

# 2022 Annual Groundwater Monitoring and Corrective Action Report

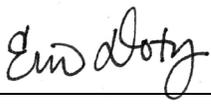
Laramie River Station  
Wheatland, Wyoming

Basin Electric Power Cooperative

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## Table of Contents

List of Acronyms.....	ii
Executive Summary .....	ES-1
1. Introduction.....	1-1
Regulatory Background.....	1-1
Facility Location and Operational History.....	1-1
CCR Unit Description .....	1-1
Physical Setting.....	1-2
2. CCR Groundwater Monitoring Activities Prior to 2022 .....	2-1
3. CCR Groundwater Monitoring and Corrective Action Activities in 2022 .....	3-1
Assessment Monitoring Activities.....	3-1
Monitoring System Evaluation.....	3-1
Groundwater Sampling and Analysis .....	3-1
Statistical Procedures and Analysis .....	3-2
Bottom Ash Pond 1 .....	3-2
Bottom Ash Pond 2, Bottom Ash Pond 3, Ash Landfill Multi-unit .....	3-3
Emergency Holding Ponds.....	3-3
Corrective Action Activities .....	3-3
Selection of Remedy for Bottom Ash Pond 1 .....	3-3
4. General Information .....	4-1
Problems Encountered.....	4-1
Actions Planned for 2023 .....	4-1
5. Summary and Conclusions .....	5-1
6. References .....	6-1

## Figures

- Figure 1 Site Location Map  
Figure 2 LRS CCR Monitoring Well Network

## Tables

- Table 1 Statistical Analysis Methods and Results – Bottom Ash Pond 1  
Table 2 Statistical Analysis Methods and Results –Ash Pond 2, Ash Pond 3, Ash Landfill Multi-unit  
Table 3 Statistical Analysis Methods and Results – Emergency Holding Ponds

## Attachments

- Attachment A 2022 Sampling and Analysis Report, CCR Monitoring Program  
Attachment B Input Data Files for Calculation of Upper and Lower Prediction Limits (2016-2021)

## List of Acronyms

ACM	Assessment of Corrective Measures
AECOM	AECOM Technical Services, Inc.
ASD	Alternative Source Demonstration
Basin	Basin Electric Power Cooperative
bgs	below ground surface
CCR	coal combustion residuals
CFR	Code of Federal Regulations
ft	feet
ft/day	feet per day
GWPS	groundwater protection standards
LRS	Laramie River Station
SSI	statistically significant increase
SSL	statistically significant levels
UPL	upper prediction limit
USGS	U.S. Geological Survey
95% LCL	95 percent lower confidence limit

## Executive Summary

This report summarizes groundwater monitoring and corrective action activities completed between January 1 and December 31, 2022 for the Coal Combustion Residuals (CCR) units at the Basin Electric Power Cooperative (Basin) Laramie River Station (LRS) as required by 40 Code of Federal Regulations (CFR) § 257.90(e) of the U.S. Environmental Protection Agency CCR rule. The CCR units subject to the rule include:

- Bottom Ash Pond 1,
- Bottom Ash Pond 2/Bottom Ash Pond 3/Ash Landfill Multi-unit, and
- Emergency Holding Ponds Multi-unit.

Site figures illustrating the location of the CCR units and program monitoring networks for the CCR units are presented as **Figures 1** and **2**, respectively. No program monitoring wells were modified or abandoned during the reporting period.

Basin implemented an Assessment monitoring program for Bottom Ash Pond 1 and the two CCR multi-units (Bottom Ash Pond 2/Bottom Ash Pond 3/Ash Landfill and Emergency Holding Ponds) in the spring of 2018 in response to the identification of statistically significant increases (SSIs) of Appendix III constituents in downgradient monitoring wells. Assessment monitoring was in place for all three units/multi-units at the start and end of the current annual reporting period (2022).

Assessment monitoring of the Bottom Ash Pond 2/Bottom Ash Pond 3/Ash Landfill Multi-unit in 2022 found that concentrations of some Appendix IV constituents (chromium, molybdenum, and selenium) exhibited SSIs above background values at selected monitoring wells but at concentrations below their respective groundwater protection standards (GWPSs).

Assessment monitoring of the Emergency Holding Ponds Multi-unit in 2022 found that concentrations of one Appendix IV constituent (barium) exhibited an SSI above the background value at monitoring well MW-47B, but at a concentration below the GWPS.

Assessment monitoring of the Bottom Ash Pond 1 Unit found that concentrations of lithium and molybdenum were more than their respective GWPSs. Downgradient well(s) with a constituent or constituents reported above GWPSs at a statistically significant level (SSL) are as follows:

Appendix IV Constituent	Unit/Multi-Unit	Downgradient Well(s) GWPS Exceedance
Lithium and molybdenum	Bottom Ash Pond 1	MW-38B

As required by the CCR rule, an assessment of corrective measures (ACM) was conducted and a public meeting open to interested and affected parties was held on January 30, 2020 to discuss the results of the ACM. After completion of the ACM, work was initiated on the Selection of Remedy for the impacted groundwater as required by 40 CFR § 257.97. A Groundwater Remedy Selection Report was prepared and issued in July 2020 (AECOM 2020), after which work was initiated on the design and implementation of the following selected remedy:

- Bottom Ash Pond 1 retrofit, hydraulic capture of impacted groundwater, and treatment of the captured groundwater in the new zero-discharge Pond 1.

Cleanout and retrofit of Bottom Ash Pond 1, which essentially eliminated the source of impact to groundwater, was completed in March 2021. Installation and hydraulic testing of extraction wells for the hydraulic capture system was completed in December 2021. The hydraulic capture pumping system was designed in 2022 and contracting for

installation of the system was initiated in 2022. Installation of the pumping system and initiation of pumping is expected in 2023.

Other activities and conditions for the 2022 annual reporting period include:

- Semiannual Assessment-mode groundwater monitoring events were conducted in June and September. Monitoring involved sampling of background monitoring wells and downgradient monitoring wells.
- No decommissioning of the existing program monitoring networks was conducted.
- No program transitions (Detection to Assessment or vice versa) were triggered.

Anticipated 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.
- Initiation of groundwater withdrawal for the Bottom Ash Pond 1 Unit treatment system.

# 1. Introduction

On behalf of Basin Electric Power Cooperative (Basin), AECOM Technical Services, Inc. (AECOM) has prepared this 2022 annual report documenting groundwater monitoring and corrective action for the Coal Combustion Residuals (CCR) units at Basin's Laramie River Station (LRS).

Section 1 provides background information on the LRS power generating facility, its CCR unit(s) and their physical setting, including geology, hydrology, and groundwater conditions. Section 2 summarizes CCR groundwater monitoring activities conducted prior to 2022. Section 3 summarizes the groundwater monitoring and corrective action activities completed in 2022, and references attachments to this report that contain detailed documentation of those activities. Section 4 provides some general information regarding the LRS CCR program and actions planned for 2023. Section 5 presents a summary and conclusions from CCR groundwater monitoring in 2022 and statistical analysis of the results. Section 6 lists references cited in this report.

## Regulatory Background

The CCR rule (Chapter 40 of the Code of Federal Regulations [CFR] Part 257 Subpart D) became effective on October 19, 2015 and established standards for the disposal of CCR in landfills and surface impoundments (CCR units). In particular, the rule set forth groundwater monitoring and corrective action requirements for CCR units. The rule includes the requirement for an "annual groundwater monitoring and corrective action report" (annual report), with the annual report for 2021 due by January 31, 2022. The annual report is intended to document the status of the groundwater monitoring and corrective action program for each CCR unit, summarize key actions completed in the previous year, and project key activities for the upcoming year. This report is the sixth annual report for LRS and reports on activities performed and data gathered in calendar year 2022.

## Facility Location and Operational History

LRS, located east of Wheatland, Wyoming (**Figure 1**), is one of the largest consumer-operated, regional, joint power supply ventures in the United States. The plant consists of three power-generating units with a total power output capacity of 1,710 megawatts:

- Unit 1, with a rating of 570 megawatts, which began operating in 1980;
- Unit 2, with a rating of 570 net megawatts, which began operating in 1981; and
- Unit 3, with a rating of 570 net megawatts, which began operating in 1982.

CCR produced at LRS includes fly ash, bottom ash, and flue gas desulfurization waste.

## CCR Unit Description

CCR is disposed at LRS in the following CCR units, monitored as individual units or multi-units:

- Bottom Ash Pond 1;
- Bottom Ash Pond 2, Bottom Ash Pond 3, Ash Landfill (multi-unit); and
- Emergency Holding Ponds (multi-unit).

The Ash Landfill and three bottom ash ponds are located near the western edge of the site, west of the LRS generating units and office complex (**Figure 1**). The two emergency holding ponds are located north of the generating units in the northeastern part of the site. The landfill and ash ponds were permitted in 1978 and began receiving coal ash in 1980. The emergency holding ponds were identified as CCR units due to periodic disposal of flue gas desulfurization waste in the ponds.

## Physical Setting

The geological and hydrogeological setting is important to understanding the groundwater environment in the vicinity of the LRS. The geologic history of Platte County, Wyoming is similar to most areas within the Front Range of the Rocky Mountains. Platte County is underlain by marine and continental deposits of limestone, conglomerate, sandstone, siltstone, shale, and unconsolidated sediments. Deposits range in thickness up to 10,000 feet (ft) in the east central and southeastern parts of the county. Precambrian rocks generally make up the mountainous areas, Paleozoic and Mesozoic rocks adjoin the older formations, and Tertiary and Quaternary period rocks underlie most of the county east of the Laramie Range (U.S. Geological Survey [USGS] 1960). The Laramide Orogeny was a period of mountain building active in the county approximately 70 million years ago marking the beginning of the Laramie Range and the Hartville Uplift, a structural divide separating the southern Powder River Basin from the northern Denver Basin. During the Cenozoic Era, streams eroded the eastern side of the range depositing silts, sands, and gravels of the Brule and Arikaree Formations that underlie the Wheatland area, including LRS.

Precipitation landing on the eastern flank of the Laramie Range supplies surface water to perennial and ephemeral streams that flow east towards the basin. Most surface water west of Wheatland eventually joins with the Laramie River, continuing east before discharging into the Platte River near Fort Laramie. Groundwater near Wheatland is recharged primarily through infiltration of rain and melt water on the eastern flank of the Laramie Range and through infiltration of irrigation water during the spring, summer, and fall months. Some groundwater in the saturated zones eventually returns to the land surface through seeps and springs, or is discharged by wells and evapotranspiration; however, the majority flows into surface streams. Alluvial drainages bounding the eastern (Wheatland Creek) and western portions (Chugwater Creek) of the facility generally transport surface water northward, discharging to the Laramie River (USGS 1960). Some groundwater within these regions percolates into the Arikaree Formation, which holds the uppermost aquifer beneath the LRS facility.

The LRS facility is underlain by a 5 to 30 ft thick section of Quaternary sediments that overlie the Arikaree Formation. The Arikaree Formation is comprised primarily of loosely to moderately cemented very fine to fine grained sandstone with interbedded silts and clays. A lower unit consists of lenses of loose to well-cemented red to gray coarse sandstone interbedded with lenses of well-cemented conglomerate. A basal conglomerate lies unconformably upon the underlying Brule Formation in many places throughout Platte County (USGS 1960). A review of the geologic logs generated during the drilling of the on-site water supply well (Forell-Baumgardner No. 2) suggests the Brule Formation is approximately 820 ft below ground surface (bgs) in the western portions of the facility. Based on this information, the local thickness of the Arikaree Formation on-site is approximately 790 ft thick.

The lithologic characteristics of the Arikaree Formation beneath the LRS are generally consistent, although there are slight differences in the degree of cementation and induration, and minor variations in grain size. Few fractures were noted in borehole soil cores obtained during monitoring well network installation. Interbeds with higher silt and clay content, coupled with greater cementation, generate thin discontinuous perched groundwater horizons that are interpreted to hold only seasonal groundwater. The perched groundwater would tend to percolate downward to what is interpreted as the uppermost aquifer based on data obtained during monitoring well installation and aquifer testing. The uppermost aquifer is present at a depth of approximately 95 ft bgs in the southwestern portion of the facility, and slopes generally north towards the Laramie River. The hydraulic gradient for the uppermost aquifer beneath the facility appears to be controlled dominantly through topographic features and enhanced infiltration zones in permeable shallow alluvium. A representative potentiometric surface map from the most recent assessment monitoring event conducted in October 2021 is presented in **Figure 1**. Data from aquifer pump testing conducted at the facility in 2016 were used to estimate hydraulic conductivities, which range from 0.65 feet per day (ft/day) to 3.12 ft/day, with an average of 1.40 ft/day. Aquifer slug tests were also performed on eight other wells, with resulting hydraulic conductivities ranging from 0.45 ft/day to 6.28 ft/day, with an average of 2.16 ft/day.

## 2. CCR Groundwater Monitoring Activities Prior to 2022

The regulatory process for CCR groundwater monitoring and corrective action is established by 40 CFR §§ 257.90 through 257.98. The process includes a phased approach to groundwater monitoring, leading (if applicable) to the establishment of groundwater protection standards (GWPSs) for each CCR unit. Exceedances of the GWPSs that are determined to be statistically significant can trigger requirements for additional groundwater characterization and corrective action assessment followed by corrective action implementation.

The following paragraphs provide a summary of CCR groundwater monitoring activities performed prior to 2022. CCR groundwater monitoring activities performed in 2022 are discussed in Section 3.

Groundwater monitoring at LRS is performed using a network of monitoring wells that includes wells to monitor background water quality that is not potentially influenced by the presence of the CCR unit, and wells placed at the downgradient boundary of the CCR units (**Figure 2**). The hydro stratigraphic positions of the CCR monitoring wells selected for sampling background and downgradient groundwater quality for each LRS CCR unit or multi-unit prior to 2022 are summarized below:

CCR Unit/multi-Unit	Background Wells	Downgradient Wells
Bottom Ash Pond 1	MW-52B, MW-53B	MW-49B, MW-21B, MW-38B, MW-38C
Bottom Ash Pond 2, Bottom Ash Pond 3, Ash Landfill	MW-39B, MW-32B	MW-36B, MW-37B, MW-20B, MW-14BR, MW-40B, MW-52B, MW-53B
Emergency Holding Ponds	MW-41B, MW-42B, MW-43B	MW-44B, MW-45B, MW-46B, MW-47B

The following monitoring wells were also included in the CCR monitoring network for the purpose of measuring groundwater elevations and evaluating groundwater flow direction and velocity in the vicinity of the bottom ash ponds and landfill: MW-33B, MW-34B, MW-35B, MW-48B, MW-50B, MW-51B, 54B, 55B, and 56B.

### Baseline Detection Monitoring (2016-17)

Detection monitoring was initiated in August 2016, which involved sampling groundwater for Part 257 Appendix III and Appendix IV constituents over eight baseline Detection monitoring events.

Baseline Detection monitoring events were performed in general accordance with procedures established in the site-specific Sampling and Analysis Plan (AECOM 2018a), which is included in the facility's Operating Record. The Sampling and Analysis Plan describes the procedures for equipment calibration, monitoring well water level measurement, monitoring well purging and sampling, sample custody, sample shipping, laboratory analysis, and documentation requirements for each groundwater sample submitted. The results of detection monitoring at LRS were presented and discussed in the First Annual Groundwater Monitoring and Corrective Action Report, 2016-2017 (AECOM 2018b).

### Initial Assessment Monitoring (2018)

If a statistically significant increase (SSI) of any Appendix III constituent relative to background conditions was detected in the downgradient monitoring wells and could not be demonstrated to be associated with a source other than the CCR unit, then the CCR rule required that groundwater monitoring transition from the Detection monitoring phase to the Assessment monitoring phase. The results of Detection monitoring identified the following Appendix III SSIs:

- Bottom Ash Pond 1 SSIs – boron, calcium, chloride, sulfate, and total dissolved solids;

- Bottom Ash Pond 2, Bottom Ash Pond 3, Ash Landfill SSIs – fluoride and chloride; and
- Emergency Holding Ponds SSI – fluoride.

In response to SSIs identified during Detection monitoring, Basin implemented an Assessment monitoring program for the two CCR multi-units (Bottom Ash Pond 2, Bottom Ash Pond 3, Ash Landfill and Emergency Holding Ponds) in the spring of 2018. The initial Assessment monitoring event for the two multi-units was conducted in April 2018 and included analysis of groundwater samples for constituents listed in Part 257 Appendix IV. Also in the spring of 2018, Basin elected to conduct an alternative source demonstration (ASD) investigation to evaluate whether an alternative source could explain the SSIs identified for Bottom Ash Pond 1 during Detection monitoring. This ASD investigation involved the following activities:

- Analyzing soil samples collected from shallow soil borings at 10 locations near Bottom Ash Pond 1, and
- Performing groundwater modeling to evaluate potential constituent migration pathways and transport times from potential source areas to one of the downgradient wells for Bottom Ash Pond 1.

The ASD investigation could not confirm an alternative source; therefore, Basin initiated an Assessment monitoring program for Bottom Ash Pond 1 and completed the initial Assessment monitoring event in June 2018 which included analysis of groundwater samples for constituents listed in Part 257 Appendix IV.

The following Appendix IV constituents were detected during the initial Assessment monitoring of the CCR multi-units: barium, chromium, fluoride, lithium, molybdenum, radium-226 and -228 (combined), and selenium (April 2018). The Appendix IV constituents detected during initial Assessment monitoring of Bottom Ash Pond 1 included barium, chromium, cobalt, fluoride, lithium, molybdenum, and selenium (June 2018).

Because one or more Appendix IV constituents were detected during the initial Assessment monitoring events for all three CCR units/multi-units at LRS, the CCR rule required that a second verification assessment monitoring event be performed for each unit/multi-unit. Verification assessment monitoring was performed in June 2018 for the two multi-units and in October 2018 for Bottom Ash Pond 1. Verification monitoring for each unit/multi-unit involved analysis for Appendix III constituents plus the Appendix IV constituents detected during initial Assessment monitoring.

The results of Assessment monitoring conducted in 2018 were presented in the 2018 Annual Groundwater Monitoring and Corrective Action Report (AECOM 2019a).

## Additional Groundwater Characterization (2019)

The CCR rule requires that concentrations of Appendix III and Appendix IV constituents detected in downgradient wells during Assessment monitoring be compared to background concentrations using the statistical procedures in § 257.93(g). The rule also requires the establishment of GWPSs in accordance with § 257.95(h) for each Appendix IV constituent detected in downgradient wells during Assessment monitoring. If a GWPS is exceeded in one or more downgradient wells at statistically significant levels (SSLs), the rule requires additional groundwater characterization and an assessment of corrective measures (ACM) unless the SSLs can be attributed to a source other than the CCR unit or to an error in sampling, statistical evaluation, or natural variation in groundwater quality.

Assessment monitoring of Bottom Ash Pond 1 found that lithium and molybdenum concentrations in monitoring well MW-38B exceeded GWPSs at SSLs. Although selenium concentrations in monitoring wells MW-21B and MW-38B exceeded the GWPS by direct comparison, their 95 percent lower confidence limit (95% LCL) did not exceed the GWPS. Basin concluded the available data indicated that the SSLs associated with Bottom Ash Pond 1 could not be attributed to a source other than the CCR unit or to errors in sampling, statistical evaluation, or natural variation in groundwater quality. Therefore, Basin performed additional groundwater characterization and an ACM for Bottom Ash Pond 1. Additional groundwater characterization activities were performed in the spring of 2019 to evaluate the nature and extent of groundwater impacted by a release of CCR from Bottom Ash Pond 1 that has resulted in the exceedance of GWPSs for lithium and molybdenum. The characterization activities were designed to also support selection and implementation of a remedy to attain GWPSs. The activities involved installation and sampling of four monitoring wells (MW-38C, MW-54B, MW-55B, MW-56B) downgradient of Bottom Ash Pond 1 at the locations illustrated in **Figure 2**:

- MW-38C was installed near MW-38B to evaluate the vertical extent of groundwater impacts near MW-38B. The total depth of MW-38C was 130 ft bgs.
- MW-54B was installed to evaluate groundwater quality of the uppermost aquifer at the facility boundary. The total depth of MW-54B was 25 ft bgs.
- MW-55B was installed northeast of MW-21B to evaluate the downgradient extent of groundwater impacts north of MW-38B. The total depth of MW-55B was 70 ft bgs.
- MW-56B was installed east of MW-21B to evaluate the lateral extent of groundwater impacts northeast of MW-38B. The total depth of MW-56B was 79 ft bgs.

Groundwater samples from the four wells were analyzed for Appendix III parameters and the following Appendix IV parameters: barium, chromium, cobalt, fluoride, lithium, molybdenum, and selenium; and the geochemical parameters alkalinity, magnesium, and sodium. None of the 2019 results exceeded the GWPSs for lithium, molybdenum, or the other Appendix IV constituents detected during Assessment monitoring in 2018. These results, combined with results from past Assessment monitoring, reasonably defined the extent of groundwater impacted by lithium and molybdenum attributed to Bottom Ash Pond 1. The data suggest that the horizontal extent of groundwater with lithium and molybdenum concentrations exceeding GWPSs extends from Bottom Ash Pond 1 downgradient to MW-38B but not as far as MW-55B or MW-56B. Similarly, the vertical extent of groundwater exceeding GWPSs extends from the surface of the uppermost aquifer at MW-38B to possibly below the bottom of the screened interval of MW-38B (75 ft bgs), but not as deep as the screened interval of MW-38C (114 ft bgs to 125 ft bgs). Overall, the data enhanced understanding of relevant site conditions, assisted in selecting a remedy, and will be useful for remedy design and implementation.

### Assessment of Corrective Measures (ACM) (2019-2020)

Groundwater assessment monitoring of Bottom Ash Pond 1 identified lithium and molybdenum at SSLs above GWPSs. The exceedance of GWPSs triggered requirements for the assessment, selection, and implementation of corrective measures to prevent further releases of hazardous constituents, remediate any releases, and restore the affected area. Basin completed an ACM in 2019 (AECOM 2019b). The ACM focused on identifying and evaluating groundwater corrective measures to address the dissolved lithium and molybdenum in groundwater downgradient of Bottom Ash Pond 1.

Potentially applicable corrective measures were identified based on the nature and extent of groundwater impacts and site-specific geological and hydrogeological characteristics. Screening was performed by evaluating each corrective measure against the criteria of effectiveness, technical implementability, and relative cost. Those that were deemed ineffective and/or had significant implementation concerns were rejected from further consideration. Natural attenuation, groundwater extraction, and long-term monitoring passed the screening step and were assembled into the following two corrective measures alternatives for further detailed evaluation:

- Alternative A: Natural Attenuation and Long-Term Monitoring; and
- Alternative B: Groundwater Extraction, On-site Reuse or Disposal, and Long-Term Monitoring.

The two alternatives were evaluated against the requirements specified in 40 §§ CFR 257.96 and 257.97, broadly categorized under the criterion of effectiveness, implementability, and cost. The results of the ACMs, including an evaluation of the two alternatives, are presented in the ACMs (AECOM 2019b). The two alternatives were presented at a public meeting held on January 30, 2020 in Wheatland, Wyoming. A 30-day public comment period started on January 30, 2020 and ended on February 29, 2020. No comments were received during the 30-day period following the public meeting.

### Selection of Remedy and Remedy Implementation (2020-2021)

Following the ACM public meeting, Basin elected to implement Alternative B: Retrofit of Bottom Ash Pond 1, Groundwater Extraction, On-site Reuse or Disposal, and Long-Term Monitoring to meet the remedy requirements of the CCR rule. The Groundwater Remedy Selection Report was certified and issued in July 2020 (AECOM 2020).

Basin subsequently initiated remedial design activities within 90 days of remedy selection in accordance with § 257.97.

- The first step in the selected alternative involves the removal of all CCR from Bottom Ash Pond 1 and the placement of a liner system before returning it to service as a CCR unit. The retrofit was initiated in August 2020 and completed in March 2021.
- The second step involves the use of proven, reliable groundwater pumping technology to intercept impacted groundwater and route it back to the retrofitted Bottom Ash Pond 1. Design of this step was initiated in November 2020 and was completed in spring 2022. The following steps were completed in 2021:
  - Installation of two 6-inch recovery wells to a total depth of approximately 80 ft bgs occurred in November 2021.
  - Recovery well development and aquifer testing of the recovery wells occurred in December 2021.

### Semi-annual Assessment Monitoring (2019-2021)

Assessment monitoring in 2018 of the Bottom Ash Pond 2, Bottom Ash Pond 3, and the Ash Landfill multi-unit found that concentrations of Appendix IV constituents chromium, fluoride, and selenium exhibited SSIs above background values, but all concentrations were below GWPSs. Therefore, Assessment monitoring of this multi-unit is required on a semi-annual basis per the requirements of § 257.95. Assessment monitoring of the Emergency Holding Ponds multi-unit found that Appendix IV constituents chromium, fluoride, and selenium exhibited SSIs above background values but below GWPSs. Therefore, semi-annual Assessment monitoring of this multi-unit is also required. The results of semi-annual assessment monitoring subsequently completed in 2022 are discussed in section 3.

The first of two semi-annual Assessment monitoring events for 2019 occurred on June 4-6, 2019. The field activities and resulting data were summarized in the Sampling and Analysis Report, Assessment Monitoring, June 2019 (AECOM 2019c). The second semi-annual Assessment monitoring event for 2019 occurred on October 21-23, 2019. The field activities and data were summarized in the Sampling and Analysis Report, Assessment Monitoring, October 2019 (AECOM 2019d).

Semi-annual Assessment monitoring events for 2020 and 2021 occurred in June and October of each year. The field activities and resulting data were summarized in the 2020 Annual Groundwater Monitoring and Corrective Action Report and the 2021 Annual Groundwater Monitoring Corrective Action Report (AECOM 2021, 2022).

### 3. CCR Groundwater Monitoring and Corrective Action Activities in 2022

This section summarizes the activities conducted at LRS in 2022 to comply with the groundwater requirements of the CCR rule:

- Groundwater assessment monitoring activities for all CCR units:
  - monitoring system evaluation;
  - groundwater sampling;
  - laboratory analysis; and
  - statistical analysis of the monitoring results.
- Groundwater Corrective Action
  - A Groundwater Extraction System was designed for Bottom Ash Pond 1 and operation is anticipated to be initiated in 2023

Further details concerning each of these activities, including brief discussion of work completed during the reporting period are provided below.

#### Assessment Monitoring Activities

##### Monitoring System Evaluation

As described in the CCR Groundwater Monitoring System Report (AECOM 2017), monitoring wells were installed around the CCR unit/multi-units at LRS to: (1) facilitate collection of representative groundwater samples from the uppermost aquifer; and (2) accurately measure water table elevations to support evaluation of groundwater gradient and flow direction. All monitoring wells comprising the LRS CCR monitoring system were found to be in good condition during the assessment monitoring events conducted in 2022.

Following additional groundwater characterization of Bottom Ash Pond 1 in the spring of 2019, Basin elected to incorporate the four newly installed monitoring wells into the assessment monitoring program which continued into 2022. Water level measurements and groundwater quality samples were collected from MW-38C during the June 2022 assessment monitoring event. Water level measurements were taken at MW-54B, MW-55B and MW-56B.

Potentiometric surface maps constructed using the depth-to-groundwater measurements obtained at the beginning of each event are presented in **Attachment A**. The direction of groundwater flow in both 2022 events is generally to the northeast, consistent with previous data collected during detection and assessment monitoring from 2016 through 2021 and supports the design of the well network (**Figure 2**) to monitor background groundwater quality and the quality of groundwater downgradient of the CCR units.

##### Groundwater Sampling and Analysis

Groundwater assessment monitoring was performed at LRS in June and September 2022 for the three CCR unit/multi-units. Monitoring activities included collecting groundwater samples from the wells listed below:

CCR Unit/multi-unit	Background Wells	Downgradient Wells
Bottom Ash Pond 1	MW-52B, MW-53B	MW-21B, MW-38B, MW-38C*, MW-49B
Bottom Ash Pond 2, Bottom Ash Pond 3, Ash Landfill (multi-unit)	MW-39B, MW-32B	MW-36B, MW-37B, MW-20B, MW-14BR, MW-40B, MW-52B, MW-53B
Emergency Holding Ponds (multi-unit)	MW-41B, MW-42B, MW-43B	MW-44B, MW-45B, MW-46B, MW-47B

\* MW-38C, installed in April 2019, was added to the assessment monitoring program as a downgradient compliance well for Bottom Ash Pond 1. This well was sampled during the June 2022 monitoring event, but not the September 2022 monitoring event.

Water levels were also measured in the following monitoring wells for the purpose of evaluating groundwater flow direction and velocity:

- MW-33B, MW-34B, MW-35B, MW-48B, MW-50B, MW-51B, MW-54B, MW-55B, and MW-56B<sup>1</sup>. Monitoring well MW-22B and MW-23B were not measured for water levels in 2022 due to damage to the lock and to the well, respectively. No well repair is planned for MW-23B this well has been removed from the water level monitoring network.

Assessment monitoring sampling and analysis was performed in general accordance with procedures established in the Sampling and Analysis Plan (AECOM 2018a). The results are presented in **Attachment A**, which also includes a representative potentiometric surface map for the uppermost aquifer, inferred groundwater flow direction and estimated velocities, and a tabulated summary of field measurements and laboratory analytical data.

## Statistical Procedures and Analysis

The CCR rule requires that concentrations of Appendix III and Appendix IV constituents detected in downgradient wells during assessment monitoring be compared to background concentrations using the statistical procedures in § 257.93(g). The rule also requires the establishment of GWPSs for each Appendix IV constituent detected in downgradient wells during assessment monitoring. The detected concentrations are then compared to the GWPSs for each constituent, which are either:

- The federal Safe Drinking Water Act maximum contaminant level,
- Concentrations for cobalt, lead, lithium, and molybdenum specified in § 257.95(h)(2), or
- The background concentration (upper prediction limit [UPL]) if it is higher than the maximum contaminant level or concentration specified in § 257.95(h)(2).

The statistical analysis procedures and results from 2022 assessment monitoring for each LRS CCR unit/multi-unit are discussed below. Input data files for calculating the UPLs and lower prediction limits for the LRS multi-units are provided in **Attachment B**.

### Bottom Ash Pond 1

Appendix III and Appendix IV groundwater quality data from Bottom Ash Pond 1 Assessment Monitoring were evaluated using an interwell approach that statistically compared constituent concentrations at downgradient monitoring wells to those present at background monitoring wells. The statistical analyses were performed in accordance with the Statistical Method Certification and Statistical Methodology presented in the CCR Groundwater Monitoring System Report (AECOM 2017).

Prediction limits (i.e., parametric or nonparametric) were developed for each constituent based on the frequency of non-detect values and whether the background data for that constituent exhibited a normal, lognormal, or nonparametric distribution. For the statistical analysis, non-detect values were represented as one-half the detection

<sup>1</sup> MW-54B, MW-55B, and MW-56B were only gauged during the first monitoring event in June and are not included in the second half potentiometric map in September.

limit. No outliers were identified in the background data. Analytical data from the background monitoring wells were used to develop an UPL for the Appendix III and Appendix IV background data at 95% confidence or better. Data from each downgradient compliance monitoring well were compared to the UPL to identify SSIs over background. Mann-Kendall trend analysis was used to identify trends for constituents with SSIs. Constituents exhibiting an SSI over the background UPL were further evaluated to determine whether they are present at SSLs relative to GWPS established under § 257.95(d)(2). SSLs were identified by calculating the 95% LCL for the constituents exhibiting SSIs over background at the downgradient compliance wells at each CCR unit and comparing the 95% LCL to the established GWPS. A constituent is present at an SSL above the GWPS if the 95% LCL is greater than the GWPS.

**Table 1** summarizes the statistically determined background UPLs of each Appendix III and Appendix IV constituent for Bottom Ash Pond 1. **Table 1** also identifies applicable Appendix IV GWPSs, whether each Appendix IV constituent concentration measured in the downgradient wells exceeds the GWPS by direct comparison, and if constituent concentrations are present at an SSL above the GWPS. Assessment monitoring of Bottom Ash Pond 1 in 2022 found that lithium and molybdenum at monitoring well MW-38B exceeded their respective GWPSs at an SSL. Appendix IV SSIs were also observed in MW-21B for chromium, molybdenum, and selenium, in monitoring well MW-38B for chromium, and in monitoring well MW-49B for lead. In these SSIs did not exceed the GWPS at an SSL because the 95% LCL did not exceed the GWPS. In addition, lithium concentrations in MW-49B exceeded the GWPS but do not exceed the UPL at an SSI. Assessment monitoring of this CCR unit will continue on a semi-annual basis per the requirements of § 257.95.

### Bottom Ash Pond 2, Bottom Ash Pond 3, Ash Landfill Multi-unit

Statistical analyses of Appendix III and Appendix IV groundwater quality data for the Bottom Ash Pond 2, Bottom Ash Pond 3, Ash Landfill multi-unit were performed in a manner similar to that described above for Bottom Ash Pond 1. **Table 2** summarizes the statistically determined background UPLs of each Appendix III and Appendix IV constituent for the Bottom Ash Pond 2, Bottom Ash Pond 3, Ash Landfill multi-unit. **Table 2** also identifies applicable Appendix IV GWPSs, whether each Appendix IV constituent concentration measured in the downgradient wells exceeds a GWPS by direct comparison, and if the constituent concentrations are present at an SSL above the GWPS. Assessment monitoring of this multi-unit in 2022 found that concentrations of some Appendix IV constituents (chromium, cobalt, molybdenum, and selenium) exhibited SSIs above background values at selected monitoring wells, but the concentrations were below GWPSs. The GWPS for lithium is controlled by the UPL of the background data set (0.0848 mg/L) as directed by § 257.95(h)(3). No downgradient monitoring well concentrations exceeded the lithium GWPS. Assessment monitoring of this multi-unit will continue on a semi-annual basis per the requirements of § 257.95.

### Emergency Holding Ponds

Statistical analyses of Appendix III and Appendix IV groundwater quality data for the Emergency Holding Ponds multi-unit were also performed consistent with the methodology described above for Bottom Ash Pond 1. **Table 3** summarizes the statistically determined background UPLs of each Appendix III and IV constituent for the Emergency Holding Ponds multi-unit. **Table 3** also identifies applicable Appendix IV GWPSs, whether each Appendix IV constituent concentration measured in the downgradient wells exceeds a GWPS by direct comparison, and if the constituent concentrations are present at an SSL above the GWPS. Assessment monitoring of the Emergency Holding Ponds multi-unit in 2022 found that concentrations of one Appendix IV constituent (barium) exhibited an SSI above the background value at monitoring well MW-47B, but the concentration was below the GWPS. Assessment monitoring of this multi-unit will continue on at least a semi-annual basis per the requirements of § 257.95.

## Corrective Action Activities

### Selection of Remedy for Bottom Ash Pond 1

After completion of the Bottom Ash Pond 1 excavation and retrofit and the installation of the groundwater interceptor system extraction wells in 2021, the design of the groundwater recovery pumping system was conducted. The design includes elements of pumping, piping, electrical service, and process controls. These activities were complete in 2022 and the contracting for installation of these elements was initiated in 2022. Supply chain issues have affected the

schedule of implementation but contracting and installation of the final elements are expected to be complete in 2023 so that pumping and treatment can be initiated in 2023.

## 4. General Information

The following subsections summarize any problems encountered in the LRS CCR program through 2022, resolutions to those problems (if needed), and upcoming actions planned for 2023.

### Problems Encountered

Except for supply chain issues associated with implementation of the Bottom Ash Pond 1 groundwater remedy implementation described above, no problems were encountered during the 2022 monitoring period.

### Actions Planned for 2023

Basin plans on continuing the Assessment monitoring program for the three CCR unit/multi-units at LRS in 2023. The Assessment monitoring program will include semi-annual groundwater sampling events and the required statistical evaluations. Basin also plans to complete the implementation of the remedy selected for Bottom Ash Pond 1. Basin will prepare a semiannual report describing the progress in implementing the remedy as needed.

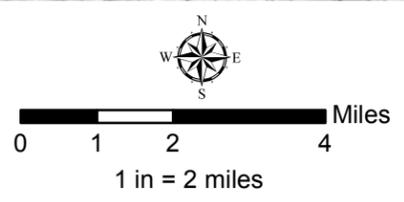
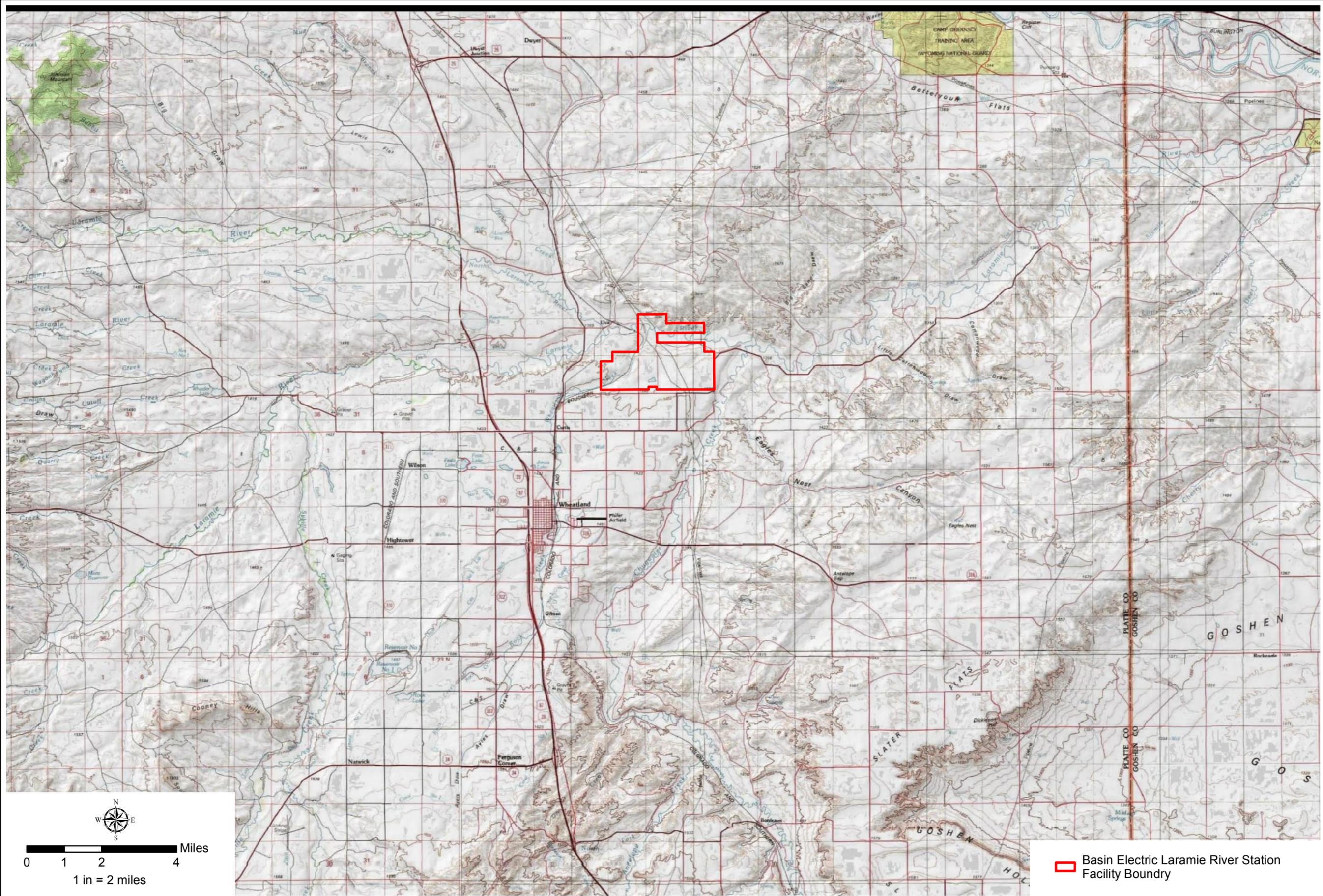
## 5. Summary and Conclusions

Two rounds of groundwater Assessment monitoring were performed at LRS in 2022. Statistical analysis of the results identified an SSI for at least one Appendix III constituent for each LRS CCR unit/multi-units. Therefore, Assessment monitoring will be performed on a semi-annual basis in 2022 for all LRS CCR unit/multi-units. Basin will also implement the selected remedy to address Appendix IV SSLs for lithium and molybdenum associated with Bottom Ash Pond 1 and continue to comply with CCR rule notification, reporting, and certification requirements.

## 6. References

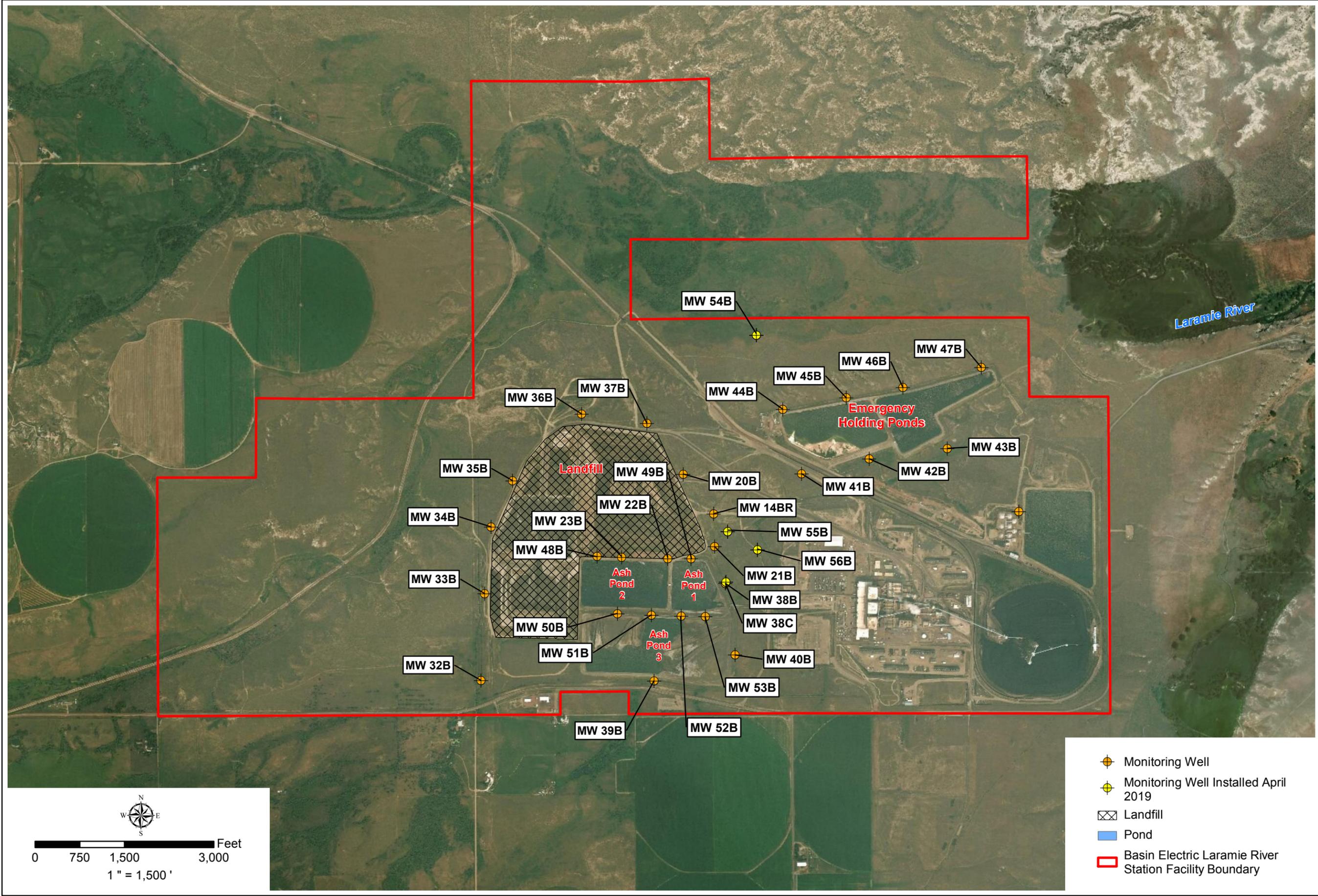
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## Figures



 Basin Electric Laramie River Station Facility Boundary

Site Location Map



## Tables

**Table 1 Statistical Analysis Methods and Results - Bottom Ash Pond 1  
Basin Electric Cooperative, Laramie River Station, Wyoming  
Groundwater Monitoring and Corrective Action Report**

Parameter (units)	Number of Samples	Percent Nondetects	Normal or Lognormal Distribution?	Statistical Test	Background UPL	GWPS Basis	GWPS	SSI Above Background?	Exceeds GWPS?	SSL Above GWPS?
<b>Appendix III</b>										
Boron (mg/L)	32	34	No/No	Nonparametric	0.179	----	----	Yes (MW-38B)	----	----
Calcium (mg/L)	32	0	No/Yes	Parametric	189.3	----	----	Yes (MW-38B)	----	----
Chloride (mg/L)	32	0	Yes/Yes	Parametric	49.9	----	----	Yes (MW-21B, MW-38B)	----	----
Fluoride (mg/L)	34	47	Yes/No	Parametric	1.327	----	----	No	----	----
pH (std units)	32	0	No/No	Nonparametric	6.94/8.837	----	----	No	----	----
Sulfate (mg/L)	32	0	No/No	Nonparametric	647.4	----	----	Yes (MW-38B)	----	----
TDS (mg/L)	32	0	No/No	Nonparametric	1,403	----	----	No	----	----
<b>Appendix IV</b>										
Antimony (mg/L)	30	100	No/No	MDL	0.002	\$257.95(h)(3)	0.006	No	----	----
Arsenic (mg/L)	30	100	No/No	MDL	0.005		0.05	No	----	----
Barium (mg/L)	34	0	Yes/Yes	Parametric	0.155		2	No	----	----
Beryllium (mg/L)	30	100	No/No	MDL	0.001		0.004	No	----	----
Cadmium (mg/L)	30	100	No/No	MDL	0.001		0.005	No	----	----
Chromium (mg/L)	34	68	Yes/Yes	Parametric	0.00583		0.1	Yes (MW-21B, MW-38B)	----	----
Cobalt (mg/L)	32	91	No/No	Nonparametric	0.001		0.006	No	----	----
Fluoride (mg/L)	34	47	No/No	Nonparametric	1.33		4	No	----	----
Lead (mg/L)	30	97	No/No	MDL	0.004		0.015	Yes (MW-49B)	----	----
Lithium (mg/L)	34	6	Yes/Yes	Parametric	0.0532		0.04	Yes (MW-38B)	Yes (MW-49B MW-38B)	Yes (MW-38B)
Mercury (mg/L)	34	100	No/No	MDL	0.0002		0.002	No	----	----
Molybdenum (mg/L)	34	24	Yes/Yes	Parametric	0.014		0.1	Yes (MW-21B, MW-38B)	Yes (MW-38B)	Yes (MW-38B)
Radium 226+228 (pCi/L)	30	70	Yes/Yes	Parametric	0.80		5	No	----	----
Selenium (mg/L)	34	71	Yes/Yes	Parametric	0.011		0.05	Yes (MW-21B)	No	No
Thallium (mg/L)	30	100	No/No	MDL	0.001		0.004	No	----	----

UPL - upper prediction limit (background reporting period 2016-2021)

GWPS - groundwater protection standard

SSI - statistically significant increase

SSL - statistically significant level (95LCL exceeds GWPS)

MCL - maximum contaminant level

mg/L - milligram per liter

pCi/L - picocuries per liter

MDL - UPL set at maximum Method Detection Limit

**Table 2 Statistical Analysis Methods and Results - Ash Pond 2, Ash Pond 3, Ash Landfill Multiunit Basin Electric Cooperative, Laramie River Station, Wyoming Groundwater Monitoring and Corrective Action Report**

Parameter (units)	Number of Samples	Percent Nondetects	Normal or Lognormal Distribution?	Statistical Test	Background UPL	GWPS Basis	GWPS	SSI Above Background?	Exceeds GWPS?	SSL Above GWPS?
<b>Appendix III</b>										
Boron (mg/L)	30	0	No/No	Nonparametric	0.311	----	----	No	----	----
Calcium (mg/L)	30	0	Yes/Yes	Parametric	208.3	----	----	Yes (MW-37B)	----	----
Chloride (mg/L)	30	0	No/No	Nonparametric	95.56	----	----	Yes (MW-37B)	----	----
Fluoride (mg/L)	32	31	No/No	Nonparametric	0.93	----	----	Yes (MW-53B)	----	----
pH (std units)	30	0	No/No	Nonparametric	6.37/7.635	----	----	No	----	----
Sulfate (mg/L)	30	0	No/No	Nonparametric	859.4	----	----	No	----	----
TDS (mg/L)	30	0	No/No	Nonparametric	1,835	----	----	No	----	----
<b>Appendix IV</b>										
Antimony (mg/L)	30	100	No/No	MDL	0.002	§257.95(h)(3)	0.006	No	----	----
Arsenic (mg/L)	30	100	No/No	MDL	0.005		0.05	No	----	----
Barium (mg/L)	32	0	No/No	Nonparametric	0.0885		2	No	----	----
Beryllium (mg/L)	30	100	No/No	MDL	0.001		0.004	No	----	----
Cadmium (mg/L)	30	100	No/No	MDL	0.001		0.005	No	----	----
Chromium (mg/L)	32	97	No/No	MDL	0.002		0.1	Yes (MW-14BR, MW-52B)	No	No
Cobalt (mg/L)	28	89	No/No	MDL	0.001		0.006	Yes (MW-52B)	----	----
Fluoride (mg/L)	32	31	No/No	Nonparametric	0.93		4	No	----	----
Lead (mg/L)	30	100	No/No	MDL	0.001		0.015	No	----	----
Lithium (mg/L)	32	6.25	Yes/Yes	Parametric	0.0848		0.0848	No	----	----
Mercury (mg/L)	30	100	No/No	MDL	0.0002		0.002	No	----	----
Molybdenum (mg/L)	32	31	No/Yes	Parametric	0.0315		0.1	Yes (MW-37B)	No	No
Radium 226+228 (pCi/L)	32	28	No/Yes	Parametric	1.198		5	No	----	----
Selenium (mg/L)	32	100	No/No	MDL	0.005		0.05	Yes (MW-14BR, MW-36B, MW-37B, MW-53B)	No	No
Thallium (mg/L)	30	100	No/No	MDL	0.001		0.004	----	----	----

UPL - upper prediction limit (background reporting period 2016-2021)

GWPS - groundwater protection standard

SSI - statistically significant increase

SSL - statistically significant level (95LCL exceeds GWPS)

MCL - maximum contaminant level

mg/L - milligram per liter

pCi/L - picocuries per liter

MDL - UPL set at maximum Method Detection Limit

**Table 3 Statistical Analysis Methods and Results - Emergency Holding Ponds  
Basin Electric Cooperative, Laramie River Station, Wyoming  
Groundwater Monitoring and Corrective Action Report**

Parameter (units)	Number of Samples	Percent Nondetects	Normal or Lognormal Distribution?	Statistical Test	Background UPL	GWPS Basis	GWPS	SSI Above Background?	Exceeds GWPS?	SSL Above GWPS?
<b>Appendix III</b>										
Boron (mg/L)	45	0	No/No	Nonparametric	1.26	----	----	No	----	----
Calcium (mg/L)	45	0	Yes/Yes	Parametric	446.7	----	----	No	----	----
Chloride (mg/L)	45	0	No/No	Nonparametric	320	----	----	No	----	----
Fluoride (mg/L)	45	78	Yes/Yes	Parametric	0.694	----	----	Yes (MW-45B)	----	----
pH (std units)	45	0	No/No	Nonparametric	6.45/7.9	----	----	No	----	----
Sulfate (mg/L)	45	4	No/No	Nonparametric	2,200	----	----	No	----	----
TDS (mg/L)	45	0	No/No	Nonparametric	3,900	----	----	No	----	----
<b>Appendix IV</b>										
Antimony (mg/L)	45	100	No/No	MDL	0.002	§257.95(h)(3)	0.006	No	----	----
Arsenic (mg/L)	45	100	No/No	MDL	0.005		0.05	No	----	----
Barium (mg/L)	45	0	No/Yes	Parametric	0.0552		2	Yes (MW-47B)	No	No
Beryllium (mg/L)	45	100	No/No	MDL	0.001		0.004	No	----	----
Cadmium (mg/L)	45	100	No/No	MDL	0.001		0.005	No	----	----
Chromium (mg/L)	45	27	No/Yes	Parametric	0.0063		0.1	No	----	----
Cobalt (mg/L)	45	88	Yes/Yes	Parametric	0.00121		0.006	No	----	----
Fluoride (mg/L)	45	78	Yes/Yes	Parametric	0.694		4	Yes (MW-45B)	No	No
Lead (mg/L)	45	100	No/No	MDL	0.001		0.015	No	----	----
Lithium (mg/L)	45	4	Yes/No	Parametric	0.0809		0.04	No	----	----
Mercury (mg/L)	42	100	No/No	MDL	0.0002		0.002	No	----	----
Molybdenum (mg/L)	45	0	No/No	Nonparametric	0.177		0.1	No	----	----
Radium 226+228 (pCi/L)	45	58	Yes/Yes	Parametric	0.826		5	No	----	----
Selenium (mg/L)	45	49	Yes/Yes	Parametric	0.014		0.05	No	----	----
Thallium (mg/L)	44	100	No/No	MDL	0.001		0.004	No	----	----

UPL - upper prediction limit(background reporting period 2016- 2021)

GWPS - groundwater protection standard

SSI - statistically significant increase

SSL - statistically significant level (95LCL exceeds GWPS)

MCL - maximum contaminant level

mg/L - milligram per liter

pCi/L - picocuries per liter

MDL - UPL set at maximum Method Detection Limit

## **Attachment A**

# **Sampling and Analysis Report, 2022**

# 2022 Sampling and Analysis Report CCR Monitoring Program

Laramie River Station  
Wheatland, Wyoming

Basin Electric Power Cooperative

January 31, 2023

## Prepared for:

Basin Electric Power Cooperative  
Bismarck, North Dakota

## Prepared by:

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1601 Prospect Park Way  
Fort Collins, CO 80525  
aecom.com

Project number: 60632474

## Table of Contents

List of Acronyms.....	ii
1. Introduction .....	1
2. Groundwater Flow.....	2
3. Groundwater Quality .....	3

## Figures

Figure 1	Potentiometric Surface Map June 27, 2022
Figure 2	Potentiometric Surface Map September 28, 2022

## Tables

Table 1	Groundwater Level Measurements and Elevations 2022
Table 2	Groundwater Analytical Data – Bottom Ash Pond 1
Table 3	Groundwater Analytical Data – Bottom Ash Pond 2, Bottom Ash Pond 3, Ash Landfill
Table 4	Groundwater Analytical Data – Emergency Holding Ponds
Table 5	Groundwater Analytical Data – Field Blanks

## List of Appendices

Appendix I	Groundwater Flow Calculations
Appendix II	Analytical Laboratory and Data Validation Reports

## List of Acronyms

AECOM	AECOM Technical Services, Inc.
Basin	Basin Electric Power Cooperative
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
LRS	Laramie River Station
USEPA	United States Environmental Protection Agency

# 1. Introduction

On behalf of Basin Electric Power Cooperative (Basin), AECOM Technical Services, Inc. (AECOM) prepared this Coal Combustion Residuals (CCR) Groundwater Sampling and Analysis Report for the Basin Laramie River Station (LRS).

