ias co	orrected) 1	.838													1
433 434				MLE	Sd (bi	ias co	orrected) 0	.618				959	% Per	centile	of Chi	squa	are (2ksta	r)	28.46	-
434						Gam	ma RO	S Stati	istics us	sing Imput	ed N	on-Det	ects									-
436					be use	d whe	en data	set has	s > 50%	NDs with	man	y tied c	bserv									1
437	GROS	may no								s <1.0, esp							I (e.	g., <	15-20	J)		1
438 439			Fo	or suc						yield incor				_s and	BTVs	5						-
440	Eor	aamma	distribu	ted d							ne S			a distri	ibutior	n on KM	1 est	timat	tes			1
י טדד	1 ()	yanını					Minimun			y be comm											0.719	1
441	1 01	gairiin							.01	y be comp		uonig (Jan						Mea	n		1
441 442	101	gamma					1aximun	1 2	.9	y be comp		uomig (Julilia					ľ	Media	n	0.571	-
441 442 443	101	yanni				N	laximun SI	n 2	9 721	y be comp		uomg (k sto	r (biog			Media C'	n V	1.002	
441 442 443 444	101	yanina			Th	k h	laximun SI at (MLE	n 2 0 0) 0	.9 .721 .592	y be comp		uomg (r (bias o	corre	ecte	Media C' d MLE	n V E)	1.002 0.564	-
441 442 443 444 445 446	101	yamma			Th	k h eta h	laximun SI	1 2 0 0) 0) 1	9 721 592 214 619	y be comp					ta sta	r (bias o r (bias o u star (corre	ected	Media C' d MLE d MLE	in V E)	1.002 0.564 1.276 43.97	
441 442 443 444 445 446 447					lean (bi	k h eta h nu h ias co	Maximun SI at (MLE at (MLE at (MLE orrected	1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.9 0.721 0.592 0.214 6.19 0.719	y be comp		uomig (ta sta n	r (bias d u star (LE Sd (corre corre bias bias	ected ected s cor	Media C' d MLE d MLE rected rected	in V E) E) d)	1.002 0.564 1.276 43.97 0.958	
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476		pear Lognon	mal at 10% Significance Level	
477 478	Dooleanound Lamanes DOO Garteries	Accumis - 1	ognormal Distribution Using Imputed Non-Detects	
479	Mean in Original Scale	0.98	ognormal distribution using imputed Non-Detects Mean in Log Scale	-0.156
480	SD in Original Scale	0.555	SD in Log Scale	0.522
481	95% UTL95% Coverage	2.593	95% BCA UTL95% Coverage	2.9
482	95% Bootstrap (%) UTL95% Coverage	2.9	95% UPL (t)	2.086
483 484	90% Percentile (z) 99% Percentile (z)	1.67 2.882	95% Percentile (z) 95% USL	2.019 3.802
485	99 % Percentile (2)	2.002	95 % USL	3.002
486		on Logged [Data and Assuming Lognormal Distribution	
487	KM Mean of Logged Data	0.153	95% KM UTL (Lognormal)95% Coverage	2.141
488 489	KM SD of Logged Data 95% KM Percentile Lognormal (z)	0.286 1.866	95% KM UPL (Lognormal)	1.9 2.641
490	95% KM Percentile Lognormai (2)	1.800	95% KM USL (Lognormal)	2.041
491	Background DL/2 S	Statistics As	suming Lognormal Distribution	
492	Mean in Original Scale	1.176	Mean in Log Scale	-0.0958
493	SD in Original Scale	0.964	SD in Log Scale	0.696
494 495	95% UTL95% Coverage 90% Percentile (z)	3.985 2.216	95% UPL (t) 95% Percentile (z)	2.981 2.854
496	99% Percentile (z)	4.585	95% USL	6.634
497	DL/2 is not a Recommended Meth	od. DL/2 pro	ovided for comparisons and historical reasons.	0.001
498				
499			Free Background Statistics	
500 501	Data appea	r to tollow a	Discernible Distribution	
502	Nonparametric Upper Limits for B	ΓVs(no distir	nction made between detects and nondetects)	
503	Order of Statistic, r	39	95% UTL with95% Coverage	10
504	Approx, f used to compute achieved CC	2.053	Approximate Actual Confidence Coefficient achieved by UTL	0.865
505 506	Approximate Sample Size needed to achieve specified CC 95% USL	59 10	95% UPL 95% KM Chebyshev UPL	5 3.203
507	93 % USL	10	95 % KIVI CHEDYSHEV OFL	3.203
508	Note: The use of USL tends to yield a conservati	ve estimate	of BTV, especially when the sample size starts exceeding 20.	
509	Therefore, one may use USL to estimate a BTV	only when th	ne data set represents a background data set free of outliers	
510 511			ed from clean unimpacted locations.	
512			false positives and false negatives provided the data usite observations need to be compared with the BTV.	
513	represents a background data set and wi	ici many or	isite observations freed to be compared with the BTV.	
514	Cobalt			
514 515	Cobalt	Conord	Chatlatia	
514 515 516			Statistics Number of Missing Observations	0
514 515	Cobalt Total Number of Observations Number of Distinct Observations	General	Statistics Number of Missing Observations	0
514 515 516 517 518 519	Total Number of Observations Number of Distinct Observations Number of Detects	39 10 14	Number of Missing Observations Number of Non-Detects	25
514 515 516 517 518 519 520	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects	39 10 14 8	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects	25 5
514 515 516 517 518 519 520 521	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Minimum Detect	39 10 14 8 1	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect	25 5 1
514 515 516 517 518 519 520 521 522	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect	39 10 14 8 1	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect	25 5 1 10
514 515 516 517 518 519 520 521 522 523 524	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Minimum Detect	39 10 14 8 1	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect	25 5 1
514 515 516 517 518 519 520 521 522 523 524 525	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected	39 10 14 8 1 3 0.341	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects	25 5 1 10 64.1%
514 515 516 517 518 519 520 521 522 523 524 525 526	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data	39 10 14 8 1 3 0.341 1.486 0.334	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data	25 5 1 10 64.1% 0.584
514 515 516 517 518 519 520 521 522 523 524 525 526 527	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for	39 10 14 8 1 3 0.341 1.486 0.334 or Backgrou	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data	25 5 1 10 64.1% 0.584 0.352
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data	39 10 14 8 1 3 0.341 1.486 0.334	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data	25 5 1 10 64.1% 0.584
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL)	39 10 14 8 1 3 0.341 1.486 0.334 or Backgrout 2.124	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data and Threshold Values (BTVs) d2max (for USL)	25 5 1 10 64.1% 0.584 0.352
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic	39 10 14 8 1 3 0.341 1.486 0.334 or Backgrout 2.124 all GOF Tes 0.818	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data Ind Threshold Values (BTVs) d2max (for USL) t on Detects Only Shapiro Wilk GOF Test	25 5 1 10 64.1% 0.584 0.352
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532	Total Number of Observations Number of Distinct Observations Number of Distinct Detects Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value	39 10 14 8 1 3 0.341 1.486 0.334 or Backgrout 2.124 all GOF Tes 0.818 0.825	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data Ind Threshold Values (BTVs) d2max (for USL) t on Detects Only Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level	25 5 1 10 64.1% 0.584 0.352
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic	39 10 14 8 1 3 0.341 1.486 0.334 or Backgrout 2.124 all GOF Tes 0.818	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detect SD Detected SD of Detected Logged Data Ind Threshold Values (BTVs) d2max (for USL) t on Detects Only Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level Lilliefors GOF Test	25 5 1 10 64.1% 0.584 0.352
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535	Total Number of Observations Number of Distinct Observations Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic	39 10 14 8 1 3 0.341 1.486 0.334 or Backgroun 2.124 all GOF Tes 0.818 0.825 0.203 0.263	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data Ind Threshold Values (BTVs) d2max (for USL) t on Detects Only Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level	25 5 1 10 64.1% 0.584 0.352
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536	Total Number of Observations Number of Distinct Observations Number of Distinct Detects Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic 1% Lilliefors Critical Value Detected Data appear	39 10 14 8 1 3 0.341 1.486 0.334 or Backgroun 2.124 all GOF Tes 0.818 0.825 0.203 0.263 Approximate	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data Ind Threshold Values (BTVs) t on Detects Only Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level Lilliefors GOF Test Detected Data appear Normal at 1% Significance Level e Normal at 1% Significance Level	25 5 1 10 64.1% 0.584 0.352
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic 1% Lilliefors Critical Value Detected Data appear	39 10 14 8 1 3 0.341 1.486 0.334 or Backgroun 2.124 all GOF Tes 0.818 0.825 0.203 0.263 Approximating	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data and Threshold Values (BTVs) t on Detects Only Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level Lilliefors GOF Test Detected Data appear Normal at 1% Significance Level e Normal at 1% Significance Level tistics Assuming Normal Distribution	25 5 1 10 64.1% 0.584 0.352 2.857
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538	Total Number of Observations Number of Distinct Observations Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic 1% Lilliefors Critical Value Detected Data appear Kaplan Meier (KM) Back KM Mean	39 10 14 8 1 3 0.341 1.486 0.334 or Backgroun 2.124 all GOF Tes 0.818 0.825 0.203 0.263 Approximate sground Stat 1.218	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data and Threshold Values (BTVs) t on Detects Only Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level Lilliefors GOF Test Detected Data appear Normal at 1% Significance Level e Normal at 1% Significance Level tistics Assuming Normal Distribution KM SD	25 5 1 10 64.1% 0.584 0.352 2.857
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic 1% Lilliefors Critical Value Detected Data appear	39 10 14 8 1 3 0.341 1.486 0.334 Dr Backgroun 2.124 Dal GOF Tes 0.818 0.825 0.203 0.263 Approximate sground Stat 1.218 2.145 1.777	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data and Threshold Values (BTVs) t on Detects Only Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level Lilliefors GOF Test Detected Data appear Normal at 1% Significance Level e Normal at 1% Significance Level tistics Assuming Normal Distribution	25 5 1 10 64.1% 0.584 0.352 2.857
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic 1% Lilliefors Critical Value Detected Data appear Kaplan Meier (KM) Back KM Mean 95% UTL95% Coverage	39 10 14 8 1 3 0.341 1.486 0.334 or Backgroun 2.124 all GOF Tes 0.818 0.825 0.203 0.263 Approximate sground Stat 1.218 2.145	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data Ind Threshold Values (BTVs) It on Detects Only Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level Lilliefors GOF Test Detected Data appear Normal at 1% Significance Level e Normal at 1% Significance Level tistics Assuming Normal Distribution KM SD 95% KM UPL (t)	25 5 1 10 64.1% 0.584 0.352 2.857
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic 1% Lilliefors Critical Value Detected Data appear Kaplan Meier (KM) Back KM Mean 95% UTL95% Coverage 90% KM Percentile (z) 99% KM Percentile (z)	39 10 14 8 1 3 0.341 1.486 0.334 Dr Backgroun 2.124 Data GOF Tes 0.818 0.825 0.203 0.263 Approximat 1.218 2.145 1.777 2.233	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data Ind Threshold Values (BTVs) It on Detects Only Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level Lilliefors GOF Test Detected Data appear Normal at 1% Significance Level e Normal at 1% Significance Level tistics Assuming Normal Distribution KM SD 95% KM UPL (t) 95% KM Percentile (z) 95% KM USL	25 5 1 10 64.1% 0.584 0.352 2.857 el 0.436 1.963 1.935