This Sampling and Analysis Report was prepared to present the results of sampling and analysis of groundwater conducted per the monitoring requirements of the United States Environmental Protection Agency (USEPA) CCR rule (Chapter 40 of the Code of Federal Regulations [CFR], §§ 257.90 to 257.98).

The following three CCR unit/multi-units are present at LRS:

- Bottom Ash Pond 1;
- Bottom Ash Pond 2, Bottom Ash Pond 3, Ash Landfill (multi-unit); and
- Emergency Holding Ponds (multi-unit).

Semi-annual groundwater Assessment monitoring was performed at LRS in June and September 2022 for the three CCR unit/multi-units. Assessment monitoring involves groundwater level measurements, collection of groundwater samples from CCR monitoring wells, and analysis for Part 257 Appendix III and selected Appendix IV parameters.

## 2. Groundwater Flow

As required by 40 CFR § 257.93(c), groundwater elevations were measured in each well prior to purging each time groundwater was sampled. The groundwater measurements for the 2022 Assessment monitoring events, presented in **Table 1**, were used to create potentiometric surface maps for the uppermost aquifer for the baseline monitoring events. The resulting potentiometric surface maps (contained in the operating record) were used to evaluate the direction of groundwater flow and hydraulic gradient for each subject CCR unit/multi-unit. **Figure 1** and **Figure 2** represent a potentiometric surface map, including inferred groundwater flow direction for each CCR unit/multiunit, constructed using measurements taken on June 27, 2022 and September 28, 2022, respectively. The potentiometric surface and inferred groundwater flow direction for the events completed in 2022 were generally consistent with previous events that have been conducted at LRS since monitoring began in 2016.

Groundwater flow velocities were calculated for each unit/multi-unit using measurements from the semi-annual assessment monitoring events in June and September 2022, as presented in **Appendix I** and summarized below:

CCR Unit/multi-unit	Calculated Seepage Velocities (ft/day)		
	Minimum	Maximum	Average
Bottom Ash Pond 1	0.033	0.50	0.13
Bottom Ash Pond 2, Bottom Ash Pond 3, Ash Landfill	0.012	2.7	0.18
Emergency Holding Ponds	0.05	2.9	0.36

Based on the groundwater flow conditions documented in this section, the relative function of the monitoring wells employed in the LRS CCR groundwater monitoring system is as follows:

CCR Unit/multi-unit	Background Wells	Downgradient Wells
Bottom Ash Pond 1	MW-52B, MW-53B	MW-49B, MW-21B, MW-38B, MW-38C*
Bottom Ash Pond 2, Bottom Ash Pond 3, Ash Landfill	MW-39B, MW-32B	MW-36B, MW-37B, MW-20B, MW-14BR, MW-40B, MW-52B, MW-53B
Emergency Holding Ponds	MW-41B, MW-42B, MW-43B	MW-44B, MW-45B, MW-46B, MW-47B

\* MW-38C was added to the Bottom Ash Pond 1 monitoring program following its installation during groundwater characterization activities in the spring of 2019.

The following monitoring wells are also included in the LRS CCR monitoring system for the purpose of measuring groundwater elevations and evaluating groundwater flow direction and velocity in the vicinity of the bottom ash ponds and landfill: MW-33B, MW-34B, MW-35B, MW-48B, MW-50B, MW-51B, MW-54B, MW-55B, and MW-56B. These wells were added to the list following their installation during groundwater characterization activities conducted in the spring of 2019. Well MW-23B was removed from the monitoring well network after the well was found to be damaged in 2019 and it was determined the well was not needed to determine groundwater flow in the area. MW-22B could not be opened due to a damaged lock and therefore was not gauged during the 2022 reporting period. Monitoring wells MW MW-54B, MW-55B, and MW-56B were only gauged during the June 2022 monitoring event and thus are not included in the potentiometric surface map for September 2022.

### 3. Groundwater Quality

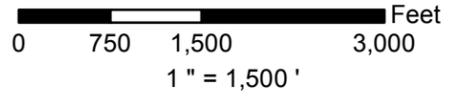
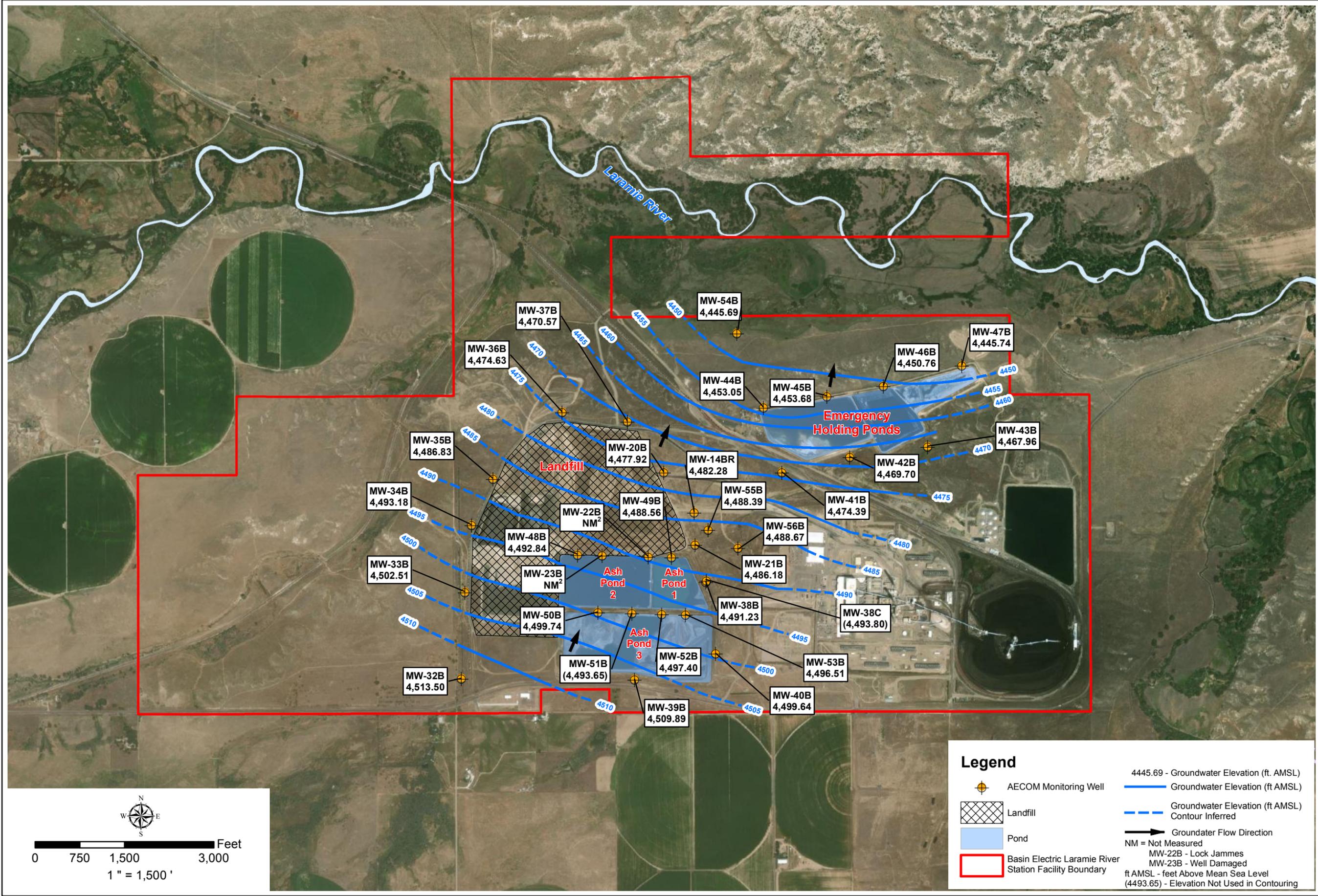
The semiannual Assessment monitoring events in June and September 2022 included samples from each well in the CCR unit/multiunit program except for MW-38C that was omitted from the October 2022 sampling event due to field sampling error. The samples collected for each event were submitted under chain-of-custody to the Eurofins Denver Laboratory located in Arvada, Colorado for analysis of the analytes included CCR Rule Appendix III and Appendix IV. The laboratory reports issued by Eurofins for these events were reviewed against the chain-of-custody forms and for compliance with maximum holding times and conformance with project-required methods with copies included in the LRS operating record. The reported analytical results from Eurofins were reviewed and verified by an AECOM data validator/chemist using USEPA guidelines (USEPA 2020<sup>1</sup>). Data validation concluded that field and laboratory precision, field and laboratory accuracy, method compliance, and data set completeness were acceptable based on the data reported. No data were missing or rejected, and all reported data are suitable for their intended use as reported with the clarifications and qualifications noted. Data validation reports were prepared for each monitoring event and are included in the operating record. The validated results for the June and September 2022 sampling events were compiled into summary form as presented in **Tables 2, 3, and 4** with the results of quality assurance/quality control field blank samples presented in **Table 5**. Copies of the Eurofins analytical laboratory and data validation reports for the June and September 2022 events are included as **Appendix II**.

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<sup>1</sup> U.S. Environmental Protection Agency (USEPA). 2020. Superfund CLP National Functional Guidelines for Data Review. November 2020.

## Figures

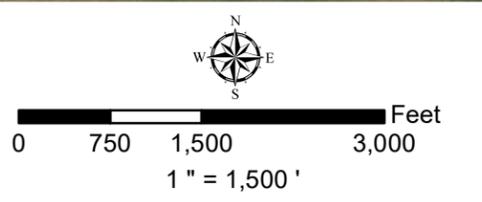
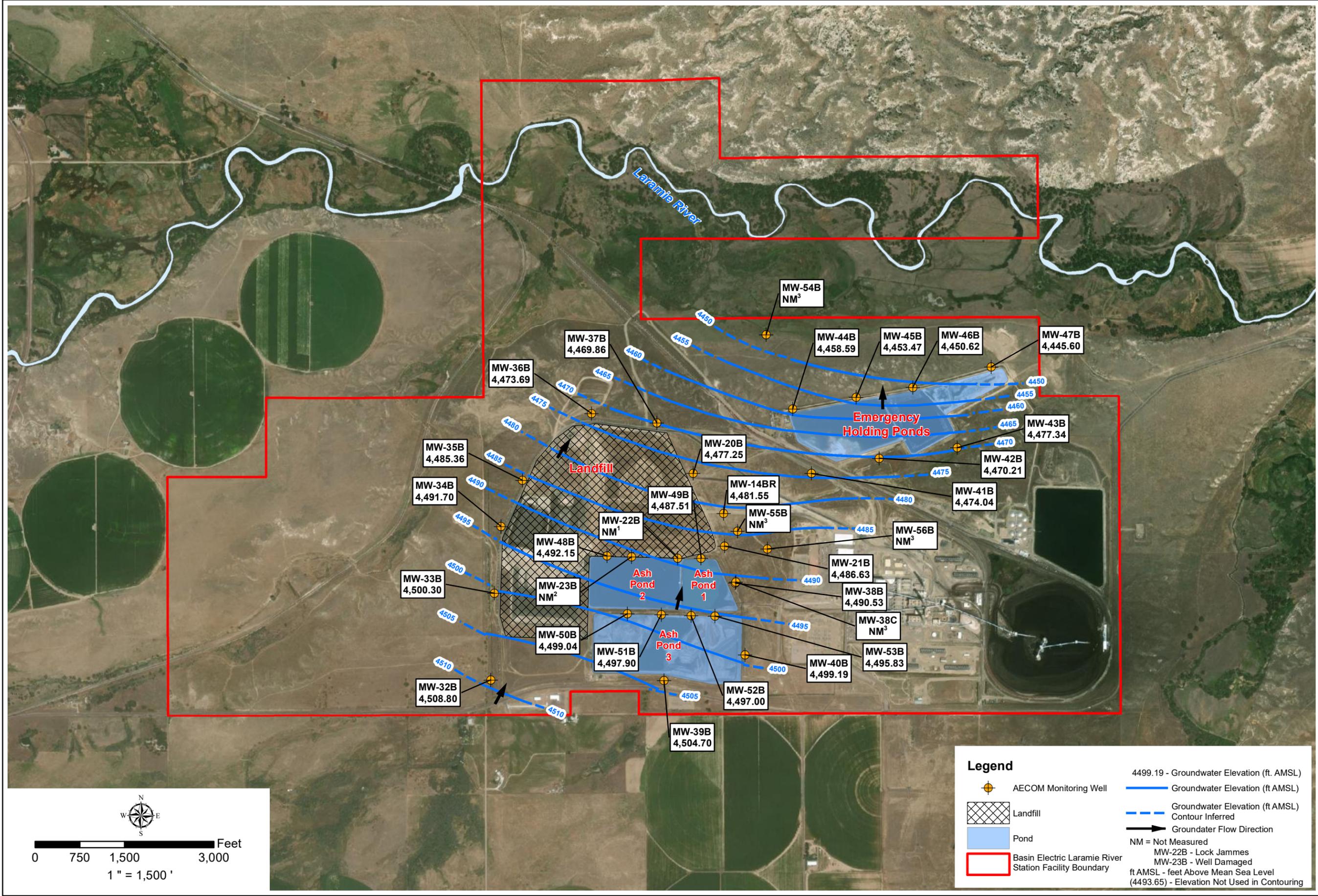
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**Legend**

- AECOM Monitoring Well
- Landfill
- Pond
- Basin Electric Laramie River Station Facility Boundary
- 4445.69 - Groundwater Elevation (ft. AMSL)
- Groundwater Elevation (ft AMSL) Contour Inferred
- Groundwater Flow Direction
- NM = Not Measured
- MW-22B - Lock Jammes
- MW-23B - Well Damaged
- ft AMSL - feet Above Mean Sea Level
- (4493.65) - Elevation Not Used in Contouring

Potentiometric Surface Map  
June, 2022



**Legend**

- AECOM Monitoring Well
- Landfill
- Pond
- Basin Electric Laramie River Station Facility Boundary
- 4499.19 - Groundwater Elevation (ft. AMSL)
- Groundwater Elevation (ft AMSL) Contour Inferred
- Groundwater Flow Direction
- NM = Not Measured
- MW-22B - Lock Jammes
- MW-23B - Well Damaged
- ft AMSL - feet Above Mean Sea Level
- (4493.65) - Elevation Not Used in Contouring

## Tables

**Table 1: Groundwater Level Measurements and Elevations 2022**  
**Basin Electric Cooperative, Laramie River Station, Wyoming**  
**2022 Sampling and Analysis Report**

Location ID	TOC Elevation (feet amsl)	Date	Depth To Water (TOC feet)	Water Level Elevation (feet amsl)	Date	Depth To Water (TOC feet)	Water Level Elevation (feet amsl)
MW-14BR	4,537.90	6/27/2022	55.62	4,482.28	9/28/2022	56.35	4,481.55
MW-20B	4,535.47	6/27/2022	57.55	4,477.92	9/28/2022	58.22	4,477.25
MW-21B	4,539.58	6/27/2022	53.40	4,486.180	9/28/2022	52.95	4,486.63
MW-22B	4,569.21	6/27/2022	NM <sup>1</sup>	NM <sup>1</sup>	9/28/2022	NM <sup>1</sup>	NM <sup>1</sup>
MW-23B	4,569.48	6/27/2022	NM <sup>2</sup>	NM <sup>2</sup>	9/28/2022	NM <sup>2</sup>	NM <sup>2</sup>
MW-32B	4,567.11	6/27/2022	53.61	4,513.50	9/28/2022	58.31	4,508.80
MW-33B	4,566.61	6/27/2022	64.10	4,502.51	9/28/2022	66.31	4,500.30
MW-34B	4,554.72	6/27/2022	61.54	4,493.18	9/28/2022	63.02	4,491.70
MW-35B	4,548.67	6/27/2022	61.84	4,486.83	9/28/2022	63.31	4,485.36
MW-36B	4,532.44	6/27/2022	57.81	4,474.63	9/28/2022	58.75	4,473.69
MW-37B	4,530.37	6/27/2022	59.80	4,470.57	9/28/2022	60.51	4,469.86
MW-38B	4,547.48	6/27/2022	56.25	4,491.23	9/28/2022	56.95	4,490.53
MW-38C	4,549.45	6/27/2022	55.65	4,493.80	9/28/2022	NM <sup>3</sup>	NM <sup>3</sup>
MW-39B	4,581.45	6/27/2022	75.56	4,505.89	9/28/2022	76.75	4,504.70
MW-40B	4,589.59	6/27/2022	89.95	4,499.64	9/28/2022	90.40	4,499.19
MW-41B	4,529.64	6/27/2022	55.25	4,474.39	9/28/2022	55.60	4,474.04
MW-42B	4,515.83	6/27/2022	46.13	4,469.70	9/28/2022	45.62	4,470.21
MW-43B	4,501.44	6/27/2022	33.48	4,467.96	9/28/2022	24.10	4,477.34
MW-44B	4,529.39	6/27/2022	76.34	4,453.05	9/28/2022	70.80	4,458.59
MW-45B	4,530.92	6/27/2022	77.24	4,453.68	9/28/2022	77.45	4,453.47
MW-46B	4,527.72	6/27/2022	76.96	4,450.76	9/28/2022	77.10	4,450.62
MW-47B	4,522.60	6/27/2022	76.86	4,445.74	9/28/2022	77.00	4,445.60
MW-48B	4,568.66	6/27/2022	75.82	4,492.84	9/28/2022	76.51	4,492.15
MW-49B	4,564.36	6/27/2022	75.80	4,488.56	9/28/2022	76.85	4,487.51
MW-50B	4,588.34	6/27/2022	88.60	4,499.74	9/28/2022	89.30	4,499.04
MW-51B	4,588.90	6/27/2022	95.25	4,493.65	9/28/2022	91.00	4,497.90
MW-52B	4,589.60	6/27/2022	92.20	4,497.40	9/28/2022	92.60	4,497.00
MW-53B	4,589.23	6/27/2022	92.72	4,496.51	9/28/2022	93.40	4,495.83
MW-54B	4,454.80	6/27/2022	9.11	4,445.69	9/28/2022	NM <sup>3</sup>	NM <sup>3</sup>
MW-55B	4,532.37	6/27/2022	45.98	4,486.39	9/28/2022	NM <sup>3</sup>	NM <sup>3</sup>
MW-56B	4,541.95	6/27/2022	53.28	4,488.67	9/28/2022	NM <sup>3</sup>	NM <sup>3</sup>

**Notes:**

- TOC = top of casing
- feet amsl = feet above mean sea level
- NM<sup>1</sup> = Not Measured - Well Damaged
- NM<sup>2</sup> = Not Measured - Lock Damaged
- NM<sup>3</sup> = No measured

Geodetic Datum: North American Datum of 1983 (NAD 83)  
 Vertical Datum: North American Vertical Datum of 1988 (NAVD 88)

**Table 2: Groundwater Analytical Data - Bottom Ash Pond 1  
Basin Electric Cooperative, Laramie River Station, Wyoming  
Sampling and Analysis Report**

Relative Location	Well ID	Sample Date	Chemical Name Unit Sample Type	Appendix III Constituents						
				Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH SU	Sulfate mg/L	TDS mg/L
Background	MW-52B	6/27/2022	N	0.180	161	48.2	< 0.500 U	7.54	501	1040
	MW-52B	09/29/2022	N	0.181	163	50.1	< 0.500 U	7.46	506	1080
	MW-53B	6/28/2022	N	0.153	103	52.6	1.09	7.75	252	681
	MW-53B	9/29/2022	N	0.174	145	51.6	1.01	7.55	255	660
Downgradient	MW-21B	6/28/2022	N	0.157	177	146 F1	0.765 F1	7.71	459	1140
	MW-21B	9/28/2022	N	0.151	202	167	0.591	7.46	531	1310
	MW-38B	6/28/2022	N	3.35	479	310	< 0.500 U	7.47	5820	8180
	MW-38B	9/28/2022	N	3.090	476	303	1.43	7.21	5450	7980
	MW-38C	6/28/2022	N	< 0.100 U	105	29.1	0.653	7.5	230	627
	MW-38C	6/28/2022	FD	< 0.100 U	101	29.2	0.643		228	617
	MW-49B	6/27/2022	N	0.164	150	34.8	0.573	7.69	442	882
	MW-49B	9/28/2022	N	0.212	145	26.3	0.604	7.3	329	773

Notes:  
mg/L = milligrams per liter  
U = undetected at the reporting limit/concentration  
N = primary Sample  
FD = field duplicate  
J+ = estimated concentration, biased high

**Table 2: Groundwater Analytical Data - Bottom Ash Pond 1  
Basin Electric Cooperative, Laramie River Station, Wyoming  
Sampling and Analysis Report**

Relative Location	Well ID	Sample Date	Chemical Name Unit Sample Type	Appendix IV Constituents													
				Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Cadmium mg/L	Chromium mg/L	Cobalt mg/L	Lead mg/L	Lithium mg/L	Mercury mg/L	Molybdenum mg/L	Radium 226/228 pCi/L	Selenium mg/L	Thallium mg/L
Background	MW-52B	6/27/2022	N	< 0.00200 U	< 0.00500 U	0.0718	< 0.00100 U	< 0.00100 U	< 0.00500 U	0.00128	< 0.00100 U	0.0546	< 0.000200 U	< 0.0100 U	1.38	< 0.00500 U	< 0.00100 U
	MW-52B	09/29/2022	N	< 0.00200 U	< 0.00500 U	0.0886	< 0.00100 U	< 0.00100 U	0.00378	0.00227	0.00139	0.0635	< 0.000200 U	0.00393	< 1.22	< 0.00500 U	< 0.00100 U
	MW-53B	6/28/2022	N	< 0.00200 U	< 0.00500 U	0.0454	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	0.0418	< 0.000200 U	< 0.0100 U	0.555	0.0101	< 0.00100 U
	MW-53B	9/29/2022	N	< 0.00200 U	< 0.00500 U	0.158	< 0.00100 U	< 0.00100 U	0.0178	0.00288	0.00299	0.0695	< 0.000200 U	0.00823	< 1.17	0.0110	< 0.00100 U
Downgradient	MW-21B	6/28/2022	N	< 0.00200 U	< 0.00500 U	0.0426	< 0.00100 U	< 0.00100 U	0.0105	< 0.00100 U	< 0.00100 U	0.0350	< 0.000200 U	0.0151	< 0.542 U	0.0325	< 0.00100 U
	MW-21B	9/28/2022	N	< 0.00200 U	< 0.00500 U	0.0510	< 0.00100 U	< 0.00100 U	0.0134	< 0.00100 U	< 0.00100 U	0.0502	< 0.000200 U	0.0160	< 0.467	0.0437	< 0.00100 U
	MW-38B	6/28/2022	N	< 0.00200 U	< 0.00500 U	0.0156	< 0.00100 U	< 0.00100 U	0.00620	< 0.00100 U	< 0.00100 U	0.119	< 0.000200 U	0.199	0.768	0.00538	< 0.00100 U
	MW-38B	9/28/2022	N	< 0.00200 U	< 0.00500 U	0.0165	< 0.00100 U	< 0.00100 U	0.00728	< 0.00100 U	< 0.00100 U	0.129	< 0.000200 U	0.203	1.01	0.00538	< 0.00100 U
	MW-38C	6/28/2022	N	< 0.00200 U	< 0.00500 U	0.0473	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	0.0256	< 0.000200 U	< 0.0100 U	0.648	0.00538	< 0.00100 U
	MW-38C	6/28/2022	FD	< 0.00200 U	< 0.00500 U	0.0451	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	0.0231	< 0.000200 U	< 0.0100 U	1.07	0.00594	< 0.00100 U
	MW-49B	6/27/2022	N	< 0.00200 U	< 0.00500 U	0.0942	< 0.00100 U	< 0.00100 U	< 0.00500 U	0.00114	0.00129	0.0510	< 0.000200 U	< 0.0100 U	0.905	< 0.00500 U	< 0.00100 U
	MW-49B	9/28/2022	N	< 0.00200 U	< 0.00500 U	0.0800	< 0.00100 U	< 0.00100 U	0.00235	< 0.00100 U	0.00103	0.0505	< 0.000200 U	0.00326	0.859	< 0.00500 U	< 0.00100 U

Notes:  
mg/L = milligrams per liter  
U = undetected at the reporting limit/concentration  
N = primary Sample  
FD = field duplicate  
J+ = estimated concentration, biased high

**Table 3: Groundwater Analytical Data - Bottom Ash Pond 2, Bottom Ash Pond 3, Ash Landfill  
Basin Electric Cooperative, Laramie River Station, Wyoming  
Sampling and Analysis Report**

Relative Location	Well ID	Sample Date	Chemical Name Unit	Appendix III Constituents						
				Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH SU	Sulfate mg/L	TDS mg/L
			Sample Type							
Background	MW-32B	6/29/2022	N	0.316	205	103	0.553	7.41	942	1830
	MW-32B	9/27/2022	N	0.300	199	98.0	< 0.500 U	6.99	899	1790
	MW-39B	6/29/2022	N	0.193	190	48.6	1.54	< 9999	585	1260
	MW-39B	9/29/2022	N	0.173	133	53.9	0.673	7.05	481	1150
Downgradient	MW-14BR	6/29/2022	N	0.154	162	85.6	< 0.500 U	7.72	384	944
	MW-14BR	9/28/2022	FD	0.160	180	87.4	< 0.500 U	7.5	393	1010
	MW-14BR	9/28/2022	N	0.157	176	85.2	< 0.500 U	7.5	389	981
	MW-20B	6/29/2022	N	0.243	140	52.3	0.754	7.68	422	978
	MW-20B	9/28/2022	N	0.243	143	50.4	0.707	7.54	396	943
	MW-36B	6/29/2022	N	0.112	134	45.4 F1	0.737 F1	7.81	374	861
	MW-36B	9/27/2022	N	0.121	130	46.0	0.715	7.52	341	847
	MW-37B	6/29/2022	N	0.176	219	121	0.554	7.56	610	1320
	MW-37B	9/27/2022	N	0.168	221	116	< 0.500 U	7.25	601	1370
	MW-40B	6/27/2022	N	0.180	132	29.6	0.983	7.57	327	832
	MW-40B	9/29/2022	N	0.166	131	32.7	0.862	7.35	324	862
	MW-52B	6/27/2022	N	0.180	161	48.2	< 0.500 U	7.54	501	1040
	MW-52B	09/29/2022	N	0.181	163	50.1	< 0.500 U	7.46	506	1080
	MW-53B	6/28/2022	N	0.153	103	52.6	1.09	7.75	252	681
	MW-53B	9/29/2022	N	0.174	145	51.6	1.01	7.55	255	660

Notes:  
mg/L = milligrams per liter  
U = undetected at the reporting limit/concentration  
UJ = undetected, reporting limit is estimated  
FD = field duplicate  
N = primary sample  
J+ = estimated concentration, biased high

**Table 3: Groundwater Analytical Data - Bottom Ash Pond 2, Bottom Ash Pond  
Basin Electric Cooperative, Laramie River Station, Wyoming  
Sampling and Analysis Report**

Relative Location	Well ID	Sample Date	Chemical Name Unit	Appendix IV Constituents													
				Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Cadmium mg/L	Chromium mg/L	Cobalt mg/L	Lead mg/L	Lithium mg/L	Mercury mg/L	Molybdenum mg/L	Radium 226/228 pCi/L	Selenium mg/L	Thallium mg/L
Background	MW-32B	6/29/2022	N	< 0.00200 U	< 0.00500 U	0.0258	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	0.0796	< 0.000200 U	< 0.0100 U	0.583	< 0.00500 U	< 0.00100 U
	MW-32B	9/27/2022	N	< 0.00200 U	< 0.00500 U	0.0325	< 0.00100 U	< 0.00100 U	< 0.00200 U	< 0.00100 U	< 0.00100 U	0.0801	< 0.000200 U	0.00312	0.667	< 0.00500 U	< 0.00100 U
	MW-39B	6/29/2022	N	< 0.00200 U	< 0.00500 U	0.0292	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	0.0616	< 0.000200 U	< 0.0100 U	0.713	< 0.00500 U	< 0.00100 U
	MW-39B	9/29/2022	N	< 0.00200 U	< 0.00500 U	0.0311	< 0.00100 U	< 0.00100 U	< 0.00200 U	< 0.00100 U	< 0.00100 U	0.0676	< 0.000200 U	0.00398	1.00	0.00500	< 0.00100 U
Downgradient	MW-14BR	6/29/2022	N	< 0.00200 U	< 0.00500 U	0.0388	< 0.00100 U	< 0.00100 U	0.00741	< 0.00100 U	< 0.00100 U	0.0308	< 0.000200 U	< 0.0100 U	< 0.549 U	0.0101	< 0.00100 U
	MW-14BR	9/28/2022	FD	< 0.00200 U	< 0.00500 U	0.0459	< 0.00100 U	< 0.00100 U	0.00796	< 0.00100 U	< 0.00100 U	0.0388	< 0.000200 U	0.0103	0.746	0.0160	< 0.00100 U
	MW-14BR	9/28/2022	N	< 0.00200 U	< 0.00500 U	0.0446	< 0.00100 U	< 0.00100 U	0.00780	< 0.00100 U	< 0.00100 U	0.0342	< 0.000200 U	0.0101	0.628	0.0150	< 0.00100 U
	MW-20B	6/29/2022	N	< 0.00200 U	< 0.00500 U	0.0534	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	0.0350	< 0.000200 U	< 0.0100 U	< 0.585 U	< 0.00500 U	< 0.00100 U
	MW-20B	9/28/2022	N	< 0.00200 U	< 0.00500 U	0.0548	< 0.00100 U	< 0.00100 U	< 0.00200 U	< 0.00100 U	< 0.00100 U	0.0383	< 0.000200 U	0.00808	0.465	< 0.00500 U	< 0.00100 U
	MW-36B	6/29/2022	N	< 0.00200 U	< 0.00500 U	0.0650	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	0.0309	< 0.000200 U	< 0.0100 U	0.545	0.00617	< 0.00100 U
	MW-36B	9/27/2022	N	< 0.00200 U	< 0.00500 U	0.0665	< 0.00100 U	< 0.00100 U	< 0.00200 U	< 0.00100 U	< 0.00100 U	0.0344	< 0.000200 U	0.00723	0.842	0.00838	< 0.00100 U
	MW-37B	6/29/2022	N	< 0.00200 U	< 0.00500 U	0.0691	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	0.0412	< 0.000200 U	0.0705	< 0.489 U	0.0125	< 0.00100 U
	MW-37B	9/27/2022	N	< 0.00200 U	< 0.00500 U	0.0633	< 0.00100 U	< 0.00100 U	< 0.00200 U	< 0.00100 U	< 0.00100 U	0.0418	< 0.000200 U	0.0738	0.479	0.0136	< 0.00100 U
	MW-40B	6/27/2022	N	< 0.00200 U	< 0.00500 U	0.0267	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	0.0524	< 0.000200 U	< 0.0100 U	1.24	< 0.00500 U	< 0.00100 U
	MW-40B	9/29/2022	N	< 0.00200 U	< 0.00500 U	0.0289	< 0.00100 U	< 0.00100 U	< 0.00200 U	< 0.00100 U	< 0.00100 U	0.0630	< 0.000200 U	0.00723	0.507	0.00524	< 0.00100 U
	MW-52B	6/27/2022	N	< 0.00200 U	< 0.00500 U	0.0718	< 0.00100 U	< 0.00100 U	< 0.00500 U	0.00128	< 0.00100 U	0.0546	< 0.000200 U	< 0.0100 U	1.38	< 0.00500 U	< 0.00100 U
	MW-52B	09/29/2022	N	< 0.00200 U	< 0.00500 U	0.0886	< 0.00100 U	< 0.00100 U	0.00378	0.00227	0.00139	0.0635	< 0.000200 U	0.00393	< 1.22	< 0.00500 U	< 0.00100 U
	MW-53B	6/28/2022	N	< 0.00200 U	< 0.00500 U	0.0454	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	0.0418	< 0.000200 U	< 0.0100 U	0.555	0.0101	< 0.00100 U
	MW-53B	9/29/2022	N	< 0.00200 U	< 0.00500 U	0.158	< 0.00100 U	< 0.00100 U	0.0178	0.00288	0.00299	0.0695	< 0.000200 U	0.00823	< 1.17	0.0110	< 0.00100 U

Notes:  
mg/L = milligrams per liter  
U = undetected at the reporting limit/concentration  
UJ = undetected, reporting limit is estimated  
FD = field duplicate  
N = primary sample  
J+ = estimated concentration, biased high

**Table 4: Groundwater Analytical Data - Emergency Holding Ponds  
Basin Electric Cooperative, Laramie River Station, Wyoming  
Sampling and Analysis Report**

Relative Location	Well ID	Sample Date	Chemical Name Unit	Appendix III Constituents						
				Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH SU	Sulfate mg/L	TDS mg/L
			Sample Type							
Background	MW-41B	6/29/2022	N	0.914	158	103	0.507	7.67	912	1610
	MW-41B	9/29/2022	N	0.921	146	93.6	< 0.500 U	7.41	780	1520
	MW-42B	6/29/2022	N	0.820	427	356	0.616	7.43	2740	4150
	MW-42B	9/27/2022	N	0.696	154	122	< 0.500 U	7.47	959	1770
	MW-43B	6/29/2022	N	0.314	91.9	44.7	0.606	7.48	367	819
	MW-43B	9/27/2022	N	0.321	101	51.9	0.583	7.28	392	861
Downgradient	MW-44B	6/30/2022	N	0.105	174	62.0	0.719	7.66	456	1090
	MW-44B	9/27/2022	N	0.110	182	61.1	0.617	7.37	438	1090
	MW-45B	6/30/2022	N	0.188	150	49.9	0.774	7.71	384	938
	MW-45B	9/27/2022	N	0.0426	155	48.8	0.922	7.47	380	904
	MW-46B	6/29/2022	N	< 0.100 U	77.8	21.8	0.886	7.69	186	538
	MW-46B	9/27/2022	N	< 0.100 U	106	46.3	0.557	7.27	276	709
	MW-47B	6/29/2022	N	0.127	124	35.0	< 0.500 U	7.61	321	747
	MW-47B	9/27/2022	N	0.143	127	33.3	< 0.500 U	7.33	319	760

Notes:  
mg/L = milligrams per liter  
U = undetected at the reporting limit/concentration  
N = primary sample  
J+ = estimated concentration, biased high

**Table 4: Groundwater Analytical Data - Emergency Holding Ponds  
Basin Electric Cooperative, Laramie River Station, Wyoming  
Sampling and Analysis Report**

				Appendix IV Constituents													
Chemical Name Unit				Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Cadmium mg/L	Chromium mg/L	Cobalt mg/L	Lead mg/L	Lithium mg/L	Mercury mg/L	Molybdenum mg/L	Radium 226/228 pCi/L	Selenium mg/L	Thallium mg/L
Relative Location	Well ID	Sample Date	Sample Type														
Background	MW-41B	6/29/2022	N	< 0.00200 U	< 0.00500 U	0.0183	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	0.0483	< 0.000200 U	0.113	0.657	0.00557	< 0.00100 U
	MW-41B	9/29/2022	N	< 0.00200 U	< 0.00500 U	0.0175	< 0.00100 U	< 0.00100 U	0.00528	< 0.00100 U	< 0.00100 U	0.0524	< 0.000200 U	0.109	< 0.448	0.00569	< 0.00100 U
	MW-42B	6/29/2022	N	< 0.00200 U	< 0.00500 U	0.0198	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	0.0730	< 0.000200 U	0.0458	< 0.501 U	0.00567	< 0.00100 U
	MW-42B	9/27/2022	N	< 0.00200 U	< 0.00500 U	0.0174	< 0.00100 U	< 1.00	0.00231	< 0.00100 U	< 0.00100 U	0.0410	< 0.000200 U	0.0418	1.38	0.0180	< 0.00100 U
	MW-43B	6/29/2022	N	< 0.00200 U	< 0.00500 U	0.0321	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	0.0335	< 0.000200 U	0.0131	< 0.571 U	< 0.00500 U	< 0.00100 U
	MW-43B	9/27/2022	N	< 0.00200 U	< 0.00500 U	0.0280	< 0.00100 U	< 0.00100 U	< 0.00200 U	< 0.00100 U	< 0.00100 U	0.0315	< 0.000200 U	0.0125	< 0.502	< 0.00500 U	< 0.00100 U
Downgradient	MW-44B	6/30/2022	N	< 0.00200 U	< 0.00500 U	0.0526	< 0.00100 U	< 0.00100 U	0.00562	< 0.00100 U	< 0.00100 U	0.0343	< 0.000200 U	< 0.0100 U	< 0.532 U	0.00629	< 0.00100 U
	MW-44B	9/27/2022	N	< 0.00200 U	< 0.00500 U	0.0494	< 0.00100 U	< 0.00100 U	0.00464	< 0.00100 U	< 0.00100 U	0.0381	< 0.000200 U	0.00665	< 0.485	0.00586	< 0.00100 U
	MW-45B	6/30/2022	N	< 0.00200 U	< 0.00500 U	0.0362	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	0.0326	< 0.000200 U	< 0.0100 U	0.640	0.00711	< 0.00100 U
	MW-45B	9/27/2022	N	< 0.00200 U	< 0.00500 U	0.0426	< 0.00100 U	< 0.00100 U	< 0.00200 U	< 0.00100 U	< 0.00100 U	0.0347	< 0.000200 U	0.00683	< 0.439	0.00961	< 0.00100 U
	MW-46B	6/29/2022	N	< 0.00200 U	< 0.00500 U	0.0396	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	0.0253	< 0.000200 U	< 0.0100 U	< 0.572 U	< 0.00500 U	< 0.00100 U
	MW-46B	9/27/2022	N	< 0.00200 U	< 0.00500 U	0.0682	< 0.00100 U	< 0.00100 U	0.0127	< 0.00100 U	< 0.00100 U	0.0282	< 0.000200 U	0.00423	0.561	< 0.00500 U	< 0.00100 U
	MW-47B	6/29/2022	N	< 0.00200 U	< 0.00500 U	0.0610	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	0.0288	< 0.000200 U	< 0.0100 U	< 0.477 U	< 0.00500 U	< 0.00100 U
	MW-47B	9/27/2022	N	< 0.00200 U	< 0.00500 U	0.0749	< 0.00100 U	< 0.00100 U	0.00527	< 0.00100 U	< 0.00100 U	0.0280	< 0.000200 U	0.00579	0.919	< 0.00500 U	< 0.00100 U

Notes:  
mg/L = milligrams per liter  
U = undetected at the reporting limit/concentration  
N = primary sample  
J+ = estimated concentration, biased high

**Table 5: Groundwater Analytical Data - Field Blanks**  
**Basin Electric Cooperative, Laramie River Station, Wyoming**  
**Sampling and Analysis Report**

			Appendix III Constituents					
			Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	Sulfate mg/L	TDS mg/L
Sample ID	Sample Date	Sample Type						
Field Blank	6/30/2022	FB	< 0.100 U	< 0.200 U	< 3.00 U	< 0.500 U	< 5.00 U	<10.0 U
FB-1	9/29/2022	FB	< 0.100 U	< 0.200 U	< 3.00 U	< 0.500 U	< 5.00 U	<10.0 U

Notes:  
 mg/L = milligrams per liter  
 U = undetected at reporting limit/concentration  
 FB = field blank

**Table 5: Groundwater Analytical Data - Field Blanks**  
**Basin Electric Cooperative, Laramie River Station, Wyoming**  
**Sampling and Analysis Report**

Chemical Name Unit			Appendix IV Constituents													
			Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Cadmium mg/L	Chromium mg/L	Cobalt mg/L	Lead mg/L	Lithium mg/L	Mercury mg/L	Molybdenum mg/L	Radium 226/228 pCi/L	Selenium mg/L	Thallium mg/L
Sample ID	Sample Date	Sample Type														
Field Blank	6/30/2022	FB	< 0.00200 U	< 0.00500 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	< 0.00800 U <sup>+</sup>	< 0.000200 U	< 0.0100 U	0.0540 U	< 0.00500 U	< 0.00100 U
FB-1	9/29/2022	FB	< 0.00200 U	< 0.00500 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	< 0.00500 U	< 0.00100 U	< 0.00100 U	< 0.00800 U	< 0.000200 U	< 0.0100 U	0.429 U	< 0.00500 U	< 0.00100 U

Notes:  
mg/L = milligrams per liter  
U = undetected at reporting limit/concentration  
FB = field blank

## Appendix I

### Groundwater Flow Calculations

Project: Laramie River Station  
Calculations by: Erin Doty  
Date: 1/19/2022

CCR Unit: Bottom Ash Pond 1  
Checked by: Jeremy Hurshman  
Date: 1/23/2022

Background Wells: MW-52B, MW-53B  
Downgradient Wells: MW-49B, MW-21B, MW-38B

**Hydraulic Gradient (i, ft/ft)**

$$i = -dh/dl$$

where, i= hydraulic gradient  
dh= change in hydraulic head between upgradient and downgradient locations  
dl= horizontal distance between upgradient and downgradient locations, parallel to flow (perpendicular to potentiometric contours)

Date	Upgradient WL elevation (ft MSL)	Downgradient WL Elevation (ft MSL)	dh (ft)	dl (ft)	i (ft/ft)	
June 27, 2022 (49B)	4495	4488.56	6.44	675	0.00954	
September 28, 2022 (49B)	4495	4487.51	7.49	790	0.00948	
					<b>Minimum</b>	<b>0.00948</b>
					<b>Maximum</b>	<b>0.00954</b>
					<b>Average</b>	<b>0.00951</b>

**Hydraulic Conductivity (K, ft/d)**

K, from slug and pumping tests		
Minimum	1.04	ft/day
Maximum	1.04	ft/day
Average (geomean)	1.04	ft/day

**Specific Yield, Effective Porosity**

Specific Yield, Effective Porosity	
Minimum	0.02
Maximum	0.3
Average	0.15

Note: Effective porosity/specific yield is based on literature values from Arikaree Formation literature and textbook values for sandstone

**Seepage Velocity**

$$v_s = -K * i / n_e$$

where, v<sub>s</sub>= seepage velocity, feet per day (ft/d)  
K= hydraulic conductivity, feet per day (ft/d)  
i= hydraulic gradient, feet per foot (ft/ft)  
n<sub>e</sub>= effective porosity/specific yield, unitless

Calculated Seepage Velocities (ft/day)				
	K (ft/day)	i (ft/ft)	n <sub>e</sub>	v <sub>s</sub> (ft/day)
Minimum	1.04	0.0095	0.30	<b>0.033</b>
Maximum	1.04	0.0095	0.02	<b>0.50</b>
<b>Geometric Mean</b>				<b>0.13</b>

Project: Laramie River Station  
Calculations by: Erin Doty  
Date: 1/19/2022

CCR Unit: Bottom Ash Ponds 2&3 and Ash Landfill  
Checked by: Jeremy Hurshman  
Date: 1/23/2022

Background Wells: MW-39B, MW-32B  
Downgradient Wells: MW-36B, MW-37B, MW-20B, MW-148R, MW-40B, MW-52B, MW-53B

**Hydraulic Gradient (i, ft/ft)**

$$i = -dh/dl$$

where, i= hydraulic gradient  
dh= change in hydraulic head between upgradient and downgradient locations  
dl= horizontal distance between upgradient and downgradient locations, parallel to flow (perpendicular to potentiometric contours)

**Summary Table - Hydraulic Gradient**

Date	Vector	Upgradient WL elevation (ft MSL)	Downgradient WL Elevation (ft MSL)	dh (ft)	dl (ft)	i (ft/ft)	Average i (ft/ft)
June 27, 2022	Vector 1 (36B)	4510.00	4474.63	35.37	4275	0.0083	0.0088
	Vector 2 (48B)	4505.00	4492.84	12.16	1350	0.0090	
	Vector 3 (37B)	4505.00	4470.57	34.43	3750	0.0092	
September 28, 2022	Vector 1 (36B)	4505.00	4473.69	31.31	4105	0.0076	0.0074
	Vector 2 (48B)	4500.00	4492.15	7.85	1263	0.0062	
	Vector 3 (37B)	4500.00	4469.86	30.14	3632	0.0083	
						<b>Minimum</b>	<b>0.0074</b>
						<b>Maximum</b>	<b>0.0088</b>
						<b>Average</b>	<b>0.0081</b>

**Hydraulic Conductivity (K, ft/d)**

K from slug and pumping tests conducted at site		
Minimum	0.50	ft/day
Maximum	6.16	ft/day
Average (geomean)	1.54	ft/day

**Specific Yield, Effective Porosity**

Specific Yield, Effective Porosity	
Minimum	0.02
Maximum	0.3
Average	0.15

Note: Effective porosity/specific yield is based on literature values from Arikaree Formation literature and textbook values for sandstone

**Seepage Velocity**

$$v_s = -K * i / n_e$$

where, v<sub>s</sub>= seepage velocity, feet per day (ft/d)  
K= hydraulic conductivity, feet per day (ft/d)  
i= hydraulic gradient, feet per foot (ft/ft)  
n<sub>e</sub>= effective porosity/specific yield, unitless

Calculated Seepage Velocities (ft/day)				
	K (ft/day)	i (ft/ft)	n <sub>e</sub>	v <sub>s</sub> (ft/day)
Minimum	0.50	0.0074	0.30	<b>0.012</b>
Maximum	6.16	0.0088	0.02	<b>2.7</b>
<b>Geometric Mean</b>				<b>0.18</b>

Project: Laramie River Station  
Calculations by: Erin Doty  
Date: 1/19/2022

CCR Unit: Emergency Holding Ponds  
Checked by: Jeremy Hurshman  
Date: 1/23/2022

Background Wells: MW-41B, MW-42B, MW-43B  
Downgradient Wells: MW-44B, MW-45B, MW-46B, MW-47B

**Hydraulic Gradient (i, ft/ft)**

Governing Equation:  
(Hydraulic Gradient)

$$i = -dh/dl$$

where, i= hydraulic gradient

dh= change in hydraulic head between upgradient and downgradient locations

dl= horizontal distance between upgradient and downgradient locations, parallel to flow (perpendicular to potentiometric contours)

Calculation Table

Date	Vector	Upgradient WL elevation (ft MSL)	Downgradient WL Elevation (ft MSL)	dh (ft)	dl (ft)	i (ft/ft)	Average i (ft/ft)
June 27, 2022	Vector 1 (42B)	4469.70	4455.00	14.70	750	0.0196	0.0184
	Vector 2 (43B)	4467.96	4450.00	17.96	1050	0.0171	
September 28, 2022	Vector 1 (42B)	4470.21	4455.00	15.21	790	0.0193	0.0177
	Vector 2 (45B)	4470.00	4453.47	16.53	1026	0.0161	
						Minimum	0.0184
						Maximum	0.0184
						Average	0.0180

**Hydraulic Conductivity (K, ft/d)**

K from slug and pumping tests conducted at site		
Minimum	0.75	ft/day
Maximum	3.12	ft/day
Average (geomean)	1.31	ft/day

**Specific Yield, Effective Porosity**

Specific Yield, Effective Porosity	
Minimum	0.02
Maximum	0.3
Average	0.15

Note: Effective porosity/specific yield is based on literature values from Arikaree Formation literature and textbook values for sandstone

**Seepage Velocity**

$$v_s = -K * i / n_e$$

where,

v<sub>s</sub>= seepage velocity, feet per day (ft/d)

K= hydraulic conductivity, feet per day (ft/d)

i= hydraulic gradient, feet per foot (ft/ft)

n<sub>e</sub>= effective porosity/specific yield, unitless

Calculated Seepage Velocities (ft/day)				
	K (ft/day)	i (ft/ft)	n <sub>e</sub>	v <sub>s</sub> (ft/day)
Minimum	0.75	0.0184	0.30	0.05
Maximum	3.12	0.0184	0.02	2.9
Geometric Mean				0.36

## **Appendix II**

# **Analytical Laboratory and Data Validation Reports**

## ANALYTICAL REPORT

Eurofins Denver  
4955 Yarrow Street  
Arvada, CO 80002  
Tel: (303)736-0100

Laboratory Job ID: 280-163953-1

Client Project/Site: CCR - Basin Electric 2022 - LRS

For:

AECOM Technical Services Inc.  
6200 S. Quebec Street  
Greenwood Village, Colorado 80111

Attn: Ms. Katie Abbott



Authorized for release by:  
7/15/2022 6:14:01 AM

Patrick McEntee, Client Service Manager  
(303)736-0107  
[Patrick.McEntee@et.eurofinsus.com](mailto:Patrick.McEntee@et.eurofinsus.com)

### LINKS

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results through



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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions . . . . .	3
Case Narrative . . . . .	4
Detection Summary . . . . .	7
Method Summary . . . . .	14
Sample Summary . . . . .	15
Client Sample Results . . . . .	16
QC Sample Results . . . . .	33
QC Association . . . . .	46
Chronicle . . . . .	54
Certification Summary . . . . .	63
Chain of Custody . . . . .	64
Receipt Checklists . . . . .	71

# Definitions/Glossary

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Qualifiers

### Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.

### General Chemistry

Qualifier	Qualifier Description
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.

## Glossary

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

# Case Narrative

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

**Job ID: 280-163953-1**

**Laboratory: Eurofins Denver**

**Narrative**

## CASE NARRATIVE

**Client: AECOM Technical Services Inc.**

**Project: CCR - Basin Electric 2022 - LRS**

**Report Number: 280-163953-1**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### **RECEIPT**

The samples were received on 6/30/2022 1:50 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 8 coolers at receipt time were 5.2° C, 7.9° C, 8.0° C, 12.4° C, 13.8° C, 19.7° C, 20.1° C and 22.7° C.

The radiochemical analyses requested on the COC are reported under separate cover.

Results for sample RW-1 and RW-2 are reported under separate cover.

### **Receipt Exceptions**

The following sample was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): Field Blank (280-163953-24). The client instructed the laboratory to log the sample for all analyses - metals, TDS, anions, and radiochemistry.

The following samples were received at the laboratory outside the required temperature criteria for non-rad analysis: 280-163953-10, 280-163953-11, 280-163953-12, 280-163953-13, 280-163953-15, 280-163953-16, 280-163953-22, 280-163953-23 and 280-163953-24. This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to proceed with analysis.

### **TOTAL RECOVERABLE METALS**

Samples MW-40B (280-163953-1), MW-52B (280-163953-2), MW-49B (280-163953-3), MW-21B (280-163953-5), MW-38C (280-163953-6), DUP-1 (280-163953-7), MW-38B (280-163953-8), MW-53B (280-163953-9), MW-39B (280-163953-10), MW-32B (280-163953-11), MW-36B (280-163953-12), MW-37B (280-163953-13), MW-20B (280-163953-14), MW-14BR (280-163953-15), MW-41B (280-163953-16), MW-43B (280-163953-18), MW-42B (280-163953-19), MW-47B (280-163953-20), MW-46B (280-163953-21), MW-45B (280-163953-22), MW-44B (280-163953-23) and Field Blank (280-163953-24) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 07/07/2022 and analyzed on 07/08/2022, 07/09/2022, 07/11/2022 and 07/12/2022.

The low level continuing calibration verification (CCVL) associated with batch 280-580399 recovered (70-130%) above the control limit (160%) for Li. The MB, LCS, SD and MS associated with this CCVL were non-detects and within control limit for the affected analytes; therefore, the data have been reported.

The low level continuing calibration verification (CCVL) associated with 280-580535 failed above the upper control limit for Li. The

# Case Narrative

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Job ID: 280-163953-1 (Continued)

### Laboratory: Eurofins Denver (Continued)

associated samples contained the affected analyte at a level greater than 10x the value in the CCVL; therefore the data have been reported. CCVL 280-580535/64 and 280-163427-E-1-F

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

### TOTAL RECOVERABLE METALS (ICPMS)

Samples MW-40B (280-163953-1), MW-52B (280-163953-2), MW-49B (280-163953-3), MW-21B (280-163953-5), MW-38C (280-163953-6), DUP-1 (280-163953-7), MW-38B (280-163953-8), MW-53B (280-163953-9), MW-39B (280-163953-10), MW-32B (280-163953-11), MW-36B (280-163953-12), MW-37B (280-163953-13), MW-20B (280-163953-14), MW-14BR (280-163953-15), MW-41B (280-163953-16), MW-43B (280-163953-18), MW-42B (280-163953-19), MW-47B (280-163953-20), MW-46B (280-163953-21), MW-45B (280-163953-22), MW-44B (280-163953-23) and Field Blank (280-163953-24) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 07/07/2022 and analyzed on 07/08/2022 and 07/11/2022.

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

### TOTAL MERCURY

Samples MW-40B (280-163953-1), MW-52B (280-163953-2), MW-49B (280-163953-3), MW-21B (280-163953-5), MW-38C (280-163953-6), DUP-1 (280-163953-7), MW-38B (280-163953-8), MW-53B (280-163953-9), MW-39B (280-163953-10), MW-32B (280-163953-11), MW-36B (280-163953-12), MW-37B (280-163953-13), MW-20B (280-163953-14), MW-14BR (280-163953-15), MW-41B (280-163953-16), MW-43B (280-163953-18), MW-42B (280-163953-19), MW-47B (280-163953-20), MW-46B (280-163953-21), MW-45B (280-163953-22), MW-44B (280-163953-23) and Field Blank (280-163953-24) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared on 06/30/2022 and 07/07/2022 and analyzed on 07/01/2022 and 07/08/2022.

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

### TOTAL DISSOLVED SOLIDS

Samples MW-40B (280-163953-1), MW-52B (280-163953-2), MW-49B (280-163953-3), MW-21B (280-163953-5), MW-38C (280-163953-6), DUP-1 (280-163953-7), MW-38B (280-163953-8), MW-53B (280-163953-9), MW-39B (280-163953-10), MW-32B (280-163953-11), MW-36B (280-163953-12), MW-37B (280-163953-13), MW-20B (280-163953-14), MW-14BR (280-163953-15), MW-41B (280-163953-16), MW-43B (280-163953-18), MW-42B (280-163953-19), MW-47B (280-163953-20), MW-46B (280-163953-21), MW-45B (280-163953-22), MW-44B (280-163953-23) and Field Blank (280-163953-24) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 07/01/2022, 07/05/2022 and 07/07/2022.

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

### ANIONS (28 DAYS)

Samples MW-40B (280-163953-1), MW-52B (280-163953-2), MW-49B (280-163953-3), MW-21B (280-163953-5), MW-38C (280-163953-6), DUP-1 (280-163953-7), MW-38B (280-163953-8), MW-53B (280-163953-9), MW-39B (280-163953-10), MW-32B (280-163953-11), MW-36B (280-163953-12), MW-37B (280-163953-13), MW-20B (280-163953-14), MW-14BR (280-163953-15), MW-41B (280-163953-16), MW-43B (280-163953-18), MW-42B (280-163953-19), MW-47B (280-163953-20), MW-46B (280-163953-21), MW-45B (280-163953-22), MW-44B (280-163953-23) and Field Blank (280-163953-24) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A (28 Days). The samples were analyzed on 07/01/2022, 07/02/2022, 07/05/2022, 07/06/2022, 07/07/2022 and 07/08/2022.

Chloride and Fluoride failed the recovery criteria high for the MS of sample MW-36BMS (280-163953-12) in batch 280-579709. Chloride and Fluoride failed the recovery criteria high for the MSD of sample MW-36BMSD (280-163953-12) in batch 280-579709.

Chloride and Fluoride failed the recovery criteria high for the MS of sample MW-21BMS (280-163953-5) in batch 280-579709. Chloride and Fluoride failed the recovery criteria high for the MSD of sample MW-21BMSD (280-163953-5) in batch 280-579709.

Samples MW-40B (280-163953-1)[5X], MW-52B (280-163953-2)[5X], MW-49B (280-163953-3)[5X], MW-21B (280-163953-5)[5X], MW-38C (280-163953-6)[2X], DUP-1 (280-163953-7)[2X], MW-38B (280-163953-8)[5X], MW-38B (280-163953-8)[50X], MW-53B (280-163953-9)[2X], MW-39B (280-163953-10)[5X], MW-32B (280-163953-11)[10X], MW-36B (280-163953-12)[5X], MW-37B (280-163953-13)[5X], MW-20B (280-163953-14)[5X], MW-14BR (280-163953-15)[5X], MW-41B (280-163953-16)[5X], MW-43B (280-163953-18)[5X], MW-42B (280-163953-19)[20X], MW-42B (280-163953-19)[5X], MW-47B (280-163953-20)[5X], MW-45B (280-163953-22)[5X] and MW-44B

# Case Narrative

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Job ID: 280-163953-1 (Continued)

### Laboratory: Eurofins Denver (Continued)

(280-163953-23)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

### Job Narrative 280-163953-1

#### Comments

No additional comments.

#### Receipt

#### Metals

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

#### General Chemistry

Method 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 280-579709 were outside control limits for Chloride and Fluoride. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 280-579709 were outside control limits for Chloride and Fluoride. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 9056A: Due to the high concentration of Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 280-579709 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 9056A: The matrix spike duplicate (MSD) recovery for analytical batch 280-579709 was outside control limits for Sulfate. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Methods 300.0, 9056A: Due to the high concentration of Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 280-579709 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 9056A: Due to the high concentration of Chloride, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 280-580183 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Methods 300.0, 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 280-580183 were outside control limits for Sulfate. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

# Detection Summary

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Client Sample ID: MW-40B

## Lab Sample ID: 280-163953-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.180		0.100		mg/L	1		6010C	Total Recoverable
Calcium	132		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0524		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0267		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	29.6		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.983		0.500		mg/L	1		9056A	Total/NA
Sulfate	327		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	832		10.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-52B

## Lab Sample ID: 280-163953-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.180		0.100		mg/L	1		6010C	Total Recoverable
Calcium	161		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0546		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0718		0.00500		mg/L	1		6020A	Total Recoverable
Cobalt	0.00128		0.00100		mg/L	1		6020A	Total Recoverable
Chloride	48.2		3.00		mg/L	1		9056A	Total/NA
Sulfate	501		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1040		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-49B

## Lab Sample ID: 280-163953-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.164		0.100		mg/L	1		6010C	Total Recoverable
Calcium	150		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0510		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0942		0.00500		mg/L	1		6020A	Total Recoverable
Cobalt	0.00114		0.00100		mg/L	1		6020A	Total Recoverable
Lead	0.00129		0.00100		mg/L	1		6020A	Total Recoverable
Chloride	34.8		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.573		0.500		mg/L	1		9056A	Total/NA
Sulfate	442		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	882		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-21B

## Lab Sample ID: 280-163953-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.157		0.100		mg/L	1		6010C	Total Recoverable
Calcium	177		0.200		mg/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Denver

# Detection Summary

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Client Sample ID: MW-21B (Continued)

## Lab Sample ID: 280-163953-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.0350		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0426		0.00500		mg/L	1		6020A	Total Recoverable
Chromium	0.0105		0.00500		mg/L	1		6020A	Total Recoverable
Molybdenum	0.0151		0.0100		mg/L	1		6020A	Total Recoverable
Selenium	0.0325		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	146	F1	3.00		mg/L	1		9056A	Total/NA
Fluoride	0.765	F1	0.500		mg/L	1		9056A	Total/NA
Sulfate	459		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1140		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-38C

## Lab Sample ID: 280-163953-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	105		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0256		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0473		0.00500		mg/L	1		6020A	Total Recoverable
Selenium	0.00538		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	29.1		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.653		0.500		mg/L	1		9056A	Total/NA
Sulfate	230		10.0		mg/L	2		9056A	Total/NA
Total Dissolved Solids (TDS)	627		10.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: DUP-1

## Lab Sample ID: 280-163953-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	101		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0231		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0451		0.00500		mg/L	1		6020A	Total Recoverable
Selenium	0.00594		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	29.2		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.643		0.500		mg/L	1		9056A	Total/NA
Sulfate	228		10.0		mg/L	2		9056A	Total/NA
Total Dissolved Solids (TDS)	617		10.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-38B

## Lab Sample ID: 280-163953-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	3.35		0.100		mg/L	1		6010C	Total Recoverable
Calcium	479		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.119		0.0200		mg/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Denver

# Detection Summary

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Client Sample ID: MW-38B (Continued)

## Lab Sample ID: 280-163953-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0156		0.00500		mg/L	1		6020A	Total Recoverable
Chromium	0.00620		0.00500		mg/L	1		6020A	Total Recoverable
Molybdenum	0.199		0.0100		mg/L	1		6020A	Total Recoverable
Selenium	0.00538		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	310		15.0		mg/L	5		9056A	Total/NA
Sulfate	5820		250		mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	8180		100		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-53B

## Lab Sample ID: 280-163953-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.153		0.100		mg/L	1		6010C	Total Recoverable
Calcium	103		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0418		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0454		0.00500		mg/L	1		6020A	Total Recoverable
Selenium	0.0101		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	52.6		3.00		mg/L	1		9056A	Total/NA
Fluoride	1.09		0.500		mg/L	1		9056A	Total/NA
Sulfate	252		10.0		mg/L	2		9056A	Total/NA
Total Dissolved Solids (TDS)	681		10.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-39B

## Lab Sample ID: 280-163953-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.193		0.100		mg/L	1		6010C	Total Recoverable
Calcium	190		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0616		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0292		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	48.6		3.00		mg/L	1		9056A	Total/NA
Fluoride	1.54		0.500		mg/L	1		9056A	Total/NA
Sulfate	585		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1260		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-32B

## Lab Sample ID: 280-163953-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.316		0.100		mg/L	1		6010C	Total Recoverable
Calcium	205		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0796		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0258		0.00500		mg/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Denver

# Detection Summary

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Client Sample ID: MW-32B (Continued)

## Lab Sample ID: 280-163953-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	103		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.553		0.500		mg/L	1		9056A	Total/NA
Sulfate	942		50.0		mg/L	10		9056A	Total/NA
Total Dissolved Solids (TDS)	1830		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-36B

## Lab Sample ID: 280-163953-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.112		0.100		mg/L	1		6010C	Total Recoverable
Calcium	134		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0309		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0650		0.00500		mg/L	1		6020A	Total Recoverable
Selenium	0.00617		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	45.4	F1	3.00		mg/L	1		9056A	Total/NA
Fluoride	0.737	F1	0.500		mg/L	1		9056A	Total/NA
Sulfate	374		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	861		10.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-37B

## Lab Sample ID: 280-163953-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.176		0.100		mg/L	1		6010C	Total Recoverable
Calcium	219		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0412		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0691		0.00500		mg/L	1		6020A	Total Recoverable
Molybdenum	0.0705		0.0100		mg/L	1		6020A	Total Recoverable
Selenium	0.0125		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	121		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.554		0.500		mg/L	1		9056A	Total/NA
Sulfate	610		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1320		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-20B

## Lab Sample ID: 280-163953-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.243		0.100		mg/L	1		6010C	Total Recoverable
Calcium	140		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0350		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0534		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	52.3		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.754		0.500		mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Denver

# Detection Summary

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Client Sample ID: MW-20B (Continued)

## Lab Sample ID: 280-163953-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	422		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	978		10.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-14BR

## Lab Sample ID: 280-163953-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.154		0.100		mg/L	1		6010C	Total Recoverable
Calcium	162		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0308		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0388		0.00500		mg/L	1		6020A	Total Recoverable
Chromium	0.00741		0.00500		mg/L	1		6020A	Total Recoverable
Selenium	0.0101		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	85.6		3.00		mg/L	1		9056A	Total/NA
Sulfate	384		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	944		10.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-41B

## Lab Sample ID: 280-163953-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.914		0.100		mg/L	1		6010C	Total Recoverable
Calcium	158		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0483		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0183		0.00500		mg/L	1		6020A	Total Recoverable
Molybdenum	0.113		0.0100		mg/L	1		6020A	Total Recoverable
Selenium	0.00557		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	103		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.507		0.500		mg/L	1		9056A	Total/NA
Sulfate	912		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1610		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-43B

## Lab Sample ID: 280-163953-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.314		0.100		mg/L	1		6010C	Total Recoverable
Calcium	91.9		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0335		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0321		0.00500		mg/L	1		6020A	Total Recoverable
Molybdenum	0.0131		0.0100		mg/L	1		6020A	Total Recoverable
Chloride	44.7		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.606		0.500		mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Denver

# Detection Summary

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Client Sample ID: MW-43B (Continued)

## Lab Sample ID: 280-163953-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	367		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	819		10.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-42B

## Lab Sample ID: 280-163953-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.820		0.100		mg/L	1		6010C	Total Recoverable
Calcium	427		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0730		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0198		0.00500		mg/L	1		6020A	Total Recoverable
Molybdenum	0.0458		0.0100		mg/L	1		6020A	Total Recoverable
Selenium	0.00567		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	356		15.0		mg/L	5		9056A	Total/NA
Fluoride	0.616		0.500		mg/L	1		9056A	Total/NA
Sulfate	2740		100		mg/L	20		9056A	Total/NA
Total Dissolved Solids (TDS)	4150		40.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-47B

## Lab Sample ID: 280-163953-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.127		0.100		mg/L	1		6010C	Total Recoverable
Calcium	124		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0288		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0610		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	35.0		3.00		mg/L	1		9056A	Total/NA
Sulfate	321		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	747		10.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-46B

## Lab Sample ID: 280-163953-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	77.8		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0253		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0396		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	21.8		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.886		0.500		mg/L	1		9056A	Total/NA
Sulfate	186		5.00		mg/L	1		9056A	Total/NA
Total Dissolved Solids (TDS)	538		10.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Denver

# Detection Summary

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Client Sample ID: MW-45B

## Lab Sample ID: 280-163953-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.188		0.100		mg/L	1		6010C	Total Recoverable
Calcium	150		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0326		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0362		0.00500		mg/L	1		6020A	Total Recoverable
Selenium	0.00711		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	49.9		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.774		0.500		mg/L	1		9056A	Total/NA
Sulfate	384		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	938		10.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-44B

## Lab Sample ID: 280-163953-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.105		0.100		mg/L	1		6010C	Total Recoverable
Calcium	174		0.200		mg/L	1		6010C	Total Recoverable
Lithium	0.0343		0.0200		mg/L	1		6010C	Total Recoverable
Barium	0.0526		0.00500		mg/L	1		6020A	Total Recoverable
Chromium	0.00562		0.00500		mg/L	1		6020A	Total Recoverable
Selenium	0.00629		0.00500		mg/L	1		6020A	Total Recoverable
Chloride	62.0		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.719		0.500		mg/L	1		9056A	Total/NA
Sulfate	456		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1090		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: Field Blank

## Lab Sample ID: 280-163953-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	0.277		0.200		mg/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Denver

# Method Summary

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL DEN
7470A	Preparation, Mercury	SW846	TAL DEN

#### Protocol References:

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

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

#### Laboratory References:

TAL CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

# Sample Summary

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-163953-1	MW-40B	Water	06/27/22 14:00	06/30/22 13:50
280-163953-2	MW-52B	Water	06/27/22 16:15	06/30/22 13:50
280-163953-3	MW-49B	Water	06/27/22 18:15	06/30/22 13:50
280-163953-5	MW-21B	Water	06/28/22 09:35	06/30/22 13:50
280-163953-6	MW-38C	Water	06/28/22 10:45	06/30/22 13:50
280-163953-7	DUP-1	Water	06/28/22 11:00	06/30/22 13:50
280-163953-8	MW-38B	Water	06/28/22 12:10	06/30/22 13:50
280-163953-9	MW-53B	Water	06/28/22 13:05	06/30/22 13:50
280-163953-10	MW-39B	Water	06/29/22 09:42	06/30/22 13:50
280-163953-11	MW-32B	Water	06/29/22 10:30	06/30/22 13:50
280-163953-12	MW-36B	Water	06/29/22 11:20	06/30/22 13:50
280-163953-13	MW-37B	Water	06/29/22 13:05	06/30/22 13:50
280-163953-14	MW-20B	Water	06/29/22 13:45	06/30/22 13:50
280-163953-15	MW-14BR	Water	06/29/22 14:35	06/30/22 13:50
280-163953-16	MW-41B	Water	06/29/22 15:30	06/30/22 13:50
280-163953-18	MW-43B	Water	06/29/22 17:10	06/30/22 13:50
280-163953-19	MW-42B	Water	06/29/22 18:05	06/30/22 13:50
280-163953-20	MW-47B	Water	06/29/22 19:00	06/30/22 13:50
280-163953-21	MW-46B	Water	06/29/22 19:55	06/30/22 13:50
280-163953-22	MW-45B	Water	06/30/22 08:35	06/30/22 13:50
280-163953-23	MW-44B	Water	06/30/22 09:30	06/30/22 13:50
280-163953-24	Field Blank	Water	06/30/22 09:45	06/30/22 13:50



# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Method: 6010C - Metals (ICP) - Total Recoverable

**Client Sample ID: MW-40B**  
**Date Collected: 06/27/22 14:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-1**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.180		0.100		mg/L		07/07/22 16:21	07/11/22 19:02	1
Calcium	132		0.200		mg/L		07/07/22 16:21	07/09/22 06:29	1
Lithium	0.0524		0.0200		mg/L		07/07/22 16:21	07/09/22 06:29	1

**Client Sample ID: MW-52B**  
**Date Collected: 06/27/22 16:15**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.180		0.100		mg/L		07/07/22 16:21	07/11/22 19:06	1
Calcium	161		0.200		mg/L		07/07/22 16:21	07/09/22 06:33	1
Lithium	0.0546		0.0200		mg/L		07/07/22 16:21	07/09/22 06:33	1

**Client Sample ID: MW-49B**  
**Date Collected: 06/27/22 18:15**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-3**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.164		0.100		mg/L		07/07/22 16:21	07/11/22 19:10	1
Calcium	150		0.200		mg/L		07/07/22 16:21	07/09/22 06:37	1
Lithium	0.0510		0.0200		mg/L		07/07/22 16:21	07/09/22 06:37	1

**Client Sample ID: MW-21B**  
**Date Collected: 06/28/22 09:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-5**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.157		0.100		mg/L		07/07/22 09:10	07/08/22 22:57	1
Calcium	177		0.200		mg/L		07/07/22 09:10	07/08/22 22:57	1
Lithium	0.0350		0.0200		mg/L		07/07/22 09:10	07/11/22 12:25	1

**Client Sample ID: MW-38C**  
**Date Collected: 06/28/22 10:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-6**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.100		mg/L		07/07/22 09:10	07/08/22 23:34	1
Calcium	105		0.200		mg/L		07/07/22 09:10	07/08/22 23:34	1
Lithium	0.0256		0.0200		mg/L		07/07/22 09:10	07/11/22 12:45	1

**Client Sample ID: DUP-1**  
**Date Collected: 06/28/22 11:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-7**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.100		mg/L		07/07/22 09:10	07/08/22 23:38	1
Calcium	101		0.200		mg/L		07/07/22 09:10	07/08/22 23:38	1
Lithium	0.0231		0.0200		mg/L		07/07/22 09:10	07/11/22 12:49	1

**Client Sample ID: MW-38B**  
**Date Collected: 06/28/22 12:10**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-8**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3.35		0.100		mg/L		07/07/22 09:10	07/08/22 23:42	1
Calcium	479		0.200		mg/L		07/07/22 09:10	07/08/22 23:42	1
Lithium	0.119		0.0200		mg/L		07/07/22 09:10	07/11/22 12:53	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Method: 6010C - Metals (ICP) - Total Recoverable

**Client Sample ID: MW-53B**  
**Date Collected: 06/28/22 13:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-9**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.153		0.100		mg/L		07/07/22 09:10	07/08/22 23:46	1
Calcium	103		0.200		mg/L		07/07/22 09:10	07/08/22 23:46	1
Lithium	0.0418		0.0200		mg/L		07/07/22 09:10	07/11/22 13:14	1

**Client Sample ID: MW-39B**  
**Date Collected: 06/29/22 09:42**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-10**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.193		0.100		mg/L		07/07/22 09:10	07/08/22 23:50	1
Calcium	190		0.200		mg/L		07/07/22 09:10	07/08/22 23:50	1
Lithium	0.0616		0.0200		mg/L		07/07/22 09:10	07/11/22 13:18	1

**Client Sample ID: MW-32B**  
**Date Collected: 06/29/22 10:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-11**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.316		0.100		mg/L		07/07/22 09:10	07/08/22 23:54	1
Calcium	205		0.200		mg/L		07/07/22 09:10	07/08/22 23:54	1
Lithium	0.0796		0.0200		mg/L		07/07/22 09:10	07/11/22 13:22	1

**Client Sample ID: MW-36B**  
**Date Collected: 06/29/22 11:20**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-12**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.112		0.100		mg/L		07/07/22 09:10	07/08/22 23:58	1
Calcium	134		0.200		mg/L		07/07/22 09:10	07/08/22 23:58	1
Lithium	0.0309		0.0200		mg/L		07/07/22 09:10	07/11/22 13:26	1

**Client Sample ID: MW-37B**  
**Date Collected: 06/29/22 13:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-13**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.176		0.100		mg/L		07/07/22 09:10	07/09/22 00:02	1
Calcium	219		0.200		mg/L		07/07/22 09:10	07/09/22 00:02	1
Lithium	0.0412		0.0200		mg/L		07/07/22 09:10	07/11/22 13:30	1

**Client Sample ID: MW-20B**  
**Date Collected: 06/29/22 13:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-14**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.243		0.100		mg/L		07/07/22 09:10	07/09/22 00:22	1
Calcium	140		0.200		mg/L		07/07/22 09:10	07/09/22 00:22	1
Lithium	0.0350		0.0200		mg/L		07/07/22 09:10	07/11/22 13:34	1

**Client Sample ID: MW-14BR**  
**Date Collected: 06/29/22 14:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-15**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.154		0.100		mg/L		07/07/22 09:10	07/09/22 00:26	1
Calcium	162		0.200		mg/L		07/07/22 09:10	07/09/22 00:26	1
Lithium	0.0308		0.0200		mg/L		07/07/22 09:10	07/11/22 13:38	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Method: 6010C - Metals (ICP) - Total Recoverable

**Client Sample ID: MW-41B**  
**Date Collected: 06/29/22 15:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-16**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.914		0.100		mg/L		07/07/22 09:10	07/09/22 00:30	1
Calcium	158		0.200		mg/L		07/07/22 09:10	07/09/22 00:30	1
Lithium	0.0483		0.0200		mg/L		07/07/22 09:10	07/11/22 13:42	1

**Client Sample ID: MW-43B**  
**Date Collected: 06/29/22 17:10**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-18**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.314		0.100		mg/L		07/07/22 09:10	07/09/22 00:38	1
Calcium	91.9		0.200		mg/L		07/07/22 09:10	07/09/22 00:38	1
Lithium	0.0335		0.0200		mg/L		07/07/22 09:10	07/11/22 13:50	1

**Client Sample ID: MW-42B**  
**Date Collected: 06/29/22 18:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-19**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.820		0.100		mg/L		07/07/22 09:10	07/09/22 00:42	1
Calcium	427		0.200		mg/L		07/07/22 09:10	07/09/22 00:42	1
Lithium	0.0730		0.0200		mg/L		07/07/22 09:10	07/12/22 14:29	1

**Client Sample ID: MW-47B**  
**Date Collected: 06/29/22 19:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-20**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.127		0.100		mg/L		07/07/22 09:10	07/09/22 00:46	1
Calcium	124		0.200		mg/L		07/07/22 09:10	07/09/22 00:46	1
Lithium	0.0288		0.0200		mg/L		07/07/22 09:10	07/12/22 14:33	1

**Client Sample ID: MW-46B**  
**Date Collected: 06/29/22 19:55**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-21**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.100		mg/L		07/07/22 09:10	07/09/22 00:50	1
Calcium	77.8		0.200		mg/L		07/07/22 09:10	07/09/22 00:50	1
Lithium	0.0253		0.0200		mg/L		07/07/22 09:10	07/12/22 14:37	1

**Client Sample ID: MW-45B**  
**Date Collected: 06/30/22 08:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-22**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.188		0.100		mg/L		07/07/22 09:10	07/09/22 00:54	1
Calcium	150		0.200		mg/L		07/07/22 09:10	07/09/22 00:54	1
Lithium	0.0326		0.0200		mg/L		07/07/22 09:10	07/12/22 14:41	1

**Client Sample ID: MW-44B**  
**Date Collected: 06/30/22 09:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-23**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.105		0.100		mg/L		07/07/22 09:10	07/09/22 00:58	1
Calcium	174		0.200		mg/L		07/07/22 09:10	07/09/22 00:58	1
Lithium	0.0343		0.0200		mg/L		07/07/22 09:10	07/12/22 14:45	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Method: 6010C - Metals (ICP) - Total Recoverable

**Client Sample ID: Field Blank**  
**Date Collected: 06/30/22 09:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-24**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.100		mg/L		07/07/22 09:10	07/09/22 11:59	1
<b>Calcium</b>	<b>0.277</b>		0.200		mg/L		07/07/22 09:10	07/09/22 11:59	1
Lithium	ND		0.0200		mg/L		07/07/22 09:10	07/12/22 15:30	1

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

**Client Sample ID: MW-40B**  
**Date Collected: 06/27/22 14:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-1**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 10:47	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 10:47	1
<b>Barium</b>	<b>0.0267</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 10:47	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:47	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:47	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 10:47	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:47	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:47	1
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/08/22 10:47	1
Selenium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 10:47	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:47	1

**Client Sample ID: MW-52B**  
**Date Collected: 06/27/22 16:15**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 10:54	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 10:54	1
<b>Barium</b>	<b>0.0718</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 10:54	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:54	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:54	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 10:54	1
<b>Cobalt</b>	<b>0.00128</b>		0.00100		mg/L		07/07/22 12:00	07/08/22 10:54	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:54	1
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/08/22 10:54	1
Selenium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 10:54	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:54	1

**Client Sample ID: MW-49B**  
**Date Collected: 06/27/22 18:15**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-3**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 10:57	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 10:57	1
<b>Barium</b>	<b>0.0942</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 10:57	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:57	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:57	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 10:57	1
<b>Cobalt</b>	<b>0.00114</b>		0.00100		mg/L		07/07/22 12:00	07/08/22 10:57	1
<b>Lead</b>	<b>0.00129</b>		0.00100		mg/L		07/07/22 12:00	07/08/22 10:57	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

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

**Client Sample ID: MW-49B**  
**Date Collected: 06/27/22 18:15**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-3**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/08/22 10:57	1
Selenium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 10:57	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:57	1

**Client Sample ID: MW-21B**  
**Date Collected: 06/28/22 09:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-5**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 10:33	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 10:33	1
<b>Barium</b>	<b>0.0426</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 10:33	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:33	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:33	1
<b>Chromium</b>	<b>0.0105</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 10:33	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:33	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:33	1
<b>Molybdenum</b>	<b>0.0151</b>		0.0100		mg/L		07/07/22 12:00	07/08/22 10:33	1
<b>Selenium</b>	<b>0.0325</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 10:33	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:33	1

**Client Sample ID: MW-38C**  
**Date Collected: 06/28/22 10:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-6**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 10:59	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 10:59	1
<b>Barium</b>	<b>0.0473</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 10:59	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:59	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:59	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 10:59	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:59	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:59	1
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/08/22 10:59	1
<b>Selenium</b>	<b>0.00538</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 10:59	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:59	1

**Client Sample ID: DUP-1**  
**Date Collected: 06/28/22 11:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-7**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 11:02	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:02	1
<b>Barium</b>	<b>0.0451</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:02	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:02	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:02	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:02	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:02	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:02	1
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/08/22 11:02	1
<b>Selenium</b>	<b>0.00594</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:02	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

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

**Client Sample ID: DUP-1**  
**Date Collected: 06/28/22 11:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-7**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:02	1

**Client Sample ID: MW-38B**  
**Date Collected: 06/28/22 12:10**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-8**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 11:04	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:04	1
<b>Barium</b>	<b>0.0156</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:04	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:04	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:04	1
<b>Chromium</b>	<b>0.00620</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:04	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:04	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:04	1
<b>Molybdenum</b>	<b>0.199</b>		0.0100		mg/L		07/07/22 12:00	07/08/22 11:04	1
<b>Selenium</b>	<b>0.00538</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:04	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:04	1

**Client Sample ID: MW-53B**  
**Date Collected: 06/28/22 13:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-9**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 11:07	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:07	1
<b>Barium</b>	<b>0.0454</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:07	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:07	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:07	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:07	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:07	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:07	1
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/08/22 11:07	1
<b>Selenium</b>	<b>0.0101</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:07	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:07	1

**Client Sample ID: MW-39B**  
**Date Collected: 06/29/22 09:42**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-10**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 11:09	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:09	1
<b>Barium</b>	<b>0.0292</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:09	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:09	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:09	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:09	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:09	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:09	1
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/08/22 11:09	1
Selenium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:09	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:09	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

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

**Client Sample ID: MW-32B**  
**Date Collected: 06/29/22 10:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-11**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 11:12	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:12	1
<b>Barium</b>	<b>0.0258</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:12	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:12	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:12	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:12	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:12	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:12	1
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/08/22 11:12	1
Selenium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:12	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:12	1

**Client Sample ID: MW-36B**  
**Date Collected: 06/29/22 11:20**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-12**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 11:14	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:14	1
<b>Barium</b>	<b>0.0650</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:14	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:14	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:14	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:14	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:14	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:14	1
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/08/22 11:14	1
<b>Selenium</b>	<b>0.00617</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:14	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:14	1

**Client Sample ID: MW-37B**  
**Date Collected: 06/29/22 13:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-13**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 11:17	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:17	1
<b>Barium</b>	<b>0.0691</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:17	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:17	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:17	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:17	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:17	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:17	1
<b>Molybdenum</b>	<b>0.0705</b>		0.0100		mg/L		07/07/22 12:00	07/08/22 11:17	1
<b>Selenium</b>	<b>0.0125</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:17	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:17	1

**Client Sample ID: MW-20B**  
**Date Collected: 06/29/22 13:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-14**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 11:24	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:24	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

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

**Client Sample ID: MW-20B**  
**Date Collected: 06/29/22 13:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-14**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Barium</b>	<b>0.0534</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:24	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:24	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:24	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:24	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:24	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:24	1
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/08/22 11:24	1
Selenium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:24	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:24	1

**Client Sample ID: MW-14BR**  
**Date Collected: 06/29/22 14:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-15**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 11:27	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:27	1
<b>Barium</b>	<b>0.0388</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:27	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:27	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:27	1
<b>Chromium</b>	<b>0.00741</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:27	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:27	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:27	1
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/08/22 11:27	1
<b>Selenium</b>	<b>0.0101</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:27	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:27	1

**Client Sample ID: MW-41B**  
**Date Collected: 06/29/22 15:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-16**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 11:29	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:29	1
<b>Barium</b>	<b>0.0183</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:29	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:29	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:29	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:29	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:29	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:29	1
<b>Molybdenum</b>	<b>0.113</b>		0.0100		mg/L		07/07/22 12:00	07/08/22 11:29	1
<b>Selenium</b>	<b>0.00557</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:29	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:29	1

**Client Sample ID: MW-43B**  
**Date Collected: 06/29/22 17:10**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-18**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 11:32	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:32	1
<b>Barium</b>	<b>0.0321</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:32	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:32	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

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

**Client Sample ID: MW-43B**  
**Date Collected: 06/29/22 17:10**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-18**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:32	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:32	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:32	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:32	1
<b>Molybdenum</b>	<b>0.0131</b>		0.0100		mg/L		07/07/22 12:00	07/08/22 11:32	1
Selenium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:32	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:32	1

**Client Sample ID: MW-42B**  
**Date Collected: 06/29/22 18:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-19**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 11:34	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:34	1
<b>Barium</b>	<b>0.0198</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:34	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:34	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:34	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:34	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:34	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:34	1
<b>Molybdenum</b>	<b>0.0458</b>		0.0100		mg/L		07/07/22 12:00	07/08/22 11:34	1
<b>Selenium</b>	<b>0.00567</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:34	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:34	1

**Client Sample ID: MW-47B**  
**Date Collected: 06/29/22 19:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-20**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 11:37	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:37	1
<b>Barium</b>	<b>0.0610</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:37	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:37	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:37	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:37	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:37	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:37	1
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/08/22 11:37	1
Selenium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:37	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:37	1

**Client Sample ID: MW-46B**  
**Date Collected: 06/29/22 19:55**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-21**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 11:39	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:39	1
<b>Barium</b>	<b>0.0396</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:39	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:39	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:39	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:39	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

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

**Client Sample ID: MW-46B**  
**Date Collected: 06/29/22 19:55**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-21**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:39	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:39	1
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/08/22 11:39	1
Selenium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:39	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:39	1

**Client Sample ID: MW-45B**  
**Date Collected: 06/30/22 08:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-22**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 11:42	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:42	1
<b>Barium</b>	<b>0.0362</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:42	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:42	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:42	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 11:42	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:42	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:42	1
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/08/22 11:42	1
<b>Selenium</b>	<b>0.00711</b>		0.00500		mg/L		07/07/22 12:00	07/08/22 11:42	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 11:42	1

**Client Sample ID: MW-44B**  
**Date Collected: 06/30/22 09:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-23**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/11/22 13:31	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/11/22 13:31	1
<b>Barium</b>	<b>0.0526</b>		0.00500		mg/L		07/07/22 12:00	07/11/22 13:31	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/11/22 13:31	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/11/22 13:31	1
<b>Chromium</b>	<b>0.00562</b>		0.00500		mg/L		07/07/22 12:00	07/11/22 13:31	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/11/22 13:31	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/11/22 13:31	1
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/11/22 13:31	1
<b>Selenium</b>	<b>0.00629</b>		0.00500		mg/L		07/07/22 12:00	07/11/22 13:31	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/11/22 13:31	1

**Client Sample ID: Field Blank**  
**Date Collected: 06/30/22 09:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-24**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/11/22 13:34	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/11/22 13:34	1
Barium	ND		0.00500		mg/L		07/07/22 12:00	07/11/22 13:34	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/11/22 13:34	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/11/22 13:34	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/11/22 13:34	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/11/22 13:34	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/11/22 13:34	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

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

**Client Sample ID: Field Blank**  
**Date Collected: 06/30/22 09:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-24**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/11/22 13:34	1
Selenium	ND		0.00500		mg/L		07/07/22 12:00	07/11/22 13:34	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/11/22 13:34	1

## Method: 7470A - Mercury (CVAA)

**Client Sample ID: MW-40B**  
**Date Collected: 06/27/22 14:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-1**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 04:58	1

**Client Sample ID: MW-52B**  
**Date Collected: 06/27/22 16:15**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 05:01	1

**Client Sample ID: MW-49B**  
**Date Collected: 06/27/22 18:15**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-3**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 05:03	1

**Client Sample ID: MW-21B**  
**Date Collected: 06/28/22 09:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-5**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 05:08	1

**Client Sample ID: MW-38C**  
**Date Collected: 06/28/22 10:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-6**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 05:16	1

**Client Sample ID: DUP-1**  
**Date Collected: 06/28/22 11:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-7**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 05:24	1

**Client Sample ID: MW-38B**  
**Date Collected: 06/28/22 12:10**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-8**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 05:26	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Method: 7470A - Mercury (CVAA)

**Client Sample ID: MW-53B**  
**Date Collected: 06/28/22 13:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-9**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 05:29	1

**Client Sample ID: MW-39B**  
**Date Collected: 06/29/22 09:42**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-10**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 05:31	1

**Client Sample ID: MW-32B**  
**Date Collected: 06/29/22 10:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-11**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 05:34	1

**Client Sample ID: MW-36B**  
**Date Collected: 06/29/22 11:20**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-12**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 05:36	1

**Client Sample ID: MW-37B**  
**Date Collected: 06/29/22 13:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-13**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 05:39	1

**Client Sample ID: MW-20B**  
**Date Collected: 06/29/22 13:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-14**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 05:42	1

**Client Sample ID: MW-14BR**  
**Date Collected: 06/29/22 14:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-15**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 05:44	1

**Client Sample ID: MW-41B**  
**Date Collected: 06/29/22 15:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-16**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 05:47	1

**Client Sample ID: MW-43B**  
**Date Collected: 06/29/22 17:10**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-18**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 05:57	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Method: 7470A - Mercury (CVAA)

**Client Sample ID: MW-42B**  
**Date Collected: 06/29/22 18:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-19**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 05:59	1

**Client Sample ID: MW-47B**  
**Date Collected: 06/29/22 19:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-20**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 06:02	1

**Client Sample ID: MW-46B**  
**Date Collected: 06/29/22 19:55**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-21**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 04:12	1

**Client Sample ID: MW-45B**  
**Date Collected: 06/30/22 08:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-22**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 04:15	1

**Client Sample ID: MW-44B**  
**Date Collected: 06/30/22 09:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-23**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 04:17	1

**Client Sample ID: Field Blank**  
**Date Collected: 06/30/22 09:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-24**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		07/07/22 17:40	07/08/22 03:12	1

## General Chemistry

**Client Sample ID: MW-40B**  
**Date Collected: 06/27/22 14:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-1**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29.6		3.00		mg/L			07/01/22 13:50	1
Fluoride	0.983		0.500		mg/L			07/01/22 13:50	1
Sulfate	327		25.0		mg/L			07/05/22 22:02	5
Total Dissolved Solids (TDS)	832		10.0		mg/L			07/01/22 10:28	1

**Client Sample ID: MW-52B**  
**Date Collected: 06/27/22 16:15**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	48.2		3.00		mg/L			07/01/22 14:06	1
Fluoride	ND		0.500		mg/L			07/01/22 14:06	1
Sulfate	501		25.0		mg/L			07/05/22 22:18	5
Total Dissolved Solids (TDS)	1040		20.0		mg/L			07/01/22 10:28	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## General Chemistry