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543	Total Number of Observations Number of Distinct Observations Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic 1% Lilliefors Critical Value Detected Data appear Kaplan Meier (KM) Back KM Mean 95% UTL95% Coverage 90% KM Percentile (z) 99% KM Percentile (z)	39 10 14 8 1 3 0.341 1.486 0.334 Dr Backgroun 2.124 Data GOF Tes 0.818 0.825 0.203 0.263 Approximat 1.218 2.145 1.777 2.233 ground Stati	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data Ind Threshold Values (BTVs) It on Detects Only Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level Lilliefors GOF Test Detected Data appear Normal at 1% Significance Level e Normal at 1% Significance Level tistics Assuming Normal Distribution KM SD 95% KM UPL (t) 95% KM Percentile (z) 95% KM USL stics Assuming Normal Distribution	25 5 1 10 64.1% 0.584 0.352 2.857 el 0.436 1.963 1.935 2.464
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544	Total Number of Observations Number of Distinct Observations Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic 1% Lilliefors Critical Value Detected Data appear Kaplan Meier (KM) Back KM Mean 95% UTL95% Coverage 90% KM Percentile (z) 99% KM Percentile (z)	39 10 14 8 1 3 0.341 1.486 0.334 Dr Backgroun 2.124 Data GOF Tes 0.818 0.825 0.203 0.263 Approximat 1.218 2.145 1.777 2.233 ground Stati 1.238	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data Ind Threshold Values (BTVs) It on Detects Only Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level Lilliefors GOF Test Detected Data appear Normal at 1% Significance Level e Normal at 1% Significance Level tistics Assuming Normal Distribution KM SD 95% KM UPL (t) 95% KM Percentile (z) 95% KM USL stics Assuming Normal Distribution	25 5 1 10 64.1% 0.584 0.352 2.857 el 0.436 1.963 1.935 2.464
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 540 541 542 543 544 545 546 547 548 549 540 540 540 541 542 543 544 545 546 547 547 548 549 540 540 540 540 540 540 540 540	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic 1% Lilliefors Critical Value Detected Data appear Kaplan Meier (KM) Back KM Mean 95% UTL95% Coverage 90% KM Percentile (z) 99% KM Percentile (z) DL/2 Substitution Back Mean 95% UTL95% Coverage 90% Percentile (z)	39 10 14 8 1 3 0.341 1.486 0.334 Dr Backgroun 2.124 Data GOF Tes 0.818 0.825 0.203 0.263 Approximat 1.218 2.145 1.777 2.233 ground Stati 1.238 3.211 2.429	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data Ind Threshold Values (BTVs) It on Detects Only Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level Lilliefors GOF Test Detected Data appear Normal at 1% Significance Level e Normal at 1% Significance Level tistics Assuming Normal Distribution KM SD 95% KM UPL (t) 95% KM Percentile (z) 95% KM USL stics Assuming Normal Distribution	25 5 1 10 64.1% 0.584 0.352 2.857 el 0.436 1.963 1.935 2.464 0.929 2.824 2.766
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 542 543 544 545 546 547	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values fe Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic 1% Lilliefors Critical Value Detected Data appear Kaplan Meier (KM) Back KM Mean 95% UTL95% Coverage 90% KM Percentile (z) 99% KM Percentile (z) 99% Percentile (z) 99% Percentile (z)	39 10 14 8 1 3 0.341 1.486 0.334 Dr Backgroun 2.124 Data GOF Tes 0.818 0.825 0.203 0.263 Approximat 1.218 2.145 1.777 2.233 ground Stati 1.238 3.211 2.429 3.399	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data Ind Threshold Values (BTVs) Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level Lilliefors GOF Test Detected Data appear Normal at 1% Significance Level e Normal at 1% Significance Level tistics Assuming Normal Distribution KM SD 95% KM UPL (t) 95% KM USL stics Assuming Normal Distribution SD 95% UPL (t) 95% UPL (t) 95% UPL (t)	25 5 1 10 64.1% 0.584 0.352 2.857 el 0.436 1.963 1.935 2.464
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548	Total Number of Observations Number of Distinct Observations Number of Detects Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values fe Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic 1% Lilliefors Critical Value Detected Data appear Kaplan Meier (KM) Back KM Mean 95% UTL95% Coverage 90% KM Percentile (z) 99% KM Percentile (z) 99% Percentile (z) 99% Percentile (z)	39 10 14 8 1 3 0.341 1.486 0.334 Dr Backgroun 2.124 Data GOF Tes 0.818 0.825 0.203 0.263 Approximat 1.218 2.145 1.777 2.233 ground Stati 1.238 3.211 2.429 3.399	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data Ind Threshold Values (BTVs) Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level Lilliefors GOF Test Detected Data appear Normal at 1% Significance Level e Normal at 1% Significance Level tistics Assuming Normal Distribution KM SD 95% KM UPL (t) 95% KM Percentile (z) 95% UPL (t) 95% Percentile (z)	25 5 1 10 64.1% 0.584 0.352 2.857 el 0.436 1.963 1.935 2.464 0.929 2.824 2.766
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 542 543 544 545 546 547 548 549	Total Number of Observations Number of Distinct Observations Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic 1% Lilliefors Critical Value Detected Data appear Kaplan Meier (KM) Back KM Mean 95% UTL95% Coverage 90% KM Percentile (z) 99% KM Percentile (z) 99% Percentile (z) 99% Percentile (z) 99% Percentile (z)	39 10 14 8 1 3 0.341 1.486 0.334 Dr Backgroun 2.124 Data GOF Tes 0.818 0.825 0.203 0.263 Approximate 1.218 2.145 1.777 2.233 Ground Stati 1.238 3.211 2.429 3.399 od. DL/2 products	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data Ind Threshold Values (BTVs) Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level Lilliefors GOF Test Detected Data appear Normal at 1% Significance Level Normal at 1% Significance Level Itistics Assuming Normal Distribution KM SD 95% KM UPL (t) 95% KM Percentile (2) 95% UPL (t) 95% Percentile (2) 95% USL Ovided for comparisons and historical reasons	25 5 1 10 64.1% 0.584 0.352 2.857 el 0.436 1.963 1.935 2.464 0.929 2.824 2.766
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548	Total Number of Observations Number of Distinct Observations Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic 1% Lilliefors Critical Value Detected Data appear Kaplan Meier (KM) Back KM Mean 95% UTL95% Coverage 90% KM Percentile (z) 99% KM Percentile (z) 99% Percentile (z) 99% Percentile (z) 99% Percentile (z)	39 10 14 8 1 3 0.341 1.486 0.334 Dr Backgroun 2.124 Data GOF Tes 0.818 0.825 0.203 0.263 Approximate 1.218 2.145 1.777 2.233 Ground Stati 1.238 3.211 2.429 3.399 od. DL/2 products	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data Ind Threshold Values (BTVs) Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level Lilliefors GOF Test Detected Data appear Normal at 1% Significance Level Normal at 1% Significance Level Listics Assuming Normal Distribution KM SD 95% KM UPL (t) 95% KM Percentile (2) 95% UPL (t) 95% Percentile (2) 95% USL Divided for comparisons and historical reasons	25 5 1 10 64.1% 0.584 0.352 2.857 el 0.436 1.963 1.935 2.464 0.929 2.824 2.766
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 545 546 547 548 549 550 551 552	Total Number of Observations Number of Distinct Observations Number of Distinct Observations Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Norm Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic 1% Lilliefors Critical Value Detected Data appear Kaplan Meier (KM) Back KM Mean 95% UTL95% Coverage 90% KM Percentile (z) 99% KM Percentile (z) 99% Recentile (z) 99% Percentile (z) 99% Percentile (z) 99% Percentile (z) DL/2 is not a recommended meth	39 10 14 8 1 3 0.341 1.486 0.334 Dr Backgroun 2.124 Data GOF Tes 0.818 0.825 0.203 0.263 Approximate 1.218 2.145 1.777 2.233 Ground Stati 1.238 3.211 2.429 3.399 od. DL/2 processors Tests on Des	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detects SD Detected Percent Non-Detects SD Detected SD of Detected Logged Data Ind Threshold Values (BTVs) Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level Lilliefors GOF Test Detected Data appear Normal at 1% Significance Level Normal at 1% Significance Level Listics Assuming Normal Distribution KM SD 95% KM UPL (t) 95% KM UPL (t) 95% VPL (t) 95% UPL (t) 95% UPL (t) 95% USL Devided for comparisons and historical reasons Steected Observations Only Anderson-Darling GOF Test Data Not Gamma Distributed at 5% Significance Level	25 5 1 10 64.1% 0.584 0.352 2.857 el 0.436 1.963 1.963 1.935 2.464 0.929 2.824 2.766 3.892
514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551	Total Number of Observations Number of Distinct Observations Number of Distinct Detects Number of Distinct Detects Number of Distinct Detects Minimum Detect Maximum Detect Variance Detected Mean Detected Mean Of Detected Logged Data Critical Values for Tolerance Factor K (For UTL) Nom Shapiro Wilk Test Statistic 1% Shapiro Wilk Critical Value Lilliefors Test Statistic 1% Lilliefors Critical Value Detected Data appear Kaplan Meier (KM) Back KM Mean 95% UTL95% Coverage 90% KM Percentile (z) 99% KM Percentile (z) 99% KM Percentile (z) 99% Percentile (z) 99% Percentile (z) 99% Percentile (z) 99% Percentile (z)	39 10 14 8 1 3 0.341 1.486 0.334 Dr Backgroun 2.124 Dal GOF Tes 0.818 0.825 0.203 0.263 Approximat 1.218 2.145 1.777 2.233 Drougle Stati 1.238 3.211 2.429 3.399 Dod. DL/2 pro 0.778	Number of Missing Observations Number of Non-Detects Number of Distinct Non-Detects Minimum Non-Detect Maximum Non-Detect Percent Non-Detect Percent Non-Detects SD Detected SD of Detected Logged Data Ind Threshold Values (BTVs) Shapiro Wilk GOF Test Data Not Normal at 1% Significance Level Lilliefors GOF Test Detected Data appear Normal at 1% Significance Level Normal at 1% Significance Level tistics Assuming Normal Distribution KM SD 95% KM UPL (t) 95% KM Percentile (z) 95% KM USL stics Assuming Normal Distribution SD 95% UPL (t) 95% Percentile (z) 95% USL byided for comparisons and historical reasons	25 5 1 10 64.1% 0.584 0.352 2.857 el 0.436 1.963 1.963 1.935 2.464 0.929 2.824 2.766 3.892

	Α	В	С	D	E	F	G	Н		J	K	L
554 555					Critical Value		Detected of Distribution at !			a Distributed at 5°	% Significand	e Level
556				Detected da	ata follow Ap	pr. Gamma	Distribution at :	5% Signi	mcance Le	evei		
557					Gamma	Statistics of	n Detected Data	a Only				
558					k hat (MLE)					k star (bias corr		6.553
559 560					eta hat (MLE) nu hat (MLE)				ın	eta star (bias corr nu star (bias		0.227 183.5
561			N	/ILE Mean (bia						na star (blas	Corrected	100.0
562					as corrected				95% Pe	rcentile of Chisqu	are (2kstar)	22.5
563 564					Commo PO	2 Statistics	ısing Imputed N	lon Doto	ote			
565			GROS ma							s at multiple DLs		
566		GROS ma	y not be use	ed when kstar	of detects is	small such	as <1.0, especia	illy when	the samp	le size is small (e.	g., <15-20)	
567 568			F				yield incorrect en the sample s			d BTVs		
569		For ga	mma distribi							ribution on KM es	timates	
570					Minimum	0.01					Mean	0.84
571 572					Maximum SD						Median CV	0.73 0.795
573					k hat (MLE)					k star (bias corr		0.793
574					eta hat (MLE)	0.857			Th	eta star (bias corr	ected MLE)	0.911
575 576					nu hat (MLE)					nu star (bias		71.95
577				ALE Mean (bia entile of Chisq						MLE Sd (bias	6 Percentile	0.875 1.973
578				95	% Percentile	2.59				99%	Percentile	4.03
579							ng Gamma ROS					
580 581				Upper Limits	using Wilso WH	n Hilferty (W HW	H) and Hawkins	3 Wixley	(HW) Met	hods	WH	HW
582	95% App	rox. Gamma	UTL with 9	5% Coverage		3.995			95% Appr	ox. Gamma UPL	2.614	2.927