**Client Sample ID: MW-49B**  
**Date Collected: 06/27/22 18:15**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-3**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34.8		3.00		mg/L			07/01/22 14:22	1
Fluoride	0.573		0.500		mg/L			07/01/22 14:22	1
Sulfate	442		25.0		mg/L			07/05/22 23:06	5
Total Dissolved Solids (TDS)	882		20.0		mg/L			07/01/22 10:28	1

**Client Sample ID: MW-21B**  
**Date Collected: 06/28/22 09:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-5**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	146	F1	3.00		mg/L			07/01/22 14:54	1
Fluoride	0.765	F1	0.500		mg/L			07/01/22 14:54	1
Sulfate	459		25.0		mg/L			07/01/22 15:58	5
Total Dissolved Solids (TDS)	1140		20.0		mg/L			07/05/22 12:32	1

**Client Sample ID: MW-38C**  
**Date Collected: 06/28/22 10:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-6**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29.1		3.00		mg/L			07/01/22 17:34	1
Fluoride	0.653		0.500		mg/L			07/01/22 17:34	1
Sulfate	230		10.0		mg/L			07/06/22 00:26	2
Total Dissolved Solids (TDS)	627		10.0		mg/L			07/01/22 10:28	1

**Client Sample ID: DUP-1**  
**Date Collected: 06/28/22 11:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-7**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29.2		3.00		mg/L			07/01/22 17:50	1
Fluoride	0.643		0.500		mg/L			07/01/22 17:50	1
Sulfate	228		10.0		mg/L			07/06/22 00:42	2
Total Dissolved Solids (TDS)	617		10.0		mg/L			07/01/22 10:28	1

**Client Sample ID: MW-38B**  
**Date Collected: 06/28/22 12:10**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-8**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	310		15.0		mg/L			07/01/22 18:22	5
Fluoride	ND		0.500		mg/L			07/01/22 18:06	1
Sulfate	5820		250		mg/L			07/06/22 00:58	50
Total Dissolved Solids (TDS)	8180		100		mg/L			07/01/22 10:28	1

**Client Sample ID: MW-53B**  
**Date Collected: 06/28/22 13:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-9**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	52.6		3.00		mg/L			07/01/22 18:38	1
Fluoride	1.09		0.500		mg/L			07/01/22 18:38	1
Sulfate	252		10.0		mg/L			07/06/22 02:34	2
Total Dissolved Solids (TDS)	681		10.0		mg/L			07/01/22 10:30	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## General Chemistry

**Client Sample ID: MW-39B**  
**Date Collected: 06/29/22 09:42**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-10**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	48.6		3.00		mg/L			07/02/22 10:42	1
Fluoride	1.54		0.500		mg/L			07/02/22 10:42	1
Sulfate	585		25.0		mg/L			07/02/22 10:59	5
Total Dissolved Solids (TDS)	1260		20.0		mg/L			07/05/22 12:32	1

**Client Sample ID: MW-32B**  
**Date Collected: 06/29/22 10:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-11**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	103		3.00		mg/L			07/02/22 11:15	1
Fluoride	0.553		0.500		mg/L			07/02/22 11:15	1
Sulfate	942		50.0		mg/L			07/06/22 03:38	10
Total Dissolved Solids (TDS)	1830		20.0		mg/L			07/05/22 12:34	1

**Client Sample ID: MW-36B**  
**Date Collected: 06/29/22 11:20**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-12**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	45.4	F1	3.00		mg/L			07/02/22 12:03	1
Fluoride	0.737	F1	0.500		mg/L			07/02/22 12:03	1
Sulfate	374		25.0		mg/L			07/06/22 03:54	5
Total Dissolved Solids (TDS)	861		10.0		mg/L			07/05/22 12:32	1

**Client Sample ID: MW-37B**  
**Date Collected: 06/29/22 13:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-13**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	121		3.00		mg/L			07/02/22 13:07	1
Fluoride	0.554		0.500		mg/L			07/02/22 13:07	1
Sulfate	610		25.0		mg/L			07/02/22 13:23	5
Total Dissolved Solids (TDS)	1320		20.0		mg/L			07/05/22 12:34	1

**Client Sample ID: MW-20B**  
**Date Collected: 06/29/22 13:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-14**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	52.3		3.00		mg/L			07/02/22 13:39	1
Fluoride	0.754		0.500		mg/L			07/02/22 13:39	1
Sulfate	422		25.0		mg/L			07/02/22 13:55	5
Total Dissolved Solids (TDS)	978		10.0		mg/L			07/05/22 12:34	1

**Client Sample ID: MW-14BR**  
**Date Collected: 06/29/22 14:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-15**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	85.6		3.00		mg/L			07/02/22 14:11	1
Fluoride	ND		0.500		mg/L			07/02/22 14:11	1
Sulfate	384		25.0		mg/L			07/02/22 14:27	5
Total Dissolved Solids (TDS)	944		10.0		mg/L			07/05/22 12:34	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## General Chemistry

**Client Sample ID: MW-41B**  
**Date Collected: 06/29/22 15:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-16**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	103		3.00		mg/L			07/02/22 15:15	1
Fluoride	0.507		0.500		mg/L			07/02/22 15:15	1
Sulfate	912		25.0		mg/L			07/02/22 15:31	5
Total Dissolved Solids (TDS)	1610		20.0		mg/L			07/05/22 12:34	1

**Client Sample ID: MW-43B**  
**Date Collected: 06/29/22 17:10**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-18**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	44.7		3.00		mg/L			07/02/22 16:02	1
Fluoride	0.606		0.500		mg/L			07/02/22 16:02	1
Sulfate	367		25.0		mg/L			07/06/22 04:26	5
Total Dissolved Solids (TDS)	819		10.0		mg/L			07/05/22 12:34	1

**Client Sample ID: MW-42B**  
**Date Collected: 06/29/22 18:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-19**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	356		15.0		mg/L			07/02/22 16:34	5
Fluoride	0.616		0.500		mg/L			07/02/22 16:18	1
Sulfate	2740		100		mg/L			07/06/22 04:42	20
Total Dissolved Solids (TDS)	4150		40.0		mg/L			07/05/22 12:34	1

**Client Sample ID: MW-47B**  
**Date Collected: 06/29/22 19:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-20**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	35.0		3.00		mg/L			07/02/22 16:50	1
Fluoride	ND		0.500		mg/L			07/02/22 16:50	1
Sulfate	321		25.0		mg/L			07/06/22 05:29	5
Total Dissolved Solids (TDS)	747		10.0		mg/L			07/05/22 12:34	1

**Client Sample ID: MW-46B**  
**Date Collected: 06/29/22 19:55**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-21**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21.8		3.00		mg/L			07/02/22 18:26	1
Fluoride	0.886		0.500		mg/L			07/02/22 18:26	1
Sulfate	186		5.00		mg/L			07/02/22 18:26	1
Total Dissolved Solids (TDS)	538		10.0		mg/L			07/05/22 12:34	1

**Client Sample ID: MW-45B**  
**Date Collected: 06/30/22 08:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-22**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	49.9		3.00		mg/L			07/02/22 18:42	1
Fluoride	0.774		0.500		mg/L			07/02/22 18:42	1
Sulfate	384		25.0		mg/L			07/06/22 05:45	5
Total Dissolved Solids (TDS)	938		10.0		mg/L			07/05/22 12:34	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## General Chemistry

**Client Sample ID: MW-44B**  
**Date Collected: 06/30/22 09:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-23**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	62.0		3.00		mg/L			07/02/22 19:46	1
Fluoride	0.719		0.500		mg/L			07/02/22 19:46	1
Sulfate	456		25.0		mg/L			07/06/22 06:01	5
Total Dissolved Solids (TDS)	1090		20.0		mg/L			07/05/22 12:34	1

**Client Sample ID: Field Blank**  
**Date Collected: 06/30/22 09:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-24**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00		mg/L			07/07/22 16:29	1
Fluoride	ND		0.500		mg/L			07/08/22 15:34	1
Sulfate	ND		5.00		mg/L			07/07/22 16:29	1
Total Dissolved Solids (TDS)	ND		10.0		mg/L			07/07/22 09:54	1

# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 280-580072/1-A**  
**Matrix: Water**  
**Analysis Batch: 580399**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 580072**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.100		mg/L		07/07/22 16:21	07/09/22 04:28	1
Calcium	ND		0.200		mg/L		07/07/22 16:21	07/09/22 04:28	1
Lithium	ND	^+	0.0200		mg/L		07/07/22 16:21	07/09/22 04:28	1

**Lab Sample ID: LCS 280-580072/2-A**  
**Matrix: Water**  
**Analysis Batch: 580399**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 580072**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	2.021		mg/L		101	86 - 110
Calcium	50.0	50.59		mg/L		101	90 - 111
Lithium	1.00	0.9887	^+	mg/L		99	90 - 112

**Lab Sample ID: MB 280-580077/1-A**  
**Matrix: Water**  
**Analysis Batch: 580398**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 580077**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.100		mg/L		07/07/22 09:10	07/08/22 22:49	1
Calcium	ND		0.200		mg/L		07/07/22 09:10	07/08/22 22:49	1

**Lab Sample ID: MB 280-580077/1-A**  
**Matrix: Water**  
**Analysis Batch: 580535**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 580077**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0200		mg/L		07/07/22 09:10	07/11/22 12:17	1

**Lab Sample ID: LCS 280-580077/2-A**  
**Matrix: Water**  
**Analysis Batch: 580398**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 580077**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	2.096		mg/L		105	86 - 110
Calcium	50.0	51.83		mg/L		104	90 - 111

**Lab Sample ID: LCS 280-580077/2-A**  
**Matrix: Water**  
**Analysis Batch: 580535**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 580077**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1.00	1.001		mg/L		100	90 - 112

**Lab Sample ID: 280-163953-5 MS**  
**Matrix: Water**  
**Analysis Batch: 580398**

**Client Sample ID: MW-21B**  
**Prep Type: Total Recoverable**  
**Prep Batch: 580077**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.157		2.00	2.362		mg/L		110	87 - 113
Calcium	177		50.0	236.2		mg/L		118	48 - 153

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# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Method: 6010C - Metals (ICP)

**Lab Sample ID: 280-163953-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 580398**

**Client Sample ID: MW-21B**  
**Prep Type: Total Recoverable**  
**Prep Batch: 580077**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	0.157		2.00	2.280		mg/L		106	87 - 113	4	20
Calcium	177		50.0	230.5		mg/L		106	48 - 153	2	20

**Lab Sample ID: MB 280-580153/1-A**  
**Matrix: Water**  
**Analysis Batch: 580425**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 580153**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.100		mg/L		07/07/22 09:10	07/09/22 10:46	1
Calcium	ND		0.200		mg/L		07/07/22 09:10	07/09/22 10:46	1

**Lab Sample ID: MB 280-580153/1-A**  
**Matrix: Water**  
**Analysis Batch: 580535**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 580153**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND	^+	0.0200		mg/L		07/07/22 09:10	07/11/22 14:30	1

**Lab Sample ID: LCS 280-580153/2-A**  
**Matrix: Water**  
**Analysis Batch: 580425**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 580153**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	2.092		mg/L		105	86 - 110
Calcium	50.0	51.88		mg/L		104	90 - 111

**Lab Sample ID: LCS 280-580153/2-A**  
**Matrix: Water**  
**Analysis Batch: 580535**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 580153**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1.00	1.005	^+	mg/L		101	90 - 112

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

**Lab Sample ID: MB 240-533712/1-A**  
**Matrix: Water**  
**Analysis Batch: 534178**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 533712**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/11/22 12:53	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/11/22 12:53	1
Barium	ND		0.00500		mg/L		07/07/22 12:00	07/11/22 12:53	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/11/22 12:53	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/11/22 12:53	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/11/22 12:53	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/11/22 12:53	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/11/22 12:53	1
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/11/22 12:53	1
Selenium	ND		0.00500		mg/L		07/07/22 12:00	07/11/22 12:53	1

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# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

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

**Lab Sample ID: MB 240-533712/1-A**  
**Matrix: Water**  
**Analysis Batch: 534178**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 533712**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/11/22 12:53	1

**Lab Sample ID: LCS 240-533712/2-A**  
**Matrix: Water**  
**Analysis Batch: 534178**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 533712**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Antimony	0.100	0.1014		mg/L		101	80 - 120	
Arsenic	1.00	0.9465		mg/L		95	80 - 120	
Barium	1.00	1.018		mg/L		102	80 - 120	
Beryllium	0.500	0.5134		mg/L		103	80 - 120	
Cadmium	0.500	0.4782		mg/L		96	80 - 120	
Chromium	0.500	0.5028		mg/L		101	80 - 120	
Cobalt	0.500	0.4916		mg/L		98	80 - 120	
Lead	0.500	0.5042		mg/L		101	80 - 120	
Molybdenum	0.500	0.5046		mg/L		101	80 - 120	
Selenium	1.00	0.9644		mg/L		96	80 - 120	
Thallium	1.00	0.9740		mg/L		97	80 - 120	

**Lab Sample ID: MB 240-533714/1-A**  
**Matrix: Water**  
**Analysis Batch: 533965**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 533714**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200		mg/L		07/07/22 12:00	07/08/22 10:28	1
Arsenic	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 10:28	1
Barium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 10:28	1
Beryllium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:28	1
Cadmium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:28	1
Chromium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 10:28	1
Cobalt	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:28	1
Lead	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:28	1
Lithium	ND		0.00800		mg/L		07/07/22 12:00	07/08/22 10:28	1
Molybdenum	ND		0.0100		mg/L		07/07/22 12:00	07/08/22 10:28	1
Selenium	ND		0.00500		mg/L		07/07/22 12:00	07/08/22 10:28	1
Thallium	ND		0.00100		mg/L		07/07/22 12:00	07/08/22 10:28	1

**Lab Sample ID: LCS 240-533714/2-A**  
**Matrix: Water**  
**Analysis Batch: 533965**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 533714**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Antimony	0.100	0.1024		mg/L		102	80 - 120	
Arsenic	1.00	0.9353		mg/L		94	80 - 120	
Barium	1.00	0.9707		mg/L		97	80 - 120	
Beryllium	0.500	0.4419		mg/L		88	80 - 120	
Cadmium	0.500	0.4740		mg/L		95	80 - 120	
Chromium	0.500	0.4871		mg/L		97	80 - 120	
Cobalt	0.500	0.4727		mg/L		95	80 - 120	

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# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

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

**Lab Sample ID: LCS 240-533714/2-A**  
**Matrix: Water**  
**Analysis Batch: 533965**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 533714**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	0.500	0.4803		mg/L		96	80 - 120
Lithium	0.500	0.4762		mg/L		95	80 - 120
Molybdenum	0.500	0.4618		mg/L		92	80 - 120
Selenium	1.00	0.9194		mg/L		92	80 - 120
Thallium	1.00	0.9207		mg/L		92	80 - 120

**Lab Sample ID: 280-163953-5 MS**  
**Matrix: Water**  
**Analysis Batch: 533965**

**Client Sample ID: MW-21B**  
**Prep Type: Total Recoverable**  
**Prep Batch: 533714**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		0.100	0.1049		mg/L		105	75 - 125
Arsenic	ND		1.00	0.9524		mg/L		95	75 - 125
Barium	0.0426		1.00	1.042		mg/L		100	75 - 125
Beryllium	ND		0.500	0.4554		mg/L		91	75 - 125
Cadmium	ND		0.500	0.4816		mg/L		96	75 - 125
Chromium	0.0105		0.500	0.4916		mg/L		96	75 - 125
Cobalt	ND		0.500	0.4765		mg/L		95	75 - 125
Lead	ND		0.500	0.4783		mg/L		96	75 - 125
Lithium	0.0342		0.500	0.5294		mg/L		99	75 - 125
Molybdenum	0.0151		0.500	0.5044		mg/L		98	75 - 125
Selenium	0.0325		1.00	0.9751		mg/L		94	75 - 125
Thallium	ND		1.00	0.9248		mg/L		92	75 - 125

**Lab Sample ID: 280-163953-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 533965**

**Client Sample ID: MW-21B**  
**Prep Type: Total Recoverable**  
**Prep Batch: 533714**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Antimony	ND		0.100	0.09374		mg/L		94	75 - 125	11	20
Arsenic	ND		1.00	0.8579		mg/L		86	75 - 125	10	20
Barium	0.0426		1.00	0.9226		mg/L		88	75 - 125	12	20
Beryllium	ND		0.500	0.4076		mg/L		82	75 - 125	11	20
Cadmium	ND		0.500	0.4301		mg/L		86	75 - 125	11	20
Chromium	0.0105		0.500	0.4442		mg/L		87	75 - 125	10	20
Cobalt	ND		0.500	0.4257		mg/L		85	75 - 125	11	20
Lead	ND		0.500	0.4316		mg/L		86	75 - 125	10	20
Lithium	0.0342		0.500	0.4737		mg/L		88	75 - 125	11	20
Molybdenum	0.0151		0.500	0.4502		mg/L		87	75 - 125	11	20
Selenium	0.0325		1.00	0.8597		mg/L		83	75 - 125	13	20
Thallium	ND		1.00	0.8294		mg/L		83	75 - 125	11	20

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 280-579667/1-A**  
**Matrix: Water**  
**Analysis Batch: 579777**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 579667**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 04:53	1

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# QC Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: LCS 280-579667/2-A**  
**Matrix: Water**  
**Analysis Batch: 579777**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 579667**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.004781		mg/L		96	84 - 120

**Lab Sample ID: 280-163953-5 MS**  
**Matrix: Water**  
**Analysis Batch: 579777**

**Client Sample ID: MW-21B**  
**Prep Type: Total/NA**  
**Prep Batch: 579667**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.00500	0.004673		mg/L		93	75 - 125

**Lab Sample ID: 280-163953-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 579777**

**Client Sample ID: MW-21B**  
**Prep Type: Total/NA**  
**Prep Batch: 579667**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Mercury	ND		0.00500	0.004595		mg/L		92	75 - 125	2	20

**Lab Sample ID: MB 280-579668/1-A**  
**Matrix: Water**  
**Analysis Batch: 579777**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 579668**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		06/30/22 22:19	07/01/22 03:55	1

**Lab Sample ID: LCS 280-579668/2-A**  
**Matrix: Water**  
**Analysis Batch: 579777**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 579668**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.004778		mg/L		96	84 - 120

**Lab Sample ID: MB 280-579954/1-A**  
**Matrix: Water**  
**Analysis Batch: 580363**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 579954**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		07/07/22 17:40	07/08/22 01:58	1

**Lab Sample ID: LCS 280-579954/2-A**  
**Matrix: Water**  
**Analysis Batch: 580363**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 579954**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.004936		mg/L		99	84 - 120

# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Method: 9056A - Anions, Ion Chromatography

**Lab Sample ID: MB 280-579709/52**  
**Matrix: Water**  
**Analysis Batch: 579709**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00		mg/L			07/02/22 17:38	1
Fluoride	ND		0.500		mg/L			07/02/22 17:38	1
Sulfate	ND		5.00		mg/L			07/02/22 17:38	1

**Lab Sample ID: MB 280-579709/6**  
**Matrix: Water**  
**Analysis Batch: 579709**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00		mg/L			07/01/22 12:47	1
Fluoride	ND		0.500		mg/L			07/01/22 12:47	1
Sulfate	ND		5.00		mg/L			07/01/22 12:47	1

**Lab Sample ID: LCS 280-579709/4**  
**Matrix: Water**  
**Analysis Batch: 579709**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	99.79		mg/L		100	90 - 110
Fluoride	5.00	4.915		mg/L		98	90 - 110
Sulfate	100	100.4		mg/L		100	90 - 110

**Lab Sample ID: LCS 280-579709/50**  
**Matrix: Water**  
**Analysis Batch: 579709**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	101.3		mg/L		101	90 - 110
Fluoride	5.00	4.555		mg/L		91	90 - 110
Sulfate	100	101.6		mg/L		102	90 - 110

**Lab Sample ID: LCSD 280-579709/5**  
**Matrix: Water**  
**Analysis Batch: 579709**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	99.73		mg/L		100	90 - 110	0	10
Fluoride	5.00	4.832		mg/L		97	90 - 110	2	10
Sulfate	100	100.3		mg/L		100	90 - 110	0	10

**Lab Sample ID: LCSD 280-579709/51**  
**Matrix: Water**  
**Analysis Batch: 579709**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	101.7		mg/L		102	90 - 110	0	10
Fluoride	5.00	4.762		mg/L		95	90 - 110	4	10
Sulfate	100	102.1		mg/L		102	90 - 110	1	10

# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

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

**Lab Sample ID: MRL 280-579709/3**  
**Matrix: Water**  
**Analysis Batch: 579709**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	4.637		mg/L		93	50 - 150
Fluoride	0.500	ND		mg/L		97	50 - 150
Sulfate	5.00	ND		mg/L		90	50 - 150

**Lab Sample ID: 280-163953-5 MS**  
**Matrix: Water**  
**Analysis Batch: 579709**

**Client Sample ID: MW-21B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	146	F1	50.0	216.9	E F1	mg/L		141	80 - 120
Fluoride	0.765	F1	5.00	7.160	F1	mg/L		128	80 - 120

**Lab Sample ID: 280-163953-5 MS**  
**Matrix: Water**  
**Analysis Batch: 579709**

**Client Sample ID: MW-21B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	459		250	705.4		mg/L		99	80 - 120

**Lab Sample ID: 280-163953-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 579709**

**Client Sample ID: MW-21B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	146	F1	50.0	214.1	E F1	mg/L		136	80 - 120	1	20
Fluoride	0.765	F1	5.00	6.991	F1	mg/L		125	80 - 120	2	20

**Lab Sample ID: 280-163953-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 579709**

**Client Sample ID: MW-21B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	459		250	702.9		mg/L		98	80 - 120	0	20

**Lab Sample ID: 280-163953-12 MS**  
**Matrix: Water**  
**Analysis Batch: 579709**

**Client Sample ID: MW-36B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	45.4	F1	50.0	111.5	F1	mg/L		132	80 - 120
Fluoride	0.737	F1	5.00	7.280	F1	mg/L		131	80 - 120

**Lab Sample ID: 280-163953-12 MSD**  
**Matrix: Water**  
**Analysis Batch: 579709**

**Client Sample ID: MW-36B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	45.4	F1	50.0	117.2	F1	mg/L		144	80 - 120	5	20
Fluoride	0.737	F1	5.00	7.827	F1	mg/L		142	80 - 120	7	20

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# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

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

**Lab Sample ID: 280-163953-22 MS**  
**Matrix: Water**  
**Analysis Batch: 579709**

**Client Sample ID: MW-45B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	49.9		50.0	92.61		mg/L		85	80 - 120
Fluoride	0.774		5.00	5.127		mg/L		87	80 - 120

**Lab Sample ID: 280-163953-22 MSD**  
**Matrix: Water**  
**Analysis Batch: 579709**

**Client Sample ID: MW-45B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	49.9		50.0	93.62		mg/L		87	80 - 120	1	20
Fluoride	0.774		5.00	5.254		mg/L		90	80 - 120	2	20

**Lab Sample ID: 280-163953-5 DU**  
**Matrix: Water**  
**Analysis Batch: 579709**

**Client Sample ID: MW-21B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	146	F1	147.3		mg/L		0.7	15
Fluoride	0.765	F1	0.7646		mg/L		0.1	15

**Lab Sample ID: 280-163953-5 DU**  
**Matrix: Water**  
**Analysis Batch: 579709**

**Client Sample ID: MW-21B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	459		457.6		mg/L		0.3	15

**Lab Sample ID: 280-163953-12 DU**  
**Matrix: Water**  
**Analysis Batch: 579709**

**Client Sample ID: MW-36B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	45.4	F1	45.41		mg/L		0	15
Fluoride	0.737	F1	0.7227		mg/L		2	15

**Lab Sample ID: 280-163953-22 DU**  
**Matrix: Water**  
**Analysis Batch: 579709**

**Client Sample ID: MW-45B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	49.9		50.11		mg/L		0.4	15
Fluoride	0.774		0.7804		mg/L		0.8	15

**Lab Sample ID: MB 280-579961/43**  
**Matrix: Water**  
**Analysis Batch: 579961**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.00		mg/L			07/06/22 02:18	1

# QC Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

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

**Lab Sample ID: MB 280-579961/6**  
**Matrix: Water**  
**Analysis Batch: 579961**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.00		mg/L			07/05/22 14:16	1

**Lab Sample ID: LCS 280-579961/39**  
**Matrix: Water**  
**Analysis Batch: 579961**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	100	99.80		mg/L		100	90 - 110

**Lab Sample ID: LCS 280-579961/4**  
**Matrix: Water**  
**Analysis Batch: 579961**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	100	99.60		mg/L		100	90 - 110

**Lab Sample ID: LCSD 280-579961/40**  
**Matrix: Water**  
**Analysis Batch: 579961**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	100	99.70		mg/L		100	90 - 110	0	10

**Lab Sample ID: LCSD 280-579961/5**  
**Matrix: Water**  
**Analysis Batch: 579961**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	100	99.42		mg/L		99	90 - 110	0	10

**Lab Sample ID: MRL 280-579961/3**  
**Matrix: Water**  
**Analysis Batch: 579961**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	5.00	ND		mg/L		81	50 - 150

**Lab Sample ID: 280-163953-9 MS**  
**Matrix: Water**  
**Analysis Batch: 579961**

**Client Sample ID: MW-53B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	252		100	346.6		mg/L		94	80 - 120

**Lab Sample ID: 280-163953-9 MSD**  
**Matrix: Water**  
**Analysis Batch: 579961**

**Client Sample ID: MW-53B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	252		100	343.5		mg/L		91	80 - 120	1	20

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# QC Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Method: 9056A - Anions, Ion Chromatography

**Lab Sample ID: 280-163953-9 DU**  
**Matrix: Water**  
**Analysis Batch: 579961**

**Client Sample ID: MW-53B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	252		245.9		mg/L		3	15

**Lab Sample ID: MB 280-580183/6**  
**Matrix: Water**  
**Analysis Batch: 580183**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00		mg/L			07/07/22 11:02	1
Sulfate	ND		5.00		mg/L			07/07/22 11:02	1

**Lab Sample ID: LCS 280-580183/4**  
**Matrix: Water**  
**Analysis Batch: 580183**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	98.52		mg/L		99	90 - 110
Sulfate	100	99.48		mg/L		99	90 - 110

**Lab Sample ID: LCSD 280-580183/5**  
**Matrix: Water**  
**Analysis Batch: 580183**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	98.38		mg/L		98	90 - 110	0	10
Sulfate	100	99.32		mg/L		99	90 - 110	0	10

**Lab Sample ID: MRL 280-580183/3**  
**Matrix: Water**  
**Analysis Batch: 580183**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	3.663		mg/L		73	50 - 150
Sulfate	5.00	ND		mg/L		70	50 - 150

**Lab Sample ID: MB 280-580337/6**  
**Matrix: Water**  
**Analysis Batch: 580337**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.500		mg/L			07/08/22 14:14	1

**Lab Sample ID: LCS 280-580337/4**  
**Matrix: Water**  
**Analysis Batch: 580337**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	5.00	4.848		mg/L		97	90 - 110

# QC Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

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

Lab Sample ID: LCSD 280-580337/5  
 Matrix: Water  
 Analysis Batch: 580337

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	5.00	4.886		mg/L		98	90 - 110	1	10

Lab Sample ID: MRL 280-580337/3  
 Matrix: Water  
 Analysis Batch: 580337

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride	0.500	0.5325		mg/L		107	50 - 150		

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

Lab Sample ID: MB 280-579715/1  
 Matrix: Water  
 Analysis Batch: 579715

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10.0		mg/L			07/01/22 10:28	1

Lab Sample ID: LCS 280-579715/2  
 Matrix: Water  
 Analysis Batch: 579715

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)	502	472.0		mg/L		94	88 - 114		

Lab Sample ID: LCSD 280-579715/3  
 Matrix: Water  
 Analysis Batch: 579715

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	502	477.0		mg/L		95	88 - 114	1	20

Lab Sample ID: MB 280-579716/1  
 Matrix: Water  
 Analysis Batch: 579716

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10.0		mg/L			07/01/22 10:30	1

Lab Sample ID: LCS 280-579716/2  
 Matrix: Water  
 Analysis Batch: 579716

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids (TDS)	502	479.0		mg/L		95	88 - 114		

# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

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

**Lab Sample ID: 280-163953-9 DU**  
**Matrix: Water**  
**Analysis Batch: 579716**

**Client Sample ID: MW-53B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	681		674.0		mg/L		1	10

**Lab Sample ID: MB 280-579957/1**  
**Matrix: Water**  
**Analysis Batch: 579957**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10.0		mg/L			07/05/22 12:32	1

**Lab Sample ID: LCS 280-579957/2**  
**Matrix: Water**  
**Analysis Batch: 579957**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	502	492.0		mg/L		98	88 - 114

**Lab Sample ID: LCSD 280-579957/3**  
**Matrix: Water**  
**Analysis Batch: 579957**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	502	481.0		mg/L		96	88 - 114	2	20

**Lab Sample ID: 280-163953-12 DU**  
**Matrix: Water**  
**Analysis Batch: 579957**

**Client Sample ID: MW-36B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	861		867.0		mg/L		0.7	10

**Lab Sample ID: MB 280-579958/1**  
**Matrix: Water**  
**Analysis Batch: 579958**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10.0		mg/L			07/05/22 12:34	1

**Lab Sample ID: LCS 280-579958/2**  
**Matrix: Water**  
**Analysis Batch: 579958**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	502	495.0		mg/L		99	88 - 114

**Lab Sample ID: 280-163953-14 DU**  
**Matrix: Water**  
**Analysis Batch: 579958**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	978		966.0		mg/L		1	10

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# QC Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

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

**Lab Sample ID: MB 280-580191/1**  
**Matrix: Water**  
**Analysis Batch: 580191**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10.0		mg/L			07/07/22 09:54	1

**Lab Sample ID: LCS 280-580191/2**  
**Matrix: Water**  
**Analysis Batch: 580191**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	501	483.0		mg/L		96	88 - 114



# QC Association Summary

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Metals

### Prep Batch: 533712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-23	MW-44B	Total Recoverable	Water	3005A	
280-163953-24	Field Blank	Total Recoverable	Water	3005A	
MB 240-533712/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-533712/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

### Prep Batch: 533714

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-1	MW-40B	Total Recoverable	Water	3005A	
280-163953-2	MW-52B	Total Recoverable	Water	3005A	
280-163953-3	MW-49B	Total Recoverable	Water	3005A	
280-163953-5	MW-21B	Total Recoverable	Water	3005A	
280-163953-6	MW-38C	Total Recoverable	Water	3005A	
280-163953-7	DUP-1	Total Recoverable	Water	3005A	
280-163953-8	MW-38B	Total Recoverable	Water	3005A	
280-163953-9	MW-53B	Total Recoverable	Water	3005A	
280-163953-10	MW-39B	Total Recoverable	Water	3005A	
280-163953-11	MW-32B	Total Recoverable	Water	3005A	
280-163953-12	MW-36B	Total Recoverable	Water	3005A	
280-163953-13	MW-37B	Total Recoverable	Water	3005A	
280-163953-14	MW-20B	Total Recoverable	Water	3005A	
280-163953-15	MW-14BR	Total Recoverable	Water	3005A	
280-163953-16	MW-41B	Total Recoverable	Water	3005A	
280-163953-18	MW-43B	Total Recoverable	Water	3005A	
280-163953-19	MW-42B	Total Recoverable	Water	3005A	
280-163953-20	MW-47B	Total Recoverable	Water	3005A	
280-163953-21	MW-46B	Total Recoverable	Water	3005A	
280-163953-22	MW-45B	Total Recoverable	Water	3005A	
MB 240-533714/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-533714/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-163953-5 MS	MW-21B	Total Recoverable	Water	3005A	
280-163953-5 MSD	MW-21B	Total Recoverable	Water	3005A	

### Analysis Batch: 533965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-1	MW-40B	Total Recoverable	Water	6020A	533714
280-163953-2	MW-52B	Total Recoverable	Water	6020A	533714
280-163953-3	MW-49B	Total Recoverable	Water	6020A	533714
280-163953-5	MW-21B	Total Recoverable	Water	6020A	533714
280-163953-6	MW-38C	Total Recoverable	Water	6020A	533714
280-163953-7	DUP-1	Total Recoverable	Water	6020A	533714
280-163953-8	MW-38B	Total Recoverable	Water	6020A	533714
280-163953-9	MW-53B	Total Recoverable	Water	6020A	533714
280-163953-10	MW-39B	Total Recoverable	Water	6020A	533714
280-163953-11	MW-32B	Total Recoverable	Water	6020A	533714
280-163953-12	MW-36B	Total Recoverable	Water	6020A	533714
280-163953-13	MW-37B	Total Recoverable	Water	6020A	533714
280-163953-14	MW-20B	Total Recoverable	Water	6020A	533714
280-163953-15	MW-14BR	Total Recoverable	Water	6020A	533714
280-163953-16	MW-41B	Total Recoverable	Water	6020A	533714
280-163953-18	MW-43B	Total Recoverable	Water	6020A	533714
280-163953-19	MW-42B	Total Recoverable	Water	6020A	533714

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# QC Association Summary

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Metals (Continued)

### Analysis Batch: 533965 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-20	MW-47B	Total Recoverable	Water	6020A	533714
280-163953-21	MW-46B	Total Recoverable	Water	6020A	533714
280-163953-22	MW-45B	Total Recoverable	Water	6020A	533714
MB 240-533714/1-A	Method Blank	Total Recoverable	Water	6020A	533714
LCS 240-533714/2-A	Lab Control Sample	Total Recoverable	Water	6020A	533714
280-163953-5 MS	MW-21B	Total Recoverable	Water	6020A	533714
280-163953-5 MSD	MW-21B	Total Recoverable	Water	6020A	533714

### Analysis Batch: 534178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-23	MW-44B	Total Recoverable	Water	6020A	533712
280-163953-24	Field Blank	Total Recoverable	Water	6020A	533712
MB 240-533712/1-A	Method Blank	Total Recoverable	Water	6020A	533712
LCS 240-533712/2-A	Lab Control Sample	Total Recoverable	Water	6020A	533712

### Prep Batch: 579667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-1	MW-40B	Total/NA	Water	7470A	
280-163953-2	MW-52B	Total/NA	Water	7470A	
280-163953-3	MW-49B	Total/NA	Water	7470A	
280-163953-5	MW-21B	Total/NA	Water	7470A	
280-163953-6	MW-38C	Total/NA	Water	7470A	
280-163953-7	DUP-1	Total/NA	Water	7470A	
280-163953-8	MW-38B	Total/NA	Water	7470A	
280-163953-9	MW-53B	Total/NA	Water	7470A	
280-163953-10	MW-39B	Total/NA	Water	7470A	
280-163953-11	MW-32B	Total/NA	Water	7470A	
280-163953-12	MW-36B	Total/NA	Water	7470A	
280-163953-13	MW-37B	Total/NA	Water	7470A	
280-163953-14	MW-20B	Total/NA	Water	7470A	
280-163953-15	MW-14BR	Total/NA	Water	7470A	
280-163953-16	MW-41B	Total/NA	Water	7470A	
280-163953-18	MW-43B	Total/NA	Water	7470A	
280-163953-19	MW-42B	Total/NA	Water	7470A	
280-163953-20	MW-47B	Total/NA	Water	7470A	
MB 280-579667/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-579667/2-A	Lab Control Sample	Total/NA	Water	7470A	
280-163953-5 MS	MW-21B	Total/NA	Water	7470A	
280-163953-5 MSD	MW-21B	Total/NA	Water	7470A	

### Prep Batch: 579668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-21	MW-46B	Total/NA	Water	7470A	
280-163953-22	MW-45B	Total/NA	Water	7470A	
280-163953-23	MW-44B	Total/NA	Water	7470A	
MB 280-579668/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-579668/2-A	Lab Control Sample	Total/NA	Water	7470A	

### Analysis Batch: 579777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-1	MW-40B	Total/NA	Water	7470A	579667

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# QC Association Summary

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Metals (Continued)

### Analysis Batch: 579777 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-2	MW-52B	Total/NA	Water	7470A	579667
280-163953-3	MW-49B	Total/NA	Water	7470A	579667
280-163953-5	MW-21B	Total/NA	Water	7470A	579667
280-163953-6	MW-38C	Total/NA	Water	7470A	579667
280-163953-7	DUP-1	Total/NA	Water	7470A	579667
280-163953-8	MW-38B	Total/NA	Water	7470A	579667
280-163953-9	MW-53B	Total/NA	Water	7470A	579667
280-163953-10	MW-39B	Total/NA	Water	7470A	579667
280-163953-11	MW-32B	Total/NA	Water	7470A	579667
280-163953-12	MW-36B	Total/NA	Water	7470A	579667
280-163953-13	MW-37B	Total/NA	Water	7470A	579667
280-163953-14	MW-20B	Total/NA	Water	7470A	579667
280-163953-15	MW-14BR	Total/NA	Water	7470A	579667
280-163953-16	MW-41B	Total/NA	Water	7470A	579667
280-163953-18	MW-43B	Total/NA	Water	7470A	579667
280-163953-19	MW-42B	Total/NA	Water	7470A	579667
280-163953-20	MW-47B	Total/NA	Water	7470A	579667
280-163953-21	MW-46B	Total/NA	Water	7470A	579668
280-163953-22	MW-45B	Total/NA	Water	7470A	579668
280-163953-23	MW-44B	Total/NA	Water	7470A	579668
MB 280-579667/1-A	Method Blank	Total/NA	Water	7470A	579667
MB 280-579668/1-A	Method Blank	Total/NA	Water	7470A	579668
LCS 280-579667/2-A	Lab Control Sample	Total/NA	Water	7470A	579667
LCS 280-579668/2-A	Lab Control Sample	Total/NA	Water	7470A	579668
280-163953-5 MS	MW-21B	Total/NA	Water	7470A	579667
280-163953-5 MSD	MW-21B	Total/NA	Water	7470A	579667

### Prep Batch: 579954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-24	Field Blank	Total/NA	Water	7470A	
MB 280-579954/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-579954/2-A	Lab Control Sample	Total/NA	Water	7470A	

### Prep Batch: 580072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-1	MW-40B	Total Recoverable	Water	3005A	
280-163953-2	MW-52B	Total Recoverable	Water	3005A	
280-163953-3	MW-49B	Total Recoverable	Water	3005A	
MB 280-580072/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-580072/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

### Prep Batch: 580077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-5	MW-21B	Total Recoverable	Water	3005A	
280-163953-6	MW-38C	Total Recoverable	Water	3005A	
280-163953-7	DUP-1	Total Recoverable	Water	3005A	
280-163953-8	MW-38B	Total Recoverable	Water	3005A	
280-163953-9	MW-53B	Total Recoverable	Water	3005A	
280-163953-10	MW-39B	Total Recoverable	Water	3005A	
280-163953-11	MW-32B	Total Recoverable	Water	3005A	
280-163953-12	MW-36B	Total Recoverable	Water	3005A	

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# QC Association Summary

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Metals (Continued)

### Prep Batch: 580077 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-13	MW-37B	Total Recoverable	Water	3005A	
280-163953-14	MW-20B	Total Recoverable	Water	3005A	
280-163953-15	MW-14BR	Total Recoverable	Water	3005A	
280-163953-16	MW-41B	Total Recoverable	Water	3005A	
280-163953-18	MW-43B	Total Recoverable	Water	3005A	
280-163953-19	MW-42B	Total Recoverable	Water	3005A	
280-163953-20	MW-47B	Total Recoverable	Water	3005A	
280-163953-21	MW-46B	Total Recoverable	Water	3005A	
280-163953-22	MW-45B	Total Recoverable	Water	3005A	
280-163953-23	MW-44B	Total Recoverable	Water	3005A	
MB 280-580077/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-580077/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-163953-5 MS	MW-21B	Total Recoverable	Water	3005A	
280-163953-5 MSD	MW-21B	Total Recoverable	Water	3005A	

### Prep Batch: 580153

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-24	Field Blank	Total Recoverable	Water	3005A	
MB 280-580153/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-580153/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

### Analysis Batch: 580363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-24	Field Blank	Total/NA	Water	7470A	579954
MB 280-579954/1-A	Method Blank	Total/NA	Water	7470A	579954
LCS 280-579954/2-A	Lab Control Sample	Total/NA	Water	7470A	579954

### Analysis Batch: 580398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-5	MW-21B	Total Recoverable	Water	6010C	580077
280-163953-6	MW-38C	Total Recoverable	Water	6010C	580077
280-163953-7	DUP-1	Total Recoverable	Water	6010C	580077
280-163953-8	MW-38B	Total Recoverable	Water	6010C	580077
280-163953-9	MW-53B	Total Recoverable	Water	6010C	580077
280-163953-10	MW-39B	Total Recoverable	Water	6010C	580077
280-163953-11	MW-32B	Total Recoverable	Water	6010C	580077
280-163953-12	MW-36B	Total Recoverable	Water	6010C	580077
280-163953-13	MW-37B	Total Recoverable	Water	6010C	580077
280-163953-14	MW-20B	Total Recoverable	Water	6010C	580077
280-163953-15	MW-14BR	Total Recoverable	Water	6010C	580077
280-163953-16	MW-41B	Total Recoverable	Water	6010C	580077
280-163953-18	MW-43B	Total Recoverable	Water	6010C	580077
280-163953-19	MW-42B	Total Recoverable	Water	6010C	580077
280-163953-20	MW-47B	Total Recoverable	Water	6010C	580077
280-163953-21	MW-46B	Total Recoverable	Water	6010C	580077
280-163953-22	MW-45B	Total Recoverable	Water	6010C	580077
280-163953-23	MW-44B	Total Recoverable	Water	6010C	580077
MB 280-580077/1-A	Method Blank	Total Recoverable	Water	6010C	580077
LCS 280-580077/2-A	Lab Control Sample	Total Recoverable	Water	6010C	580077
280-163953-5 MS	MW-21B	Total Recoverable	Water	6010C	580077
280-163953-5 MSD	MW-21B	Total Recoverable	Water	6010C	580077

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# QC Association Summary

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Metals

### Analysis Batch: 580399

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-1	MW-40B	Total Recoverable	Water	6010C	580072
280-163953-2	MW-52B	Total Recoverable	Water	6010C	580072
280-163953-3	MW-49B	Total Recoverable	Water	6010C	580072
MB 280-580072/1-A	Method Blank	Total Recoverable	Water	6010C	580072
LCS 280-580072/2-A	Lab Control Sample	Total Recoverable	Water	6010C	580072

### Analysis Batch: 580425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-24	Field Blank	Total Recoverable	Water	6010C	580153
MB 280-580153/1-A	Method Blank	Total Recoverable	Water	6010C	580153
LCS 280-580153/2-A	Lab Control Sample	Total Recoverable	Water	6010C	580153

### Analysis Batch: 580534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-1	MW-40B	Total Recoverable	Water	6010C	580072
280-163953-2	MW-52B	Total Recoverable	Water	6010C	580072
280-163953-3	MW-49B	Total Recoverable	Water	6010C	580072

### Analysis Batch: 580535

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-5	MW-21B	Total Recoverable	Water	6010C	580077
280-163953-6	MW-38C	Total Recoverable	Water	6010C	580077
280-163953-7	DUP-1	Total Recoverable	Water	6010C	580077
280-163953-8	MW-38B	Total Recoverable	Water	6010C	580077
280-163953-9	MW-53B	Total Recoverable	Water	6010C	580077
280-163953-10	MW-39B	Total Recoverable	Water	6010C	580077
280-163953-11	MW-32B	Total Recoverable	Water	6010C	580077
280-163953-12	MW-36B	Total Recoverable	Water	6010C	580077
280-163953-13	MW-37B	Total Recoverable	Water	6010C	580077
280-163953-14	MW-20B	Total Recoverable	Water	6010C	580077
280-163953-15	MW-14BR	Total Recoverable	Water	6010C	580077
280-163953-16	MW-41B	Total Recoverable	Water	6010C	580077
280-163953-18	MW-43B	Total Recoverable	Water	6010C	580077
MB 280-580077/1-A	Method Blank	Total Recoverable	Water	6010C	580077
MB 280-580153/1-A	Method Blank	Total Recoverable	Water	6010C	580153
LCS 280-580077/2-A	Lab Control Sample	Total Recoverable	Water	6010C	580077
LCS 280-580153/2-A	Lab Control Sample	Total Recoverable	Water	6010C	580153

### Analysis Batch: 580651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-19	MW-42B	Total Recoverable	Water	6010C	580077
280-163953-20	MW-47B	Total Recoverable	Water	6010C	580077
280-163953-21	MW-46B	Total Recoverable	Water	6010C	580077
280-163953-22	MW-45B	Total Recoverable	Water	6010C	580077
280-163953-23	MW-44B	Total Recoverable	Water	6010C	580077
280-163953-24	Field Blank	Total Recoverable	Water	6010C	580153

# QC Association Summary

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## General Chemistry

Analysis Batch: 579709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-1	MW-40B	Total/NA	Water	9056A	
280-163953-2	MW-52B	Total/NA	Water	9056A	
280-163953-3	MW-49B	Total/NA	Water	9056A	
280-163953-5	MW-21B	Total/NA	Water	9056A	
280-163953-5	MW-21B	Total/NA	Water	9056A	
280-163953-6	MW-38C	Total/NA	Water	9056A	
280-163953-7	DUP-1	Total/NA	Water	9056A	
280-163953-8	MW-38B	Total/NA	Water	9056A	
280-163953-8	MW-38B	Total/NA	Water	9056A	
280-163953-9	MW-53B	Total/NA	Water	9056A	
280-163953-10	MW-39B	Total/NA	Water	9056A	
280-163953-10	MW-39B	Total/NA	Water	9056A	
280-163953-11	MW-32B	Total/NA	Water	9056A	
280-163953-12	MW-36B	Total/NA	Water	9056A	
280-163953-13	MW-37B	Total/NA	Water	9056A	
280-163953-13	MW-37B	Total/NA	Water	9056A	
280-163953-14	MW-20B	Total/NA	Water	9056A	
280-163953-14	MW-20B	Total/NA	Water	9056A	
280-163953-15	MW-14BR	Total/NA	Water	9056A	
280-163953-15	MW-14BR	Total/NA	Water	9056A	
280-163953-16	MW-41B	Total/NA	Water	9056A	
280-163953-16	MW-41B	Total/NA	Water	9056A	
280-163953-18	MW-43B	Total/NA	Water	9056A	
280-163953-19	MW-42B	Total/NA	Water	9056A	
280-163953-19	MW-42B	Total/NA	Water	9056A	
280-163953-20	MW-47B	Total/NA	Water	9056A	
280-163953-21	MW-46B	Total/NA	Water	9056A	
280-163953-22	MW-45B	Total/NA	Water	9056A	
280-163953-23	MW-44B	Total/NA	Water	9056A	
MB 280-579709/52	Method Blank	Total/NA	Water	9056A	
MB 280-579709/6	Method Blank	Total/NA	Water	9056A	
LCS 280-579709/4	Lab Control Sample	Total/NA	Water	9056A	
LCS 280-579709/50	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-579709/5	Lab Control Sample Dup	Total/NA	Water	9056A	
LCSD 280-579709/51	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-579709/3	Lab Control Sample	Total/NA	Water	9056A	
280-163953-5 MS	MW-21B	Total/NA	Water	9056A	
280-163953-5 MS	MW-21B	Total/NA	Water	9056A	
280-163953-5 MSD	MW-21B	Total/NA	Water	9056A	
280-163953-5 MSD	MW-21B	Total/NA	Water	9056A	
280-163953-12 MS	MW-36B	Total/NA	Water	9056A	
280-163953-12 MSD	MW-36B	Total/NA	Water	9056A	
280-163953-22 MS	MW-45B	Total/NA	Water	9056A	
280-163953-22 MSD	MW-45B	Total/NA	Water	9056A	
280-163953-5 DU	MW-21B	Total/NA	Water	9056A	
280-163953-5 DU	MW-21B	Total/NA	Water	9056A	
280-163953-12 DU	MW-36B	Total/NA	Water	9056A	
280-163953-22 DU	MW-45B	Total/NA	Water	9056A	

# QC Association Summary

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## General Chemistry

### Analysis Batch: 579715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-1	MW-40B	Total/NA	Water	SM 2540C	
280-163953-2	MW-52B	Total/NA	Water	SM 2540C	
280-163953-3	MW-49B	Total/NA	Water	SM 2540C	
280-163953-6	MW-38C	Total/NA	Water	SM 2540C	
280-163953-7	DUP-1	Total/NA	Water	SM 2540C	
280-163953-8	MW-38B	Total/NA	Water	SM 2540C	
MB 280-579715/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-579715/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-579715/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

### Analysis Batch: 579716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-9	MW-53B	Total/NA	Water	SM 2540C	
MB 280-579716/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-579716/2	Lab Control Sample	Total/NA	Water	SM 2540C	
280-163953-9 DU	MW-53B	Total/NA	Water	SM 2540C	

### Analysis Batch: 579957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-5	MW-21B	Total/NA	Water	SM 2540C	
280-163953-10	MW-39B	Total/NA	Water	SM 2540C	
280-163953-12	MW-36B	Total/NA	Water	SM 2540C	
MB 280-579957/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-579957/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-579957/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
280-163953-12 DU	MW-36B	Total/NA	Water	SM 2540C	

### Analysis Batch: 579958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-11	MW-32B	Total/NA	Water	SM 2540C	
280-163953-13	MW-37B	Total/NA	Water	SM 2540C	
280-163953-14	MW-20B	Total/NA	Water	SM 2540C	
280-163953-15	MW-14BR	Total/NA	Water	SM 2540C	
280-163953-16	MW-41B	Total/NA	Water	SM 2540C	
280-163953-18	MW-43B	Total/NA	Water	SM 2540C	
280-163953-19	MW-42B	Total/NA	Water	SM 2540C	
280-163953-20	MW-47B	Total/NA	Water	SM 2540C	
280-163953-21	MW-46B	Total/NA	Water	SM 2540C	
280-163953-22	MW-45B	Total/NA	Water	SM 2540C	
280-163953-23	MW-44B	Total/NA	Water	SM 2540C	
MB 280-579958/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-579958/2	Lab Control Sample	Total/NA	Water	SM 2540C	
280-163953-14 DU	MW-20B	Total/NA	Water	SM 2540C	

### Analysis Batch: 579961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-1	MW-40B	Total/NA	Water	9056A	
280-163953-2	MW-52B	Total/NA	Water	9056A	
280-163953-3	MW-49B	Total/NA	Water	9056A	
280-163953-6	MW-38C	Total/NA	Water	9056A	
280-163953-7	DUP-1	Total/NA	Water	9056A	

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# QC Association Summary

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## General Chemistry (Continued)

### Analysis Batch: 579961 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-8	MW-38B	Total/NA	Water	9056A	
280-163953-9	MW-53B	Total/NA	Water	9056A	
280-163953-11	MW-32B	Total/NA	Water	9056A	
280-163953-12	MW-36B	Total/NA	Water	9056A	
280-163953-18	MW-43B	Total/NA	Water	9056A	
280-163953-19	MW-42B	Total/NA	Water	9056A	
280-163953-20	MW-47B	Total/NA	Water	9056A	
280-163953-22	MW-45B	Total/NA	Water	9056A	
280-163953-23	MW-44B	Total/NA	Water	9056A	
MB 280-579961/43	Method Blank	Total/NA	Water	9056A	
MB 280-579961/6	Method Blank	Total/NA	Water	9056A	
LCS 280-579961/39	Lab Control Sample	Total/NA	Water	9056A	
LCS 280-579961/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-579961/40	Lab Control Sample Dup	Total/NA	Water	9056A	
LCSD 280-579961/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-579961/3	Lab Control Sample	Total/NA	Water	9056A	
280-163953-9 MS	MW-53B	Total/NA	Water	9056A	
280-163953-9 MSD	MW-53B	Total/NA	Water	9056A	
280-163953-9 DU	MW-53B	Total/NA	Water	9056A	

### Analysis Batch: 580183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-24	Field Blank	Total/NA	Water	9056A	
MB 280-580183/6	Method Blank	Total/NA	Water	9056A	
LCS 280-580183/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-580183/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-580183/3	Lab Control Sample	Total/NA	Water	9056A	

### Analysis Batch: 580191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-24	Field Blank	Total/NA	Water	SM 2540C	
MB 280-580191/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-580191/2	Lab Control Sample	Total/NA	Water	SM 2540C	

### Analysis Batch: 580337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-24	Field Blank	Total/NA	Water	9056A	
MB 280-580337/6	Method Blank	Total/NA	Water	9056A	
LCS 280-580337/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-580337/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-580337/3	Lab Control Sample	Total/NA	Water	9056A	

# Lab Chronicle

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Client Sample ID: MW-40B

## Lab Sample ID: 280-163953-1

Date Collected: 06/27/22 14:00

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580072	07/07/22 16:21	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580399	07/09/22 06:29	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580072	07/07/22 16:21	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580534	07/11/22 19:02	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 10:47	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 04:58	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/01/22 13:50	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	579961	07/05/22 22:02	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	579715	07/01/22 10:28	ASP	TAL DEN

## Client Sample ID: MW-52B

## Lab Sample ID: 280-163953-2

Date Collected: 06/27/22 16:15

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580072	07/07/22 16:21	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580399	07/09/22 06:33	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580072	07/07/22 16:21	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580534	07/11/22 19:06	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 10:54	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 05:01	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/01/22 14:06	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	579961	07/05/22 22:18	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	579715	07/01/22 10:28	ASP	TAL DEN

## Client Sample ID: MW-49B

## Lab Sample ID: 280-163953-3

Date Collected: 06/27/22 18:15

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580072	07/07/22 16:21	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580399	07/09/22 06:37	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580072	07/07/22 16:21	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580534	07/11/22 19:10	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 10:57	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 05:03	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/01/22 14:22	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	579961	07/05/22 23:06	RAF	TAL DEN

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# Lab Chronicle

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Client Sample ID: MW-49B

Lab Sample ID: 280-163953-3

Date Collected: 06/27/22 18:15

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	579715	07/01/22 10:28	ASP	TAL DEN

## Client Sample ID: MW-21B

Lab Sample ID: 280-163953-5

Date Collected: 06/28/22 09:35

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/08/22 22:57	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580535	07/11/22 12:25	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 10:33	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 05:08	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/01/22 14:54	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	579709	07/01/22 15:58	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	579957	07/05/22 12:32	ASP	TAL DEN

## Client Sample ID: MW-38C

Lab Sample ID: 280-163953-6

Date Collected: 06/28/22 10:45

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/08/22 23:34	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580535	07/11/22 12:45	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 10:59	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 05:16	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/01/22 17:34	RAF	TAL DEN
Total/NA	Analysis	9056A		2	10 mL	10 mL	579961	07/06/22 00:26	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	579715	07/01/22 10:28	ASP	TAL DEN

## Client Sample ID: DUP-1

Lab Sample ID: 280-163953-7

Date Collected: 06/28/22 11:00

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/08/22 23:38	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580535	07/11/22 12:49	MAB	TAL DEN

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# Lab Chronicle

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

**Client Sample ID: DUP-1**  
**Date Collected: 06/28/22 11:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-7**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 11:02	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 05:24	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/01/22 17:50	RAF	TAL DEN
Total/NA	Analysis	9056A		2	10 mL	10 mL	579961	07/06/22 00:42	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	579715	07/01/22 10:28	ASP	TAL DEN

**Client Sample ID: MW-38B**  
**Date Collected: 06/28/22 12:10**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-8**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/08/22 23:42	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580535	07/11/22 12:53	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 11:04	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 05:26	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/01/22 18:06	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	579709	07/01/22 18:22	RAF	TAL DEN
Total/NA	Analysis	9056A		50	10 mL	10 mL	579961	07/06/22 00:58	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	579715	07/01/22 10:28	ASP	TAL DEN

**Client Sample ID: MW-53B**  
**Date Collected: 06/28/22 13:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-9**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/08/22 23:46	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580535	07/11/22 13:14	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 11:07	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 05:29	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/01/22 18:38	RAF	TAL DEN
Total/NA	Analysis	9056A		2	10 mL	10 mL	579961	07/06/22 02:34	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	579716	07/01/22 10:30	ASP	TAL DEN

# Lab Chronicle

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Client Sample ID: MW-39B

## Lab Sample ID: 280-163953-10

Date Collected: 06/29/22 09:42

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/08/22 23:50	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580535	07/11/22 13:18	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 11:09	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 05:31	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/02/22 10:42	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	579709	07/02/22 10:59	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	579957	07/05/22 12:32	ASP	TAL DEN

## Client Sample ID: MW-32B

## Lab Sample ID: 280-163953-11

Date Collected: 06/29/22 10:30

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/08/22 23:54	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580535	07/11/22 13:22	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 11:12	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 05:34	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/02/22 11:15	RAF	TAL DEN
Total/NA	Analysis	9056A		10	10 mL	10 mL	579961	07/06/22 03:38	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	579958	07/05/22 12:34	ASP	TAL DEN

## Client Sample ID: MW-36B

## Lab Sample ID: 280-163953-12

Date Collected: 06/29/22 11:20

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/08/22 23:58	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580535	07/11/22 13:26	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 11:14	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 05:36	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/02/22 12:03	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	579961	07/06/22 03:54	RAF	TAL DEN

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# Lab Chronicle

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Client Sample ID: MW-36B

## Lab Sample ID: 280-163953-12

Date Collected: 06/29/22 11:20

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	579957	07/05/22 12:32	ASP	TAL DEN

## Client Sample ID: MW-37B

## Lab Sample ID: 280-163953-13

Date Collected: 06/29/22 13:05

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/09/22 00:02	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580535	07/11/22 13:30	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 11:17	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 05:39	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/02/22 13:07	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	579709	07/02/22 13:23	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	579958	07/05/22 12:34	ASP	TAL DEN

## Client Sample ID: MW-20B

## Lab Sample ID: 280-163953-14

Date Collected: 06/29/22 13:45

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/09/22 00:22	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580535	07/11/22 13:34	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 11:24	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 05:42	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/02/22 13:39	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	579709	07/02/22 13:55	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	579958	07/05/22 12:34	ASP	TAL DEN

## Client Sample ID: MW-14BR

## Lab Sample ID: 280-163953-15

Date Collected: 06/29/22 14:35

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/09/22 00:26	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580535	07/11/22 13:38	MAB	TAL DEN

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# Lab Chronicle

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Client Sample ID: MW-14BR

## Lab Sample ID: 280-163953-15

Date Collected: 06/29/22 14:35

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 11:27	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 05:44	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/02/22 14:11	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	579709	07/02/22 14:27	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	579958	07/05/22 12:34	ASP	TAL DEN

## Client Sample ID: MW-41B

## Lab Sample ID: 280-163953-16

Date Collected: 06/29/22 15:30

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/09/22 00:30	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580535	07/11/22 13:42	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 11:29	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 05:47	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/02/22 15:15	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	579709	07/02/22 15:31	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	579958	07/05/22 12:34	ASP	TAL DEN

## Client Sample ID: MW-43B

## Lab Sample ID: 280-163953-18

Date Collected: 06/29/22 17:10

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/09/22 00:38	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580535	07/11/22 13:50	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 11:32	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 05:57	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/02/22 16:02	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	579961	07/06/22 04:26	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	579958	07/05/22 12:34	ASP	TAL DEN

# Lab Chronicle

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

**Client Sample ID: MW-42B**  
**Date Collected: 06/29/22 18:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-19**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/09/22 00:42	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580651	07/12/22 14:29	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 11:34	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 05:59	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/02/22 16:18	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	579709	07/02/22 16:34	RAF	TAL DEN
Total/NA	Analysis	9056A		20	10 mL	10 mL	579961	07/06/22 04:42	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	579958	07/05/22 12:34	ASP	TAL DEN

**Client Sample ID: MW-47B**  
**Date Collected: 06/29/22 19:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-20**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/09/22 00:46	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580651	07/12/22 14:33	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 11:37	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579667	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 06:02	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/02/22 16:50	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	579961	07/06/22 05:29	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	579958	07/05/22 12:34	ASP	TAL DEN

**Client Sample ID: MW-46B**  
**Date Collected: 06/29/22 19:55**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-21**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/09/22 00:50	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580651	07/12/22 14:37	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 11:39	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579668	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 04:12	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/02/22 18:26	RAF	TAL DEN

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# Lab Chronicle

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

**Client Sample ID: MW-46B**  
**Date Collected: 06/29/22 19:55**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-21**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	579958	07/05/22 12:34	ASP	TAL DEN

**Client Sample ID: MW-45B**  
**Date Collected: 06/30/22 08:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-22**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/09/22 00:54	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580651	07/12/22 14:41	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533714	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			533965	07/08/22 11:42	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579668	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 04:15	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/02/22 18:42	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	579961	07/06/22 05:45	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	579958	07/05/22 12:34	ASP	TAL DEN

**Client Sample ID: MW-44B**  
**Date Collected: 06/30/22 09:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-23**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580398	07/09/22 00:58	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580077	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580651	07/12/22 14:45	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	533712	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			534178	07/11/22 13:31	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579668	06/30/22 22:19	CEH	TAL DEN
Total/NA	Analysis	7470A		1			579777	07/01/22 04:17	CEH	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	579709	07/02/22 19:46	RAF	TAL DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	579961	07/06/22 06:01	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	579958	07/05/22 12:34	ASP	TAL DEN

**Client Sample ID: Field Blank**  
**Date Collected: 06/30/22 09:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-24**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	580153	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580651	07/12/22 15:30	MAB	TAL DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	580153	07/07/22 09:10	KMS	TAL DEN
Total Recoverable	Analysis	6010C		1			580425	07/09/22 11:59	MAB	TAL DEN

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# Lab Chronicle

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 280-163953-24**

**Date Collected: 06/30/22 09:45**

**Matrix: Water**

**Date Received: 06/30/22 13:50**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	533712	07/07/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020A		1			534178	07/11/22 13:34	AJC	TAL CAN
Total/NA	Prep	7470A			30 mL	50 mL	579954	07/07/22 17:40	CEH	TAL DEN
Total/NA	Analysis	7470A		1			580363	07/08/22 03:12	CEH	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	580337	07/08/22 15:34	RAF	TAL DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	580183	07/07/22 16:29	RAF	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	580191	07/07/22 09:54	ASP	TAL DEN

**Laboratory References:**

TAL CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100



# Accreditation/Certification Summary

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-1

## Laboratory: Eurofins Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4025-011	01-09-23

## Laboratory: Eurofins Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-23-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

**Eurofins Denver**  
 4955 Yarrow Street  
 Arvada, CO 80002  
 Phone (303) 736-0100 Phone (303) 431-7171

# Chain of Custody Record



Environment Testing  
 America

<b>Client Information</b> Client Contact: Ms. Katie Abbott Company: AECOM Technical Services Inc. Address: 6200 S. Quebec Street City: Greenwood Village State, Zip: CO, 80111 Phone: [blank] Email: katie.abbott@aecom.com Project Name: CCR - Basin Electric 2022 Site: LRS		Lab Pk: McEntee, Patrick J E-Mail: Patrick.McEntee@et.eurofins.com State of Origin: WY Carrier Tracking No(s): COC No: 280-120021-33729.1 Page: Page 1 of 3 Job #:														
Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: PO# 136447 WO #: AECOM Project# 60632474 Project #: 28020759 SSOW#:		<b>Analysis Requested</b> 6010C-3 Total Metals (B, Ca & Li) 2540C-Calc'd - Solids, Total Dissolved (TDS) 9056A_280 - Chloride, Fluoride, Sulfate 6020A-11 Total Metals (Sb,As,Ba,Bi,Cd,Cr,Cu,Pb,Mo,Se,Tl) 7470A - Total Mercury 9315_9320_Ra226_Ra228														
Sample Identification Sample Date Sample Time Sample Type (C=Comp, G=grab) Matrix (W=Water, S=solid, O=soil, A=air) Preservation Code		Field Filtered Sample (Yes or No) Total Number of Containers Special Instructions/Note:														
MW-40B	6.27.22	1400	G	W	N	X	X	X	X	X	X	X	X	X		
MW-52B	6.27.22	1615	G	W	N	X	X	X	X	X	X	X	X	X		
MW-49B	6.27.22	1815	G	W	N	X	X	X	X	X	X	X	X	X		
RW-1	6.28.22	0825	G	W	N	X	X	X	X	X	X	X	X	X		+MS/MSD
MW-21B	6.28.22	0935	G	W	N	X	X	X	X	X	X	X	X	X		
MW-38C	6.28.22	1045	G	W	N	X	X	X	X	X	X	X	X	X		
Dup-1	6.28.22	1100	G	W	N	X	X	X	X	X	X	X	X	X		
MW-38B	6.28.22	1210	G	W	N	X	X	X	X	X	X	X	X	X		
MW-53B	6.28.22	1305	G	W	N	X	X	X	X	X	X	X	X	X		
MW-39B	6.29.22	0942	G	W	N	X	X	X	X	X	X	X	X	X		
MW-32B	6.29.22	1030	G	W	N	X	X	X	X	X	X	X	X	X		
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months														
Empty Kit Relinquished by: [Signature] Date: 6.30.2022 1350 Company: AECOM		Method of Shipment:														
Relinquished by: [Signature] Date: 6/30/22 1350 Company: ETA-Den		Relinquished by: [Signature] Date: 6/30/22 1350 Company:														
Relinquished by: [Signature] Date: 6/30/22 1350 Company:		Relinquished by: [Signature] Date: 6/30/22 1350 Company:														
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 13.7, 12.5, 7.9, 7.8, 20.0, 5.1, 22.6, 19.6 100 CF0.1														

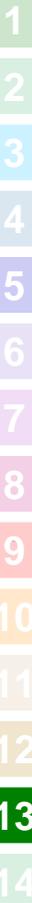


# Chain of Custody Record

<b>Client Information</b>		Lab PM: <u>McEntee, Patrick J</u>	Carrier Tracking No(s):	COC No: <u>280-120021-33729-1</u>									
Client Contact: <u>Ms. Katie Abbott</u>		E-Mail: <u>Patrick.McEntee@et.eurofins.com</u>	State of Origin: <u>WY</u>	Page: <u>2 of 3</u>									
Company: <u>AECOM Technical Services Inc.</u>		PWSID:	Job #:										
Address: <u>6200 S. Quebec Street</u>		Due Date Requested:	Analysis Requested										
City: <u>Greenwood Village</u>		TAT Requested (days):	Total Number of Containers										
State, Zip: <u>CO, 80111</u>		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No	Preservation Codes:										
Phone:		PO# <u>136447</u>	A - HCL M - Hexane N - None O - NaOH P - Na2O2 Q - Zn Acetate R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA Y - Trizma Z - other (specify)										
Email: <u>katie.abbott@aecom.com</u>		WO#:	Other:										
Project Name: <u>CCR - Basin Electric 2022</u>		AECOM Project# <u>60632474</u>											
Site: <u>LRS</u>		Project #: <u>28020759</u>											
		SSOW#:											
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=water/soil, BT=Tissue, Ash)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C-3 Total Metals (B, Ca & Li)	2540C_Calcid - Solids, Total Dissolved (TDS)	9056A_28D - Chloride, Fluoride, Sulfate	6020A-11 Total Metals (Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Mo,Se,Tl)	7470A - Total Mercury	9315, 9320, Ra226, Ra228	Special Instructions/Note:
MW-36B	6.29.22	1120	G	W	X	X	X	X	X	X	X	X	
MW-37B	6.29.22	1305	G	W	X	X	X	X	X	X	X	X	
MW-20B	6.29.22	1345	G	W	X	X	X	X	X	X	X	X	
MW-14BR	6.29.22	1435	G	W	X	X	X	X	X	X	X	X	
MW-41B	6.29.22	1530	G	W	X	X	X	X	X	X	X	X	
RW-2	6.29.22	1615	G	W	X	X	X	X	X	X	X	X	
MW-43B	6.29.22	1710	G	W	X	X	X	X	X	X	X	X	
MW-42B	6.29.22	1805	G	W	X	X	X	X	X	X	X	X	
MW-47B	6.29.22	1900	G	W	X	X	X	X	X	X	X	X	
MW-46B	6.29.22	1955	G	W	X	X	X	X	X	X	X	X	
MW-45B	6.30.22	0835	G	W	X	X	X	X	X	X	X	X	
<b>Possible Hazard Identification</b>													
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological <input type="checkbox"/> Deliverable Requested: I, II, III, IV, Other (specify)													
<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>													
<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months													
<b>Special Instructions/QC Requirements:</b>													
Empty Kit Relinquished by: _____ Date: _____ Time: _____													
Relinquished by: _____ Date: <u>6.30.22</u> Time: <u>1350</u> Company: <u>AECOM</u>													
Relinquished by: <u>[Signature]</u> Date: _____ Time: _____ Company: _____													
Relinquished by: _____ Date: _____ Time: _____ Company: _____													
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No													
Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: _____													

# Chain of Custody Record

<b>Client Information</b>		Sampler: <u>J. Leventon</u>		Lab PM: <u>McEntee, Patrick J</u>		Carrier Tracking No(s):		COC No: <u>280-120021-33729.1</u>	
Client Contact: Ms. Katie Abbott		Phone: <u>719 232 1715</u>		E-Mail: <u>Patrick.McEntee@et.eurofins.com</u>		State of Origin: <u>WY</u>		Page: <u>3 of 3</u>	
Company: AECOM Technical Services Inc.		PWSID:		Analysis Requested		Total Number of Containers		Job #:	
Address: 6200 S. Quebec Street		Due Date Requested:		Perform MS/MSD (Yes or No)		Field Filtered Sample (Yes or No)		Preservation Codes:	
City: Greenwood Village		TAT Requested (days):		60100-3 Total Metals (B, Ca & Li)		2540C_Calc'd - Solids, Total Dissolved (TDS)		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
State, Zip: CO, 80111		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		9056A_28D - Chloride, Fluoride, Sulfate		6020A-11 Total Metals (Sb,As,Ba,Be,Cd,Cr,Co,Pb,Mo,Se,Tl)		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	
Phone:		PO #: <u>136447</u>		7470A - Total Mercury		9315, 9320, Ra226, Ra228		Special Instructions/Note:	
Email: katie.abbott@aecom.com		WC #: <u>AECOM Project# 60632474</u>		Sample Date		Sample Time		Matrix	
Project Name: CCR - Basin Electric 2022		Project #: <u>28020759</u>		6.30.22		0930		G	
Site: <u>LRS</u>		SSOW#:		Sample Type (C=comp, G=grab)		Preservation Code:		Special Instructions/Note:	
Sample Identification		MW-44B		6.30.22		0930		G	
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant		<input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab		Archive For _____ Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by: <u>[Signature]</u>		Date: <u>6.30.2022</u>		Time: <u>1350</u>		Company: <u>AECOM</u>		Date/Time: <u>6/30/22 1350</u>	
Relinquished by:		Date/Time:		Company:		Date/Time:		Company: <u>ETA-DEN</u>	
Relinquished by:		Date/Time:		Company:		Date/Time:		Company:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:					



# Chain of Custody Record



Environment Testing  
 America



18-1.8

<b>Client Information (Sub Contract Lab)</b>		Sampler: <b>McEntee, Patrick J</b>	Lab PM: <b>McEntee, Patrick J</b>	Carrier Tracking No(s):	COC No. <b>280-620939-1</b>
Shipping/Receiving		Phone	E-Mail: <b>Patrick.McEntee@et.eurofins.com</b>	State of Origin: <b>Colorado</b>	Page <b>1</b> of <b>3</b>
Company: <b>Eurofins Environment Testing North Cent</b>		Accreditations Required (See note): <b>NELAP - Oregon</b>		Job # <b>280-163953-1</b>	Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 X - EDTA Y - Trizma Z - other (specify) Other:
Address: <b>180 S. Van Buren Avenue,</b>		<b>Analysis Requested</b>		Total Number of Containers	
City: <b>Barberton</b>		Due Date Requested: <b>7/14/2022</b>		6020A/3005A (MOD) 13 Metals	
State, Zip: <b>OH, 44203</b>		TAT Requested (days):		Perform MS/MSD (Yes or No)	
Phone: <b>330-497-9396(Tel) 330-497-0772(Fax)</b>		PO #:		Field Filtered Sample (Yes or No)	
Email:		WO #:		Matrix (Water, Seawater, Urine, etc.)	
Project Name: <b>CCR - Basin Electric 2020 - LRS</b>		Project #: <b>28020759</b>		Sample Type (C=comp, G=grab)	
Site:		SSOW#:		Sample Time	
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Sample Date</b>		<b>Sample Time</b>	
MW-40B (280-163953-1)	6/27/22	14:00	Mountain	Water	X
MW-52B (280-163953-2)	6/27/22	16:15	Mountain	Water	X
MW-49B (280-163953-3)	6/27/22	18:15	Mountain	Water	X
RW-1 (280-163953-4)	6/28/22	08:25	Mountain	Water	X
MW-21B (280-163953-5)	6/28/22	09:35	Mountain	Water	X
MW-21B (280-163953-5MS)	6/28/22	09:35	Mountain	Water	X
MW-21B (280-163953-5MSD)	6/28/22	09:35	Mountain	MS	X
MW-38C (280-163953-6)	6/28/22	10:45	Mountain	Water	X
DUP-1 (280-163953-7)	6/28/22	11:00	Mountain	Water	X

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_  
 Primary Deliverable Rank: 2  
 Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Relinquished by: **Madeline Davis** Date: **7/5/22 1450**  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Custody Seals Intact  Yes  No  Δ  No  Custody Seal No. \_\_\_\_\_  
 Cooler Temperature(s) °C and Other Remarks

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months  
 Special Instructions/QC Requirements:  
 Time: \_\_\_\_\_ Method of Shipment: \_\_\_\_\_  
 Date/Time: **7-6-22 1445** Company: **EEETNC**  
 Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

# Chain of Custody Record

1.8-1.8

<b>Client Information (Sub Contract Lab)</b>		Sampler: Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No: 280-620939.2						
Shipping/Receiving		Phone: Patrick.McEntee@et.eurofins.com	State of Origin: Colorado	Page: Page 2 of 3						
Company: Eurofins Environment Testing North Cent		Accreditations Required (See note): NELAP - Oregon	Job #: 280-163953-1							
Address: 180 S. Van Buren Avenue,		Due Date Requested: 7/14/2022	Preservation Codes:							
City: Barberton	State, Zip: OH, 44203	TAT Requested (days):	M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - HZSO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)							
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:	Project #:	Other:							
Email:	WO #:	28020759								
Project Name: CCR - Basin Electric 2020 - LRS	SSOW#:									
Site:										
<b>Sample Identification - Client ID (Lab ID)</b>	<b>Sample Date</b>	<b>Sample Time</b>	<b>Sample Type (C=Comp, G=grab)</b>	<b>Matrix (W=water, S=solid, O=organic, A=air)</b>	<b>Field Filtered Sample (Yes or No)</b>	<b>Perform MS/MSD (Yes or No)</b>	<b>6020A/3005A (MOD) 13 Metals</b>	<b>Analysis Requested</b>	<b>Total Number of Containers</b>	<b>Special Instructions/Note:</b>
MW-38B (280-163953-8)	6/28/22	12:10 Mountain	Water	Water	X	X			1	Use Collision Cell
MW-53B (280-163953-9)	6/28/22	13:05 Mountain	Water	Water	X	X			1	Use Collision Cell
MW-39B (280-163953-10)	6/29/22	09:42 Mountain	Water	Water	X	X			1	Use Collision Cell
MW-32B (280-163953-11)	6/29/22	10:30 Mountain	Water	Water	X	X			1	Use Collision Cell
MW-36B (280-163953-12)	6/29/22	11:20 Mountain	Water	Water	X	X			1	Use Collision Cell
MW-37B (280-163953-13)	6/29/22	13:05 Mountain	Water	Water	X	X			1	Use Collision Cell
MW-20B (280-163953-14)	6/29/22	13:45 Mountain	Water	Water	X	X			1	Use Collision Cell
MW-14BR (280-163953-15)	6/29/22	14:35 Mountain	Water	Water	X	X			1	Use Collision Cell
MW-41B (280-163953-16)	6/29/22	15:30 Mountain	Water	Water	X	X			1	Use Collision Cell
<p>Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte &amp; accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica</p>										
<b>Possible Hazard Identification</b>										
Unconfirmed										
Deliverable Requested: I, II, III, IV, Other (specify)										
Primary Deliverable Rank: 2										
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)										
<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months										
Special Instructions/QC Requirements:										
Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: _____										
Relinquished by: _____ Date/Time: 7/5/22 1450 Company: _____ Received by: _____ Date/Time: 7-6-22 1445 Company: BETH										
Relinquished by: _____ Date/Time: _____ Company: _____ Received by: _____ Date/Time: _____ Company: _____										
Relinquished by: _____ Date/Time: _____ Company: _____ Received by: _____ Date/Time: _____ Company: _____										
Custody Seals Intact: _____ Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: _____										

# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM	Carrier Tracking No(s)	COC No.				
Client Contact:		McEntee, Patrick J	McEntee, Patrick J		280-620939 3				
Shipping/Receiving		Phone	E-Mail	State of Origin:	Page				
			Patrick.McEntee@et.eurofins.com	Colorado	Page 3 of 3				
Company:		Accreditations Required (See note):		Job #:					
Eurofins Environment Testing North Cent		NELAP - Oregon		280-163953-1					
Address:		Due Date Requested:	Preservation Codes:						
180 S. Van Buren Avenue,		7/14/2022	A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNB02 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice J - DI Water U - Acetone K - EDTA V - MCAA L - EDA W - pH 4-5 Y - Trizma Z - other (specify) Other:						
City:		TAT Requested (days):	Analysis Requested						
Barberton									
State/Zip:									
OH, 44203									
Phone:		PO #:							
330-497-9396(Tel) 330-497-0772(Fax)									
Email:		WO #:							
Project Name:		Project #:							
CCR - Basin Electric 2020 - LRS		28020759							
Site:		SSOW#							
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=water/oil, BT=Blood, Anal)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A/3005A (MOD) 13 Metals	Total Number of Containers	Special Instructions/Note:
RW-2 (280-163953-17)	6/29/22	16:15 Mountain	Water	Water	X	X		1	Use Collision Cell
MW-43B (280-163953-18)	6/29/22	17:10 Mountain	Water	Water	X	X		1	Use Collision Cell
MW-42B (280-163953-19)	6/29/22	18:05 Mountain	Water	Water	X	X		1	Use Collision Cell
MW-47B (280-163953-20)	6/29/22	19:00 Mountain	Water	Water	X	X		1	Use Collision Cell
MW-46B (280-163953-21)	6/29/22	19:55 Mountain	Water	Water	X	X		1	Use Collision Cell
MW-45B (280-163953-22)	6/30/22	08:35 Mountain	Water	Water	X	X		1	Use Collision Cell
MW-44B (280-163953-23)	6/30/22	09:30 Mountain	Water	Water	X	X		1	Use Collision Cell
<p><b>Possible Hazard Identification</b></p> <p>Unconfirmed</p> <p>Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2</p> <p>Empty Kit Relinquished by: _____ Date: _____</p> <p>Relinquished by: <i>Walter Davis</i> Date: <i>7/12/22 1450</i> Company: <i>ETAPSV</i></p> <p>Relinquished by: _____ Date/Time: _____ Company: _____</p> <p>Relinquished by: _____ Date/Time: _____ Company: _____</p> <p>Custody Seals Intact: _____ Cooler Temperature(s) °C and Other Remarks: _____</p>									
<p><b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b></p> <p><input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months</p> <p>Special Instructions/QC Requirements: _____</p> <p>Method of Shipment: _____</p> <p>Time: _____</p> <p>Received by: <i>Young Joyce</i> Date/Time: <i>7-6-22 1445</i> Company: <i>ETAPSV</i></p> <p>Received by: _____ Date/Time: _____ Company: _____</p> <p>Received by: _____ Date/Time: _____ Company: _____</p>									



**Eurofins - Canton Sample Receipt Form/Narrative**  
**Barberton Facility**

Login # : \_\_\_\_\_

Client ETA Site Name \_\_\_\_\_

Cooler unpacked by: Nancy Poye

Cooler Received on 2-6-22 Opened on 2-6-22

FedEx: 1<sup>st</sup> Grd  Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours Drop-off Date/Time \_\_\_\_\_ Storage Location \_\_\_\_\_

Eurofins Cooler # TA  Foam Box Client Cooler  Box Other \_\_\_\_\_  
 Packing material used:  Bubble Wrap  Foam  Plastic Bag  None  Other \_\_\_\_\_  
 COOLANT:  Wet Ice  Blue Ice  Dry Ice  Water  None

1. Cooler temperature upon receipt  See Multiple Cooler Form  
 IR GUN# IR-13 (CF 0.0 °C) Observed Cooler Temp. 1.8 °C Corrected Cooler Temp. 1.8 °C  
 IR GUN #IR-15 (CF -0.7°C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1
  - Were the seals on the outside of the cooler(s) signed & dated? Yes  No  NA
  - Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes  No  NA
  - Were tamper/custody seals intact and uncompromised? Yes  No  NA
- 3. Shippers' packing slip attached to the cooler(s)? Yes  No
- 4. Did custody papers accompany the sample(s)? Yes  No
- 5. Were the custody papers relinquished & signed in the appropriate place? Yes  No
- 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes  No
- 7. Did all bottles arrive in good condition (Unbroken)? Yes  No
- 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes  No
- 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes  No
- 10. Were correct bottle(s) used for the test(s) indicated? Yes  No
- 11. Sufficient quantity received to perform indicated analyses? Yes  No
- 12. Are these work share samples and all listed on the COC? Yes  No
- 13. Were all preserved sample(s) at the correct pH upon receipt? Yes  No  NA  pH Strip Lot# HC178690
- 14. Were VOAs on the COC? Yes  No  NA
- 15. Were air bubbles >6 mm in any VOA vials?  Larger than this. Yes  No  NA
- 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # \_\_\_\_\_ Yes  No
- 17. Was a LL Hg or Me Hg trip blank present? \_\_\_\_\_ Yes  No

Tests that are not checked for pH by Receiving:  
 VOAs  
 Oil and Grease  
 TOC

Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal Voice Mail Other

Concerning \_\_\_\_\_

**18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES**  additional next page

Samples processed by: \_\_\_\_\_

**19. SAMPLE CONDITION**

Sample(s) \_\_\_\_\_ were received after the recommended holding time had expired.  
 Sample(s) \_\_\_\_\_ were received in a broken container.  
 Sample(s) \_\_\_\_\_ were received with bubble >6 mm in diameter. (Notify PM)

**20. SAMPLE PRESERVATION**

Sample(s) \_\_\_\_\_ were further preserved in the laboratory.  
 Time preserved: \_\_\_\_\_ Preservative(s) added/Lot number(s): \_\_\_\_\_

VOA Sample Preservation - Date/Time VOAs Frozen: \_\_\_\_\_

# Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 280-163953-1

**Login Number: 163953**

**List Source: Eurofins Denver**

**List Number: 1**

**Creator: Roehsner, Karen P**

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



## ANALYTICAL REPORT

Eurofins Denver  
4955 Yarrow Street  
Arvada, CO 80002  
Tel: (303)736-0100

Laboratory Job ID: 280-163953-2

Client Project/Site: CCR - Basin Electric 2022 - LRS

For:

AECOM Technical Services Inc.  
6200 S. Quebec Street  
Greenwood Village, Colorado 80111

Attn: Ms. Katie Abbott



Authorized for release by:  
8/5/2022 3:19:52 PM

Patrick McEntee, Client Service Manager  
(303)736-0107  
[Patrick.McEntee@et.eurofinsus.com](mailto:Patrick.McEntee@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions . . . . .	3
Case Narrative . . . . .	4
Method Summary . . . . .	6
Sample Summary . . . . .	7
Client Sample Results . . . . .	8
QC Sample Results . . . . .	21
QC Association . . . . .	24
Chronicle . . . . .	26
Certification Summary . . . . .	32
Chain of Custody . . . . .	33
Receipt Checklists . . . . .	39
Tracer Carrier Summary . . . . .	41

# Definitions/Glossary

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

## Qualifiers

### Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

## Glossary

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

# Case Narrative

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

**Job ID: 280-163953-2**

**Laboratory: Eurofins Denver**

**Narrative**

## CASE NARRATIVE

**Client: AECOM Technical Services Inc.**

**Project: CCR - Basin Electric 2022 - LRS**

**Report Number: 280-163953-2**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### **RECEIPT**

The samples were received on 6/30/2022 1:50 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 8 coolers at receipt time were 5.2° C, 7.9° C, 8.0° C, 12.4° C, 13.8° C, 19.7° C, 20.1° C and 22.7° C.

The radiochemical analyses requested on the COC are reported under this SDG. All other analysis requested is reported separate cover.

Results for samples RW-1 and RW-2 are reported under separate cover.

### **RADIUM-226 (GFPC)**

Samples MW-40B (280-163953-1), MW-52B (280-163953-2), MW-49B (280-163953-3), MW-21B (280-163953-5), MW-38C (280-163953-6), DUP-1 (280-163953-7), MW-38B (280-163953-8), MW-53B (280-163953-9), MW-39B (280-163953-10), MW-32B (280-163953-11), MW-36B (280-163953-12), MW-37B (280-163953-13), MW-20B (280-163953-14), MW-14BR (280-163953-15), MW-41B (280-163953-16), MW-43B (280-163953-18), MW-42B (280-163953-19), MW-47B (280-163953-20), MW-46B (280-163953-21), MW-45B (280-163953-22), MW-44B (280-163953-23) and Field Blank (280-163953-24) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 07/08/2022 and 07/11/2022 and analyzed on 08/01/2022 and 08/02/2022.

Methods 903.0, 9315: Radium-226 prep batch 160-573264:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. 280-163953-21, 280-163953-22, 280-163953-23, 280-163953-24, LCS 160-573264/2-A, MB 160-573264/1-A.

Method 9315: Radium-226 prep batch 160-573463:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. 280-163953-1, 280-163953-2, 280-163953-3, 280-163953-5, 280-163953-5[MS], 280-163953-5[MSD], 280-163953-6, 280-163953-7, 280-163953-8, 280-163953-9, 280-163953-10, 280-163953-11, 280-163953-12, 280-163953-13, 280-163953-14, 280-163953-15, 280-163953-16, 280-163953-18, 280-163953-19, 280-163953-20, LCS 160-573463/2-A and MB 160-573463/1-A

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

# Case Narrative

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

## Job ID: 280-163953-2 (Continued)

### Laboratory: Eurofins Denver (Continued)

#### **RADIUM-228**

Samples MW-40B (280-163953-1), MW-52B (280-163953-2), MW-49B (280-163953-3), MW-21B (280-163953-5), MW-38C (280-163953-6), DUP-1 (280-163953-7), MW-38B (280-163953-8), MW-53B (280-163953-9), MW-39B (280-163953-10), MW-32B (280-163953-11), MW-36B (280-163953-12), MW-37B (280-163953-13), MW-20B (280-163953-14), MW-14BR (280-163953-15), MW-41B (280-163953-16), MW-43B (280-163953-18), MW-42B (280-163953-19), MW-47B (280-163953-20), MW-46B (280-163953-21), MW-45B (280-163953-22), MW-44B (280-163953-23) and Field Blank (280-163953-24) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 07/08/2022 and 07/11/2022 and analyzed on 07/15/2022 and 07/18/2022.

Methods 904.0, 9320: Radium-228 Batch 573265

The LCS recovered at (129%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required. LCS 160-573265/2-A

Methods 904.0, 9320: Radium-228 batch 573265

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

280-163953-21, 280-163953-22, 280-163953-23, 280-163953-24, LCS 160-573265/2-A, MB 160-573265/1-A and 160-46112-B-1-D DU

Method 9320: Radium-228 Batch 573467

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

280-163953-1, 280-163953-2, 280-163953-3, 280-163953-5, 280-163953-5[MS], 280-163953-5[MSD], 280-163953-6, 280-163953-7, 280-163953-8, 280-163953-9, 280-163953-10, 280-163953-11, 280-163953-12, 280-163953-13, 280-163953-14, 280-163953-15, 280-163953-16, 280-163953-18, 280-163953-19, 280-163953-20, LCS 160-573467/2-A and MB 160-573467/1-A

Methods 904.0, 9320: Radium-228 batch 573265

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

160-46112-B-1-C

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

#### **RADIUM-226/RADIUM-228 (GFPC)**

Samples MW-40B (280-163953-1), MW-52B (280-163953-2), MW-49B (280-163953-3), MW-21B (280-163953-5), MW-38C (280-163953-6), DUP-1 (280-163953-7), MW-38B (280-163953-8), MW-53B (280-163953-9), MW-39B (280-163953-10), MW-32B (280-163953-11), MW-36B (280-163953-12), MW-37B (280-163953-13), MW-20B (280-163953-14), MW-14BR (280-163953-15), MW-41B (280-163953-16), MW-43B (280-163953-18), MW-42B (280-163953-19), MW-47B (280-163953-20), MW-46B (280-163953-21), MW-45B (280-163953-22), MW-44B (280-163953-23) and Field Blank (280-163953-24) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 08/02/2022 and 08/03/2022.

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

# Method Summary

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

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

#### Protocol References:

None = None

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

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

#### Laboratory References:

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

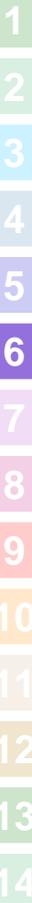
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# Sample Summary

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-163953-1	MW-40B	Water	06/27/22 14:00	06/30/22 13:50
280-163953-2	MW-52B	Water	06/27/22 16:15	06/30/22 13:50
280-163953-3	MW-49B	Water	06/27/22 18:15	06/30/22 13:50
280-163953-5	MW-21B	Water	06/28/22 09:35	06/30/22 13:50
280-163953-6	MW-38C	Water	06/28/22 10:45	06/30/22 13:50
280-163953-7	DUP-1	Water	06/28/22 11:00	06/30/22 13:50
280-163953-8	MW-38B	Water	06/28/22 12:10	06/30/22 13:50
280-163953-9	MW-53B	Water	06/28/22 13:05	06/30/22 13:50
280-163953-10	MW-39B	Water	06/29/22 09:42	06/30/22 13:50
280-163953-11	MW-32B	Water	06/29/22 10:30	06/30/22 13:50
280-163953-12	MW-36B	Water	06/29/22 11:20	06/30/22 13:50
280-163953-13	MW-37B	Water	06/29/22 13:05	06/30/22 13:50
280-163953-14	MW-20B	Water	06/29/22 13:45	06/30/22 13:50
280-163953-15	MW-14BR	Water	06/29/22 14:35	06/30/22 13:50
280-163953-16	MW-41B	Water	06/29/22 15:30	06/30/22 13:50
280-163953-18	MW-43B	Water	06/29/22 17:10	06/30/22 13:50
280-163953-19	MW-42B	Water	06/29/22 18:05	06/30/22 13:50
280-163953-20	MW-47B	Water	06/29/22 19:00	06/30/22 13:50
280-163953-21	MW-46B	Water	06/29/22 19:55	06/30/22 13:50
280-163953-22	MW-45B	Water	06/30/22 08:35	06/30/22 13:50
280-163953-23	MW-44B	Water	06/30/22 09:30	06/30/22 13:50
280-163953-24	Field Blank	Water	06/30/22 09:45	06/30/22 13:50



# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

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

**Client Sample ID: MW-40B**  
**Date Collected: 06/27/22 14:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-1**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0957	U	0.0709	0.0714	1.00	0.101	pCi/L	07/11/22 15:18	08/02/22 17:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.9		40 - 110					07/11/22 15:18	08/02/22 17:20	1

**Client Sample ID: MW-52B**  
**Date Collected: 06/27/22 16:15**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-2**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0839	U	0.0872	0.0875	1.00	0.139	pCi/L	07/11/22 15:18	08/02/22 17:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	81.8		40 - 110					07/11/22 15:18	08/02/22 17:20	1

**Client Sample ID: MW-49B**  
**Date Collected: 06/27/22 18:15**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-3**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0703	U	0.0657	0.0660	1.00	0.101	pCi/L	07/11/22 15:18	08/02/22 17:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.6		40 - 110					07/11/22 15:18	08/02/22 17:21	1

**Client Sample ID: MW-21B**  
**Date Collected: 06/28/22 09:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-5**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0681	U	0.0601	0.0604	1.00	0.0896	pCi/L	07/11/22 15:18	08/02/22 17:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.4		40 - 110					07/11/22 15:18	08/02/22 17:21	1

**Client Sample ID: MW-38C**  
**Date Collected: 06/28/22 10:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-6**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0754	U	0.0629	0.0633	1.00	0.0930	pCi/L	07/11/22 15:18	08/02/22 19:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.4		40 - 110					07/11/22 15:18	08/02/22 19:01	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

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

**Client Sample ID: DUP-1**  
**Date Collected: 06/28/22 11:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-7**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0276	U	0.0248	0.0249	1.00	0.0791	pCi/L	07/11/22 15:18	08/02/22 19:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		40 - 110					07/11/22 15:18	08/02/22 19:01	1

**Client Sample ID: MW-38B**  
**Date Collected: 06/28/22 12:10**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-8**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0476	U	0.0543	0.0545	1.00	0.0875	pCi/L	07/11/22 15:18	08/02/22 19:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.2		40 - 110					07/11/22 15:18	08/02/22 19:01	1

**Client Sample ID: MW-53B**  
**Date Collected: 06/28/22 13:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-9**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0766	U	0.0719	0.0722	1.00	0.112	pCi/L	07/11/22 15:18	08/02/22 19:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.1		40 - 110					07/11/22 15:18	08/02/22 19:01	1

**Client Sample ID: MW-39B**  
**Date Collected: 06/29/22 09:42**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-10**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0473	U	0.0666	0.0667	1.00	0.113	pCi/L	07/11/22 15:18	08/02/22 19:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	78.7		40 - 110					07/11/22 15:18	08/02/22 19:02	1

**Client Sample ID: MW-32B**  
**Date Collected: 06/29/22 10:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-11**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>0.0916</b>		0.0617	0.0622	1.00	0.0800	pCi/L	07/11/22 15:18	08/02/22 19:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					07/11/22 15:18	08/02/22 19:02	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

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

**Client Sample ID: MW-36B**  
**Date Collected: 06/29/22 11:20**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-12**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0708	U	0.0562	0.0566	1.00	0.0792	pCi/L	07/11/22 15:18	08/02/22 19:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.4		40 - 110					07/11/22 15:18	08/02/22 19:02	1

**Client Sample ID: MW-37B**  
**Date Collected: 06/29/22 13:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-13**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.101		0.0634	0.0640	1.00	0.0810	pCi/L	07/11/22 15:18	08/02/22 19:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.7		40 - 110					07/11/22 15:18	08/02/22 19:02	1

**Client Sample ID: MW-20B**  
**Date Collected: 06/29/22 13:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-14**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0234	U	0.0627	0.0627	1.00	0.115	pCi/L	07/11/22 15:18	08/02/22 19:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.8		40 - 110					07/11/22 15:18	08/02/22 19:03	1

**Client Sample ID: MW-14BR**  
**Date Collected: 06/29/22 14:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-15**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0122	U	0.0430	0.0430	1.00	0.0971	pCi/L	07/11/22 15:18	08/02/22 19:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.6		40 - 110					07/11/22 15:18	08/02/22 19:03	1

**Client Sample ID: MW-41B**  
**Date Collected: 06/29/22 15:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-16**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.106		0.0704	0.0710	1.00	0.0965	pCi/L	07/11/22 15:18	08/02/22 19:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					07/11/22 15:18	08/02/22 19:35	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

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

**Client Sample ID: MW-43B**  
**Date Collected: 06/29/22 17:10**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-18**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.119		0.0720	0.0728	1.00	0.0923	pCi/L	07/11/22 15:18	08/02/22 19:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.6		40 - 110					07/11/22 15:18	08/02/22 19:35	1

**Client Sample ID: MW-42B**  
**Date Collected: 06/29/22 18:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-19**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0419	U	0.0447	0.0448	1.00	0.111	pCi/L	07/11/22 15:18	08/02/22 19:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.2		40 - 110					07/11/22 15:18	08/02/22 19:35	1

**Client Sample ID: MW-47B**  
**Date Collected: 06/29/22 19:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-20**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.104	U	0.0872	0.0877	1.00	0.134	pCi/L	07/11/22 15:18	08/02/22 19:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		40 - 110					07/11/22 15:18	08/02/22 19:35	1

**Client Sample ID: MW-46B**  
**Date Collected: 06/29/22 19:55**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-21**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0858	U	0.0657	0.0662	1.00	0.0940	pCi/L	07/08/22 14:32	08/01/22 15:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.6		40 - 110					07/08/22 14:32	08/01/22 15:19	1