583				Gamma USL		6.545			I. L.			
584 585					atimataa af (Samma Bar	meters using K	M Estim	otoo			
586					Mean (KM)		illieters using N	IVI ESUIII	iales		SD (KM)	0.436
587				V	ariance (KM)	0.19				SE of	Mean (KM)	0.0796
588 589					k hat (KM)					_	k star (KM)	7.206
590				th	nu hat (KM) neta hat (KM)						nu star (KM) ta star (KM)	562.1 0.169
591				% gamma pe	rcentile (KM)	1.574				90% gamma pero	centile (KM)	1.823
592			95	% gamma pe	rcentile (KM)	2.047				99% gamma pero	centile (KM)	2.512
593 594			Th	e following st	atistics are o	computed us	ing gamma dist	ribution	and KM e	stimates		
595				Upper Limits	using Wilso	n Hilferty (W	H) and Hawkins	s Wixley	(HW) Met	hods		
596	050/ 4		1171 31 0	F0/ O	WH	HW			050/ 4	0 1101	WH	HW
597 598	95% App			5% Coverage ma Percentile		2.106 1.859				ox. Gamma UPL 5% Gamma USL	1.898 2.517	1.89 2.528
599			70 INVI Gaini	na i ciccitale	1.007	1.000				770 Gamma 00E	2.017	2.020
600							Detected Obser	vations (
601 602				Shapiro Wilk [*] Shapiro Wilk (Data Not	Shapiro	Wilk GOF Test at 10% Signification	ance I evel	
603			1070		Test Statistic			Data Hot		ors GOF Test	IIIOO EOVOI	
604			1	0% Lilliefors (gnormal at 10% S	ignificance L	evel
605 606				Detected Da	ata appear A	pproximate	Lognormal at 1	u% Sign	nificance L	evel		
607		F	3ackground	Lognormal R	OS Statistic	s Assuming	Lognormal Dist	ribution	Using Imp	uted Non-Detects	; ;	
608				Mean in O	riginal Scale	0.98				Mean ir	n Log Scale	-0.15
609 610					original Scale Coverage				•	SD ir 95% BCA UTL959	6 Coverage	0.509 2.1
611			95% Bootstr	95% 01L95 ap (%) UTL95							95% UPL (t)	2.053
612				90% F	Percentile (z)	1.652					ercentile (z)	1.988
613 614				99% F	Percentile (z	2.813					95% USL	3.686
615			Stat	istics usina K	M estimates	on Logged	Data and Assur	nina Loc	normal Di	stribution		
616				KM Mean of	Logged Data	0.152				L (Lognormal)95%		2.098
617			050/ 1/1		Logged Data					95% KM UPL (1.869
618 619			95% KN	// Percentile L	ognormai (z	1.837				95% KM USL (Lognormai)	2.571
620							ssuming Lognor	mal Dist	tribution			
621					riginal Scale						n Log Scale	-0.00365
622 623					riginal Scale % Coverage						n Log Scale 95% UPL (t)	0.649 3.016
624					Percentile (z)	2.288					ercentile (z)	2.896
625			DI /0.1	99% F	Percentile (z	4.505					95% USL	6.357
626 627			υL/2 is i	not a Recomr	nended Met	noa. DL/2 p	ovided for com	oarisons	and histo	ricai reasons.		
628				No	onparametric	Distribution	Free Backgrou	ınd Stati	istics			
629							Discernible Di					
630 631			Nonner	ametric I Inno	r I imite for P	TVe/no diet	inction made ha	atween d	latacte and	I nondetecte)		
632			Nonbala		of Statistic,		inction made be	irweeli a		i nondetects) 95% UTL with95%	6 Coverage	10
				3.00	,					=		

	A B C D E	F	GHIJK	L
633	Approx, f used to compute achieved CC		Approximate Actual Confidence Coefficient achieved by UTL	0.865
634 635	Approximate Sample Size needed to achieve specified CC 95% USL		95% UPL 95% KM Chebyshev UPL	5 3.144
636	30 / 0 000	. 10	33 /8 KW Chebyshev Of L	0.177
637 638			of BTV, especially when the sample size starts exceeding 20.	
639			ne data set represents a background data set free of outliers led from clean unimpacted locations.	
640	The use of USL tends to provide a bala	nce between	false positives and false negatives provided the data	
641 642	represents a background data set and w	hen many or	nsite observations need to be compared with the BTV.	
	Fluoride			
644		0	Observation .	
645 646	Total Number of Observations		Statistics Number of Missing Observations	0
647	Number of Distinct Observations	16		
648 649	Number of Detects Number of Distinct Detects		Number of Non-Detects Number of Distinct Non-Detects	21 1
650	Minimum Detects		Minimum Non-Detect	0.2
651	Maximum Detect		Maximum Non-Detect	0.2
652 653	Variance Detected Mean Detected		Percent Non-Detects SD Detected	53.85% 0.493
654	Mean of Detected Logged Data		SD of Detected Logged Data	0.621
655 656	Original Malvina	fan Daelenner	nd Threehold Values (DTVs)	
657	Tolerance Factor K (For UTL)		nd Threshold Values (BTVs) d2max (for USL)	2.857
658			•	
659 660	Norr Shapiro Wilk Test Statistic		t on Detects Only Shapiro Wilk GOF Test	
661	1% Shapiro Wilk Critical Value		Data Not Normal at 1% Significance Level	
662 663	Lilliefors Test Statistic		Lilliefors GOF Test	
664	1% Lilliefors Critical Value Data No		Data Not Normal at 1% Significance Level Significance Level	
665				
666 667	Kaplan Meier (KM) Bac KM Mean		tistics Assuming Normal Distribution KM SD	0.354
668	95% UTL95% Coverage		95% KM UPL (t)	0.932
669	90% KM Percentile (z)		95% KM Percentile (z)	0.91
670 671	99% KM Percentile (z)	1.151	95% KM USL	1.339
672			stics Assuming Normal Distribution	
673 674	Mean 95% UTL95% Coverage		SD 95% UPL (t)	0.381 0.925
675	90% Percentile (z)		95% OPE (t) 95% Percentile (z)	0.925
676	99% Percentile (z)	1.16	95% USL	1.363
677 678	DL/2 is not a recommended meti	noa. DL/2 pro	ovided for comparisons and historical reasons	
679			etected Observations Only	
680 681	A-D Test Statistic 5% A-D Critical Value		Anderson-Darling GOF Test Data Not Gamma Distributed at 5% Significance Leve	1
682	K-S Test Statistic		Kolmogorov-Smirnov GOF	1
683	5% K-S Critical Value		Data Not Gamma Distributed at 5% Significance Leve	I
684 685	Data Not Gam	ma Distribute	ed at 5% Significance Level	
686			Detected Data Only	
687 688	k hat (MLE) Theta hat (MLE)		k star (bias corrected MLE) Theta star (bias corrected MLE)	1.845 0.259
689	nu hat (MLE)	78.1	nu star (bias corrected)	66.42
690	MLE Mean (bias corrected)	0.477	0F0/ P	0.004
691 692	MLE Sd (bias corrected)	0.351	95% Percentile of Chisquare (2kstar)	8.981
693			sing Imputed Non-Detects	
694 695			6 NDs with many tied observations at multiple DLs s <1.0, especially when the sample size is small (e.g., <15-20)	