**Client Sample ID: MW-45B**  
**Date Collected: 06/30/22 08:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-22**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0507	U	0.0598	0.0600	1.00	0.0975	pCi/L	07/08/22 14:32	08/01/22 15:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.3		40 - 110					07/08/22 14:32	08/01/22 15:19	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

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

**Client Sample ID: MW-44B**  
**Date Collected: 06/30/22 09:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-23**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0772	U	0.0724	0.0728	1.00	0.113	pCi/L	07/08/22 14:32	08/01/22 15:14	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.1		40 - 110					07/08/22 14:32	08/01/22 15:14	1

**Client Sample ID: Field Blank**  
**Date Collected: 06/30/22 09:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-24**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0127	U	0.0416	0.0416	1.00	0.0802	pCi/L	07/08/22 14:32	08/01/22 15:14	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/08/22 14:32	08/01/22 15:14	1

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

**Client Sample ID: MW-40B**  
**Date Collected: 06/27/22 14:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-1**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-228</b>	<b>1.15</b>		0.418	0.431	1.00	0.519	pCi/L	07/11/22 15:18	07/18/22 10:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.9		40 - 110					07/11/22 15:18	07/18/22 10:59	1
Y Carrier	84.9		40 - 110					07/11/22 15:18	07/18/22 10:59	1

**Client Sample ID: MW-52B**  
**Date Collected: 06/27/22 16:15**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-2**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-228</b>	<b>1.30</b>		0.458	0.473	1.00	0.568	pCi/L	07/11/22 15:18	07/18/22 10:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	81.8		40 - 110					07/11/22 15:18	07/18/22 10:59	1
Y Carrier	88.2		40 - 110					07/11/22 15:18	07/18/22 10:59	1

**Client Sample ID: MW-49B**  
**Date Collected: 06/27/22 18:15**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-3**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-228</b>	<b>0.835</b>		0.376	0.384	1.00	0.493	pCi/L	07/11/22 15:18	07/18/22 10:59	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	86.6		40 - 110	07/11/22 15:18	07/18/22 10:59	1
Y Carrier	84.1		40 - 110	07/11/22 15:18	07/18/22 10:59	1

**Client Sample ID: MW-21B**  
**Date Collected: 06/28/22 09:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-5**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.347	U	0.338	0.339	1.00	0.542	pCi/L	07/11/22 15:18	07/18/22 10:59	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.4		40 - 110	07/11/22 15:18	07/18/22 10:59	1
Y Carrier	83.4		40 - 110	07/11/22 15:18	07/18/22 10:59	1

**Client Sample ID: MW-38C**  
**Date Collected: 06/28/22 10:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-6**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.573		0.349	0.353	1.00	0.513	pCi/L	07/11/22 15:18	07/18/22 11:01	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.4		40 - 110	07/11/22 15:18	07/18/22 11:01	1
Y Carrier	85.2		40 - 110	07/11/22 15:18	07/18/22 11:01	1

**Client Sample ID: DUP-1**  
**Date Collected: 06/28/22 11:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-7**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.10		0.389	0.401	1.00	0.465	pCi/L	07/11/22 15:18	07/18/22 11:01	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		40 - 110	07/11/22 15:18	07/18/22 11:01	1
Y Carrier	83.4		40 - 110	07/11/22 15:18	07/18/22 11:01	1

**Client Sample ID: MW-38B**  
**Date Collected: 06/28/22 12:10**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-8**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.720		0.353	0.359	1.00	0.482	pCi/L	07/11/22 15:18	07/18/22 11:01	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.2		40 - 110	07/11/22 15:18	07/18/22 11:01	1
Y Carrier	84.9		40 - 110	07/11/22 15:18	07/18/22 11:01	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

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

**Client Sample ID: MW-53B**  
**Date Collected: 06/28/22 13:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-9**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.479	U	0.328	0.331	1.00	0.490	pCi/L	07/11/22 15:18	07/18/22 11:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.1		40 - 110					07/11/22 15:18	07/18/22 11:01	1
Y Carrier	84.5		40 - 110					07/11/22 15:18	07/18/22 11:01	1

**Client Sample ID: MW-39B**  
**Date Collected: 06/29/22 09:42**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-10**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.666		0.431	0.436	1.00	0.645	pCi/L	07/11/22 15:18	07/18/22 11:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	78.7		40 - 110					07/11/22 15:18	07/18/22 11:01	1
Y Carrier	84.1		40 - 110					07/11/22 15:18	07/18/22 11:01	1

**Client Sample ID: MW-32B**  
**Date Collected: 06/29/22 10:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-11**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.491	U	0.342	0.345	1.00	0.516	pCi/L	07/11/22 15:18	07/18/22 11:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					07/11/22 15:18	07/18/22 11:03	1
Y Carrier	83.4		40 - 110					07/11/22 15:18	07/18/22 11:03	1

**Client Sample ID: MW-36B**  
**Date Collected: 06/29/22 11:20**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-12**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.474		0.306	0.310	1.00	0.449	pCi/L	07/11/22 15:18	07/18/22 11:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.4		40 - 110					07/11/22 15:18	07/18/22 11:03	1
Y Carrier	87.1		40 - 110					07/11/22 15:18	07/18/22 11:03	1

**Client Sample ID: MW-37B**  
**Date Collected: 06/29/22 13:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-13**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.179	U	0.287	0.287	1.00	0.489	pCi/L	07/11/22 15:18	07/18/22 11:03	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.7		40 - 110	07/11/22 15:18	07/18/22 11:03	1
Y Carrier	84.9		40 - 110	07/11/22 15:18	07/18/22 11:03	1

**Client Sample ID: MW-20B**  
**Date Collected: 06/29/22 13:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-14**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0630	U	0.325	0.325	1.00	0.585	pCi/L	07/11/22 15:18	07/18/22 11:03	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	85.8		40 - 110	07/11/22 15:18	07/18/22 11:03	1
Y Carrier	86.0		40 - 110	07/11/22 15:18	07/18/22 11:03	1

**Client Sample ID: MW-14BR**  
**Date Collected: 06/29/22 14:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-15**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.238	U	0.327	0.328	1.00	0.549	pCi/L	07/11/22 15:18	07/18/22 11:04	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	89.6		40 - 110	07/11/22 15:18	07/18/22 11:04	1
Y Carrier	87.1		40 - 110	07/11/22 15:18	07/18/22 11:04	1

**Client Sample ID: MW-41B**  
**Date Collected: 06/29/22 15:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-16**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.551		0.320	0.324	1.00	0.456	pCi/L	07/11/22 15:18	07/18/22 11:04	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110	07/11/22 15:18	07/18/22 11:04	1
Y Carrier	87.9		40 - 110	07/11/22 15:18	07/18/22 11:04	1

**Client Sample ID: MW-43B**  
**Date Collected: 06/29/22 17:10**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-18**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.241	U	0.340	0.341	1.00	0.571	pCi/L	07/11/22 15:18	07/18/22 11:04	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	87.6		40 - 110	07/11/22 15:18	07/18/22 11:04	1
Y Carrier	89.3		40 - 110	07/11/22 15:18	07/18/22 11:04	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

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

**Client Sample ID: MW-42B**  
**Date Collected: 06/29/22 18:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-19**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.109	U	0.285	0.285	1.00	0.501	pCi/L	07/11/22 15:18	07/18/22 11:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.2		40 - 110					07/11/22 15:18	07/18/22 11:04	1
Y Carrier	89.3		40 - 110					07/11/22 15:18	07/18/22 11:04	1

**Client Sample ID: MW-47B**  
**Date Collected: 06/29/22 19:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-20**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.328	U	0.300	0.302	1.00	0.477	pCi/L	07/11/22 15:18	07/18/22 11:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		40 - 110					07/11/22 15:18	07/18/22 11:04	1
Y Carrier	88.2		40 - 110					07/11/22 15:18	07/18/22 11:04	1

**Client Sample ID: MW-46B**  
**Date Collected: 06/29/22 19:55**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-21**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0375	U	0.315	0.315	1.00	0.572	pCi/L	07/08/22 14:32	07/15/22 11:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.6		40 - 110					07/08/22 14:32	07/15/22 11:11	1
Y Carrier	87.1		40 - 110					07/08/22 14:32	07/15/22 11:11	1

**Client Sample ID: MW-45B**  
**Date Collected: 06/30/22 08:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-22**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-228</b>	<b>0.589</b>		0.382	0.386	1.00	0.570	pCi/L	07/08/22 14:32	07/15/22 11:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.3		40 - 110					07/08/22 14:32	07/15/22 11:11	1
Y Carrier	84.1		40 - 110					07/08/22 14:32	07/15/22 11:11	1

**Client Sample ID: MW-44B**  
**Date Collected: 06/30/22 09:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-23**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0580	U	0.294	0.294	1.00	0.532	pCi/L	07/08/22 14:32	07/15/22 11:11	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

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

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	91.1		40 - 110	07/08/22 14:32	07/15/22 11:11	1
Y Carrier	85.2		40 - 110	07/08/22 14:32	07/15/22 11:11	1

**Client Sample ID: Field Blank**  
**Date Collected: 06/30/22 09:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-24**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0414	U	0.246	0.246	1.00	0.450	pCi/L	07/08/22 14:32	07/15/22 11:11	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110	07/08/22 14:32	07/15/22 11:11	1
Y Carrier	84.1		40 - 110	07/08/22 14:32	07/15/22 11:11	1

## Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

**Client Sample ID: MW-40B**  
**Date Collected: 06/27/22 14:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-1**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.24		0.424	0.437	5.00	0.519	pCi/L		08/03/22 23:09	1

**Client Sample ID: MW-52B**  
**Date Collected: 06/27/22 16:15**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-2**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.38		0.466	0.481	5.00	0.568	pCi/L		08/03/22 23:09	1

**Client Sample ID: MW-49B**  
**Date Collected: 06/27/22 18:15**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-3**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.905		0.382	0.390	5.00	0.493	pCi/L		08/03/22 23:09	1

**Client Sample ID: MW-21B**  
**Date Collected: 06/28/22 09:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-5**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.415	U	0.343	0.344	5.00	0.542	pCi/L		08/03/22 23:09	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

## Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

**Client Sample ID: MW-38C**  
**Date Collected: 06/28/22 10:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-6**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.648		0.355	0.359	5.00	0.513	pCi/L		08/03/22 23:09	1

**Client Sample ID: DUP-1**  
**Date Collected: 06/28/22 11:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-7**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.07		0.390	0.402	5.00	0.465	pCi/L		08/03/22 23:09	1

**Client Sample ID: MW-38B**  
**Date Collected: 06/28/22 12:10**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-8**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.768		0.357	0.363	5.00	0.482	pCi/L		08/03/22 23:09	1

**Client Sample ID: MW-53B**  
**Date Collected: 06/28/22 13:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-9**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.555		0.336	0.339	5.00	0.490	pCi/L		08/03/22 23:09	1

**Client Sample ID: MW-39B**  
**Date Collected: 06/29/22 09:42**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-10**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.713		0.436	0.441	5.00	0.645	pCi/L		08/03/22 23:09	1

**Client Sample ID: MW-32B**  
**Date Collected: 06/29/22 10:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-11**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.583		0.348	0.351	5.00	0.516	pCi/L		08/03/22 23:09	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

## Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

**Client Sample ID: MW-36B**  
**Date Collected: 06/29/22 11:20**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-12**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.545		0.311	0.315	5.00	0.449	pCi/L		08/03/22 23:09	1

**Client Sample ID: MW-37B**  
**Date Collected: 06/29/22 13:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-13**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.280	U	0.294	0.294	5.00	0.489	pCi/L		08/03/22 23:09	1

**Client Sample ID: MW-20B**  
**Date Collected: 06/29/22 13:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-14**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0864	U	0.331	0.331	5.00	0.585	pCi/L		08/03/22 23:09	1

**Client Sample ID: MW-14BR**  
**Date Collected: 06/29/22 14:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-15**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.226	U	0.330	0.331	5.00	0.549	pCi/L		08/03/22 23:09	1

**Client Sample ID: MW-41B**  
**Date Collected: 06/29/22 15:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-16**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.657		0.328	0.332	5.00	0.456	pCi/L		08/03/22 23:09	1

**Client Sample ID: MW-43B**  
**Date Collected: 06/29/22 17:10**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-18**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.359	U	0.348	0.349	5.00	0.571	pCi/L		08/03/22 23:09	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

## Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228

**Client Sample ID: MW-42B**  
**Date Collected: 06/29/22 18:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-19**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0670	U	0.288	0.288	5.00	0.501	pCi/L		08/03/22 23:09	1

**Client Sample ID: MW-47B**  
**Date Collected: 06/29/22 19:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-20**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.432	U	0.312	0.314	5.00	0.477	pCi/L		08/03/22 23:09	1

**Client Sample ID: MW-46B**  
**Date Collected: 06/29/22 19:55**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-21**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.123	U	0.322	0.322	5.00	0.572	pCi/L		08/02/22 22:21	1

**Client Sample ID: MW-45B**  
**Date Collected: 06/30/22 08:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-22**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.640		0.387	0.391	5.00	0.570	pCi/L		08/02/22 22:21	1

**Client Sample ID: MW-44B**  
**Date Collected: 06/30/22 09:30**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-23**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.135	U	0.303	0.303	5.00	0.532	pCi/L		08/02/22 22:21	1

**Client Sample ID: Field Blank**  
**Date Collected: 06/30/22 09:45**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-24**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0540	U	0.249	0.249	5.00	0.450	pCi/L		08/02/22 22:21	1

# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

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

**Lab Sample ID: MB 160-573264/1-A**  
**Matrix: Water**  
**Analysis Batch: 576060**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 573264**

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.06936	U	0.0700	0.0703	1.00	0.111	pCi/L	07/08/22 14:32	08/01/22 13:10	1
Carrier	MB		Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	%Yield	MB Qualifier	40 - 110					07/08/22 14:32	08/01/22 13:10	1

**Lab Sample ID: LCS 160-573264/2-A**  
**Matrix: Water**  
**Analysis Batch: 576061**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 573264**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium-226	11.3	11.59		1.18	1.00	0.113	pCi/L	102	75 - 125
Carrier	LCS	LCS	Limits						
Ba Carrier	%Yield	Qualifier	40 - 110						
	91.9								

**Lab Sample ID: MB 160-573463/1-A**  
**Matrix: Water**  
**Analysis Batch: 576200**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 573463**

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-0.0007002	U	0.0416	0.0416	1.00	0.0898	pCi/L	07/11/22 15:18	08/02/22 17:20	1
Carrier	MB		Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	%Yield	MB Qualifier	40 - 110					07/11/22 15:18	08/02/22 17:20	1
	88.4									

**Lab Sample ID: LCS 160-573463/2-A**  
**Matrix: Water**  
**Analysis Batch: 576200**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 573463**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium-226	11.3	10.42		1.07	1.00	0.0968	pCi/L	92	75 - 125
Carrier	LCS	LCS	Limits						
Ba Carrier	%Yield	Qualifier	40 - 110						
	94.9								

**Lab Sample ID: 280-163953-5 MS**  
**Matrix: Water**  
**Analysis Batch: 576200**

**Client Sample ID: MW-21B**  
**Prep Type: Total/NA**  
**Prep Batch: 573463**

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
						Uncert. (2σ+/-)					
Radium-226	0.0681	U	11.4	10.60		1.09	1.00	0.114	pCi/L	92	60 - 140

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# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

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

**Lab Sample ID: 280-163953-5 MS**  
**Matrix: Water**  
**Analysis Batch: 576200**

**Client Sample ID: MW-21B**  
**Prep Type: Total/NA**  
**Prep Batch: 573463**

MS MS			
Carrier	%Yield	Qualifier	Limits
Ba Carrier	91.9		40 - 110

**Lab Sample ID: 280-163953-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 576200**

**Client Sample ID: MW-21B**  
**Prep Type: Total/NA**  
**Prep Batch: 573463**

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec		RER	RER Limit
											Limits	RER		
Radium-226	0.0681	U	11.3	10.37		1.09	1.00	0.143	pCi/L	91	60 - 140	0.10		1

MSD MSD			
Carrier	%Yield	Qualifier	Limits
Ba Carrier	86.8		40 - 110

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

**Lab Sample ID: MB 160-573265/1-A**  
**Matrix: Water**  
**Analysis Batch: 574072**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 573265**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared		Analyzed		Dil Fac
								Time	Time	Time	Time	
Radium-228	0.8655		0.352	0.361	1.00	0.438	pCi/L	07/08/22 14:32		07/15/22 11:05		1

MB MB							
Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
Ba Carrier	89.9		40 - 110	07/08/22 14:32	07/15/22 11:05	1	
Y Carrier	86.0		40 - 110	07/08/22 14:32	07/15/22 11:05	1	

**Lab Sample ID: LCS 160-573265/2-A**  
**Matrix: Water**  
**Analysis Batch: 574072**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 573265**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec	
									Limits	
Radium-228	8.45	10.94		1.40	1.00	0.483	pCi/L	129	75 - 125	

LCS LCS			
Carrier	%Yield	Qualifier	Limits
Ba Carrier	91.9		40 - 110
Y Carrier	86.4		40 - 110

**Lab Sample ID: MB 160-573467/1-A**  
**Matrix: Water**  
**Analysis Batch: 574266**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 573467**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared		Analyzed		Dil Fac
								Time	Time	Time	Time	
Radium-228	0.5433		0.341	0.344	1.00	0.497	pCi/L	07/11/22 15:18		07/18/22 10:58		1

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# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

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

**Lab Sample ID: MB 160-573467/1-A**  
**Matrix: Water**  
**Analysis Batch: 574266**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 573467**

Carrier	MB MB		Limits
	%Yield	Qualifier	
Ba Carrier	88.4		40 - 110
Y Carrier	84.5		40 - 110

Prepared	Analyzed	Dil Fac
07/11/22 15:18	07/18/22 10:58	1
07/11/22 15:18	07/18/22 10:58	1

**Lab Sample ID: LCS 160-573467/2-A**  
**Matrix: Water**  
**Analysis Batch: 574266**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 573467**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	
Radium-228	8.44	9.007		1.21	1.00	0.470	pCi/L	107	75 - 125	

Carrier	LCS LCS		Limits
	%Yield	Qualifier	
Ba Carrier	94.9		40 - 110
Y Carrier	85.2		40 - 110

**Lab Sample ID: 280-163953-5 MS**  
**Matrix: Water**  
**Analysis Batch: 574266**

**Client Sample ID: MW-21B**  
**Prep Type: Total/NA**  
**Prep Batch: 573467**

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	
Radium-228	0.347	U	8.50	10.07		1.33	1.00	0.480	pCi/L	114	60 - 140	

Carrier	MS MS		Limits
	%Yield	Qualifier	
Ba Carrier	91.9		40 - 110
Y Carrier	84.1		40 - 110

**Lab Sample ID: 280-163953-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 574266**

**Client Sample ID: MW-21B**  
**Prep Type: Total/NA**  
**Prep Batch: 573467**

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		RER	Limit
Radium-228	0.347	U	8.44	9.371		1.28	1.00	0.501	pCi/L	107	60 - 140	0.27	1	

Carrier	MSD MSD		Limits
	%Yield	Qualifier	
Ba Carrier	86.8		40 - 110
Y Carrier	84.9		40 - 110

# QC Association Summary

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

## Rad

### Prep Batch: 573264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-21	MW-46B	Total/NA	Water	PrecSep-21	
280-163953-22	MW-45B	Total/NA	Water	PrecSep-21	
280-163953-23	MW-44B	Total/NA	Water	PrecSep-21	
280-163953-24	Field Blank	Total/NA	Water	PrecSep-21	
MB 160-573264/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-573264/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

### Prep Batch: 573265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-21	MW-46B	Total/NA	Water	PrecSep_0	
280-163953-22	MW-45B	Total/NA	Water	PrecSep_0	
280-163953-23	MW-44B	Total/NA	Water	PrecSep_0	
280-163953-24	Field Blank	Total/NA	Water	PrecSep_0	
MB 160-573265/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-573265/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

### Prep Batch: 573463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-1	MW-40B	Total/NA	Water	PrecSep-21	
280-163953-2	MW-52B	Total/NA	Water	PrecSep-21	
280-163953-3	MW-49B	Total/NA	Water	PrecSep-21	
280-163953-5	MW-21B	Total/NA	Water	PrecSep-21	
280-163953-6	MW-38C	Total/NA	Water	PrecSep-21	
280-163953-7	DUP-1	Total/NA	Water	PrecSep-21	
280-163953-8	MW-38B	Total/NA	Water	PrecSep-21	
280-163953-9	MW-53B	Total/NA	Water	PrecSep-21	
280-163953-10	MW-39B	Total/NA	Water	PrecSep-21	
280-163953-11	MW-32B	Total/NA	Water	PrecSep-21	
280-163953-12	MW-36B	Total/NA	Water	PrecSep-21	
280-163953-13	MW-37B	Total/NA	Water	PrecSep-21	
280-163953-14	MW-20B	Total/NA	Water	PrecSep-21	
280-163953-15	MW-14BR	Total/NA	Water	PrecSep-21	
280-163953-16	MW-41B	Total/NA	Water	PrecSep-21	
280-163953-18	MW-43B	Total/NA	Water	PrecSep-21	
280-163953-19	MW-42B	Total/NA	Water	PrecSep-21	
280-163953-20	MW-47B	Total/NA	Water	PrecSep-21	
MB 160-573463/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-573463/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
280-163953-5 MS	MW-21B	Total/NA	Water	PrecSep-21	
280-163953-5 MSD	MW-21B	Total/NA	Water	PrecSep-21	

### Prep Batch: 573467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-1	MW-40B	Total/NA	Water	PrecSep_0	
280-163953-2	MW-52B	Total/NA	Water	PrecSep_0	
280-163953-3	MW-49B	Total/NA	Water	PrecSep_0	
280-163953-5	MW-21B	Total/NA	Water	PrecSep_0	
280-163953-6	MW-38C	Total/NA	Water	PrecSep_0	
280-163953-7	DUP-1	Total/NA	Water	PrecSep_0	
280-163953-8	MW-38B	Total/NA	Water	PrecSep_0	
280-163953-9	MW-53B	Total/NA	Water	PrecSep_0	

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# QC Association Summary

Client: AECOM Technical Services Inc.  
Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

## Rad (Continued)

### Prep Batch: 573467 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-163953-10	MW-39B	Total/NA	Water	PrecSep_0	
280-163953-11	MW-32B	Total/NA	Water	PrecSep_0	
280-163953-12	MW-36B	Total/NA	Water	PrecSep_0	
280-163953-13	MW-37B	Total/NA	Water	PrecSep_0	
280-163953-14	MW-20B	Total/NA	Water	PrecSep_0	
280-163953-15	MW-14BR	Total/NA	Water	PrecSep_0	
280-163953-16	MW-41B	Total/NA	Water	PrecSep_0	
280-163953-18	MW-43B	Total/NA	Water	PrecSep_0	
280-163953-19	MW-42B	Total/NA	Water	PrecSep_0	
280-163953-20	MW-47B	Total/NA	Water	PrecSep_0	
MB 160-573467/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-573467/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
280-163953-5 MS	MW-21B	Total/NA	Water	PrecSep_0	
280-163953-5 MSD	MW-21B	Total/NA	Water	PrecSep_0	

# Lab Chronicle

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

## Client Sample ID: MW-40B

## Lab Sample ID: 280-163953-1

Date Collected: 06/27/22 14:00

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			996.72 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576200	08/02/22 17:20	JCB	ETA SL
Total/NA	Prep	PrecSep_0			996.72 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574266	07/18/22 10:59	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

## Client Sample ID: MW-52B

## Lab Sample ID: 280-163953-2

Date Collected: 06/27/22 16:15

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			994.98 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576200	08/02/22 17:20	JCB	ETA SL
Total/NA	Prep	PrecSep_0			994.98 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574266	07/18/22 10:59	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

## Client Sample ID: MW-49B

## Lab Sample ID: 280-163953-3

Date Collected: 06/27/22 18:15

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			995.89 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576200	08/02/22 17:21	JCB	ETA SL
Total/NA	Prep	PrecSep_0			995.89 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574266	07/18/22 10:59	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

## Client Sample ID: MW-21B

## Lab Sample ID: 280-163953-5

Date Collected: 06/28/22 09:35

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1002.18 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576200	08/02/22 17:21	JCB	ETA SL
Total/NA	Prep	PrecSep_0			1002.18 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574266	07/18/22 10:59	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

# Lab Chronicle

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

## Client Sample ID: MW-38C

## Lab Sample ID: 280-163953-6

Date Collected: 06/28/22 10:45

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			998.63 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576221	08/02/22 19:01	JCB	ETA SL
Total/NA	Prep	PrecSep_0			998.63 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574266	07/18/22 11:01	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

## Client Sample ID: DUP-1

## Lab Sample ID: 280-163953-7

Date Collected: 06/28/22 11:00

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.80 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576221	08/02/22 19:01	JCB	ETA SL
Total/NA	Prep	PrecSep_0			999.80 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574266	07/18/22 11:01	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

## Client Sample ID: MW-38B

## Lab Sample ID: 280-163953-8

Date Collected: 06/28/22 12:10

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			997.72 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576221	08/02/22 19:01	JCB	ETA SL
Total/NA	Prep	PrecSep_0			997.72 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574266	07/18/22 11:01	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

## Client Sample ID: MW-53B

## Lab Sample ID: 280-163953-9

Date Collected: 06/28/22 13:05

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1002.13 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576221	08/02/22 19:01	JCB	ETA SL
Total/NA	Prep	PrecSep_0			1002.13 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574266	07/18/22 11:01	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

# Lab Chronicle

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

## Client Sample ID: MW-39B

## Lab Sample ID: 280-163953-10

Date Collected: 06/29/22 09:42

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1002.77 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576221	08/02/22 19:02	JCB	ETA SL
Total/NA	Prep	PrecSep_0			1002.77 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574266	07/18/22 11:01	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

## Client Sample ID: MW-32B

## Lab Sample ID: 280-163953-11

Date Collected: 06/29/22 10:30

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1001.68 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576221	08/02/22 19:02	JCB	ETA SL
Total/NA	Prep	PrecSep_0			1001.68 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574295	07/18/22 11:03	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

## Client Sample ID: MW-36B

## Lab Sample ID: 280-163953-12

Date Collected: 06/29/22 11:20

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			996.98 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576221	08/02/22 19:02	JCB	ETA SL
Total/NA	Prep	PrecSep_0			996.98 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574295	07/18/22 11:03	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

## Client Sample ID: MW-37B

## Lab Sample ID: 280-163953-13

Date Collected: 06/29/22 13:05

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1003.51 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576221	08/02/22 19:02	JCB	ETA SL
Total/NA	Prep	PrecSep_0			1003.51 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574295	07/18/22 11:03	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

# Lab Chronicle

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

## Client Sample ID: MW-20B

## Lab Sample ID: 280-163953-14

Date Collected: 06/29/22 13:45

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			997.23 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576221	08/02/22 19:03	JCB	ETA SL
Total/NA	Prep	PrecSep_0			997.23 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574295	07/18/22 11:03	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

## Client Sample ID: MW-14BR

## Lab Sample ID: 280-163953-15

Date Collected: 06/29/22 14:35

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1004.21 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576221	08/02/22 19:03	JCB	ETA SL
Total/NA	Prep	PrecSep_0			1004.21 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574295	07/18/22 11:04	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

## Client Sample ID: MW-41B

## Lab Sample ID: 280-163953-16

Date Collected: 06/29/22 15:30

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			997.73 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576200	08/02/22 19:35	JCB	ETA SL
Total/NA	Prep	PrecSep_0			997.73 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574295	07/18/22 11:04	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

## Client Sample ID: MW-43B

## Lab Sample ID: 280-163953-18

Date Collected: 06/29/22 17:10

Matrix: Water

Date Received: 06/30/22 13:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			996.35 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576200	08/02/22 19:35	JCB	ETA SL
Total/NA	Prep	PrecSep_0			996.35 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574295	07/18/22 11:04	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

# Lab Chronicle

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

**Client Sample ID: MW-42B**  
**Date Collected: 06/29/22 18:05**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-19**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			997.79 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576200	08/02/22 19:35	JCB	ETA SL
Total/NA	Prep	PrecSep_0			997.79 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574295	07/18/22 11:04	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

**Client Sample ID: MW-47B**  
**Date Collected: 06/29/22 19:00**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-20**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.95 mL	1.0 g	573463	07/11/22 15:18	MS	ETA SL
Total/NA	Analysis	9315		1			576200	08/02/22 19:35	JCB	ETA SL
Total/NA	Prep	PrecSep_0			999.95 mL	1.0 g	573467	07/11/22 15:18	MLK	ETA SL
Total/NA	Analysis	9320		1			574295	07/18/22 11:04	CLP	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576462	08/03/22 23:09	EMH	ETA SL

**Client Sample ID: MW-46B**  
**Date Collected: 06/29/22 19:55**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-21**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1003.60 mL	1.0 g	573264	07/08/22 14:32	MLK	ETA SL
Total/NA	Analysis	9315		1			576060	08/01/22 15:19	CLP	ETA SL
Total/NA	Prep	PrecSep_0			1003.60 mL	1.0 g	573265	07/08/22 14:32	MLK	ETA SL
Total/NA	Analysis	9320		1			574130	07/15/22 11:11	FLC	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576256	08/02/22 22:21	EMH	ETA SL

**Client Sample ID: MW-45B**  
**Date Collected: 06/30/22 08:35**  
**Date Received: 06/30/22 13:50**

**Lab Sample ID: 280-163953-22**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1006.61 mL	1.0 g	573264	07/08/22 14:32	MLK	ETA SL
Total/NA	Analysis	9315		1			576060	08/01/22 15:19	CLP	ETA SL
Total/NA	Prep	PrecSep_0			1006.61 mL	1.0 g	573265	07/08/22 14:32	MLK	ETA SL
Total/NA	Analysis	9320		1			574130	07/15/22 11:11	FLC	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576256	08/02/22 22:21	EMH	ETA SL

# Lab Chronicle

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

**Client Sample ID: MW-44B**

**Lab Sample ID: 280-163953-23**

**Date Collected: 06/30/22 09:30**

**Matrix: Water**

**Date Received: 06/30/22 13:50**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1002.95 mL	1.0 g	573264	07/08/22 14:32	MLK	ETA SL
Total/NA	Analysis	9315		1			576061	08/01/22 15:14	SCB	ETA SL
Total/NA	Prep	PrecSep_0			1002.95 mL	1.0 g	573265	07/08/22 14:32	MLK	ETA SL
Total/NA	Analysis	9320		1			574130	07/15/22 11:11	FLC	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576256	08/02/22 22:21	EMH	ETA SL

**Client Sample ID: Field Blank**

**Lab Sample ID: 280-163953-24**

**Date Collected: 06/30/22 09:45**

**Matrix: Water**

**Date Received: 06/30/22 13:50**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1002.41 mL	1.0 g	573264	07/08/22 14:32	MLK	ETA SL
Total/NA	Analysis	9315		1			576061	08/01/22 15:14	SCB	ETA SL
Total/NA	Prep	PrecSep_0			1002.41 mL	1.0 g	573265	07/08/22 14:32	MLK	ETA SL
Total/NA	Analysis	9320		1			574130	07/15/22 11:11	FLC	ETA SL
Total/NA	Analysis	Ra226_Ra228		1			576256	08/02/22 22:21	EMH	ETA SL

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

## Laboratory: Eurofins St. Louis

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

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

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





# Chain of Custody Record

<b>Client Information</b>		Sampler: <u>J. Leventon</u>		Lab PM: <u>McEntee, Patrick J</u>		Carrier Tracking No(s):		COC No: <u>280-120021-33729.1</u>	
Client Contact: <u>Ms. Katie Abbott</u>		Phone: <u>719 232 1715</u>		E-Mail: <u>Patrick.McEntee@et.eurofins.com</u>		State of Origin: <u>WY</u>		Page: <u>3 of 3</u>	
Company: <u>AECOM Technical Services Inc.</u>		PWSID:		Analysis Requested		Total Number of Containers		Job #: <u>303 of 3</u>	
Address: <u>6200 S. Quebec Street</u>		Due Date Requested:		Perform MS/MSD (Yes or No)		6010C-3 Total Metals (B, Ca & Li)		Preservation Codes:	
City: <u>Greenwood Village</u>		TAT Requested (days):		Field Filtered Sample (Yes or No)		2540C_Calc'd - Solids, Total Dissolved (TDS)		A - HCL	
State, Zip: <u>CO, 80111</u>		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		9056A_28D - Chloride, Fluoride, Sulfate		N - None	
Phone: <u></u>		PO #: <u>136447</u>		Sample Type (C=comp, G=grab)		6020A-11 Total Metals (Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Mo,Se,Tl)		O - AsNaO2	
Email: <u>katie.abbott@aecom.com</u>		WC #: <u></u>		Sample Time		7470A - Total Mercury		P - Na2O4S	
Project Name: <u>CCR - Basin Electric 2022</u>		AECOM Project#: <u>60632474</u>		Sample Date		9315, 9320, Ra226, Ra228		Q - Na2SO3	
Site: <u>LRS</u>		28020759		6.30.22 0930 G U		6010C-3 Total Metals (B, Ca & Li)		R - Na2S2O3	
SSOW#: <u></u>		SSOW#: <u></u>		Preservation Code:		7540C_Calc'd - Solids, Total Dissolved (TDS)		S - H2SO4	
<b>Sample Identification</b>		MW-44B		Sample Date		9056A_28D - Chloride, Fluoride, Sulfate		T - TSP Dodecahydrate	
						6020A-11 Total Metals (Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Mo,Se,Tl)		U - Acetone	
						7470A - Total Mercury		V - MCAA	
						9315, 9320, Ra226, Ra228		W - pH 4-5	
						6010C-3 Total Metals (B, Ca & Li)		Y - Trizma	
						2540C_Calc'd - Solids, Total Dissolved (TDS)		Z - other (specify)	
						9056A_28D - Chloride, Fluoride, Sulfate		Other:	
						6020A-11 Total Metals (Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Mo,Se,Tl)			
						7470A - Total Mercury			
						9315, 9320, Ra226, Ra228			
						6010C-3 Total Metals (B, Ca & Li)			
						2540C_Calc'd - Solids, Total Dissolved (TDS)			
						9056A_28D - Chloride, Fluoride, Sulfate			
						6020A-11 Total Metals (Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Mo,Se,Tl)			
						7470A - Total Mercury			
						9315, 9320, Ra226, Ra228			
						6010C-3 Total Metals (B, Ca & Li)			
						2540C_Calc'd - Solids, Total Dissolved (TDS)			
						9056A_28D - Chloride, Fluoride, Sulfate			
						6020A-11 Total Metals (Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Mo,Se,Tl)			
						7470A - Total Mercury			
						9315, 9320, Ra226, Ra228			
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						2540C_Calc'd - Solids, Total Dissolved (TDS)			
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						7470A - Total Mercury			
						9315, 9320, Ra226, Ra228			
						6010C-3 Total Metals (B, Ca & Li)			
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						9056A_28D - Chloride, Fluoride, Sulfate			
						6020A-11 Total Metals (Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Mo,Se,Tl)			
						7470A - Total Mercury			
						9315, 9320, Ra226, Ra228			
						6010C-3 Total Metals (B, Ca & Li)			
						2540C_Calc'd - Solids, Total Dissolved (TDS)			
						9056A_28D - Chloride, Fluoride, Sulfate			
						6020A-11 Total Metals (Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Mo,Se,Tl)			
						7470A - Total Mercury			
						9315, 9320, Ra226, Ra228			
						6010C-3 Total Metals (B, Ca & Li)			
						2540C_Calc'd - Solids, Total Dissolved (TDS)			

# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Lab PM: McEntee, Patrick J	Carrier Tracking Net(s)	COC No: 280-620787-1
Shipping/Receiving		E-Mail: Patrick.McEntee@et.eurofins.com	State of Origin: Colorado	Page: Page 1 of 3
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Oregon		
Address: 13715 Rider Trail North,		Due Date Requested: 8/1/2022	Job #: 280-163953-2	
City: Earth City		TAT Requested (days):	Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA Y - Trizma Z - other (specify)	
State, Zip: MO, 63045		PO #:	Analysis Requested	
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		WO #:	Total Number of Containers	
Email:		Project #: 28020759	Special Instructions/Note:	
SOW#:		Site: CCR - Basin Electric 2020 - LRS	9315_Ra226/PreSep_21 Standard Target List	
			9320_Ra228/PreSep_0 Standard Target List	
			Ra226Ra228_GFPc	
			Perform MS/MSD (Yes or No)	
			Field Filtered Sample (Yes or No)	
			Preservation Code	
			Matrix (W=water, S=solid, O=water, BT=Tissue, AA=)	
			Sample Type (C=Comp, G=grab)	
			Sample Time	
			Sample Date	
			Sample Identification - Client ID (Lab ID)	
			MW-40B (280-163953-1)	
			MW-52B (280-163953-2)	
			MW-49B (280-163953-3)	
			RW-1 (280-163953-4)	
			MW-21B (280-163953-5)	
			MW-21B (280-163953-5MS)	
			MW-21B (280-163953-5MSD)	
			MW-38C (280-163953-6)	
			DUP-1 (280-163953-7)	
<p>Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte, &amp; accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/analysis/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica</p>				
<b>Possible Hazard Identification</b>				
Unconfirmed				
Deliverable Requested: I, II, III, IV, Other (specify)				
Primary Deliverable Rank: 2				
Date:				
Time:				
Method of Shipment:				
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Special Instructions/QC Requirements:				
Received by: _____ Date/Time: _____ Company: _____				
Received by: <i>Siana Worthington</i> Date/Time: <i>JUL 06 2022 1700</i> Company: <i>EMSA</i>				
Received by: _____ Date/Time: _____ Company: _____				
Cooler Temperature(s) °C and Other Remarks:				



# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Lab PM McEntee, Patrick J	Carrier Tracking No(s)	COC No: 280-620787 2
Shipping/Receiving		E-Mail: Patrick.McEntee@et.eurofins.com	State of Origin Colorado	Page Page 2 of 3
Company TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Oregon		
Address 13715 Rider Trail North,		Job #: 280-163953-2		
City: Earth City		<b>Analysis Requested</b>		
State, Zip MO, 63045		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)		
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		Other:		
Email:		Total Number of containers		
Project Name CCR - Basin Electric 2020 - LRS		Special Instructions/Note:		
Site SSOW#		6		
Due Date Requested: 8/1/2022		Perform MS/MSD (Yes or No)		
TAT Requested (days):		Field Filtered Sample (Yes or No)		
PO #		9315_Ra228/P/PreSep_21 Standard Target List		
WO #		9320_Ra228/P/PreSep_0 Standard Target List		
Project # 28020759		Ra228Ra228_GFPc		
Site		Matrix (W=water, S=solid, O=wastewater, LT=tissue, ANAL)		
Sample Identification - Client ID (Lab ID)		Preservation Code:		
MW-38B (280-163953-8)	6/28/22	12:10 Mountain	Water	X
MW-53B (280-163953-9)	6/28/22	13:05 Mountain	Water	X
MW-39B (280-163953-10)	6/29/22	09:42 Mountain	Water	X
MW-32B (280-163953-11)	6/29/22	10:30 Mountain	Water	X
MW-36B (280-163953-12)	6/29/22	11:20 Mountain	Water	X
MW-37B (280-163953-13)	6/29/22	13:05 Mountain	Water	X
MW-20B (280-163953-14)	6/29/22	13:45 Mountain	Water	X
MW-14BR (280-163953-15)	6/29/22	14:35 Mountain	Water	X
MW-41B (280-163953-16)	6/29/22	15:30 Mountain	Water	X

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_  
 Primary Deliverable Rank: 2  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Method of Shipment: \_\_\_\_\_  
 Empty Kit Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_  
 Custody Seal No.: \_\_\_\_\_  
 Δ Yes Δ No

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months  
 Special Instructions/QC Requirements:

Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

COOLER TEMPERATURE(S) °C AND OTHER REMARKS:  
 JUL 06 2022 1700  
 Company: \_\_\_\_\_

# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Lab PM McEntee, Patrick J	Carrier Tracking No(s)	COC No 280-620787-3
Shipping/Receiving		E-Mail Patrick.McEntee@et.eurofins.com	State of Origin Colorado	Page Page 3 of 3
TestAmerica Laboratories, Inc.		Accreditations Required (See note) NELAP - Oregon		
Address 13715 Rider Trail North,		Job # 280-163953-2		
City Earth City		<b>Analysis Requested</b>		
State/Zip MO, 63045		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Y - Trizma Z - other (specify)		
Due Date Requested: 8/1/2022		Total Number of containers		
TAT Requested (days):		Special Instructions/Note:		
PO #		9315_Ra226/PreSep_Z1 Standard Target List		
WO #		9320_Ra228/PreSep_0 Standard Target List		
Project # 28020759		Field Filtered Sample (Yes or No)		
SSOW#		Preservation Code		
Sample Identification - Client ID (Lab ID)		Matrix (W=water, S=solid, O=soil, BT=Tissue, A=Al)		
Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Field Filtered Sample (Yes or No)	9315_Ra226/PreSep_Z1 Standard Target List
6/29/22	16:15 Mountain	Water	X	X
6/29/22	17:10 Mountain	Water	X	X
6/29/22	18:05 Mountain	Water	X	X
6/29/22	19:00 Mountain	Water	X	X
6/29/22	19:55 Mountain	Water	X	X
6/30/22	08:35 Mountain	Water	X	X
6/30/22	09:30 Mountain	Water	X	X
6/30/22	Mountain	Water	X	X

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_  
 Primary Deliverable Rank: 2

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Relinquished by: *Patrick J. McEntee* Date: 7/5/22 15:30  
 Relinquished by: FEDEX Company: *STADAN*  
 Relinquished by: FEDEX Company: *Sims Weddington*  
 Relinquished by: FEDEX Company: *STADAN*

Custody Seals Intact:  Yes  No  
 Cooler Temperature(s) °C and Other Remarks: \_\_\_\_\_

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

Special Instructions/QC Requirements: \_\_\_\_\_



## Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 280-163953-2

**Login Number: 163953**

**List Source: Eurofins Denver**

**List Number: 1**

**Creator: Roehsner, Karen P**

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

## Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 280-163953-2

**Login Number: 163953**

**List Number: 2**

**Creator: Worthington, Sierra M**

**List Source: Eurofins St. Louis**

**List Creation: 07/06/22 12:33 PM**

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

# Tracer/Carrier Summary

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (40-110)	Y (40-110)
280-163953-1	MW-40B	88.9	
280-163953-2	MW-52B	81.8	
280-163953-3	MW-49B	86.6	
280-163953-5	MW-21B	90.4	
280-163953-5 MS	MW-21B	91.9	
280-163953-5 MSD	MW-21B	86.8	
280-163953-6	MW-38C	92.4	
280-163953-7	DUP-1	94.7	
280-163953-8	MW-38B	92.2	
280-163953-9	MW-53B	90.1	
280-163953-10	MW-39B	78.7	
280-163953-11	MW-32B	91.4	
280-163953-12	MW-36B	93.4	
280-163953-13	MW-37B	95.7	
280-163953-14	MW-20B	85.8	
280-163953-15	MW-14BR	89.6	
280-163953-16	MW-41B	91.4	
280-163953-18	MW-43B	87.6	
280-163953-19	MW-42B	94.2	
280-163953-20	MW-47B	94.7	
280-163953-21	MW-46B	87.6	
280-163953-22	MW-45B	85.3	
280-163953-23	MW-44B	91.1	
280-163953-24	Field Blank	102	
LCS 160-573264/2-A	Lab Control Sample	91.9	
LCS 160-573463/2-A	Lab Control Sample	94.9	
MB 160-573264/1-A	Method Blank	89.9	
MB 160-573463/1-A	Method Blank	88.4	

**Tracer/Carrier Legend**  
 Ba = Ba Carrier

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (40-110)	Y (40-110)
280-163953-1	MW-40B	88.9	84.9
280-163953-2	MW-52B	81.8	88.2
280-163953-3	MW-49B	86.6	84.1
280-163953-5	MW-21B	90.4	83.4
280-163953-5 MS	MW-21B	91.9	84.1
280-163953-5 MSD	MW-21B	86.8	84.9
280-163953-6	MW-38C	92.4	85.2
280-163953-7	DUP-1	94.7	83.4
280-163953-8	MW-38B	92.2	84.9
280-163953-9	MW-53B	90.1	84.5
280-163953-10	MW-39B	78.7	84.1
280-163953-11	MW-32B	91.4	83.4

# Tracer/Carrier Summary

Client: AECOM Technical Services Inc.  
 Project/Site: CCR - Basin Electric 2022 - LRS

Job ID: 280-163953-2

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

**Matrix: Water**

**Prep Type: Total/NA**

**Percent Yield (Acceptance Limits)**

Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
280-163953-12	MW-36B	93.4	87.1
280-163953-13	MW-37B	95.7	84.9
280-163953-14	MW-20B	85.8	86.0
280-163953-15	MW-14BR	89.6	87.1
280-163953-16	MW-41B	91.4	87.9
280-163953-18	MW-43B	87.6	89.3
280-163953-19	MW-42B	94.2	89.3
280-163953-20	MW-47B	94.7	88.2
280-163953-21	MW-46B	87.6	87.1
280-163953-22	MW-45B	85.3	84.1
280-163953-23	MW-44B	91.1	85.2
280-163953-24	Field Blank	102	84.1
LCS 160-573265/2-A	Lab Control Sample	91.9	86.4
LCS 160-573467/2-A	Lab Control Sample	94.9	85.2
MB 160-573265/1-A	Method Blank	89.9	86.0
MB 160-573467/1-A	Method Blank	88.4	84.5

**Tracer/Carrier Legend**

Ba = Ba Carrier

Y = Y Carrier





Environment

Submitted to:  
Basin Electric Laramie River Station

Submitted by:  
AECOM  
Denver, CO

August 26, 2022  
Inorganic and Radiochemistry  
Limited Data Validation Report

Basin Electric Laramie, Wyoming  
Groundwater Sampling – June 2022  
Analyzed by Eurofins TestAmerica Laboratories

Prepared By Jamie Herman  
Chemist

## **Overview**

The samples analyzed for the June 2022 sampling event are listed in the Table of Samples Validated (page 3). Limited data validation was performed on a total of nineteen groundwater samples, one field duplicate sample, and one field blank Quality Control (QC) sample.

Samples were submitted to Eurofins TestAmerica Laboratories of Denver, Colorado (TA-DEN).

The reviewed analyses were Select Total Metals by SW-846 Methods 6010C, 6020A, and 7470A, Chloride, Fluoride, and Sulfate by SW-846 Method 9056A, Total Dissolved Solids (TDS) by SM2540C, Radium-226 by SW-846 Method 9315, Radium-228 by SW-846 Method 9320, and combined Radium-226 and Radium-228 by calculation.

The Analytical Limited Data Validation Checklist is presented as pages 4-9. Data were evaluated using guidance set forth in the *United States Environmental Protection Agency (USEPA) contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Superfund Methods Data Review*, document number EPA-542-R-20-006, November 2020; method requirements, and laboratory criteria.

The following data components were reviewed during the data validation procedure:

<b>Submitted Deliverables</b>
Case Narratives (including any assigned laboratory flags)
Chain-of-Custody form(s) and sample integrity
Sample results, reporting limits, dilution factors
Holding times
Method (preparation) blank results
Field blank results
Laboratory control sample (LCS), laboratory control sample duplicate (LCSD) results
Matrix spike (MS), matrix spike duplicate (MSD) results
Laboratory duplicate (or spiked duplicate) results
Field duplicate (FD) results (calculated Relative Percent Differences [RPD])
Electronic data deliverables (EDDs) – EQUIS format

### **Data Validation Qualifiers Assigned During this Review**

- J+ The result is an estimated quantity, but the result may be biased high.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

Assigned qualifiers are detailed in the Analytical Data Validation Checklist and are summarized in the Table of Qualified Analytical Results (page 10).

### **Overall Data Assessment**

Field and laboratory precision, field and laboratory accuracy, method compliance, and data set completeness are determined to be acceptable based on the data reported. With the exception of the anions and/or total dissolved solids results for samples MW-14BR and Field Blank which were qualified as unusable as the samples were received at an elevated temperature, the completeness of the data set was calculated to be greater than 98% and is acceptable. All reported data are suitable for their intended use as reported with the clarifications and qualifications noted.

**Table of Samples Validated  
Basin Electric – Laramie, Wyoming  
June 2022 Sampling  
Eurofins TestAmerica Laboratories**

Matrix	Sample ID	Lab SDG	Lab ID	Sample Type
WG	MW-40B	280-163953-1 280-163953-2	280-163953-1	N
WG	MW-52B		280-163953-2	N
WG	MW-49B		280-163953-3	N
WG	MW-21B		280-163953-5	N
WG	MW-38C		280-163953-6	N
WG	DUP-1		280-163953-7	FD
WG	MW-38B		280-163953-8	N
WQ	MW-53B		280-163953-9	N
WG	MW-39B		280-163953-10	N
WG	MW-32B		280-163953-11	N
WG	MW-36B		280-163953-12	N
WG	MW-37B		280-163953-13	N
WG	MW-20B		280-163953-14	N
WG	MW-14BR		280-163953-15	N
WG	MW-41B		280-163953-16	N
WG	MW-43B		280-163953-18	N
WG	MW-42B		280-163953-19	N
WG	MW-47B		280-163953-20	N
WG	MW-46B		280-163953-21	N
WG	MW-45B		280-163953-22	N
WG	MW-44B		280-163953-23	N
WQ	Field Blank		280-163953-24	FB

FB – Field Blank  
 FD – Field Duplicate Sample  
 ID – Identification  
 N – Normal Investigative Sample  
 SDG – Sample Delivery Group  
 WG – Ground Water  
 WQ – Water Quality Sample

Project Name: Basin Electric Laramie River Station, Wyoming	Laboratory: Eurofins TestAmerica Denver, Colorado (6010C Metals, 7470A Mercury, 9056A Anions, and TDS) Eurofins TestAmerica Canton (6020A Metals) Eurofins TestAmerica Saint Louis, Missouri (Radiochemistry)
Project Reference: Sampling – June 2022	Sample Matrix: Groundwater
AECOM Project: 60632474 Task 8.2	Sample Start Date: 06/27/2022
Validator/Date Validated: Jamie Herman / August 26, 2022	Sample End Date: 06/30/2022
Secondary Review by: Katie Abbott	Secondary Review Date: September 12, 2022
Samples Analyzed: See Table of Samples Validated (page 3).	
Parameters Validated: Total Metals by SW-846 Method 6010C Total Metals by SW-846 Method 6020A Total Mercury by SW-846 Method 7470A Anions (Chloride, Fluoride, and Sulfate) by SW-846 Method 9056A TDS by SM2540C Radium-226 by SW-846 Method 9315 Radium-228 by SW-846 Method 9320 Combined Radium-226 and Radium-228	
Laboratory Project IDs/Sample Delivery Groups (SDGs): 280-163953-1 and 280-163953-2	

<b>PRECISION, ACCURACY, METHOD COMPLIANCE, AND COMPLETENESS ASSESSMENT</b>						
Precision:	<b>X</b>	Acceptable		Unacceptable	JH	Initials
<p>Comments: Precision is the measure of variability of individual sample measurements. Field precision was evaluated by reviewing the field duplicate results, and laboratory precision was evaluated by reviewing method duplicate sample results, laboratory control sample (LCS) to laboratory control sample duplicate (LCSD) results, and matrix spike (MS) to matrix spike duplicate (MSD) results.</p> <p>The following criteria was used to evaluate the field duplicate results:</p> <ul style="list-style-type: none"> <li>For results where both reported values were greater than five times the reporting limit (RL), the relative percent difference between the samples and its field duplicate were compared against a criterion of 30%.</li> <li>For results where either value reported was less than five times the RL, the absolute difference between the results was compared to a criterion of agreement within <math>\pm 2</math> times the RL</li> <li>The replicate error ratio (RER) for radiochemical parameters was <math>\leq 2</math>.</li> </ul> <p>Laboratory criteria was used to evaluate laboratory precision.</p> <p>Field and laboratory precision is acceptable because no data are rejected. Precision measurements are reviewed in items 17 and 21.</p>						
Accuracy:	<b>X</b>	Acceptable		Unacceptable	JH	Initials
<p>Comments: Field accuracy, a measure of the sampling bias, can be determined by reviewing field and equipment blank results for evidence of sample contamination stemming from sampling activities and/or field conditions. Laboratory accuracy is a measure of the system bias, and was measured by evaluating LCS, MS, and MSD percent recoveries (%Rs). LCS %Rs demonstrated the overall performance of the analysis. MS, MSD %Rs provided information on sample matrix interferences. Accuracy measurements were evaluated using laboratory control limits. Overall field and laboratory accuracy is acceptable because the majority of the results are unqualified based on accuracy and no data are rejected. Accuracy measurements are reviewed in items 12, 14, 15, 16, and 20.</p>						
Method Compliance:	<b>X</b>	Acceptable		Unacceptable	JH	Initials
<p>Comments: For this data set, method compliance was determined by evaluating sample integrity, holding time, reporting limits, and laboratory blanks against method specified requirements. Overall method compliance is acceptable because the majority of the results were unqualified based on the method compliance parameters reviewed. Method compliance measurements are also reviewed in items 4, 6, 8, 11, 13, 18, 19, 20, and 22.</p>						
Completeness:	<b>X</b>	Acceptable		Unacceptable	JH	Initials
<p>Comments: Completeness is the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of chain of custody records, laboratory analytical methods and reporting limits, laboratory case narratives, and project requirements. Completeness also included 100% review of the laboratory sample data results, QC summary reports, and electronic data deliverables (EDDs). Any EDD modifications were made as documented in item 23.</p> <p>With the exception of the fluoride result for sample MW-14BR, and the chloride, fluoride, sulfate, and total dissolved solids results for sample Field Blank, no results were missing or rejected, completeness of the data set was calculated to be greater than 98% and is acceptable.</p>						

### VALIDATION CRITERIA CHECK

Data validation qualifiers potentially assigned during this review:

- J+ The result is an estimated quantity, but the result may be biased high.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

The following comments identifying sample results requiring qualification are in bold type. The other comments are of interest, but qualification of the sample results is not necessary.

1. Did the laboratory identify any non-conformances related to the analytical results?	<b>X</b>	Yes		No	JH	Initials
--	----------	-----	--	----	----	----------

Comments: Data qualification, if any, related to the narrative comments and/or assigned laboratory flags contained in the analytical reports are discussed in the following sections.

2. Were sample Chain-of-Custody (COC) forms complete?		Yes	<b>X</b>	No	JH	Initials
---	--	-----	----------	----	----	----------

Comments: With the exceptions noted below, no issues were observed, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.

**Data Packages 280-163953-1 and 280-163953-2**

Samples RW-1 and RW-2 listed on the COC are included in separate data packages (280-163953-3 and 280-163953-4). The analytical results associated with these samples were not considered as part of this validation. The laboratory noted sample Field Blank was received, but not included on the COC. As the laboratory logged the sample per the volume received for total metals, total dissolved solids (TDS), anions, radium-226 and radium-228, further action was not considered necessary.

3. Were all the analyses requested for the samples on the COCs completed by the laboratory?	<b>X</b>	Yes		No	JH	Initials
---	----------	-----	--	----	----	----------

Comments: All requested analyses were completed by the laboratory.

4. Were samples received in good condition and at the appropriate temperature?		Yes	<b>X</b>	No	JH	Initials
--	--	-----	----------	----	----	----------

Comments: With the exceptions noted below, all samples were received intact and within the recommended <6°C temperature for the applicable methods.

**Data Package 280-163953-1**

The laboratory noted samples MW-39B, MW-32B, MW-36B, MW37B, MW-14BR, MW-41B, MW-45B, MW-44B, and Field Blank were received at a temperature >10°C for TDS and anions analysis. The associated detected results were qualified as estimated due to temperature preservation (J t) and the non-detected results were qualified as unusable due to temperature preservation (R t).

**Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 10).**

5. Were the reported analytical methods in compliance with WP/QAPP, permit, or COC?	<b>X</b>	Yes		No	JH	Initials
---	----------	-----	--	----	----	----------

Comments: The reported target analytes and methods are in compliance with parameters and methods listed on the COC.

6. Were detection limits in accordance with WP/QAPP, permit, or method?	<b>X</b>	Yes		No	JH	Initials
---	----------	-----	--	----	----	----------

Comments: No results were reported as non-detect at elevated reporting limits.

7. Do the laboratory reports include only those constituents requested to be reported for a specific analytical method?	<b>X</b>	Yes		No	JH	Initials
---	----------	-----	--	----	----	----------

Comments: Only the requested target analytes were reported.

### VALIDATION CRITERIA CHECK

8. Were sample holding times met?	<b>X</b>	Yes		No	JH	Initials
-----------------------------------	----------	-----	--	----	----	----------

Comments: Sample preparation and analytical holding times were within the method requirements.

9. Were correct concentration units reported?	<b>X</b>	Yes		No	JH	Initials
---	----------	-----	--	----	----	----------

Comments: Metals and general chemistry data were reported as mg/L (ppm) and radiochemistry data was reported in picocuries per liter (pCi/L).

10. Were the reporting requirements for flagged data met?	<b>X</b>	Yes		No	JH	Initials
---	----------	-----	--	----	----	----------

Comments: Laboratory flags were reviewed and considered during the data validation procedure. Data validation qualifiers override assigned laboratory flags.

11. Were laboratory blank samples free of target analyte contamination?		Yes	<b>X</b>	No	JH	Initials
---	--	-----	----------	----	----	----------

Comments: With the following exceptions, the laboratory blanks were free of target analyte contamination.

Laboratory Blank/ Associated Samples	Analyte	Concentration (pCi/L)	Qualification
MB 160-573265/1-A MW-46B, MW-45B MW-44B, Field Blank	Radium-228	0.8655	The associated results reported at concentrations <5x the concentration of the blank contamination were qualified estimated (J+ bl).
MB 160-573467/1-A MW-40B, MW-52B, MW-49B, MW-21B, MW-38C, DUP-1, MW-38B, MW-53B, MW-39B, MW-32B, MW-36B, MW-37B, MW-20B, MW-14BR, MW-41B, MW-43B, MW-42B, MW-47B	Radium-228	0.5433	The associated results reported at concentrations <5x the concentration of the blank contamination were qualified estimated (J+ bl).

< – Less Than

bl – Laboratory blank contamination

J+ – The result is an estimated quantity, but the result may be biased high.

MB – Method Blank

pCi/L – Picocuries per Liter

**Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 10).**

12. Were trip blank, field blank, and/or equipment rinse blank samples free of target analyte contamination?		Yes	<b>X</b>	No	JH	Initials
--	--	-----	----------	----	----	----------

Comments: A trip blank and equipment blank were not required for this sampling event.

One field blank was collected. With the following exception, the field blank was free of target analyte contamination.

**Data Package 280-163953-1**

Calcium was detected in the field blank at a concentration of 0.277 mg/L. As the associated sample results were reported at concentrations greater than 5x the concentration of the field blank contamination, data qualification was not considered necessary.

13. Were instrument calibrations within method or data validation control limits?	<b>NA</b>	Yes	<b>NA</b>	No	JH	Initials
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Comments: Not applicable for the analytical methods reported.

14. Were surrogate/tracer recoveries within control limits?	<b>X</b>	Yes		No	JH	Initials
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Comments: The associated tracer recoveries were within control limits.

15. Were laboratory control sample recoveries and relative percent difference (RPDs) within control limits?	<b>X</b>	Yes		No	JH	Initials
---	----------	-----	--	----	----	----------

Comments: LCS and/or LCSD percent recoveries and RPDs were within laboratory control limits.

### VALIDATION CRITERIA CHECK

16. Were matrix spike recoveries and RPDs within control limits?		Yes	<b>X</b>	No	JH	Initials
--	--	-----	----------	----	----	----------

Comments: A matrix spike/matrix spike duplicate (MS/MSD) was performed on sample MW-21B for all analyses, samples MW-36B and MW-45B for chloride and fluoride, and sample MW53B for sulfate.

Sample	Analyte	%R (Limits)	RPD (Limits)	Comment
MW-21B	Chloride	<b>141/136</b> (80-120)	1 (20)	As the potential bias was considered to be high, the associated detected results were qualified as estimated (J+ m).
	Fluoride	<b>128/125</b> (80-120)	2 (20)	
MW-36B	Chloride	<b>132/144</b> (80-120)	5 (20)	As the potential bias was considered to be high, the associated detected results were qualified as estimated (J+ m).
	Fluoride	<b>131/142</b> (80-120)	7 (20)	

**Bold indicates a recovery or RPD outside acceptance limit.**

%R – Percent Recovery

J+ – Estimated with a potential high bias

m – Matrix spike/matrix spike duplicate recovery failure

RPD – Relative Percent Difference

**Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 10).**

17. Were laboratory duplicate RPDs and/or serial dilution %Ds within control limits?	<b>X</b>	Yes		No	JH	Initials
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Comments: A laboratory duplicate was performed for anions and total dissolved solids. The RPDs for target analytes in project-specific laboratory duplicate samples were within laboratory control limits.

Serial dilutions were not evaluated for this level of validation.

18. Were organic system performance criteria met?	<b>NA</b>	Yes	<b>NA</b>	No	JH	Initials
---	-----------	-----	-----------	----	----	----------

Comments: Not applicable for this level of limited data validation or for the methods reported.

19. Were internal standards within method criteria for ICP-MS sample analyses?	<b>NA</b>	Yes	<b>NA</b>	No	JH	Initials
--	-----------	-----	-----------	----	----	----------

Comments: Not evaluated for this level of data validation. No internal standard issues were noted in the case narrative.

20. Were system performance criteria met?	<b>NA</b>	Yes	<b>NA</b>	No	JH	Initials
---	-----------	-----	-----------	----	----	----------

Comments: Not evaluated for this level of data validation. Inorganic system performance data were not supplied in the analytical laboratory reports and are therefore not included in this data review.

However, the laboratory case narrative associated with data package 280-163953-1 noted the low-level continuing calibration verification (CCVL) associated with batch 280-580399 recovered above the upper control limit for lithium (160%, limit 70-130%). As the potential bias was considered high, the associated detected lithium results for the associated samples MW-40B, MW-52B, and MW-49B were qualified as estimated (J+ c).

**Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 10).**

21. Were field duplicates collected? If so, discuss the precision (RPD and/or RER) of the results.	<b>X</b>	Yes		No	JH	Initials
--	----------	-----	--	----	----	----------

Duplicate Sample No.	DUP-01	Primary Sample No.	MW-38C
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Comments: The duplicate sample pair met the acceptance criteria.

22. Were qualitative criteria for organic target analyte identification met?	<b>NA</b>	Yes	<b>NA</b>	No	JH	Initials
--	-----------	-----	-----------	----	----	----------

Comments: Not applicable for this level of limited data validation or for the methods reported.

VALIDATION CRITERIA CHECK						
23. Were 10% of the EDD concentrations and reporting limits compared to the hardcopy data reports?	X	Yes		No	JH	Initials
Comments: During the validation procedure, 10% of the positive sample concentrations and 100% of the RLs for project samples were compared to hardcopy laboratory reports. The data validator made sure that RLs were entered into the correct EDD fields.						
24. General Comments: Data were also evaluated using guidance set forth in the <i>United States Environmental Protection Agency (USEPA) contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Superfund Methods Data Review</i> , document number EPA-542-R-20-006, November 2020; method requirements, and laboratory criteria. All data is considered usable.						

**Table of Qualified Analytical Results  
Basin Electric – Laramie, Wyoming  
June 2022 Sampling  
Eurofins TestAmerica Laboratories**

Laboratory Group	Sample ID	Lab Sample ID	Analytical Method	Analyte	Flag	Reason Code
280-163953-1	MW-40B	280-163953-1	SW6010C	Lithium	J+	c
280-163953-1	MW-49B	280-163953-3	SW6010C	Lithium	J+	c
280-163953-1	MW-21B	280-163953-5	SW9056A	Chloride	J+	m
280-163953-1	MW-21B	280-163953-5	SW9056A	Fluoride	J+	m
280-163953-1	MW-39B	280-163953-10	SM2540C	Total Dissolved Solids	J	t
280-163953-1	MW-39B	280-163953-10	SW9056A	Chloride	J	t
280-163953-1	MW-39B	280-163953-10	SW9056A	Fluoride	J	t
280-163953-1	MW-39B	280-163953-10	SW9056A	Sulfate	J	t
280-163953-1	MW-32B	280-163953-11	SM2540C	Total Dissolved Solids	J	t
280-163953-1	MW-32B	280-163953-11	SW9056A	Chloride	J	t
280-163953-1	MW-32B	280-163953-11	SW9056A	Fluoride	J	t
280-163953-1	MW-32B	280-163953-11	SW9056A	Sulfate	J	t
280-163953-1	MW-36B	280-163953-12	SM2540C	Total Dissolved Solids	J	t
280-163953-1	MW-36B	280-163953-12	SW9056A	Chloride	J+	m,t
280-163953-1	MW-36B	280-163953-12	SW9056A	Fluoride	J+	m,t
280-163953-1	MW-36B	280-163953-12	SW9056A	Sulfate	J	t
280-163953-1	MW-37B	280-163953-13	SM2540C	Total Dissolved Solids	J	t
280-163953-1	MW-37B	280-163953-13	SW9056A	Chloride	J	t
280-163953-1	MW-37B	280-163953-13	SW9056A	Fluoride	J	t
280-163953-1	MW-37B	280-163953-13	SW9056A	Sulfate	J	t
280-163953-1	MW-14BR	280-163953-15	SM2540C	Total Dissolved Solids	J	t
280-163953-1	MW-14BR	280-163953-15	SW9056A	Chloride	J	t
280-163953-1	MW-14BR	280-163953-15	SW9056A	Fluoride	R	t
280-163953-1	MW-14BR	280-163953-15	SW9056A	Sulfate	J	t
280-163953-1	MW-41B	280-163953-16	SM2540C	Total Dissolved Solids	J	t
280-163953-1	MW-41B	280-163953-16	SW9056A	Chloride	J	t
280-163953-1	MW-41B	280-163953-16	SW9056A	Fluoride	J	t
280-163953-1	MW-41B	280-163953-16	SW9056A	Sulfate	J	t
280-163953-1	MW-52B	280-163953-2	SW6010C	Lithium	J+	c
280-163953-1	MW-45B	280-163953-22	SM2540C	Total Dissolved Solids	J	t
280-163953-1	MW-45B	280-163953-22	SW9056A	Chloride	J	t
280-163953-1	MW-45B	280-163953-22	SW9056A	Fluoride	J	t
280-163953-1	MW-45B	280-163953-22	SW9056A	Sulfate	J	t
280-163953-1	MW-44B	280-163953-23	SM2540C	Total Dissolved Solids	J	t
280-163953-1	MW-44B	280-163953-23	SW9056A	Chloride	J	t
280-163953-1	MW-44B	280-163953-23	SW9056A	Fluoride	J	t
280-163953-1	MW-44B	280-163953-23	SW9056A	Sulfate	J	t
280-163953-1	Field Blank	280-163953-24	SM2540C	Total Dissolved Solids	R	t
280-163953-1	Field Blank	280-163953-24	SW9056A	Chloride	R	t
280-163953-1	Field Blank	280-163953-24	SW9056A	Fluoride	R	t
280-163953-1	Field Blank	280-163953-24	SW9056A	Sulfate	R	t
280-163953-2	MW-40B	280-163953-1	SW9320	Radium-228	J+	bl
280-163953-2	MW-52B	280-163953-2	SW9320	Radium-228	J+	bl
280-163953-2	MW-49B	280-163953-3	SW9320	Radium-228	J+	bl
280-163953-2	MW-38C	280-163953-6	SW9320	Radium-228	J+	bl
280-163953-2	DUP-1	280-163953-7	SW9320	Radium-228	J+	bl
280-163953-2	MW-38B	280-163953-8	SW9320	Radium-228	J+	bl
280-163953-2	MW-39B	280-163953-10	SW9320	Radium-228	J+	bl
280-163953-2	MW-36B	280-163953-12	SW9320	Radium-228	J+	bl
280-163953-2	MW-41B	280-163953-16	SW9320	Radium-228	J+	bl
280-163953-2	MW-45B	280-163953-22	SW9320	Radium-228	J+	bl

bl – Laboratory blank contamination

c – Calibration Issue

ID – Identification

J+ – The result is an estimated quantity, but the result may be biased high.

J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

m – Matrix spike/matrix spike duplicate recovery failure

R – The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

t – Temperature Preservation Issue

## ANALYTICAL REPORT

Eurofins Denver  
4955 Yarrow Street  
Arvada, CO 80002  
Tel: (303)736-0100

Laboratory Job ID: 280-167087-1  
Client Project/Site: Basin 2020 Support

For:  
AECOM Technical Services Inc.  
6200 S. Quebec Street  
Greenwood Village, Colorado 80111

Attn: Ms. Katie Abbott



Authorized for release by:  
11/4/2022 3:14:21 AM

Patrick McEntee, Client Service Manager  
(303)736-0107  
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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

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



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions . . . . .	3
Case Narrative . . . . .	4
Method Summary . . . . .	7
Sample Summary . . . . .	8
Client Sample Results . . . . .	9
QC Sample Results . . . . .	22
QC Association . . . . .	26
Chronicle . . . . .	28
Certification Summary . . . . .	34
Chain of Custody . . . . .	35
Receipt Checklists . . . . .	41
Tracer Carrier Summary . . . . .	43

# Definitions/Glossary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Qualifiers

### Rad

Qualifier	Qualifier Description
F	MS/MSD Recovery and/or RPD exceeds the control limits
F1	MS and/or MSD recovery exceeds control limits.
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

## Glossary

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

# Case Narrative

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

**Job ID: 280-167087-1**

**Laboratory: Eurofins Denver**

**Narrative**

## CASE NARRATIVE

**Client: AECOM Technical Services Inc.**

**Project: Basin 2020 Support**

**Report Number: 280-167087-1**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### **RECEIPT**

The samples were received on 9/30/2022 11:10 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 7 coolers at receipt time were 0.2° C, 0.3° C, 0.5° C, 0.9° C, 3.1° C, 12.0° C and 15.8° C.

### **Receipt Exceptions**

The two coolers that were above 6 degrees C were filled with only Nitric Acid preserved containers that did not require temperature preservation.

Per client request, the results for samples RW-2 (280-167087-22) and RW-1 (280-167087-23) are reported under 280-167087-3 (chemical) and 280-167087-4 (radiochemical).

### **RADIUM-226 (GFPC)**

Samples MW-42B (280-167087-1), MW-43B (280-167087-2), MW-47B (280-167087-3), MW-46B (280-167087-4), MW-45B (280-167087-5), MW-44B (280-167087-6), MW-37B (280-167087-7), MW-36B (280-167087-8), MW-32B (280-167087-9), MW-14BR (280-167087-10), DUP-1 (280-167087-11), MW-20B (280-167087-12), MW-38B (280-167087-13), MW-49B (280-167087-14), MW-21B (280-167087-15), MW-41B (280-167087-16), MW-53B (280-167087-17), MW-52B (280-167087-18), FB-1 (280-167087-19), MW-39B (280-167087-20) and MW-40B (280-167087-21) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 10/07/2022 and 10/12/2022 and analyzed on 11/02/2022 and 11/03/2022.

Method 9315: Radium-226 batch 585049

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date

280-167087-1, 280-167087-2, 280-167087-3, LCS 160-585049/2-A, MB 160-585049/1-A, 240-173918-E-12-A and 240-173918-D-12-A DU

Method 9315: Radium-226 batch 585732

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. 280-167087-15, 280-167087-16, 280-167087-17, 280-167087-18, 280-167087-19,

280-167087-20, 280-167087-21, LCS 160-585732/2-A, MB 160-585732/1-A

# Case Narrative

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Job ID: 280-167087-1 (Continued)

### Laboratory: Eurofins Denver (Continued)

Methods 903.0, 9315: Radium-226 batch 585729

The matrix spike (MS) recoveries for Radium-226 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. 280-167087-12[MS]

Methods 903.0, 9315: Radium-226 batch 585729

The sample duplicate (DUP) precision was outside control limits due the Matrix spike failure attributed to suspected sample matrix interference. 280-167087-12[MSD]

Methods 903.0, 9315: Radium-226 batch 585729

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. 280-167087-4, 280-167087-5, 280-167087-6, 280-167087-7, 280-167087-8, 280-167087-9, 280-167087-10, 280-167087-11, 280-167087-12, 280-167087-12[MS], 280-167087-12[MSD], 280-167087-13, 280-167087-14, LCS 160-585729/2-A and MB 160-585729/1-A

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

### **RADIUM-228**

Samples MW-42B (280-167087-1), MW-43B (280-167087-2), MW-47B (280-167087-3), MW-46B (280-167087-4), MW-45B (280-167087-5), MW-44B (280-167087-6), MW-37B (280-167087-7), MW-36B (280-167087-8), MW-32B (280-167087-9), MW-14BR (280-167087-10), DUP-1 (280-167087-11), MW-20B (280-167087-12), MW-38B (280-167087-13), MW-49B (280-167087-14), MW-21B (280-167087-15), MW-41B (280-167087-16), MW-53B (280-167087-17), MW-52B (280-167087-18), FB-1 (280-167087-19), MW-39B (280-167087-20) and MW-40B (280-167087-21) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 10/07/2022 and 10/12/2022 and analyzed on 10/25/2022, 10/26/2022 and 10/28/2022.

Method 9320: Radium-228 batch 585052

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. 280-167087-1, 280-167087-2, 280-167087-3, LCS 160-585052/2-A, MB 160-585052/1-A.

Methods 904.0, 9320: Radium-228 batch 585731

The matrix spike / matrix spike duplicate (MS/MSD) precision for was outside control limits due to low recovery in the MS. Sample matrix interference is suspected. 280-167087-12[MSD]

Methods 904.0, 9320: Radium-228 batch 585731

The matrix spike (MS) recoveries were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. 280-167087-12[MS]

Methods 904.0, 9320: Radium-228 batch 585731

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. 280-167087-4, 280-167087-5, 280-167087-6, 280-167087-7, 280-167087-8, 280-167087-9, 280-167087-10, 280-167087-11, 280-167087-12, 280-167087-12[MS], 280-167087-12[MSD], 280-167087-13, 280-167087-14, LCS 160-585731/2-A and MB 160-585731/1-A

Method 9320: Radium-228 batch 585733

The detection goal was not met for the following sample(s). Samples were prepped at a reduced volume due to the presence of matrix interferences: 280-167087-17 and 280-167087-18. Analytical results are reported with the detection limit achieved.

Method 9320: Radium-228 batch 585733

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. 280-167087-15, 280-167087-16, 280-167087-17, 280-167087-18, 280-167087-19, 280-167087-20, 280-167087-21, LCS 160-585733/2-A, MB 160-585733/1-A, 480-202216-A-10-C, 480-202216-B-10-B MS and 480-202216-A-10-D MSD

# Case Narrative

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

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## Job ID: 280-167087-1 (Continued)

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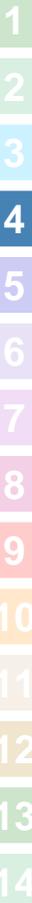
### Laboratory: Eurofins Denver (Continued)

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

#### **RADIUM-226/RADIUM-228 (GFPC)**

Samples MW-42B (280-167087-1), MW-43B (280-167087-2), MW-47B (280-167087-3), MW-46B (280-167087-4), MW-45B (280-167087-5), MW-44B (280-167087-6), MW-37B (280-167087-7), MW-36B (280-167087-8), MW-32B (280-167087-9), MW-14BR (280-167087-10), DUP-1 (280-167087-11), MW-20B (280-167087-12), MW-38B (280-167087-13), MW-49B (280-167087-14), MW-21B (280-167087-15), MW-41B (280-167087-16), MW-53B (280-167087-17), MW-52B (280-167087-18), FB-1 (280-167087-19), MW-39B (280-167087-20) and MW-40B (280-167087-21) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 11/03/2022.

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



# Method Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

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

#### Protocol References:

None = None

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

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

#### Laboratory References:

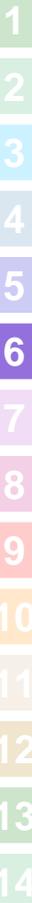
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

# Sample Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-167087-1	MW-42B	Water	09/27/22 10:01	09/30/22 11:10
280-167087-2	MW-43B	Water	09/27/22 11:37	09/30/22 11:10
280-167087-3	MW-47B	Water	09/27/22 12:27	09/30/22 11:10
280-167087-4	MW-46B	Water	09/27/22 13:22	09/30/22 11:10
280-167087-5	MW-45B	Water	09/27/22 14:18	09/30/22 11:10
280-167087-6	MW-44B	Water	09/27/22 14:55	09/30/22 11:10
280-167087-7	MW-37B	Water	09/27/22 16:06	09/30/22 11:10
280-167087-8	MW-36B	Water	09/27/22 16:48	09/30/22 11:10
280-167087-9	MW-32B	Water	09/27/22 17:49	09/30/22 11:10
280-167087-10	MW-14BR	Water	09/28/22 10:52	09/30/22 11:10
280-167087-11	DUP-1	Water	09/28/22 00:00	09/30/22 11:10
280-167087-12	MW-20B	Water	09/28/22 11:40	09/30/22 11:10
280-167087-13	MW-38B	Water	09/28/22 12:44	09/30/22 11:10
280-167087-14	MW-49B	Water	09/28/22 14:44	09/30/22 11:10
280-167087-15	MW-21B	Water	09/28/22 15:45	09/30/22 11:10
280-167087-16	MW-41B	Water	09/29/22 09:26	09/30/22 11:10
280-167087-17	MW-53B	Water	09/29/22 11:35	09/30/22 11:10
280-167087-18	MW-52B	Water	09/29/22 14:00	09/30/22 11:10
280-167087-19	FB-1	Water	09/29/22 13:00	09/30/22 11:10
280-167087-20	MW-39B	Water	09/29/22 15:46	09/30/22 11:10
280-167087-21	MW-40B	Water	09/29/22 16:42	09/30/22 11:10



# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Method: SW846 9315 - Radium-226 (GFPC)

**Client Sample ID: MW-42B**  
**Date Collected: 09/27/22 10:01**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-1**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0176	U	0.0618	0.0618	1.00	0.117	pCi/L	10/07/22 17:31	11/02/22 10:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110					10/07/22 17:31	11/02/22 10:06	1

**Client Sample ID: MW-43B**  
**Date Collected: 09/27/22 11:37**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-2**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0362	U	0.0561	0.0562	1.00	0.0972	pCi/L	10/07/22 17:31	11/02/22 10:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.4		40 - 110					10/07/22 17:31	11/02/22 10:06	1

**Client Sample ID: MW-47B**  
**Date Collected: 09/27/22 12:27**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-3**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0774	U	0.0658	0.0662	1.00	0.0954	pCi/L	10/07/22 17:31	11/02/22 10:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.2		40 - 110					10/07/22 17:31	11/02/22 10:06	1

**Client Sample ID: MW-46B**  
**Date Collected: 09/27/22 13:22**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-4**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.00372	U F	0.0495	0.0495	1.00	0.106	pCi/L	10/12/22 16:15	11/03/22 06:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		40 - 110					10/12/22 16:15	11/03/22 06:51	1

**Client Sample ID: MW-45B**  
**Date Collected: 09/27/22 14:18**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-5**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0656	U F	0.0582	0.0585	1.00	0.0841	pCi/L	10/12/22 16:15	11/03/22 06:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		40 - 110					10/12/22 16:15	11/03/22 06:51	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Method: SW846 9315 - Radium-226 (GFPC)

**Client Sample ID: MW-44B**  
**Date Collected: 09/27/22 14:55**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-6**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00375	U F	0.0471	0.0471	1.00	0.0980	pCi/L	10/12/22 16:15	11/03/22 06:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.6		40 - 110					10/12/22 16:15	11/03/22 06:51	1

**Client Sample ID: MW-37B**  
**Date Collected: 09/27/22 16:06**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-7**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0330	U F	0.0656	0.0657	1.00	0.117	pCi/L	10/12/22 16:15	11/03/22 06:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.1		40 - 110					10/12/22 16:15	11/03/22 06:51	1

**Client Sample ID: MW-36B**  
**Date Collected: 09/27/22 16:48**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-8**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0357	U F	0.0553	0.0554	1.00	0.0957	pCi/L	10/12/22 16:15	11/03/22 06:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110					10/12/22 16:15	11/03/22 06:51	1

**Client Sample ID: MW-32B**  
**Date Collected: 09/27/22 17:49**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-9**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0835	U F	0.0663	0.0667	1.00	0.0934	pCi/L	10/12/22 16:15	11/03/22 06:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.6		40 - 110					10/12/22 16:15	11/03/22 06:51	1

**Client Sample ID: MW-14BR**  
**Date Collected: 09/28/22 10:52**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-10**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0122	U F	0.0575	0.0575	1.00	0.112	pCi/L	10/12/22 16:15	11/03/22 07:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.9		40 - 110					10/12/22 16:15	11/03/22 07:02	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Method: SW846 9315 - Radium-226 (GFPC)

**Client Sample ID: DUP-1**  
**Date Collected: 09/28/22 00:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-11**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0107	U F	0.0667	0.0667	1.00	0.130	pCi/L	10/12/22 16:15	11/03/22 07:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.2		40 - 110					10/12/22 16:15	11/03/22 07:02	1

**Client Sample ID: MW-20B**  
**Date Collected: 09/28/22 11:40**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-12**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0692	U F	0.0811	0.0814	1.00	0.133	pCi/L	10/12/22 16:15	11/03/22 07:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.7		40 - 110					10/12/22 16:15	11/03/22 07:02	1

**Client Sample ID: MW-38B**  
**Date Collected: 09/28/22 12:44**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-13**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.104	U F	0.0812	0.0818	1.00	0.117	pCi/L	10/12/22 16:15	11/03/22 07:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.8		40 - 110					10/12/22 16:15	11/03/22 07:03	1

**Client Sample ID: MW-49B**  
**Date Collected: 09/28/22 14:44**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-14**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0489	U F	0.0581	0.0582	1.00	0.0945	pCi/L	10/12/22 16:15	11/03/22 07:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.5		40 - 110					10/12/22 16:15	11/03/22 07:03	1

**Client Sample ID: MW-21B**  
**Date Collected: 09/28/22 15:45**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-15**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0608	U	0.0737	0.0739	1.00	0.121	pCi/L	10/12/22 16:56	11/03/22 07:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110					10/12/22 16:56	11/03/22 07:06	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Method: SW846 9315 - Radium-226 (GFPC)

**Client Sample ID: MW-41B**  
**Date Collected: 09/29/22 09:26**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-16**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0360	U	0.0770	0.0771	1.00	0.139	pCi/L	10/12/22 16:56	11/03/22 07:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110					10/12/22 16:56	11/03/22 07:06	1

**Client Sample ID: MW-53B**  
**Date Collected: 09/29/22 11:35**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-17**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.474		0.230	0.234	1.00	0.261	pCi/L	10/12/22 16:56	11/03/22 07:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	75.7		40 - 110					10/12/22 16:56	11/03/22 07:06	1

**Client Sample ID: MW-52B**  
**Date Collected: 09/29/22 14:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-18**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.34		0.367	0.387	1.00	0.322	pCi/L	10/12/22 16:56	11/03/22 07:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	74.3		40 - 110					10/12/22 16:56	11/03/22 07:06	1

**Client Sample ID: FB-1**  
**Date Collected: 09/29/22 13:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-19**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0785	U	0.100	0.101	1.00	0.167	pCi/L	10/12/22 16:56	11/03/22 07:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.1		40 - 110					10/12/22 16:56	11/03/22 07:06	1

**Client Sample ID: MW-39B**  
**Date Collected: 09/29/22 15:46**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-20**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0655	U	0.0711	0.0713	1.00	0.168	pCi/L	10/12/22 16:56	11/03/22 07:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.5		40 - 110					10/12/22 16:56	11/03/22 07:07	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Method: SW846 9315 - Radium-226 (GFPC)

**Client Sample ID: MW-40B**  
**Date Collected: 09/29/22 16:42**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-21**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0628	U	0.0720	0.0722	1.00	0.116	pCi/L	10/12/22 16:56	11/03/22 09:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		40 - 110					10/12/22 16:56	11/03/22 09:23	1

## Method: SW846 9320 - Radium-228 (GFPC)

**Client Sample ID: MW-42B**  
**Date Collected: 09/27/22 10:01**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-1**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.36		0.518	0.533	1.00	0.698	pCi/L	10/07/22 17:31	10/25/22 12:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110					10/07/22 17:31	10/25/22 12:56	1
Y Carrier	81.9		40 - 110					10/07/22 17:31	10/25/22 12:56	1

**Client Sample ID: MW-43B**  
**Date Collected: 09/27/22 11:37**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-2**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.282	U	0.308	0.309	1.00	0.502	pCi/L	10/07/22 17:31	10/25/22 12:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.4		40 - 110					10/07/22 17:31	10/25/22 12:56	1
Y Carrier	83.4		40 - 110					10/07/22 17:31	10/25/22 12:56	1

**Client Sample ID: MW-47B**  
**Date Collected: 09/27/22 12:27**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-3**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.841		0.428	0.435	1.00	0.610	pCi/L	10/07/22 17:31	10/25/22 12:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.2		40 - 110					10/07/22 17:31	10/25/22 12:56	1
Y Carrier	86.0		40 - 110					10/07/22 17:31	10/25/22 12:56	1

**Client Sample ID: MW-46B**  
**Date Collected: 09/27/22 13:22**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-4**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.565	F	0.328	0.332	1.00	0.469	pCi/L	10/12/22 16:53	10/26/22 14:32	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Method: SW846 9320 - Radium-228 (GFPC)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		40 - 110	10/12/22 16:53	10/26/22 14:32	1
Y Carrier	83.0		40 - 110	10/12/22 16:53	10/26/22 14:32	1

**Client Sample ID: MW-45B**  
**Date Collected: 09/27/22 14:18**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-5**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.231	U F	0.268	0.268	1.00	0.439	pCi/L	10/12/22 16:53	10/26/22 14:32	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		40 - 110	10/12/22 16:53	10/26/22 14:32	1
Y Carrier	85.6		40 - 110	10/12/22 16:53	10/26/22 14:32	1

**Client Sample ID: MW-44B**  
**Date Collected: 09/27/22 14:55**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-6**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.466	U F	0.321	0.324	1.00	0.485	pCi/L	10/12/22 16:53	10/26/22 14:32	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.6		40 - 110	10/12/22 16:53	10/26/22 14:32	1
Y Carrier	86.7		40 - 110	10/12/22 16:53	10/26/22 14:32	1

**Client Sample ID: MW-37B**  
**Date Collected: 09/27/22 16:06**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-7**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.446	U F	0.316	0.318	1.00	0.475	pCi/L	10/12/22 16:53	10/26/22 14:32	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.1		40 - 110	10/12/22 16:53	10/26/22 14:32	1
Y Carrier	85.6		40 - 110	10/12/22 16:53	10/26/22 14:32	1

**Client Sample ID: MW-36B**  
**Date Collected: 09/27/22 16:48**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-8**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.806	F	0.334	0.342	1.00	0.426	pCi/L	10/12/22 16:53	10/26/22 14:32	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110	10/12/22 16:53	10/26/22 14:32	1
Y Carrier	87.1		40 - 110	10/12/22 16:53	10/26/22 14:32	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Method: SW846 9320 - Radium-228 (GFPC)

**Client Sample ID: MW-32B**  
**Date Collected: 09/27/22 17:49**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-9**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.583	F	0.303	0.308	1.00	0.413	pCi/L	10/12/22 16:53	10/26/22 14:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.6		40 - 110					10/12/22 16:53	10/26/22 14:32	1
Y Carrier	86.4		40 - 110					10/12/22 16:53	10/26/22 14:32	1

**Client Sample ID: MW-14BR**  
**Date Collected: 09/28/22 10:52**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-10**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.616	F	0.336	0.341	1.00	0.475	pCi/L	10/12/22 16:53	10/26/22 14:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.9		40 - 110					10/12/22 16:53	10/26/22 14:32	1
Y Carrier	86.0		40 - 110					10/12/22 16:53	10/26/22 14:32	1

**Client Sample ID: DUP-1**  
**Date Collected: 09/28/22 00:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-11**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.735	F	0.373	0.379	1.00	0.523	pCi/L	10/12/22 16:53	10/26/22 14:34	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.2		40 - 110					10/12/22 16:53	10/26/22 14:34	1
Y Carrier	88.2		40 - 110					10/12/22 16:53	10/26/22 14:34	1

**Client Sample ID: MW-20B**  
**Date Collected: 09/28/22 11:40**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-12**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.396	U F	0.299	0.301	1.00	0.455	pCi/L	10/12/22 16:53	10/26/22 14:34	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.7		40 - 110					10/12/22 16:53	10/26/22 14:34	1
Y Carrier	89.0		40 - 110					10/12/22 16:53	10/26/22 14:34	1

**Client Sample ID: MW-38B**  
**Date Collected: 09/28/22 12:44**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-13**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.907	F	0.437	0.445	1.00	0.599	pCi/L	10/12/22 16:53	10/26/22 14:34	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	85.8		40 - 110	10/12/22 16:53	10/26/22 14:34	1
Y Carrier	78.9		40 - 110	10/12/22 16:53	10/26/22 14:34	1

**Client Sample ID: MW-49B**  
**Date Collected: 09/28/22 14:44**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-14**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.810	F	0.333	0.341	1.00	0.433	pCi/L	10/12/22 16:53	10/26/22 14:34	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	99.5		40 - 110	10/12/22 16:53	10/26/22 14:34	1
Y Carrier	90.1		40 - 110	10/12/22 16:53	10/26/22 14:34	1

**Client Sample ID: MW-21B**  
**Date Collected: 09/28/22 15:45**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-15**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0364	U	0.256	0.256	1.00	0.467	pCi/L	10/12/22 17:18	10/28/22 11:09	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110	10/12/22 17:18	10/28/22 11:09	1
Y Carrier	89.3		40 - 110	10/12/22 17:18	10/28/22 11:09	1

**Client Sample ID: MW-41B**  
**Date Collected: 09/29/22 09:26**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-16**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.452	U	0.157	0.163	1.00	0.448	pCi/L	10/12/22 17:18	10/28/22 11:09	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110	10/12/22 17:18	10/28/22 11:09	1
Y Carrier	90.5		40 - 110	10/12/22 17:18	10/28/22 11:09	1

**Client Sample ID: MW-53B**  
**Date Collected: 09/29/22 11:35**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-17**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-1.01	U G	0.445	0.454	1.00	1.17	pCi/L	10/12/22 17:18	10/28/22 11:10	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	75.7		40 - 110	10/12/22 17:18	10/28/22 11:10	1
Y Carrier	88.2		40 - 110	10/12/22 17:18	10/28/22 11:10	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Method: SW846 9320 - Radium-228 (GFPC)

**Client Sample ID: MW-52B**  
**Date Collected: 09/29/22 14:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-18**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.899	U G	0.499	0.505	1.00	1.22	pCi/L	10/12/22 17:18	10/28/22 11:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	74.3		40 - 110					10/12/22 17:18	10/28/22 11:10	1
Y Carrier	88.2		40 - 110					10/12/22 17:18	10/28/22 11:10	1

**Client Sample ID: FB-1**  
**Date Collected: 09/29/22 13:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-19**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.350	U	0.285	0.287	1.00	0.442	pCi/L	10/12/22 17:18	10/28/22 11:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.1		40 - 110					10/12/22 17:18	10/28/22 11:10	1
Y Carrier	88.6		40 - 110					10/12/22 17:18	10/28/22 11:10	1

**Client Sample ID: MW-39B**  
**Date Collected: 09/29/22 15:46**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-20**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-228</b>	<b>1.07</b>		0.362	0.375	1.00	0.435	pCi/L	10/12/22 17:18	10/28/22 11:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.5		40 - 110					10/12/22 17:18	10/28/22 11:10	1
Y Carrier	89.3		40 - 110					10/12/22 17:18	10/28/22 11:10	1

**Client Sample ID: MW-40B**  
**Date Collected: 09/29/22 16:42**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-21**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.444	U	0.309	0.312	1.00	0.466	pCi/L	10/12/22 17:18	10/28/22 11:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		40 - 110					10/12/22 17:18	10/28/22 11:10	1
Y Carrier	90.5		40 - 110					10/12/22 17:18	10/28/22 11:10	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228

**Client Sample ID: MW-42B**  
**Date Collected: 09/27/22 10:01**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-1**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.38		0.522	0.537	5.00	0.698	pCi/L		11/03/22 21:55	1

**Client Sample ID: MW-43B**  
**Date Collected: 09/27/22 11:37**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-2**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.318	U	0.313	0.314	5.00	0.502	pCi/L		11/03/22 21:55	1

**Client Sample ID: MW-47B**  
**Date Collected: 09/27/22 12:27**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-3**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.919		0.433	0.440	5.00	0.610	pCi/L		11/03/22 21:55	1

**Client Sample ID: MW-46B**  
**Date Collected: 09/27/22 13:22**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-4**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.561		0.332	0.336	5.00	0.469	pCi/L		11/03/22 21:55	1

**Client Sample ID: MW-45B**  
**Date Collected: 09/27/22 14:18**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-5**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.296	U	0.274	0.274	5.00	0.439	pCi/L		11/03/22 21:55	1

**Client Sample ID: MW-44B**  
**Date Collected: 09/27/22 14:55**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-6**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.470	U	0.324	0.327	5.00	0.485	pCi/L		11/03/22 21:55	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228

**Client Sample ID: MW-37B**  
**Date Collected: 09/27/22 16:06**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-7**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.479		0.323	0.325	5.00	0.475	pCi/L		11/03/22 21:55	1

**Client Sample ID: MW-36B**  
**Date Collected: 09/27/22 16:48**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-8**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.842		0.339	0.346	5.00	0.426	pCi/L		11/03/22 21:55	1

**Client Sample ID: MW-32B**  
**Date Collected: 09/27/22 17:49**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-9**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.667		0.310	0.315	5.00	0.413	pCi/L		11/03/22 21:55	1

**Client Sample ID: MW-14BR**  
**Date Collected: 09/28/22 10:52**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-10**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.628		0.341	0.346	5.00	0.475	pCi/L		11/03/22 21:55	1

**Client Sample ID: DUP-1**  
**Date Collected: 09/28/22 00:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-11**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.746		0.379	0.385	5.00	0.523	pCi/L		11/03/22 21:55	1

**Client Sample ID: MW-20B**  
**Date Collected: 09/28/22 11:40**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-12**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.465		0.310	0.312	5.00	0.455	pCi/L		11/03/22 21:55	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228

**Client Sample ID: MW-38B**  
**Date Collected: 09/28/22 12:44**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-13**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.01		0.444	0.452	5.00	0.599	pCi/L		11/03/22 21:55	1

**Client Sample ID: MW-49B**  
**Date Collected: 09/28/22 14:44**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-14**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.859		0.338	0.346	5.00	0.433	pCi/L		11/03/22 21:55	1

**Client Sample ID: MW-21B**  
**Date Collected: 09/28/22 15:45**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-15**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0972	U	0.266	0.266	5.00	0.467	pCi/L		11/03/22 21:55	1

**Client Sample ID: MW-41B**  
**Date Collected: 09/29/22 09:26**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-16**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.416	U	0.175	0.180	5.00	0.448	pCi/L		11/03/22 21:55	1

**Client Sample ID: MW-53B**  
**Date Collected: 09/29/22 11:35**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-17**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.534	U	0.501	0.511	5.00	1.17	pCi/L		11/03/22 21:55	1

**Client Sample ID: MW-52B**  
**Date Collected: 09/29/22 14:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-18**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.442	U	0.619	0.636	5.00	1.22	pCi/L		11/03/22 21:55	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
 Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228

**Client Sample ID: FB-1**  
**Date Collected: 09/29/22 13:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-19**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.429	U	0.302	0.304	5.00	0.442	pCi/L		11/03/22 21:55	1

**Client Sample ID: MW-39B**  
**Date Collected: 09/29/22 15:46**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-20**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.00		0.369	0.382	5.00	0.435	pCi/L		11/03/22 21:55	1

**Client Sample ID: MW-40B**  
**Date Collected: 09/29/22 16:42**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-21**  
**Matrix: Water**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.507		0.317	0.320	5.00	0.466	pCi/L		11/03/22 21:58	1

# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

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

**Lab Sample ID: MB 160-585049/1-A**  
**Matrix: Water**  
**Analysis Batch: 587973**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 585049**

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.07536	U	0.0724	0.0727	1.00	0.111	pCi/L	10/07/22 17:31	11/01/22 19:23	1
Carrier	MB MB		Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba Carrier	92.2		40 - 110			10/07/22 17:31	11/01/22 19:23	1		