696			yield incorrect values of UCLs and BTVs	
697	This is espec	ially true whe	en the sample size is small.	
698 699	For gamma distributed detected data, BTVs a Minimum		by be computed using gamma distribution on KM estimates Mean	0.226
700	Maximum	2.3	Median	0.01
701 702	SD k hat (MLE)		CV k star /hias corrected MLE)	1.798 0.43
703	k hat (MLE) Theta hat (MLE)		k star (bias corrected MLE) Theta star (bias corrected MLE)	0.43
704	nu hat (MLE)	34.86	nu star (bias corrected)	33.51
705 706	MLE Mean (bias corrected) 95% Percentile of Chisquare (2kstar)	0.226 3.482	MLE Sd (bias corrected) 90% Percentile	0.344 0.629
707	95% Percentile	0.915	99% Percentile	1.627
708 709			g Gamma ROS Statistics on Imputed Data	
710	Upper Limits using Wilson WH	n Hilferty (WI HW	H) and Hawkins Wixley (HW) Methods WH	HW
711	95% Approx. Gamma UTL with 95% Coverage 1.224	1.368	95% Approx. Gamma UPL 0.855	0.901

	A B C D E		F	G	Н		l	J	K	L
712 713	95% Gamma USL 2.105	5	2.6							
714	Estimates o	of Gar	mma Parar	neters using	KM Estima	ates				
715	Mean (K	(M)	0.328						SD (KM)	0.354
716 717	Variance (K k hat (K		0.125 0.859					SE o	f Mean (KM) k star (KM)	0.0583 0.81
718	nu hat (K		67.02						nu star (KM)	63.2
719	theta hat (K	(M)	0.382					the	eta star (KM)	0.405
720 721	80% gamma percentile (K		0.536					% gamma per		0.795
722	95% gamma percentile (K	(IVI)	1.059				993	% gamma per	centile (Kivi)	1.682
723	The following statistics are									
724 725	Upper Limits using Wils WH	son F	Hilterty (WE HW	i) and Hawki	ns Wixley	(HW) I	Method	IS	WH	HW
726	95% Approx. Gamma UTL with 95% Coverage 0.866	3	0.846		(95% A	pprox.	Gamma UPL		0.695
727 728	95% KM Gamma Percentile 0.695	5	0.674				95%	Gamma USL	1.179	1.168
729	Lognormal	GOF	Test on De	etected Obse	ervations C	nlv				
730	Shapiro Wilk Test Statis		0.837	otootoa obot	or valiono c		piro Wi	ilk GOF Test		
731	10% Shapiro Wilk Critical Val		0.914		Data Not			t 10% Signific	ance Level	
732 733	Lilliefors Test Statis 10% Lilliefors Critical Val		0.176 0.185	Dete	rted Data a			GOF Test rmal at 10% S	Significance I	evel
734	Detected Data appear								o.g.mounoc	
735				_						
736 737	Background Lognormal ROS Statist Mean in Original Sca		Assuming L 0.261	ognormal Di	SINDUTION (JSING I	mpute		s in Log Scale	-1.944
738	SD in Original Sca	ale	0.389					SD	in Log Scale	1.093
739	95% UTL95% Covera		1.46				95%	BCA UTL95	% Coverage	
740 741	95% Bootstrap (%) UTL95% Covera 90% Percentile		2.3 0.581						95% UPL (t) Percentile (z)	
742	99% Percentile		1.82					JJ /0 F	95% USL	3.251
743										
744 745	Statistics using KM estimate KM Mean of Logged Da		n Logged E -1.322	oata and Ass				bution ₋ognormal)95	% Coverage	0.794
746	KM SD of Logged Da		0.514			70 14141		95% KM UPL		0.641
747	95% KM Percentile Lognormal		0.62					95% KM USL		1.157
748 749	Background DL	/2 St	atistics Ass	sumina Loan	ormal Diet	ributio	n			
750	Mean in Original Sca	ale	0.274	ig Logii	ai 2130				in Log Scale	
751	SD in Original Sca	ale	0.381					SD	in Log Scale	0.783
752 753	95% UTL95% Covera 90% Percentile		0.969 0.501						95% UPL (t) Percentile (z)	0.699 0.665
754	99% Percentile		1.135					33701	95% USL	1.719
755	DL/2 is not a Recommended M	lethod	d. DL/2 pro	vided for co	mparisons	and hi	istorica	I reasons.		
756 757	Nonparamet	tric D	istribution	Free Backar	ound Statis	stics				
758				Discernible [
759 760	Nonparametric Upper Limits for	r RT\/	/e/no dietir	oction made l	hetween de	atacte	and no	andetecte)		
761	Order of Statistic		39	iction made i	between de	elecis		% UTL with95	% Coverage	2.3
762	Approx, f used to compute achieved 0		2.053	Approximat	te Actual C	onfide	nce Co	efficient achie		0.865
763 764	Approximate Sample Size needed to achieve specified C 95% U		59 2.3					95% KM Che	95% UPL	0.97 1.89
765									•	1.00
766	Note: The use of USL tends to yield a conserv									
767 768	Therefore, one may use USL to estimate a B and consists of obse							uata set free	of outliers	
769	The use of USL tends to provide a ba	alance	e between	false positive	es and false	e nega	tives pi			
770 771	represents a background data set and	d whe	en many on	site observat	tions need	to be c	compar	ed with the B	TV.	
	Lead									
773										
774 775	Total Number of Observation	one	General S	Statistics			Numba	r of Missins C)hearyation=	
776	Total Number of Observatio Number of Distinct Observatio		39 6				numbe	r of Missing C	buservations	0
777	Number of Detection	ects	3						Non-Detects	36
778 779	Number of Distinct Detec		1				Numbe	er of Distinct I		5
780	Minimum Dete Maximum Dete		1.5						Non-Detect Non-Detect	10
781	Variance Detect	ted	0.0833						Non-Detects	92.31%
782 783	Mean of Detected Legged De		1.167				C F		SD Detected	0.289
783 784	Mean of Detected Logged Da	ата	0.135				SD	of Detected I	Logged Data	0.234
785				only 3 Detect						
786 787	This is not enough to co						stimate	es.		
787 788										
789	Critical Value		Backgrour	nd Threshold	Values (B	TVs)				
790	Tolerance Factor K (For UT	TL)	2.124					d2m	ax (for USL)	2.857

	Α	В		С	Т	D	\top	E	F	G	ŀ	Н		1	J			K	L
791																•		•	
792 793					Chan	iro Mille	, Toot C			est on Dete	cts Only		Cha	nina \A/i	IL 00E	Tool			
793							k Test S Critica				D:	ata N			lk GOF 1% Sigr		ים ו ם	امر	
795				170 0			s Test S					ata i v			GOF T		JO E0	V C1	
796				-			Critica		0.429		Detected				mal at 1	% Sigr	nificar	nce Lev	el
797						Detected	d Data	appear	· Approxima	ate Normal	at 1% Sig	ynific	ance L	.evel					
798 799					Va	nlan M	olor /Vi	M) Poo	karound Ct	atiatiaa Aa	oumina Na		l Diatril	hutian					
800					Na	ріап м		м) вас і /I Mean		atistics Ass	suming inc	ərmai	II DISTIII	bution			k	(M SD	0.0912
801					959	% UTL9	95% Co									95%		JPL (t)	1.173
802							l Percer								95%			tile (z)	1.167
803 804					9	9% KM	l Percer	ntile (z)	1.229							95	5% KN	M USL	1.278
805						l /2 Sub	netitutio	n Rack	around Sta	ntistics Ass	umina No	rmal	Dietrih	ution					
806							Journalio	Mean		100000	unning 140	iiiiai	Distrib	duon				SD	1.231
807					959		95% Co											JPL (t)	3.166
808							Percer								(95% Pe		tile (z)	3.089
809 810				11 /2 ie	not :		Percer			rovided for	comparis	one	and his	etorica	l resent	10	95%	% USL	4.581
811				<i>)</i> L/2 15	HOL &	a recom	illelide	a meu	ю и. DD2 р	iovided ioi	Compans	OI IS	anu m	Storica	i ieasui	15			
812							Gamm	a GOF	Tests on D	Detected O	bservation								
813						A-D	Test S	Statistic	0.619			-	Anders	on-Da	rling GO	OF Tes	st		
814					Ę		Critica			Dete	cted data							nifican	e Level
815 816							S Test S Critica			Deta	cted data				Smirno			nifican	'e l evel
817										Ited at 5%				а D	ion ibute	u al J	,o Oig	imicail	,C LCV61
818											_								
819										on Detected	d Data On	ıly							
820 821						Th		t (MLE)							star (bia				N/A
822						In	neta hat	t (MLE)						rneta	star (bia			ected)	N/A N/A
823				N	/LE N	Mean (b	oias cor								110 010	ai (biac		colou)	14/7
824							oias cor						95%	Percer	ntile of (Chisqu	are (2	2kstar)	N/A
825																			
826 827			GR	OS ma	v noi	ha uca	Gamm	ia KOS	Statistics	using Impu 1% NDs wit	ted Non-L	Jetec	CTS Servati	ione at	multiple	n DI e			
828		GROS ma	av not	be use	d wh	en ksta	r of det	ects is	small such	as <1.0, es	specially w	vhen	the sar	mple si	ze is sr	nall (e.	a <1	15-20)	
829						ch situa	ations, (GROS	method ma	y yield inco	orrect valu	ies of	f UCLs			()	3 -, .		
830										nen the san									
831 832		For ga	amma	distribu	ıted (detected		BTVs a		nay be com	puted usir	ng ga	amma d	distribu	tion on	KM es		es Mean	0.164
833								aximum										ledian	0.104
834								SD										CV	2.022
835								t (MLE)							star (bia				0.378
836 837						Th	neta hat							Theta	star (bia				0.434
838					/I ⊏ r	Mean (h	nu nat ias cori	t (MLE)							MLE S	ar (bias			29.5 0.267
839			95%				quare (IVILL			centile	0.468
840						9	5% Per	rcentile	0.695							99%	Perc	entile	1.27
841										ng Gamma									
842 843					Uppe	er Limits		Wilsor /H	HW	VH) and Ha	WKINS WI	xiey ((HW) N	Method	S		WI	Ц	HW
844	95% App	rox. Gamm	na UTL	with 9	5% C	Coverag).879	0.919			Ç	95% Ar	oprox. (Gamma	UPL		602	0.594
845		2.3				nma US	L 1	.552	1.79										
846											1 125 -								
847 848						E				ameters us	ing KM E	stima	ates				C.L) (KVV)	0.0912
849						١	меа Varianc	n (KM) e (KM))						SF of) (KM) n (KM)	0.0912
850						'		at (KM)		-								r (KM)	114.8
851							nu ha	at (KM)	9697							n	ıu sta	r (KM)	8952
852					0/		theta ha			3				000	/			r (KM)	0.00886
853 854							ercentil ercentil								% gamn % gamn				1.141 1.251
855					∕∘ ya	a pt	OI OCI IIII	C (IVIVI)	1.170					337	o garrill	ia p e it	CHILIE	~ (1X1VI)	1.201
856				The	e foll	owing s	statistic	s are c	omputed u	sing gamm	a distribut	tion &	and KM	/l estim	ates				
857					Uppe	er Limits				VH) and Ha	ıwkins Wi	xley ((HW) N	dethod	s		1		1.1547
858 859	95% Ann	rox. Gamm	ıa I ITI	with O	5% C	`OVETOG		/H .195	HW 1.193				95% Ar	nnroy (Gamma	IIDI	WI 1	H 158	HW 1.156
860	20 /0 App					ercentil		.152	1.151				JU /0 /A		Gamma			261	1.150
861																			
862										Detected C)bservatio	ons C				_			
863 864							k Test S Critica				Doto	Not			Ik GOF : 10% S		anco I	AVOI	
865				10 /0 5			s Test S				Data	I INUL			GOF T		ance L	_evel	
866				10	0% L	illiefors	Critica	l Value	0.389		etected D		appear	Logno	rmal at		ignific	cance L	evel
867										Lognorma									
868			D = -'		1 -		D00 C	L 11 - 11	. A = · ·	. 1	1 D!"	u	1-2		J & J	_I-			
869			Backg	round	∟ogr	iormal F	<u>KUS SI</u>	atistics	s Assuming	Lognorma	וטistribut	<u>iion L</u>	using li	mputed	ı Non-E	etects	i		

	A	В	С	D		E	F	G	Н		ı		J	K	L
870	П	ر ر	U	Mean in C	ı Origina		0.374	<u> </u>	- 11		- 1			n Log Scale	-1.219
871				SD in C			0.289						SD	n Log Scale	0.692
872				95% UTL95							9!	5% BC		% Coverage	1.05
873		95%	% Bootstrap	(%) UTL95										95% UPL (t)	0.964
874 875						ntile (z)							95% P	ercentile (z)	0.923
876				99% 1	ercei	ntile (z)	1.479							95% USL	2.136
877			Statis	tics usina K	M est	imates	on Logged [Data and Assu	ımina La	anori	mal Dis	tributio	on		
878			K	M Mean of	Logge	ed Data	0.014					. (Logn	ormal)95	% Coverage	1.187
879				KM SD of	Logge	ed Data	0.074							(Lognormal)	1.151
880 881			95% KM	Percentile L	.ognor	mal (z)	1.145					95%	KM USL	(Lognormal)	1.253
882				Back	aroun	d DI /2 :	Statietice Ae	suming Logno	rmal Die	etribut	tion				
883				Mean in C				Summy Logic	mai Di	Suibu	LIOII		Mean	n Log Scale	-0.273
884				SD in C	rigina	I Scale	1.231						SD	n Log Scale	0.704
885				95% UTL95										95% UPL (t)	2.533
886 887						ntile (z)							95% P	ercentile (z)	2.424
888			DI /2 is no			ntile (z)		vided for con	naricon	e and	l histori	cal res	eone	95% USL	5.692
889			DELIGITO	or a moodiii	Horiac	Ju Mou	iou. DDZ pic	ovided for con	траноон	o una	Tilotori	our roc	100110.		
890				No				Free Backgro			3				
891					Data	a appea	ar to follow a	Discernible D	istributio	on					
892 893			Nonnerer	netrie I Inne	r I imi	te for D'	T\/e/po dio±i-	nction made b	etwoon	dotos	te and	nondo	tects)		
894			ivoliparan			atistic, r			GIMAGE!!	uetec	เอ ariu ด	11011 08 15% 1 17	(Cus)	% Coverage	10
895				to compute	achiev	ved CC	2.053	Approximate	e Actual	Confi					0.865
896	Approximate S				specif	fied CC	59							95% UPL	10
897					95	% USL	10					95%	KM Che	byshev UPL	1.42
898 899	No	te: The us	en of Hel	ande to viola	1 2 00	ncervot	ive estimate	of BTV, espec	sially who	on the	campl	o cizo	etarte eva	peding 20	
900								ne data set rep							
901								ed from clean							
902								false positive							
903 904		repre	esents a ba	ckground d	ata se	t and w	hen many or	site observat	ons need	d to b	e comp	oared v	vith the B	ΓV.	
	Lithium														
906	Littiuiii														
	General Statistic	s													
908			Total	Number of (Num	ber of		bservations	30
910				Sa		inimum Largest							F	irst Quartile Median	197 220
911						aximum							Т	nird Quartile	230.5
912						Mean	222.3							SD	38.14
913				Coefficien									05 1	Skewness	2.551
914 915				Mean of	iogge	ea Data	5.392						SD of	logged Data	0.149
916				Cri	tical V	alues f	or Backgrou	nd Threshold	Values ((BTVs	5)				
917			Toler	ance Factor							•		d2m	ax (for USL)	2.857
918							A1	OC T :							
919 920			CI	napiro Wilk	Tect C	Statietic	0.767	GOF Test		e	haniro	Wilk C	OF Test		
921				napiro wiik napiro Wilk (Data				Significan	ce Level	
922				Lilliefors									F Test		
923			19	% Lilliefors (0.163			Not N	lormal	at 1%	Significan	ce Level	
924 925					D	ata Not	t Normal at 1	% Significand	e Level						
925				F	Backer	round S	tatistice ∆ee	uming Norma	l Distrib	ution					
927			95% U	ITL with 95					. 21001100	-u-U11			90% P	ercentile (z)	271.2
928					95%	UPL (t)	287.5						95% P	ercentile (z)	285.1
929					95°	% USL	331.3						99% P	ercentile (z)	311.1
930 931							Commo	GOF Test							
932				A-D	Test S	Statistic		GOF TEST	And	derso	n-Darli	ng Ga	mma GOI	- Test	
933				5% A-D (Da	ta Not G	iamma	a Distril	buted a	at 5% Sig	nificance Lev	el
934						Statistic			Kolm	nogor	ov-Smi	rnov G	amma G	OF Test	
935				5% K-S (buted a	at 5% Sig	nificance Lev	el
936 937				D	ata No	ot Gami	ma טופולווט stribute	ed at 5% Sign	ırıcance	Leve	<u> </u>				
938							Gamma	Statistics							
						t (MLE)	42.55	_						rected MLE)	39.3
939						t (MLE)					The			rected MLE)	5.658
939 940								i .							000-
939 940 941			N A I		nu hat	t (MLE)								s corrected)	3065
939 940 941 942			ML		nu hat	t (MLE)									3065 35.47
939 940 941 942 943 944			ML	E Mean (bi	nu hat as cor	t (MLE) rected)	222.3	uming Gamm	a Distrib	ution				s corrected)	
939 940 941 942 943 944 945			Hilferty (W	E Mean (bia B H) Approx.	nu hat as cor ackgr Gamn	t (MLE) rected) round S na UPL	222.3 tatistics Ass 284.5	uming Gamm	a Distrib	ution			E Sd (bia	s corrected) s corrected) % Percentile	35.47 268.8
939 940 941 942 943 944 945 946	95%	Hawkins	Hilferty (W Wixley (H)	E Mean (bia B H) Approx. V) Approx.	nu hat as cor ackgr Gamn Gamn	t (MLE) rected) round S na UPL na UPL	222.3 tatistics Ass 284.5 284.2	uming Gamm	a Distrib	ution			E Sd (bia 90° 95°	s corrected) s corrected) % Percentile % Percentile	35.47 268.8 283.7
939 940 941 942 943 944 945	95% 95% WI	Hawkins H Approx	Hilferty (W Wixley (H\ . Gamma U	E Mean (bia B H) Approx.	nu hat as cor ackgr Gamn Gamn 5% Co	rected) round S na UPL na UPL overage	222.3 tatistics Ass 284.5 284.2 301.8	uming Gamm	a Distrib	ution			E Sd (bia 90° 95°	s corrected) s corrected) % Percentile	35.47 268.8

	А	В		С		D		Е	F	G	Н		I		J		K	L
949 950	•						95% V	VH USL	333.8							95% H	IW USL	334.3
950									Loanorma	I GOF Test								
952								Statistic	0.864				o Wilk L					
953 954				10% S				al Value	0.948		Data		gnormal				Level	
955				10				Statistic al Value			Data		fors Log gnormal				e Level	
956										10% Signific			9		70 G.g			
957 958)l				aal Dia	المداد ما اسم						
959				95%	UTL			overage		ming Lognori	nai Dis	uribuuc)TI		90%	Perce	ntile (z)	265.9
960							95%	UPL (t)	283.4						95%	Perce	ntile (z)	280.7
961 962							9	5% USL	336.3						99%	Perce	ntile (z)	310.7
963							Nonpai	ametric	Distribution	Free Backgr	ound S	tatistic	s					
964										Discernible Di								
965 966						Non	narame	etric Uni	per Limits fo	r Background	Thresi	hold Va	alues					
967						der of	Statisti	c, order	39				959				overage	383
968		<i>F</i>	Approx	x, f used	d to co	omput	e achie	ved CC	2.053	Approxima								0.865
969 970	95	% Percent	tile Bo	notstran	UTL .	with (95% C	overage	383	Approxim							overage	59 383
971	33	.5 . 6.66111	20	Juliap			9	5% UPL	330		3070	. DOA		۱۱ ک م.	ç	90% Pe	rcentile	249.6
972								ev UPL									rcentile	270.6
973 974					ç	15% C		ev UPL 5% USL								я» Ре	rcentile	362.9
975																		
976										of BTV, espe								
977 978		ı neretoi	re, one	e may u						he data set re ted from clea					set fre	e of ou	ıtııers	
979					SL ter	nds to	provide	e a balaı	nce betweer	false positive	es and f	false ne	egatives	provi				
980		r	repres	ents a b	ackg	round	data se	et and w	hen many o	nsite observa	tions ne	eed to I	oe comp	ared	with the	BTV.		
981 982	Mercury																	
983																		
984 985				T-4-	I NI		f Ohaa			Statistics			Nima	h - u - f	Minning	. Ob		
986								rvations rvations	39 2				Num	ber or	wiissing	Obser	rvations	0
987						Num	nber of	Detects	0								Detects	39
988 989				N	lumb			Detects Detect	_				Nun	nber o			Detects -Detect	0.1
990								Detect									-Detect	0.1
991								etected	N/A						Percer		Detects	100%
992 993				Mean	of D			etected ed Data						SD of I	Detecto		etected ed Data	N/A N/A
994				Wican	1010	CICCIC	u Logg	ca Data	14//-1					011	Joiceic	a Loggi	ca Data	14//
995										refore all stat								
996 997	TI									stics are also alues to estir								
998									•				_		(5.	g.,	-,	
999 1000							The da	ata set f	or variable N	lercury was r	ot proc	essed						
1001																		
1002	Molybdenum	1																
1003 1004									General	Statistics								
1005								rvations	39				Num	ber of	Missing) Obser	rvations	0
1006 1007				Numbe	er of E			rvations	34							£ NI -	Data -	
1007				N	lumh			Detects Detects	35 32				Nun				Detects Detects	3
1009						М	linimun	n Detect	2.3						Minimu	ım Non	-Detect	5
1010 1011								Detect									-Detect	20
1012								etected etected							rercer		Detects	10.26% 11.01
1013				Mean	of D			ed Data					5	SD of I	Detecte		ed Data	0.86
1014 1015							'ritiaal '	/aluaa 1	or Backara	ınd Threshold	ا المالية	e (DT\	'e)					
1015				Tole	eranc			or UTL)	2.124	11110511010	value:	5 (DIV	<i>a)</i>		d2	2max (f	or USL)	2.857
1017							,									,-	/	
1018 1019					Shani	ro \//il	k Test	Nom Statistic		st on Detects	Only		Shapiro	Wilk (OF TO	et		
1020								al Value			Da		Normal :				evel	
1021					Ĺ	illiefor	s Test	Statistic	0.162	_			Lilliefo	rs GC	F Test			
1022 1023				1				al Value		│ De t e Normal at					at 1% S	significa	ance Lev	/el
1024						GIGUIE	o Dala	appedi	Approxima	ai al	ı 70 Olyl	micall	oe Leve					
1025					Kaj	olan M				tistics Assum	ing No	rmal D	istributio	on			IZB 4 0 =	40.05
1026					OE 0	/ LITL		M Mean overage							QI		KM SD UPL (t)	10.65 31.53
1027																		

	A B C D	E	l F l	G	Н		J	K	L
1028	90% KM Per			<u> </u>	<u> </u>			ercentile (z)	30.86
1029	99% KM Per	centile (z)	38.12				9	5% KM USL	43.77
1030 1031	DL/2 Substitu	ition Book	around Static	otice Accumin	a Normal Die	etribution			
1031	DL/2 Subsuit	Mean		sucs Assumm	y Nomiai Dis	suibudon		SD	10.71
1033	95% UTL95%	Coverage	36.14					95% UPL (t)	31.68
1034		centile (z)					95% F	ercentile (z)	31.01
1035 1036		centile (z)				احدادها والما	l	95% USL	43.99
1036	DL/2 is not a recommen	naea metn	oa. ט⊔∠ pro	viaea for com	parisons and	ı nistoricai	reasons		
1038	Gar	nma GOF	Tests on De	tected Observ	vations Only				
1039		st Statistic					rling GOF Te		
1040 1041	5% A-D Crit			Detected				% Significand	e Level
1041	K-S Tes 5% K-S Crit	st Statistic		Detected			Smirnov GO	r 5% Significand	ו פעפן
1043				tributed at 5%			istributou at c	770 Olgrillicaric	C LOVOI
1044									
1045	1.			Detected Dat	ta Only		-t (l-:	t NAL (T.)	1 5 4 4
1046 1047		hat (MLE) hat (MLE)					star (bias cor star (bias cor		1.544 9.161
1048		hat (MLE)				Tilota		s corrected)	108.1
1049	MLE Mean (bias o	corrected)	14.14				·	,	
1050	MLE Sd (bias o	corrected)	11.38		9	5% Percen	ntile of Chisqu	uare (2kstar)	7.966
1051 1052	Got	mma POS	Statistics us	ing Imputed N	Non-Detecto				
1052	GROS may not be used wi					vations at	multiple DLs		
1054	GROS may not be used when kstar of	detects is	small such as	<1.0, especia	ally when the	sample si	ze is small (e	e.g., <15-20)	
1055	For such situation						TVs		
1056 1057	This For gamma distributed detected da			n the sample :			tion on KM o	stimates	
1058	i or garrina distributed detected da	Minimum		y De Computer	u uəniy yailli	าเล นเอนามน	aon on rivi es	Mean	13.33
1059		Maximum	40					Median	9.6
1060		SD					. "	CV	0.806
1061 1062		hat (MLE) hat (MLE)	1.653 8.062				star (bias cor star (bias cor		1.543 8.637
1063		hat (MLE)				IIIeta		s corrected)	120.4
1064	MLE Mean (bias of		13.33				MLE Sd (bia		10.73
1065	95% Percentile of Chisquar							% Percentile	27.58
1066 1067	95% The following statist	Percentile		. Commo BO	C Statiation c	n Imputed		6 Percentile	49.73
1068	Upper Limits us	ina Wilsor	ilputed using i Hilferty (WF) damina RO 1) and Hawkin	s Wixlev (H\	M) Method	s Data		
1069		WH	HW					WH	HW
1070	95% Approx. Gamma UTL with 95% Coverage	43.94	46.19		95%	6 Approx. (Gamma UPL	34.94	35.91
1071 1072	95% Gamma USL	63.28	69.38						
1073	Estir	nates of G	amma Parar	neters using k	KM Estimate	S			
1074	N	lean (KM)	13.35					SD (KM)	10.65
1075 1076		ance (KM)					SE o	f Mean (KM)	1.744
1076		k hat (KM) u hat (KM)						k star (KM) nu star (KM)	1.467 114.4
1078		a hat (KM)						eta star (KM)	9.098
1079	80% gamma perce	entile (KM)	20.7				% gamma per	centile (KM)	27.96
1080 1081	95% gamma perce	ntile (KM)	35.03			99%	% gamma per	centile (KM)	51
1081	The following statis	stics are o	omputed usir	ng gamma die	tribution and	KM estim	ates		
1083	Upper Limits us								
1084		WH	HW					WH	HW
1085 1086	95% Approx. Gamma UTL with 95% Coverage 95% KM Gamma Percentile	43.74 33.56	45.98 34.39		95%		Gamma UPL Gamma USL	34.79 62.95	35.76 69.05
1086	95% KIVI GAMIMA Percentile	33.30	34.39			95% (Ganina USL	02.90	09.00
1088	Logr	normal GO	F Test on De	etected Obser					
1089	Shapiro Wilk Tes	st Statistic	0.941		5	Shapiro Wi	lk GOF Test		
1090 1091	10% Shapiro Wilk Crit Lilliefors Tes				Data Not Lo		: 10% Signific GOF Test	ance Level	
1091	Lilletors Tes 10% Lilliefors Crit			Detec	ted Data ann			Significance L	evel
1093	Detected Data								
1094									
1095 1096	Background Lognormal ROS			ognormal Dis	tribution Usir	ng Imputed			2.26
1096	Mean in Orig SD in Orig							in Log Scale in Log Scale	0.84
1098	95% UTL95%		57.16			95%	BCA UTL95		40
1099	95% Bootstrap (%) UTL95%	Coverage	40					95% UPL (t)	40.26
1100 1101		centile (z)					95% F	ercentile (z)	38.2
1101	99% Per	centile (z)	67.73					95% USL	105.8
1103	Statistics using KM of	estimates	on Logged D	ata and Assu	ming Lognor	rmal Distrit	oution		
1104	KM Mean of Log	gged Data	2.252			KM UTL (L	ognormal)95		57.8
	101.00 (1	ctc C hann	0.85			9	5% KM UPL	(Lognormal)	40.56
1105 1106	KM SD of Log 95% KM Percentile Logi						5% KM USL		107.7

	Α		В		С		D		E		F	G		Н		I		J		K	L
1107 1108							Back	carounc	I DL/2	Statis	stics As	suming I	oanor	nal Dist	ributio	n					
1109						M	lean in (Original	l Scale	1	3.4		_og.ioi.	nai biot	i ibadio	••			n in Log		2.265
1110 1111						OF	SD in	Original	l Scale	1	0.71							SI	O in Log		0.85
1112						95	% UTL9	Percer		2	8.67 8.65							95%		UPL (t)	41.15 39.02
1113								Percer			9.66							30 70		% USL	109.4
1114					DL/2 is	not a	Recom	mende	d Meth	nod. [DL/2 pr	ovided fo	r comp	arisons	and h	istorica	al rea	sons.			
1115 1116								lonnara	metric	Dietr	ibution	Free Ba	ckarou	nd Statio	etice						
1117												Discerni									
1118																					
1119 1120					Nonpa	ramet		er Limit r of Sta				nction m	ade be	ween de	etects			tects) L with9	15% Co	verage	40
1121			Α	Appro	x, f us	ed to c	compute			_	2.053	Approx	kimate /	Actual C	onfide						0.865
1122	Approx	imate	e Sampl	le Siz	e need	ded to	achieve													% UPL	36.8
1123 1124								959	% USL	. 4	0						95%	KM Ch	nebyshe	ev UPL	60.36
1125		N	lote: The	e use	of US	L tend	s to yie	ld a cor	servat	ive es	stimate	of BTV,	especia	Illy wher	the s	ample	size	starts e	xceedir	ng 20.	
1126						use U	SL to e	stimate	a BTV	only	when t	he data s	et repre	esents a	back	ground	data				
1127 1128			-	Thou	ico of l							ted from false po						lod tha	data		
1129												nsite obs									
1130				•		`															
1131 1132	Radium																				
1133	General S	tatist	ics																		
1134					То	tal Nu	mber of	Observ	/ations	3	8							Distinct			37
1135 1136								N #:	nimum		1					Numbe	er of N	Missing		vations Quartile	1 0.54
1137							Se	econd L			2.81									Median	0.867
1138									ximum	3	3.2								Third C		1.35
1139 1140							c	-+ -£\/-	Mean		.013								Ol.	SD	0.678
1141						C	oefficie	nt of va	iriation	(0.669								SKE	ewness	1.408
1142											ckgrou	nd Thres	shold V	alues (B	TVs)						
1143 1144					To	olerano	ce Facto	or K (Fo	r UTL)	2	2.132							d2	max (fc	r USL)	2.846
1145										N	ormal	GOF Tes	t								
1146							iro Wilk				.89							OF Tes			
1147 1148					1%		iro Wilk				0.916			Data N				Significa	ance Le	evel	
1149							_illiefors .illiefors).17).165			Data N				F Test Significa	ance Le	evel	
1150						170 L						l% Signif	ficance		101110	i i i i i i i i i i i i i i i i i i i	. 170	Sigillio	arioo Ec	7701	
1151															•						
1152 1153					959	% LITI	with 9				i cs ass 2.458	suming N	ıormaı ı	JISTRIDUT	ion			90%	Percer	ntile (z)	1.882
1154					30	70 O I L	With 0		JPL (t)		2.171							95%	Percer	ntile (z)	2.128
1155								95%	6 USL	2	2.942							99%	Percer	ntile (z)	2.59
1156 1157										c	amma	Statistics	•								
1158									Ga			ics Not A)							
1159									0	0-		0	04-4-4	1							
1160 1161									Cann	ot Co	mpute	Gamma	Statist	CS!							
1162									Ca	nnot	Compu	te Log S	tatistic	3							
1163 1164							<u> </u>	lonner	motel	Dict-	ibustan	Eroo Do	okare	nd Ctat	otics						
1165												Free Ba Discernib			ธนตร						
1166																					
1167 1168						0	Nonp rder of S	aramet	ric Up	per Li		r Backgro	ound T	nreshold	i Value		LITI	with 0	150/ C-	voroco	2 2
1169			Δ	Appro	x, fus		raer of 8 compute					Approx	cimate .	Actual C	onfide			with 9 ient ach			3.2 0.858
1170							•							e Sampl	e Size	neede	ed to	achieve	e specif	ied CC	59
1171 1172		95%	Percent	ile B	ootstra	p UTL	with 9		verage % UPL		3.2 2.83			95% BC	CA Boo	otstrap	UTL		05% Co 0% Pei		3.2 1.751
1173							90% Cr				3.83 3.073								5% Per		2.062
1174							95% Ch	ebyshe	v UPL	. 4	.006								9% Per		3.056
1175 1176								959	% USL	. 3	3.2										
1177		N	lote: The	e use	of US	L tend	s to vie	ld a cor	servat	ive es	stimate	of BTV,	especia	Illy wher	n the s	ample	size	starts e	xceedir	ng 20.	
1178						use U	SL to e	stimate	a BTV	only	when t	he data s	et repre	esents a	back	ground	data				
1179 1180			-	Tho	ico of l							ted from						lad tha	data		
1181												false po									
1182							,				y 01	20 000				pu					
1183 1184	Selenium																				
1185										G	eneral	Statistic	S								
													-								

	АВ	С	D	Е	F	G	Н	l J	K	L		
1186			Number of C		39			Number of Missing C	bservations	0		
1187 1188		Numbe	r of Distinct C Numbe	r of Detects	25 25			Number of N	Von-Detects	14		
1189		N	umber of Dist					Number of Distinct N		6		
1190				mum Detect					Non-Detect	1		
1191 1192				mum Detect ce Detected					Non-Detect Non-Detects	15 35.9%		
1193				an Detected					SD Detected	74		
1194		Mean	of Detected L	ogged Data	3.757			SD of Detected L	ogged Data	1.737		
1195 1196			Cula	iaal Valuaa f	on Dookanou	nd Thuashald	I Values /DT	7/0)				
1197		Tole	erance Factor		2.124	nd Threshold	i values (b i		ax (for USL)	2.857		
1198					ı	I			(/			
1199 1200			Shanira Wille T		nal GOF Tes 0.902	t on Detects	Only	Chanina Wills COE Test				
1200			Shapiro Wilk T Shapiro Wilk C		0.902	De	tected Data	Shapiro Wilk GOF Test appear Normal at 1% Sig	nificance Lev	/el		
1202				est Statistic	0.193			Lilliefors GOF Test				
1203		1	% Lilliefors C					appear Normal at 1% Sig	nificance Lev	el		
1204 1205			Det	ected Data	appear Norm	nal at 1% Sig	nificance Le	evel				
1206			Kaplan Mei	er (KM) Bac	kground Stat	istics Assum	ing Normal	Distribution				
1207				KM Mean					KM SD	73.9		
1208 1209			95% UTL95	% Coverage ercentile (z)				95% 050/ KM D	KM UPL (t) ercentile (z)	188.4 183.8		
1210				ercentile (z)					5% KM USL	273.4		
1211				` ,	-	1			502			
1212	DL/2 Substitution Background Statistics Assuming Normal Distribution											
1213 1214			95% UTL95	Mean Coverage %				(SD 95% UPL (t)	74.83 190.1		
1215				ercentile (z)					ercentile (z)	185.4		
1216				ercentile (z)					95% USL	276.1		
1217 1218		DL/2 is	not a recomm	ended meth	od. DL/2 pro	vided for co	mparisons a	nd historical reasons				
1219			G	amma GOF	Tests on De	tected Obse	rvations On	lv				
1220			A-D T	est Statistic	2.166		Α	nderson-Darling GOF Te	st			
1221 1222				ritical Value	0.785	Da		ma Distributed at 5% Sign		el		
1223				est Statistic ritical Value		Da		Kolmogorov-Smirnov GOF nma Distributed at 5% Sign		el		
1224						ed at 5% Sigi			miodiloo Lov	<u>J1</u>		
1225					6							
1226 1227				k hat (MLE)		Detected Da	ata Only	k star (bias cor	rected MLE)	0.677		
1228				ta hat (MLE)				Theta star (bias con		142.6		
1229				u hat (MLE)	36.93			nu star (bia	s corrected)	33.84		
1230 1231		M	LE Mean (bia MLE Sd (bia					95% Percentile of Chisqu	iaro (2ketar)	4.663		
1232			IVILL OU (DIA	3 corrected)	117.5			35 % T ercentile of Chisqu	iaie (Zkstai)	4.003		
1233			G	amma ROS	Statistics us	sing Imputed	Non-Detec	ts				
1234 1235	CDOS mov	GROS may	y not be used	when data s	et has > 50%	NDs with m	any tied obs	ervations at multiple DLs he sample size is small (e	a <15.20\			
1236	GNOS IIIa							UCLs and BTVs	.y., <15-20)			
1237			Т	his is espec	ally true whe	n the sample	size is sma	III.				
1238 1239	For gar	mma distribu	ted detected			y be compute	ed using gar	mma distribution on KM es		6E 04		
1239				Minimum Maximum					Mean Median	65.84 16.68		
1241				SD	72.04				CV	1.094		
1242 1243				k hat (MLE)	0.637			k star (bias con		0.605		
1243				ta hat (MLE) iu hat (MLE)	103.3 49.69			Theta star (bias corr nu star (bia	s corrected)	108.8 47.21		
1245			LE Mean (bia	s corrected)	65.84			MLE Sd (bia	s corrected)	84.63		
1246		95% Percei	ntile of Chisqu		4.342			909	% Percentile	170.9		
1247 1248		The		% Percentile		n Gamma PC)S Statistics	99% on Imputed Data	Percentile	393.9		
1249								HW) Methods				
1250	050/ 4			WH	HW				WH	HW		
1251 1252	95% Approx. Gamma		5% Coverage Gamma USL	326.9 533.7	369.5 657.2		9	5% Approx. Gamma UPL	237.5	255.4		
1253		30 /0	Gamma USL	JJJ.1	UJ1.Z	<u> </u>						
1254			Es			meters using	KM Estima	tes				
1255 1256			\/-	Mean (KM)				OF -4	SD (KM)	73.9 12.08		
1257			Va	riance (KM) k hat (KM)	0.71			SE 01	Mean (KM) k star (KM)	0.672		
1258				nu hat (KM)	55.37				nu star (KM)	52.45		
1259		22.		eta hat (KM)					ta star (KM)	92.6		
1260 1261			% gamma per % gamma per					90% gamma per 99% gamma per		157.8 352.2		
1262								<u> </u>	Condic (IVIVI)	JUL.L		
1263 1264		The	following sta	ntistics are c	omputed usi	ng gamma di	istribution a	nd KM estimates				
			Joper Limits	usina Wilsor	Hilferty (Wh	1) and Hawki	ins Wixley (I	HW) Methods				

	Α	В	С	D	Е	F	G	Н		I	J	K	L	
1265					WH	HW						WH	HW	
1266	95% Appr	rox. Gamma				434			95% A		Gamma UPL	252.4	279.5	
1267		95%	% KM Gamm	a Percentile	237.8	260.5				95%	Gamma USL	635.9	850.1	
1268 1269						E Took on D	atastad Oba		Onb.					
1209			9			0.77	etected Obse	ervations		niro W	ilk GOE Toet			
1271		Shapiro Wilk Test Statistic 0.77 Shapiro Wilk GOF Test 10% Shapiro Wilk Critical Value 0.931 Data Not Lognormal at 10% Significance Level												
1272			10 70 01		Test Statistic	0.331	Lilliefors GOF Test							
1273			10		Critical Value	0.159		Data No			t 10% Signific	ance Level		
1274						ognormal at	10% Signific							
1275														
1276		В	ackground L				ognormal Di	stribution	Using	Impute	d Non-Detect			
1277 1278					riginal Scale	62.45	Mean in Log Scale 2.5							
1279					riginal Scale % Coverage	74.71 1445		SD in Log Scale 2.24 95% BCA UTL95% Coverage 228						
1280		9!	228				90 /			565.9				
1281					95% UPL (t) 565.9 95% Percentile (z) 491.7									
1282	99% Percentile (z) 2275 95% USL 75													
1283	3577. 3.555 (E) 1000													
1284							Data and Ass							
1285			ŀ	KM Mean of I		2.433		9	5% KM		ognormal)95		1329	
1286			050/ 1/25		Logged Data	2.24					95% KM UPL		522.3	
1287 1288			95% KM	Percentile L	ognormal (z)	453.9				(95% KM USL	(Lognormal)	6861	
1289				Backs	round DI /2 G	Statistics Ac	suming Logn	ormal Dia	etributio	n				
1290					riginal Scale	62.32	ourning LUGII		งแมนแบ	71.1	Mean	in Log Scale	2.34	
1291					riginal Scale	74.83						in Log Scale	2.413	
1292					% Coverage							95% UPL (t)		
1293	90% Percentile (z)					228.8						ercentile (z)		
1294					Percentile (z)							95% USL	10249	
1295			DL/2 is no	ot a Recomn	nended Meth	od. DL/2 pro	ovided for cor	mparisons	s and h	istorica	I reasons.			
1296 1297				Na		Distribution	Fran Bankar	arrad Ctat						
1297				INC			Free Background Discernible I							
1299					Data appea	i to ioliow a	Discernible i	Jisti ibutio	<i>/</i> 11					
1300			Nonparar	metric Upper	Limits for B	ΓVs(no distir	nction made I	between o	detects	and no	ndetects)			
1301			•	Order	of Statistic, r	39					% UTL with95		228	
1200	Approx, f used to compute achieved CC					2.053 59	Approximat	e Actual (ctual Confidence Coefficient achieved by UTL 0.865					
				Approximate Sample Size needed to achieve specified CC					95% UPL 213					
1303	Approxim			to achieve s							050/ 1/14 01	bysnev UPL	388.5	
1303 1304	Approxim			to achieve s	95% USL	228					95% KM Che			
1303 1304 1305	Approxim	nate Sample	Size needed		95% USL	228	of RTV esne	cially whe	an tha c			needing 20		
1303 1304 1305 1306	Approxim	nate Sample Note: The	Size needed	ends to yield	95% USL a conservati	228 ve estimate				ample	size starts exc			
1303 1304 1305 1306 1307 1308		Note: The Therefore,	Size needed use of USL to one may us	ends to yield te USL to est and consis	95% USL a conservati imate a BTV its of observa	ve estimate only when thations collect	ne data set re red from clear	presents n unimpac	a backo cted loc	ample s ground ations.	size starts exc data set free	of outliers		
1303 1304 1305 1306 1307 1308 1309		Note: The Therefore,	Size needed use of USL to one may us	ends to yield te USL to est and consis	95% USL a conservati imate a BTV its of observa	ve estimate only when thations collect	ne data set re red from clear	presents n unimpac	a backo cted loc	ample s ground ations.	size starts exc	of outliers		
1303 1304 1305 1306 1307 1308 1309 1310		Note: The Therefore,	Size needed use of USL to one may use	ends to yield te USL to est and consis L tends to pr	95% USL a conservati imate a BTV sts of observati ovide a balar	ve estimate only when thations collect ace between	ne data set re led from clear false positive	presents n unimpaces and fals	a backo cted loc se nega	ample s ground ations.	size starts exc data set free	of outliers ata		
1303 1304 1305 1306 1307 1308 1309 1310 1311		Note: The Therefore,	Size needed use of USL to one may use	ends to yield te USL to est and consis L tends to pr	95% USL a conservati imate a BTV sts of observati ovide a balar	ve estimate only when thations collect ace between	ne data set re led from clear false positive	presents n unimpaces and fals	a backo cted loc se nega	ample s ground ations.	size starts exc data set free rovided the da	of outliers ata		
1303 1304 1305 1306 1307 1308 1309 1310 1311 1312		Note: The Therefore,	Size needed use of USL to one may use	ends to yield te USL to est and consis L tends to pr	95% USL a conservati imate a BTV sts of observati ovide a balar	ve estimate only when thations collect ace between	ne data set re led from clear false positive	presents n unimpaces and fals	a backo cted loc se nega	ample s ground ations.	size starts exc data set free rovided the da	of outliers ata		
1303 1304 1305 1306 1307 1308 1309 1310 1311 1312 1313		Note: The Therefore,	Size needed use of USL to one may use	ends to yield te USL to est and consis L tends to pr	95% USL a conservati imate a BTV sts of observati ovide a balar	ve estimate only when the stions collect ace between then many on	ne data set re led from clear false positive nsite observat	presents n unimpaces and fals	a backo cted loc se nega	ample s ground ations.	size starts exc data set free rovided the da	of outliers ata		
1303 1304 1305 1306 1307 1308 1309 1310 1311 1312 1313 1314		Note: The Therefore,	Size needed use of USL to one may us ne use of US presents a ba	ends to yield te USL to est and consis L tends to pr ackground da	95% USL a conservati imate a BTV its of observa- ovide a balar ata set and wi	ve estimate only when the stions collect ace between then many on General states.	ne data set re led from clear false positive nsite observat	presents n unimpaces and fals	a backo cted loc se nega d to be o	ample s ground ations. atives p compar	size starts exc data set free rovided the da red with the B	of outliers ata TV.		
1303 1304 1305 1306 1307 1308 1309 1310 1311 1312 1313 1314 1315 1316	Thallium	Note: The Therefore,	Size needed use of USL to one may us ne use of US presents a ba	ends to yield te USL to est and consis L tends to pr	95% USL a conservati imate a BTV its of observa- ovide a balar ata set and will Deservations	ve estimate only when the stions collect ace between then many on	ne data set re led from clear false positive nsite observat	presents n unimpaces and fals	a backo cted loc se nega d to be o	ample s ground ations. atives p compar	size starts exc data set free rovided the da	of outliers ata TV.	0	
1303 1304 1305 1306 1307 1308 1309 1310 1311 1312 1313 1314 1315 1316 1317	Thallium	Note: The Therefore,	Size needed use of USL to one may us ne use of US presents a ba	ends to yield te USL to est and consis L tends to pr ackground da Number of C	95% USL a conservati imate a BTV its of observa- ovide a balar ata set and will Deservations	ve estimate only when the stions collect ace between then many on General 3	ne data set re led from clear false positive nsite observat	presents n unimpaces and fals	a backo cted loc se nega d to be o	ample s ground ations. atives p compar	size starts exc data set free rovided the da red with the B	of outliers ata TV.		
1303 1304 1305 1306 1307 1308 1309 1310 1311 1312 1313 1314 1315 1316 1317 1318	Thallium	Note: The Therefore,	Size needed use of USL to one may use of US nee use of US presents a barresents a b	ends to yield te USL to est and consis L tends to pr ackground da Number of C r of Distinct C Number of Dis	95% USL a conservationate a BTV ats of observationate a balar ata set and will bbservations bbservations er of Detects tinct Detects	ve estimate only when the stions collect ince between then many on the stions of the s	ne data set re led from clear false positive nsite observat	presents n unimpaces and fals	a backo cted loc se nega d to be o	ample s ground ations. atives p compar	size starts exc data set free rovided the da red with the B	of outliers ata TV. Observations Non-Detects Non-Detects	0 39 6	
1303 1304 1305 1306 1307 1308 1309 1310 1311 1312 1313 1314 1315 1316 1317 1318 1319	Thallium	Note: The Therefore,	Size needed use of USL to one may use of US nee use of US presents a barresents a b	ends to yield te USL to est and consis L tends to pr ackground da Number of C Number umber of Dis Mini	95% USL a conservationate a BTV ats of observa- ovide a balar ata set and will bbservations bbservations er of Detects tinct Detects mum Detect	ve estimate only when the stions collect ace between then many on the stions of the stions collect ace between then many on the stions of the	ne data set re led from clear false positive nsite observat	presents n unimpaces and fals	a backo cted loc se nega d to be o	ample s ground ations. atives p compar	size starts exc data set free rovided the da red with the B	of outliers ata TV. Observations Non-Detects Non-Detects Non-Detect	0 39 6 0.1	
1303 1304 1305 1306 1307 1308 1309 1310 1311 1312 1313 1314 1315 1316 1317 1318 1319	Thallium	Note: The Therefore,	Size needed use of USL to one may use of US nee use of US presents a barresents a b	ends to yield the USL to est and consis L tends to pr ackground da Number of Cr of Distinct Cr Number of Distinct Of Minimumber of Distinct Of Minimum Maxi	95% USL a conservationate a BTV ats of observations ovide a balar ata set and with the set	ve estimate of only when the stions collect size between then many on the stions of th	ne data set re led from clear false positive nsite observat	presents n unimpaces and fals	a backo cted loc se nega d to be o	ample s ground ations. atives p compar	size starts exc data set free rovided the da red with the B	of outliers ata TV. Observations Non-Detects Non-Detects Non-Detect Non-Detect	0 39 6 0.1 10	
1303 1304 1305 1306 1307 1308 1309 1310 1311 1312 1313 1314 1315 1316 1317 1318 1319 1320 1321	Thallium	Note: The Therefore,	Size needed use of USL to one may use of US nee use of US presents a barresents a b	ends to yield the USL to est and consis L tends to pr ackground da Number of Cr of Distinct Cr Number of Distinct Of Distinct	a conservations of Deservations of Detects mum Detect mum Detect deep personal and	ve estimate only when the stions collect size between then many on the stions of the stions collect size between then many on the stions of th	ne data set re led from clear false positive nsite observat	presents n unimpaces and fals	a backo cted loc se nega d to be o	ample s ground ations. atives p compar	size starts exc data set free rovided the da red with the B' er of Missing C Number of I er of Distinct I Minimum Maximum Percent I	of outliers ata TV. Observations Non-Detects Non-Detect Non-Detect Non-Detect Non-Detect Non-Detects	0 39 6 0.1 10 100%	
1303 1304 1305 1306 1307 1308 1309 1310 1311 1312 1313 1314 1315 1316 1317 1318 1319 1320 1321 1322	Thallium	Note: The Therefore,	Size needed use of USL to one may use of US one may use of US or one may use of US or one may use use of US or one may use use of US or one may use use of US or one may use use of US or one may use use of US or one may use use of US or one may use use of US or one may use use of US or one may use use of US or one may use use use of US or one may use use use use use use use use use use	ends to yield e USL to est and consis L tends to pr ackground da Number of C r of Distinct C Numbe umber of Dis Mini Maxi Varian Me	a conservations of Detects mum Detect mum Detect on Detected an Detected an Detected in Detected an Detected in Detected an Detected in De	ve estimate only when the stions collect ace between then many on the stions of the st	ne data set re led from clear false positive nsite observat	presents n unimpaces and fals	a backo cted loc se nega d to be o	eample s ground cations. atives p compar Numbe	size starts exc data set free rovided the da red with the B' er of Missing C Number of I er of Distinct I Minimum Maximum Percent I	of outliers ata TV. Observations Non-Detects Non-Detect Non-Detect Non-Detect Non-Detects SD Detected	0 39 6 0.1 10 100% N/A	
1303 1304 1305 1306 1307 1308 1309 1310 1311 1312 1313 1314 1315 1316 1317 1318 1319 1320 1321 1322 1323	Thallium	Note: The Therefore,	Size needed use of USL to one may use of US one may use of US or one may use of US or one may use use of US or one may use use of US or one may use use of US or one may use use of US or one may use use of US or one may use use of US or one may use use of US or one may use use of US or one may use use of US or one may use use use of US or one may use use use use use use use use use use	ends to yield the USL to est and consis L tends to pr ackground da Number of Cr of Distinct Cr Number of Distinct Of Distinct	a conservations of Detects mum Detect mum Detect on Detected an Detected an Detected in Detected an Detected in Detected an Detected in De	ve estimate only when the stions collect size between then many on the stions of the stions collect size between then many on the stions of th	ne data set re led from clear false positive nsite observat	presents n unimpaces and fals	a backo cted loc se nega d to be o	eample s ground cations. atives p compar Numbe	size starts exc data set free rovided the da red with the B' er of Missing C Number of I er of Distinct I Minimum Maximum Percent I	of outliers ata TV. Observations Non-Detects Non-Detect Non-Detect Non-Detect Non-Detects SD Detected	0 39 6 0.1 10 100%	
1303 1304 1305 1306 1307 1308 1310 1311 1312 1313 1314 1315 1316 1317 1318 1319 1320 1321 1322 1323 1324 1325	Thallium	Note: The Therefore,	Size needed use of USL to one may use of US one may use of US or one may use of US or one may use use of US or one may use use of US or one may use use of US or one may use o	ends to yield e USL to est and consis L tends to pr ackground da Number of Cr of Distinct Cr Number of Dis Mini Maxi Variar Me of Detected I	a conservations observations observations observations observations or of Detects mum Detect mum Detect oce Detected an Detected ogged Data	ve estimate only when the stions collect ace between then many on the stions of the st	ne data set re led from clear false positive site observat	presents n unimpaces and fals tions need	a backgoted loc se negad d to be o	sample signound sations. Satives procompared Number	size starts exc data set free rovided the dated with the B' er of Missing C Number of I er of Distinct I Minimum Maximum Percent I	of outliers ata TV. Observations Non-Detects Non-Detect Non-Detect Non-Detect Son-Detect On-Detects Detected Logged Data	0 39 6 0.1 10 100% N/A	
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