**Lab Sample ID: LCS 160-585049/2-A**  
**Matrix: Water**  
**Analysis Batch: 587973**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 585049**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium-226	11.3	9.759		1.04	1.00	0.0992	pCi/L	86	75 - 125
Carrier	LCS LCS		Limits			Prepared	Analyzed	Dil Fac	
	%Yield	Qualifier							
Ba Carrier	96.3		40 - 110						

**Lab Sample ID: MB 160-585729/1-A**  
**Matrix: Water**  
**Analysis Batch: 588335**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 585729**

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-0.004475	U	0.0471	0.0471	1.00	0.102	pCi/L	10/12/22 16:15	11/03/22 06:48	1
Carrier	MB MB		Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba Carrier	96.3		40 - 110			10/12/22 16:15	11/03/22 06:48	1		

**Lab Sample ID: LCS 160-585729/2-A**  
**Matrix: Water**  
**Analysis Batch: 588335**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 585729**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium-226	11.3	9.599		1.02	1.00	0.143	pCi/L	85	75 - 125
Carrier	LCS LCS		Limits			Prepared	Analyzed	Dil Fac	
	%Yield	Qualifier							
Ba Carrier	96.3		40 - 110						

**Lab Sample ID: 280-167087-12 MS**  
**Matrix: Water**  
**Analysis Batch: 588335**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**  
**Prep Batch: 585729**

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
						Uncert. (2σ+/-)					
Radium-226	0.0692	U F	11.3	3.060	F1	0.414	1.00	0.141	pCi/L	26	60 - 140

Eurofins Denver

# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

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

**Lab Sample ID: 280-167087-12 MS**  
**Matrix: Water**  
**Analysis Batch: 588335**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**  
**Prep Batch: 585729**

		MS	MS		
Carrier	%Yield	Qualifier	Limits		
Ba Carrier	95.6		40 - 110		

**Lab Sample ID: 280-167087-12 MSD**  
**Matrix: Water**  
**Analysis Batch: 588336**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**  
**Prep Batch: 585729**

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec		RER	Limit
											Limits	RER		
Radium-226	0.0692	U	11.3	9.076	F	0.986	1.00	0.110	pCi/L	80	60 - 140	3.85	1	

		MSD	MSD		
Carrier	%Yield	Qualifier	Limits		
Ba Carrier	85.3		40 - 110		

**Lab Sample ID: MB 160-585732/1-A**  
**Matrix: Water**  
**Analysis Batch: 588336**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 585732**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared		Analyzed		Dil Fac
								Prepared	Analyzed	Prepared	Analyzed	
Radium-226	0.04074	U	0.0688	0.0689	1.00	0.121	pCi/L	10/12/22 16:56	11/03/22 07:06		1	

		MB	MB			Prepared		Analyzed		Dil Fac	
Carrier	%Yield	Qualifier	Limits			Prepared	Analyzed	Dil Fac			
Ba Carrier	97.3		40 - 110			10/12/22 16:56	11/03/22 07:06	1			

**Lab Sample ID: LCS 160-585732/2-A**  
**Matrix: Water**  
**Analysis Batch: 588336**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 585732**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec		Dil Fac
									Limits	RER	
Radium-226	11.3	11.86		1.28	1.00	0.196	pCi/L	105	75 - 125		

		LCS	LCS		
Carrier	%Yield	Qualifier	Limits		
Ba Carrier	81.6		40 - 110		

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

**Lab Sample ID: MB 160-585052/1-A**  
**Matrix: Water**  
**Analysis Batch: 587277**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 585052**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared		Analyzed		Dil Fac
								Prepared	Analyzed	Prepared	Analyzed	
Radium-228	0.1300	U	0.298	0.298	1.00	0.522	pCi/L	10/07/22 17:31	10/25/22 12:52		1	

		MB	MB			Prepared		Analyzed		Dil Fac	
Carrier	%Yield	Qualifier	Limits			Prepared	Analyzed	Dil Fac			
Ba Carrier	92.2		40 - 110			10/07/22 17:31	10/25/22 12:52	1			

Eurofins Denver

# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

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

**Lab Sample ID: MB 160-585052/1-A**  
**Matrix: Water**  
**Analysis Batch: 587277**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 585052**

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	88.2		40 - 110	10/07/22 17:31	10/25/22 12:52	1

**Lab Sample ID: LCS 160-585052/2-A**  
**Matrix: Water**  
**Analysis Batch: 587277**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 585052**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	8.50	9.221		1.24	1.00	0.482	pCi/L	108	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	96.3		40 - 110
Y Carrier	88.2		40 - 110

**Lab Sample ID: MB 160-585731/1-A**  
**Matrix: Water**  
**Analysis Batch: 587437**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 585731**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.5080		0.307	0.311	1.00	0.442	pCi/L	10/12/22 16:53	10/26/22 14:30	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.3		40 - 110	10/12/22 16:53	10/26/22 14:30	1
Y Carrier	84.1		40 - 110	10/12/22 16:53	10/26/22 14:30	1

**Lab Sample ID: LCS 160-585731/2-A**  
**Matrix: Water**  
**Analysis Batch: 587437**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 585731**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	8.50	8.674		1.18	1.00	0.497	pCi/L	102	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	96.3		40 - 110
Y Carrier	85.2		40 - 110

**Lab Sample ID: 280-167087-12 MS**  
**Matrix: Water**  
**Analysis Batch: 587438**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**  
**Prep Batch: 585731**

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	0.396	U F	8.47	1.489	F1	0.451	1.00	0.497	pCi/L	13	60 - 140

# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

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

**Lab Sample ID: 280-167087-12 MS**  
**Matrix: Water**  
**Analysis Batch: 587438**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**  
**Prep Batch: 585731**

MS MS			
Carrier	%Yield	Qualifier	Limits
Ba Carrier	95.6		40 - 110
Y Carrier	88.6		40 - 110

**Lab Sample ID: 280-167087-12 MSD**  
**Matrix: Water**  
**Analysis Batch: 587438**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**  
**Prep Batch: 585731**

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec		RER	Limit
											Limits	RER		
Radium-228	0.396	U F	8.48	9.090	F	1.25	1.00	0.551	pCi/L	103	60 - 140	4.48	1	

MSD MSD			
Carrier	%Yield	Qualifier	Limits
Ba Carrier	85.3		40 - 110
Y Carrier	88.6		40 - 110

**Lab Sample ID: MB 160-585733/1-A**  
**Matrix: Water**  
**Analysis Batch: 587656**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 585733**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared		Analyzed		Dil Fac
								Time	Time	Time	Time	
Radium-228	0.2797	U	0.276	0.277	1.00	0.442	pCi/L	10/12/22 17:18	10/28/22 11:09	10/28/22 11:09	1	

MB MB				Prepared		Analyzed		Dil Fac
Carrier	%Yield	Qualifier	Limits	Time	Time	Time	Time	
Ba Carrier	97.3		40 - 110	10/12/22 17:18	10/28/22 11:09	10/28/22 11:09	1	
Y Carrier	86.0		40 - 110	10/12/22 17:18	10/28/22 11:09	10/28/22 11:09	1	

**Lab Sample ID: LCS 160-585733/2-A**  
**Matrix: Water**  
**Analysis Batch: 587656**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 585733**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec	
									Limits	RER
Radium-228	8.49	8.973		1.23	1.00	0.450	pCi/L	106	75 - 125	

LCS LCS			
Carrier	%Yield	Qualifier	Limits
Ba Carrier	81.6		40 - 110
Y Carrier	89.3		40 - 110

# QC Association Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Rad

### Prep Batch: 585049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-1	MW-42B	Total/NA	Water	PrecSep-21	
280-167087-2	MW-43B	Total/NA	Water	PrecSep-21	
280-167087-3	MW-47B	Total/NA	Water	PrecSep-21	
MB 160-585049/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-585049/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

### Prep Batch: 585052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-1	MW-42B	Total/NA	Water	PrecSep_0	
280-167087-2	MW-43B	Total/NA	Water	PrecSep_0	
280-167087-3	MW-47B	Total/NA	Water	PrecSep_0	
MB 160-585052/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-585052/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

### Prep Batch: 585729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-4	MW-46B	Total/NA	Water	PrecSep-21	
280-167087-5	MW-45B	Total/NA	Water	PrecSep-21	
280-167087-6	MW-44B	Total/NA	Water	PrecSep-21	
280-167087-7	MW-37B	Total/NA	Water	PrecSep-21	
280-167087-8	MW-36B	Total/NA	Water	PrecSep-21	
280-167087-9	MW-32B	Total/NA	Water	PrecSep-21	
280-167087-10	MW-14BR	Total/NA	Water	PrecSep-21	
280-167087-11	DUP-1	Total/NA	Water	PrecSep-21	
280-167087-12	MW-20B	Total/NA	Water	PrecSep-21	
280-167087-13	MW-38B	Total/NA	Water	PrecSep-21	
280-167087-14	MW-49B	Total/NA	Water	PrecSep-21	
MB 160-585729/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-585729/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
280-167087-12 MS	MW-20B	Total/NA	Water	PrecSep-21	
280-167087-12 MSD	MW-20B	Total/NA	Water	PrecSep-21	

### Prep Batch: 585731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-4	MW-46B	Total/NA	Water	PrecSep_0	
280-167087-5	MW-45B	Total/NA	Water	PrecSep_0	
280-167087-6	MW-44B	Total/NA	Water	PrecSep_0	
280-167087-7	MW-37B	Total/NA	Water	PrecSep_0	
280-167087-8	MW-36B	Total/NA	Water	PrecSep_0	
280-167087-9	MW-32B	Total/NA	Water	PrecSep_0	
280-167087-10	MW-14BR	Total/NA	Water	PrecSep_0	
280-167087-11	DUP-1	Total/NA	Water	PrecSep_0	
280-167087-12	MW-20B	Total/NA	Water	PrecSep_0	
280-167087-13	MW-38B	Total/NA	Water	PrecSep_0	
280-167087-14	MW-49B	Total/NA	Water	PrecSep_0	
MB 160-585731/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-585731/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
280-167087-12 MS	MW-20B	Total/NA	Water	PrecSep_0	
280-167087-12 MSD	MW-20B	Total/NA	Water	PrecSep_0	

# QC Association Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Rad

### Prep Batch: 585732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-15	MW-21B	Total/NA	Water	PrecSep-21	
280-167087-16	MW-41B	Total/NA	Water	PrecSep-21	
280-167087-17	MW-53B	Total/NA	Water	PrecSep-21	
280-167087-18	MW-52B	Total/NA	Water	PrecSep-21	
280-167087-19	FB-1	Total/NA	Water	PrecSep-21	
280-167087-20	MW-39B	Total/NA	Water	PrecSep-21	
280-167087-21	MW-40B	Total/NA	Water	PrecSep-21	
MB 160-585732/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-585732/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

### Prep Batch: 585733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-15	MW-21B	Total/NA	Water	PrecSep_0	
280-167087-16	MW-41B	Total/NA	Water	PrecSep_0	
280-167087-17	MW-53B	Total/NA	Water	PrecSep_0	
280-167087-18	MW-52B	Total/NA	Water	PrecSep_0	
280-167087-19	FB-1	Total/NA	Water	PrecSep_0	
280-167087-20	MW-39B	Total/NA	Water	PrecSep_0	
280-167087-21	MW-40B	Total/NA	Water	PrecSep_0	
MB 160-585733/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-585733/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

# Lab Chronicle

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Client Sample ID: MW-42B

Lab Sample ID: 280-167087-1

Date Collected: 09/27/22 10:01

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1002.74 mL	1.0 g	585049	10/07/22 17:31	MLK	EET SL
Total/NA	Analysis	9315		1			588204	11/02/22 10:06	FLC	EET SL
Total/NA	Prep	PrecSep_0			1002.74 mL	1.0 g	585052	10/07/22 17:31	MLK	EET SL
Total/NA	Analysis	9320		1			587278	10/25/22 12:56	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

## Client Sample ID: MW-43B

Lab Sample ID: 280-167087-2

Date Collected: 09/27/22 11:37

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1008.73 mL	1.0 g	585049	10/07/22 17:31	MLK	EET SL
Total/NA	Analysis	9315		1			588204	11/02/22 10:06	FLC	EET SL
Total/NA	Prep	PrecSep_0			1008.73 mL	1.0 g	585052	10/07/22 17:31	MLK	EET SL
Total/NA	Analysis	9320		1			587278	10/25/22 12:56	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

## Client Sample ID: MW-47B

Lab Sample ID: 280-167087-3

Date Collected: 09/27/22 12:27

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1003.52 mL	1.0 g	585049	10/07/22 17:31	MLK	EET SL
Total/NA	Analysis	9315		1			588204	11/02/22 10:06	FLC	EET SL
Total/NA	Prep	PrecSep_0			1003.52 mL	1.0 g	585052	10/07/22 17:31	MLK	EET SL
Total/NA	Analysis	9320		1			587278	10/25/22 12:56	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

## Client Sample ID: MW-46B

Lab Sample ID: 280-167087-4

Date Collected: 09/27/22 13:22

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.21 mL	1.0 g	585729	10/12/22 16:15	BMP	EET SL
Total/NA	Analysis	9315		1			588335	11/03/22 06:51	FLC	EET SL
Total/NA	Prep	PrecSep_0			1000.21 mL	1.0 g	585731	10/12/22 16:53	BMP	EET SL
Total/NA	Analysis	9320		1			587437	10/26/22 14:32	CLP	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

# Lab Chronicle

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Client Sample ID: MW-45B

Lab Sample ID: 280-167087-5

Date Collected: 09/27/22 14:18

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1009.65 mL	1.0 g	585729	10/12/22 16:15	BMP	EET SL
Total/NA	Analysis	9315		1			588335	11/03/22 06:51	FLC	EET SL
Total/NA	Prep	PrecSep_0			1009.65 mL	1.0 g	585731	10/12/22 16:53	BMP	EET SL
Total/NA	Analysis	9320		1			587437	10/26/22 14:32	CLP	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

## Client Sample ID: MW-44B

Lab Sample ID: 280-167087-6

Date Collected: 09/27/22 14:55

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			997.29 mL	1.0 g	585729	10/12/22 16:15	BMP	EET SL
Total/NA	Analysis	9315		1			588335	11/03/22 06:51	FLC	EET SL
Total/NA	Prep	PrecSep_0			997.29 mL	1.0 g	585731	10/12/22 16:53	BMP	EET SL
Total/NA	Analysis	9320		1			587437	10/26/22 14:32	CLP	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

## Client Sample ID: MW-37B

Lab Sample ID: 280-167087-7

Date Collected: 09/27/22 16:06

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.90 mL	1.0 g	585729	10/12/22 16:15	BMP	EET SL
Total/NA	Analysis	9315		1			588335	11/03/22 06:51	FLC	EET SL
Total/NA	Prep	PrecSep_0			1000.90 mL	1.0 g	585731	10/12/22 16:53	BMP	EET SL
Total/NA	Analysis	9320		1			587437	10/26/22 14:32	CLP	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

## Client Sample ID: MW-36B

Lab Sample ID: 280-167087-8

Date Collected: 09/27/22 16:48

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1008.02 mL	1.0 g	585729	10/12/22 16:15	BMP	EET SL
Total/NA	Analysis	9315		1			588335	11/03/22 06:51	FLC	EET SL
Total/NA	Prep	PrecSep_0			1008.02 mL	1.0 g	585731	10/12/22 16:53	BMP	EET SL
Total/NA	Analysis	9320		1			587437	10/26/22 14:32	CLP	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

# Lab Chronicle

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Client Sample ID: MW-32B

Lab Sample ID: 280-167087-9

Date Collected: 09/27/22 17:49

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			995.94 mL	1.0 g	585729	10/12/22 16:15	BMP	EET SL
Total/NA	Analysis	9315		1			588335	11/03/22 06:51	FLC	EET SL
Total/NA	Prep	PrecSep_0			995.94 mL	1.0 g	585731	10/12/22 16:53	BMP	EET SL
Total/NA	Analysis	9320		1			587437	10/26/22 14:32	CLP	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

## Client Sample ID: MW-14BR

Lab Sample ID: 280-167087-10

Date Collected: 09/28/22 10:52

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1006.56 mL	1.0 g	585729	10/12/22 16:15	BMP	EET SL
Total/NA	Analysis	9315		1			588336	11/03/22 07:02	FLC	EET SL
Total/NA	Prep	PrecSep_0			1006.56 mL	1.0 g	585731	10/12/22 16:53	BMP	EET SL
Total/NA	Analysis	9320		1			587437	10/26/22 14:32	CLP	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

## Client Sample ID: DUP-1

Lab Sample ID: 280-167087-11

Date Collected: 09/28/22 00:00

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			995.42 mL	1.0 g	585729	10/12/22 16:15	BMP	EET SL
Total/NA	Analysis	9315		1			588336	11/03/22 07:02	FLC	EET SL
Total/NA	Prep	PrecSep_0			995.42 mL	1.0 g	585731	10/12/22 16:53	BMP	EET SL
Total/NA	Analysis	9320		1			587438	10/26/22 14:34	CLP	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

## Client Sample ID: MW-20B

Lab Sample ID: 280-167087-12

Date Collected: 09/28/22 11:40

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1016.02 mL	1.0 g	585729	10/12/22 16:15	BMP	EET SL
Total/NA	Analysis	9315		1			588336	11/03/22 07:02	FLC	EET SL
Total/NA	Prep	PrecSep_0			1016.02 mL	1.0 g	585731	10/12/22 16:53	BMP	EET SL
Total/NA	Analysis	9320		1			587438	10/26/22 14:34	CLP	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

# Lab Chronicle

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Client Sample ID: MW-38B

## Lab Sample ID: 280-167087-13

Date Collected: 09/28/22 12:44

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			994.81 mL	1.0 g	585729	10/12/22 16:15	BMP	EET SL
Total/NA	Analysis	9315		1			588336	11/03/22 07:03	FLC	EET SL
Total/NA	Prep	PrecSep_0			994.81 mL	1.0 g	585731	10/12/22 16:53	BMP	EET SL
Total/NA	Analysis	9320		1			587438	10/26/22 14:34	CLP	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

## Client Sample ID: MW-49B

## Lab Sample ID: 280-167087-14

Date Collected: 09/28/22 14:44

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1005.51 mL	1.0 g	585729	10/12/22 16:15	BMP	EET SL
Total/NA	Analysis	9315		1			588336	11/03/22 07:03	FLC	EET SL
Total/NA	Prep	PrecSep_0			1005.51 mL	1.0 g	585731	10/12/22 16:53	BMP	EET SL
Total/NA	Analysis	9320		1			587438	10/26/22 14:34	CLP	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

## Client Sample ID: MW-21B

## Lab Sample ID: 280-167087-15

Date Collected: 09/28/22 15:45

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1001.56 mL	1.0 g	585732	10/12/22 16:56	BMP	EET SL
Total/NA	Analysis	9315		1			588336	11/03/22 07:06	FLC	EET SL
Total/NA	Prep	PrecSep_0			1001.56 mL	1.0 g	585733	10/12/22 17:18	BMP	EET SL
Total/NA	Analysis	9320		1			587656	10/28/22 11:09	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

## Client Sample ID: MW-41B

## Lab Sample ID: 280-167087-16

Date Collected: 09/29/22 09:26

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1011.75 mL	1.0 g	585732	10/12/22 16:56	BMP	EET SL
Total/NA	Analysis	9315		1			588336	11/03/22 07:06	FLC	EET SL
Total/NA	Prep	PrecSep_0			1011.75 mL	1.0 g	585733	10/12/22 17:18	BMP	EET SL
Total/NA	Analysis	9320		1			587656	10/28/22 11:09	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

# Lab Chronicle

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Client Sample ID: MW-53B

Lab Sample ID: 280-167087-17

Date Collected: 09/29/22 11:35

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			502.33 mL	1.0 g	585732	10/12/22 16:56	BMP	EET SL
Total/NA	Analysis	9315		1			588336	11/03/22 07:06	FLC	EET SL
Total/NA	Prep	PrecSep_0			502.33 mL	1.0 g	585733	10/12/22 17:18	BMP	EET SL
Total/NA	Analysis	9320		1			587656	10/28/22 11:10	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

## Client Sample ID: MW-52B

Lab Sample ID: 280-167087-18

Date Collected: 09/29/22 14:00

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			500.07 mL	1.0 g	585732	10/12/22 16:56	BMP	EET SL
Total/NA	Analysis	9315		1			588336	11/03/22 07:06	FLC	EET SL
Total/NA	Prep	PrecSep_0			500.07 mL	1.0 g	585733	10/12/22 17:18	BMP	EET SL
Total/NA	Analysis	9320		1			587656	10/28/22 11:10	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

## Client Sample ID: FB-1

Lab Sample ID: 280-167087-19

Date Collected: 09/29/22 13:00

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1004.01 mL	1.0 g	585732	10/12/22 16:56	BMP	EET SL
Total/NA	Analysis	9315		1			588336	11/03/22 07:06	FLC	EET SL
Total/NA	Prep	PrecSep_0			1004.01 mL	1.0 g	585733	10/12/22 17:18	BMP	EET SL
Total/NA	Analysis	9320		1			587656	10/28/22 11:10	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

## Client Sample ID: MW-39B

Lab Sample ID: 280-167087-20

Date Collected: 09/29/22 15:46

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			996.04 mL	1.0 g	585732	10/12/22 16:56	BMP	EET SL
Total/NA	Analysis	9315		1			588336	11/03/22 07:07	FLC	EET SL
Total/NA	Prep	PrecSep_0			996.04 mL	1.0 g	585733	10/12/22 17:18	BMP	EET SL
Total/NA	Analysis	9320		1			587656	10/28/22 11:10	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:55	EMH	EET SL

# Lab Chronicle

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-1

**Client Sample ID: MW-40B**

**Lab Sample ID: 280-167087-21**

**Date Collected: 09/29/22 16:42**

**Matrix: Water**

**Date Received: 09/30/22 11:10**

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dil Factor</u>	<u>Initial Amount</u>	<u>Final Amount</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Prep	PrecSep-21			998.82 mL	1.0 g	585732	10/12/22 16:56	BMP	EET SL
Total/NA	Analysis	9315		1			588335	11/03/22 09:23	FLC	EET SL
Total/NA	Prep	PrecSep_0			998.82 mL	1.0 g	585733	10/12/22 17:18	BMP	EET SL
Total/NA	Analysis	9320		1			587656	10/28/22 11:10	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			588497	11/03/22 21:58	EMH	EET SL

**Laboratory References:**

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



# Accreditation/Certification Summary

Client: AECOM Technical Services Inc.  
 Project/Site: Basin 2020 Support

Job ID: 280-167087-1

## Laboratory: Eurofins St. Louis

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

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

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

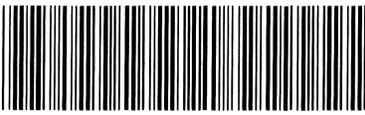
# Chain of Custody Record

**Client Information**

Client Contact: Ms. Katie Abbott  
 Company: AECOM Technical Services Inc.  
 Address: 7595 Technology Way  
 City: Denver  
 State, Zip: CO, 80237  
 Phone: \_\_\_\_\_  
 Email: katie.abbott@aecom.com  
 Project Name: CCR - Basin Electric 2022  
 Site: Basin LRS site

**Sampler:** Lab PM: McEntee, Patrick J  
 Phone: Patrick.McEntee@et.eurofins.com  
 PWSID: \_\_\_\_\_

**Carrier Tracking No(s):** \_\_\_\_\_  
**State of Origin:** CO  
**Page:** Page 1 of 5  
**Job #:** \_\_\_\_\_



280-167087 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=water/oil, BT=trace, AS=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested										Total Number of Containers	Special Instructions/Note:
							6010-3 Total Metals (B, Ca & Li)	2540C_Calcd - Solids, Total Dissolved (TDS)	9056A_28D - Chloride, Fluoride, Sulfate	6020A-11 Total Metals (Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Mo,Se,Tl)	7470A - Total Mercury	9315_Ra226	9320_Ra228	Combined Radium226 and Radium228				
MW-42B	9/27/22	1001	G	W	X	X	X	X	X	X	X	X	X	X	X	X	6080A and 7470A/6010C combined to 1 sample	
MW-43B		1137	G	W	X	X	X	X	X	X	X	X	X	X	X	X		
MW-47B		1227	G	W	X	X	X	X	X	X	X	X	X	X	X	X		
MW-46B		1322	G	W	X	X	X	X	X	X	X	X	X	X	X	X		
MW-45B		1418	G	W	X	X	X	X	X	X	X	X	X	X	X	X		
MW-44B		1455	G	W	X	X	X	X	X	X	X	X	X	X	X	X		
MW-37B		1606	G	W	X	X	X	X	X	X	X	X	X	X	X	X		
MW-36B		1648	G	W	X	X	X	X	X	X	X	X	X	X	X	X		
MW-32B		1749	G	W	X	X	X	X	X	X	X	X	X	X	X	X		
MW-14BR	9/28/22	1052	G	W	X	X	X	X	X	X	X	X	X	X	X	X		
PAW-1		-	G	W	X	X	X	X	X	X	X	X	X	X	X	X		

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

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

**Empty Kit Relinquished by:** \_\_\_\_\_  
**Relinquished by:** [Signature] \_\_\_\_\_  
**Relinquished by:** [Signature] \_\_\_\_\_  
**Relinquished by:** \_\_\_\_\_

**Custody Seals Intact:**  Yes  No  Custody Seal No.: \_\_\_\_\_

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

**Special Instructions/QC Requirements:** \_\_\_\_\_

**Method of Shipment:** \_\_\_\_\_  
**Received by:** [Signature] \_\_\_\_\_  
**Date:** 9/30/22 1110  
**Company:** ETADEN  
**Received by:** \_\_\_\_\_  
**Date:** \_\_\_\_\_  
**Company:** \_\_\_\_\_  
**Received by:** \_\_\_\_\_  
**Date:** \_\_\_\_\_  
**Company:** \_\_\_\_\_

**Cooler Temperature(s) °C and Other Remarks:** 13.8, 0.9, 0.3, 3.1, 12.0, 0.2, 0.5 CF+0.5 12.12





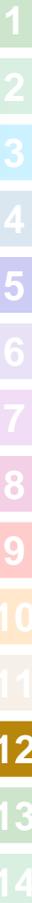




# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM	Carrier Tracking No(s):	COC No:					
Client Contact:		McEntee, Patrick J	McEntee, Patrick J	State of Origin:	280-630809.2					
Shipping/Receiving		Phone	E-Mail:	Colorado	Page 2 of 3					
Company		Patrick.McEntee@et.eurofins.com		Job #	280-167087-1					
TestAmerica Laboratories, Inc.		Accreditations Required (See note) NELAP - Oregon								
Address:		Due Date Requested:								
13715 Rider Trail North,		10/31/2022								
City:		TAT Requested (days):								
Earth City										
State, Zip:		PO #:								
MO, 63045		WO #:								
Phone:		Project #:								
314-298-8566(Tel) 314-298-8757(Fax)		28020759								
Email:		SSOW#:								
Project Name:		CCR - Basin Electric 2020 - LRS								
Site:										
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Orwash, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315 Ra226/Presep_21 Standard Target List	9320 Ra226/Presep_0 Standard Target List	Total Number of Containers	Special Instructions/Note:
MW-14BR (280-167087-10)	9/28/22	10:52	Mountain	Water	X	X	X	X	2	
DUP-1 (280-167087-11)	9/28/22	Mountain	Mountain	Water	X	X	X	X	2	
MW-20B (280-167087-12)	9/28/22	11:40	Mountain	Water	X	X	X	X	2	
MW-20B (280-167087-12MS)	9/28/22	11:40	Mountain	MS	X	X	X	X	2	
MW-20B (280-167087-12MSD)	9/28/22	11:40	Mountain	MSD	X	X	X	X	2	
MW-38B (280-167087-13)	9/28/22	12:44	Mountain	Water	X	X	X	X	2	
MW-49B (280-167087-14)	9/28/22	14:44	Mountain	Water	X	X	X	X	2	
MW-21B (280-167087-15)	9/28/22	15:45	Mountain	Water	X	X	X	X	2	
MW-41B (280-167087-16)	9/29/22	09:26	Mountain	Water	X	X	X	X	2	
<p>Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte &amp; accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica</p>										
<b>Possible Hazard Identification</b>										
Unconfirmed										
Deliverable Requested: I, II, III, IV, Other (specify)										
Primary Deliverable Rank: 2										
Empty Kit Relinquished by:										
Relinquished by: <i>[Signature]</i>										
Date: 10/3/22 15:38										
Relinquished by: <i>[Signature]</i>										
Date: 10/3/22 15:38										
Relinquished by: <i>[Signature]</i>										
Date: 10/3/22 15:38										
Relinquished by: <i>[Signature]</i>										
Date: 10/3/22 15:38										
Custody Seal No.:										
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No										
Cooler Temperature(s) °C and Other Remarks:										
<p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</p> <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months <p>Special Instructions/QC Requirements:</p>										
<p>Method of Shipment: _____</p> <p>Received by: <i>[Signature]</i> Date/Time: 10/3/22 15:38</p> <p>Company: EPA DUN</p> <p>Received by: <i>[Signature]</i> Date/Time: 10/4/2022 0900</p> <p>Company: EPA DUN</p> <p>Received by: <i>[Signature]</i> Date/Time: _____</p> <p>Company: _____</p>										





# Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 280-167087-1

**Login Number: 167087**

**List Number: 1**

**Creator: Roehsner, Karen P**

**List Source: Eurofins Denver**

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



# Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 280-167087-1

**Login Number: 167087**

**List Number: 2**

**Creator: Worthington, Sierra M**

**List Source: Eurofins St. Louis**

**List Creation: 10/04/22 11:16 AM**

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



# Tracer/Carrier Summary

Client: AECOM Technical Services Inc.  
 Project/Site: Basin 2020 Support

Job ID: 280-167087-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (40-110)	
280-167087-1	MW-42B	94.1	
280-167087-2	MW-43B	94.4	
280-167087-3	MW-47B	92.2	
280-167087-4	MW-46B	95.8	
280-167087-5	MW-45B	95.8	
280-167087-6	MW-44B	95.6	
280-167087-7	MW-37B	95.1	
280-167087-8	MW-36B	97.3	
280-167087-9	MW-32B	96.6	
280-167087-10	MW-14BR	94.9	
280-167087-11	DUP-1	89.2	
280-167087-12	MW-20B	90.7	
280-167087-12 MS	MW-20B	95.6	
280-167087-12 MSD	MW-20B	85.3	
280-167087-13	MW-38B	85.8	
280-167087-14	MW-49B	99.5	
280-167087-15	MW-21B	97.3	
280-167087-16	MW-41B	95.3	
280-167087-17	MW-53B	75.7	
280-167087-18	MW-52B	74.3	
280-167087-19	FB-1	95.1	
280-167087-20	MW-39B	97.5	
280-167087-21	MW-40B	91.7	
LCS 160-585049/2-A	Lab Control Sample	96.3	
LCS 160-585729/2-A	Lab Control Sample	96.3	
LCS 160-585732/2-A	Lab Control Sample	81.6	
MB 160-585049/1-A	Method Blank	92.2	
MB 160-585729/1-A	Method Blank	96.3	
MB 160-585732/1-A	Method Blank	97.3	

**Tracer/Carrier Legend**

Ba = Ba Carrier

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (40-110)	Y (40-110)
280-167087-1	MW-42B	94.1	81.9
280-167087-2	MW-43B	94.4	83.4
280-167087-3	MW-47B	92.2	86.0
280-167087-4	MW-46B	95.8	83.0
280-167087-5	MW-45B	95.8	85.6
280-167087-6	MW-44B	95.6	86.7
280-167087-7	MW-37B	95.1	85.6
280-167087-8	MW-36B	97.3	87.1
280-167087-9	MW-32B	96.6	86.4
280-167087-10	MW-14BR	94.9	86.0
280-167087-11	DUP-1	89.2	88.2

# Tracer/Carrier Summary

Client: AECOM Technical Services Inc.  
 Project/Site: Basin 2020 Support

Job ID: 280-167087-1

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

**Matrix: Water**

**Prep Type: Total/NA**

**Percent Yield (Acceptance Limits)**

Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
280-167087-12	MW-20B	90.7	89.0
280-167087-12 MS	MW-20B	95.6	88.6
280-167087-12 MSD	MW-20B	85.3	88.6
280-167087-13	MW-38B	85.8	78.9
280-167087-14	MW-49B	99.5	90.1
280-167087-15	MW-21B	97.3	89.3
280-167087-16	MW-41B	95.3	90.5
280-167087-17	MW-53B	75.7	88.2
280-167087-18	MW-52B	74.3	88.2
280-167087-19	FB-1	95.1	88.6
280-167087-20	MW-39B	97.5	89.3
280-167087-21	MW-40B	91.7	90.5
LCS 160-585052/2-A	Lab Control Sample	96.3	88.2
LCS 160-585731/2-A	Lab Control Sample	96.3	85.2
LCS 160-585733/2-A	Lab Control Sample	81.6	89.3
MB 160-585052/1-A	Method Blank	92.2	88.2
MB 160-585731/1-A	Method Blank	96.3	84.1
MB 160-585733/1-A	Method Blank	97.3	86.0

**Tracer/Carrier Legend**

Ba = Ba Carrier

Y = Y Carrier



## ANALYTICAL REPORT

Eurofins Denver  
4955 Yarrow Street  
Arvada, CO 80002  
Tel: (303)736-0100

Laboratory Job ID: 280-167087-2  
Client Project/Site: Basin 2020 Support

For:  
AECOM Technical Services Inc.  
6200 S. Quebec Street  
Greenwood Village, Colorado 80111

Attn: Ms. Katie Abbott



Authorized for release by:  
10/14/2022 7:44:33 PM

Patrick McEntee, Client Service Manager  
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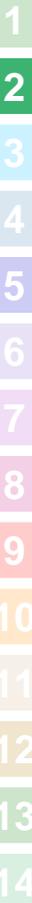
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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions . . . . .	3
Case Narrative . . . . .	4
Detection Summary . . . . .	6
Method Summary . . . . .	12
Sample Summary . . . . .	13
Client Sample Results . . . . .	14
QC Sample Results . . . . .	30
QC Association . . . . .	42
Chronicle . . . . .	49
Certification Summary . . . . .	57
Chain of Custody . . . . .	58
Receipt Checklists . . . . .	61

# Definitions/Glossary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Qualifiers

### General Chemistry

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

## Glossary

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

# Case Narrative

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

**Job ID: 280-167087-2**

**Laboratory: Eurofins Denver**

**Narrative**

## CASE NARRATIVE

**Client: AECOM Technical Services Inc.**

**Project: Basin 2020 Support**

**Report Number: 280-167087-2**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### **RECEIPT**

The samples were received on 9/30/2022 11:10 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 7 coolers at receipt time were 0.2° C, 0.3° C, 0.5° C, 0.9° C, 3.1° C, 12.0° C and 15.8° C.

### **Receipt Exceptions**

The two coolers that were above 6 degrees C were filled with only Nitric Acid preserved containers.

Per client request, the results for samples RW-2 (280-167087-22) and RW-1 (280-167087-23) are reported under 280-167087-3 (chemical) and 280-167087-4 (radiochemical).

### **TOTAL METALS (ICP)**

Samples MW-42B (280-167087-1), MW-43B (280-167087-2), MW-47B (280-167087-3), MW-46B (280-167087-4), MW-45B (280-167087-5), MW-44B (280-167087-6), MW-37B (280-167087-7), MW-36B (280-167087-8), MW-32B (280-167087-9), MW-14BR (280-167087-10), DUP-1 (280-167087-11), MW-20B (280-167087-12), MW-38B (280-167087-13), MW-49B (280-167087-14), MW-21B (280-167087-15), MW-41B (280-167087-16), MW-53B (280-167087-17), MW-52B (280-167087-18), FB-1 (280-167087-19), MW-39B (280-167087-20) and MW-40B (280-167087-21) were analyzed for Total Metals (ICP) in accordance with EPA SW846 6010D. The samples were prepared and analyzed on 10/04/2022.

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

### **TOTAL METALS (ICP/MS)**

Samples MW-42B (280-167087-1), MW-43B (280-167087-2), MW-47B (280-167087-3), MW-46B (280-167087-4), MW-45B (280-167087-5), MW-44B (280-167087-6), MW-37B (280-167087-7), MW-36B (280-167087-8), MW-32B (280-167087-9), MW-14BR (280-167087-10), DUP-1 (280-167087-11), MW-20B (280-167087-12), MW-38B (280-167087-13), MW-49B (280-167087-14), MW-21B (280-167087-15), MW-41B (280-167087-16), MW-53B (280-167087-17), MW-52B (280-167087-18), FB-1 (280-167087-19), MW-39B (280-167087-20) and MW-40B (280-167087-21) were analyzed for Total Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 10/04/2022 and 10/05/2022 and analyzed on 10/05/2022 and 10/06/2022.

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

### **TOTAL MERCURY**

# Case Narrative

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Job ID: 280-167087-2 (Continued)

### Laboratory: Eurofins Denver (Continued)

Samples MW-42B (280-167087-1), MW-43B (280-167087-2), MW-47B (280-167087-3), MW-46B (280-167087-4), MW-45B (280-167087-5), MW-44B (280-167087-6), MW-37B (280-167087-7), MW-36B (280-167087-8), MW-32B (280-167087-9), MW-14BR (280-167087-10), DUP-1 (280-167087-11), MW-20B (280-167087-12), MW-38B (280-167087-13), MW-49B (280-167087-14), MW-21B (280-167087-15), MW-41B (280-167087-16), MW-53B (280-167087-17), MW-52B (280-167087-18), FB-1 (280-167087-19), MW-39B (280-167087-20) and MW-40B (280-167087-21) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 10/04/2022 and 10/05/2022.

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

### **TOTAL DISSOLVED SOLIDS**

Samples MW-42B (280-167087-1), MW-43B (280-167087-2), MW-47B (280-167087-3), MW-46B (280-167087-4), MW-45B (280-167087-5), MW-44B (280-167087-6), MW-37B (280-167087-7), MW-36B (280-167087-8), MW-32B (280-167087-9), MW-14BR (280-167087-10), DUP-1 (280-167087-11), MW-20B (280-167087-12), MW-38B (280-167087-13), MW-49B (280-167087-14), MW-21B (280-167087-15), MW-41B (280-167087-16), MW-53B (280-167087-17), MW-52B (280-167087-18), FB-1 (280-167087-19), MW-39B (280-167087-20) and MW-40B (280-167087-21) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 10/03/2022.

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

### **ANIONS (28 DAYS)**

Samples MW-42B (280-167087-1), MW-43B (280-167087-2), MW-47B (280-167087-3), MW-46B (280-167087-4), MW-45B (280-167087-5), MW-44B (280-167087-6), MW-37B (280-167087-7), MW-36B (280-167087-8), MW-32B (280-167087-9), MW-14BR (280-167087-10), DUP-1 (280-167087-11), MW-20B (280-167087-12), MW-38B (280-167087-13), MW-49B (280-167087-14), MW-21B (280-167087-15), MW-41B (280-167087-16), MW-53B (280-167087-17), MW-52B (280-167087-18), FB-1 (280-167087-19), MW-39B (280-167087-20) and MW-40B (280-167087-21) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A (28 Days). The samples were analyzed on 10/06/2022, 10/07/2022, 10/10/2022, 10/11/2022, 10/12/2022 and 10/14/2022.

Samples MW-42B (280-167087-1)[5X], MW-43B (280-167087-2)[2X], MW-47B (280-167087-3)[2X], MW-46B (280-167087-4)[2X], MW-45B (280-167087-5)[2X], MW-44B (280-167087-6)[5X], MW-37B (280-167087-7)[5X], MW-36B (280-167087-8)[2X], MW-32B (280-167087-9) [5X], MW-14BR (280-167087-10)[2X], DUP-1 (280-167087-11)[2X], MW-20B (280-167087-12)[5X], MW-38B (280-167087-13)[5X], MW-38B (280-167087-13)[50X], MW-49B (280-167087-14)[2X], MW-21B (280-167087-15)[5X], MW-41B (280-167087-16)[5X], MW-53B (280-167087-17)[2X], MW-52B (280-167087-18)[5X], MW-39B (280-167087-20)[5X] and MW-40B (280-167087-21)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

# Detection Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Client Sample ID: MW-42B

## Lab Sample ID: 280-167087-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	696		100		ug/L	1		6010D	Total/NA
Calcium	154000		200		ug/L	1		6010D	Total/NA
Lithium	41.0		20.0		ug/L	1		6010D	Total/NA
Barium	17.4		1.00		ug/L	1		6020B	Total/NA
Chromium	2.31		2.00		ug/L	1		6020B	Total/NA
Molybdenum	41.8		2.00		ug/L	1		6020B	Total/NA
Selenium	18.0		5.00		ug/L	1		6020B	Total/NA
Chloride	122		3.00		mg/L	1		9056A	Total/NA
Sulfate	959		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1770		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-43B

## Lab Sample ID: 280-167087-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	321		100		ug/L	1		6010D	Total/NA
Calcium	101000		200		ug/L	1		6010D	Total/NA
Lithium	31.5		20.0		ug/L	1		6010D	Total/NA
Barium	28.0		1.00		ug/L	1		6020B	Total/NA
Molybdenum	12.5		2.00		ug/L	1		6020B	Total/NA
Chloride	51.9		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.583		0.500		mg/L	1		9056A	Total/NA
Sulfate	392		10.0		mg/L	2		9056A	Total/NA
Total Dissolved Solids (TDS)	861		10.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-47B

## Lab Sample ID: 280-167087-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	143		100		ug/L	1		6010D	Total/NA
Calcium	127000		200		ug/L	1		6010D	Total/NA
Lithium	28.0		20.0		ug/L	1		6010D	Total/NA
Barium	74.9		1.00		ug/L	1		6020B	Total/NA
Chromium	5.27		2.00		ug/L	1		6020B	Total/NA
Molybdenum	5.79		2.00		ug/L	1		6020B	Total/NA
Chloride	33.3		3.00		mg/L	1		9056A	Total/NA
Sulfate	319		10.0		mg/L	2		9056A	Total/NA
Total Dissolved Solids (TDS)	760		10.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-46B

## Lab Sample ID: 280-167087-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	106000		200		ug/L	1		6010D	Total/NA
Lithium	28.2		20.0		ug/L	1		6010D	Total/NA
Barium	68.2		1.00		ug/L	1		6020B	Total/NA
Chromium	12.7		2.00		ug/L	1		6020B	Total/NA
Molybdenum	4.23		2.00		ug/L	1		6020B	Total/NA
Chloride	46.3		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.557		0.500		mg/L	1		9056A	Total/NA
Sulfate	276		10.0		mg/L	2		9056A	Total/NA
Total Dissolved Solids (TDS)	709		10.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Denver

# Detection Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Client Sample ID: MW-45B

## Lab Sample ID: 280-167087-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	192		100		ug/L	1		6010D	Total/NA
Calcium	155000		200		ug/L	1		6010D	Total/NA
Lithium	34.7		20.0		ug/L	1		6010D	Total/NA
Barium	42.6		1.00		ug/L	1		6020B	Total/NA
Molybdenum	6.83		2.00		ug/L	1		6020B	Total/NA
Selenium	9.61		5.00		ug/L	1		6020B	Total/NA
Chloride	48.8		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.922		0.500		mg/L	1		9056A	Total/NA
Sulfate	380		10.0		mg/L	2		9056A	Total/NA
Total Dissolved Solids (TDS)	904		10.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-44B

## Lab Sample ID: 280-167087-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	110		100		ug/L	1		6010D	Total/NA
Calcium	182000		200		ug/L	1		6010D	Total/NA
Lithium	38.1		20.0		ug/L	1		6010D	Total/NA
Barium	49.4		1.00		ug/L	1		6020B	Total/NA
Chromium	4.64		2.00		ug/L	1		6020B	Total/NA
Molybdenum	6.65		2.00		ug/L	1		6020B	Total/NA
Selenium	5.86		5.00		ug/L	1		6020B	Total/NA
Chloride	61.1		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.617		0.500		mg/L	1		9056A	Total/NA
Sulfate	438		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1090		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-37B

## Lab Sample ID: 280-167087-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	168		100		ug/L	1		6010D	Total/NA
Calcium	221000		200		ug/L	1		6010D	Total/NA
Lithium	41.8		20.0		ug/L	1		6010D	Total/NA
Barium	63.3		1.00		ug/L	1		6020B	Total/NA
Molybdenum	73.8		2.00		ug/L	1		6020B	Total/NA
Selenium	13.6		5.00		ug/L	1		6020B	Total/NA
Chloride	116		3.00		mg/L	1		9056A	Total/NA
Sulfate	601		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1370		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-36B

## Lab Sample ID: 280-167087-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	121		100		ug/L	1		6010D	Total/NA
Calcium	130000		200		ug/L	1		6010D	Total/NA
Lithium	34.4		20.0		ug/L	1		6010D	Total/NA
Barium	66.5		1.00		ug/L	1		6020B	Total/NA
Molybdenum	7.23		2.00		ug/L	1		6020B	Total/NA
Selenium	8.38		5.00		ug/L	1		6020B	Total/NA
Chloride	46.0		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.715		0.500		mg/L	1		9056A	Total/NA
Sulfate	341		10.0		mg/L	2		9056A	Total/NA
Total Dissolved Solids (TDS)	847		10.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Denver

# Detection Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Client Sample ID: MW-32B

## Lab Sample ID: 280-167087-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	300		100		ug/L	1		6010D	Total/NA
Calcium	199000		200		ug/L	1		6010D	Total/NA
Lithium	80.1		20.0		ug/L	1		6010D	Total/NA
Barium	32.5		1.00		ug/L	1		6020B	Total/NA
Molybdenum	3.12		2.00		ug/L	1		6020B	Total/NA
Chloride	98.0		3.00		mg/L	1		9056A	Total/NA
Sulfate	899		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1790		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-14BR

## Lab Sample ID: 280-167087-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	157		100		ug/L	1		6010D	Total/NA
Calcium	176000		200		ug/L	1		6010D	Total/NA
Lithium	34.2		20.0		ug/L	1		6010D	Total/NA
Barium	44.6		1.00		ug/L	1		6020B	Total/NA
Chromium	7.80		2.00		ug/L	1		6020B	Total/NA
Molybdenum	10.1		2.00		ug/L	1		6020B	Total/NA
Selenium	15.0		5.00		ug/L	1		6020B	Total/NA
Chloride	85.2		3.00		mg/L	1		9056A	Total/NA
Sulfate	389		10.0		mg/L	2		9056A	Total/NA
Total Dissolved Solids (TDS)	981		10.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: DUP-1

## Lab Sample ID: 280-167087-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	160		100		ug/L	1		6010D	Total/NA
Calcium	180000		200		ug/L	1		6010D	Total/NA
Lithium	38.8		20.0		ug/L	1		6010D	Total/NA
Barium	45.9		1.00		ug/L	1		6020B	Total/NA
Chromium	7.96		2.00		ug/L	1		6020B	Total/NA
Molybdenum	10.3		2.00		ug/L	1		6020B	Total/NA
Selenium	16.0		5.00		ug/L	1		6020B	Total/NA
Chloride	87.4		3.00		mg/L	1		9056A	Total/NA
Sulfate	393		10.0		mg/L	2		9056A	Total/NA
Total Dissolved Solids (TDS)	1010		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-20B

## Lab Sample ID: 280-167087-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	243		100		ug/L	1		6010D	Total/NA
Calcium	143000		200		ug/L	1		6010D	Total/NA
Lithium	38.3		20.0		ug/L	1		6010D	Total/NA
Barium	54.8		1.00		ug/L	1		6020B	Total/NA
Molybdenum	8.08		2.00		ug/L	1		6020B	Total/NA
Chloride	50.4		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.707		0.500		mg/L	1		9056A	Total/NA
Sulfate	396		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	943		10.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Denver

# Detection Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Client Sample ID: MW-38B

## Lab Sample ID: 280-167087-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	3090		100		ug/L	1		6010D	Total/NA
Calcium	476000		200		ug/L	1		6010D	Total/NA
Lithium	129		20.0		ug/L	1		6010D	Total/NA
Barium	16.5		1.00		ug/L	1		6020B	Total/NA
Chromium	7.28		2.00		ug/L	1		6020B	Total/NA
Molybdenum	203		2.00		ug/L	1		6020B	Total/NA
Selenium	5.38		5.00		ug/L	1		6020B	Total/NA
Chloride	303		15.0		mg/L	5		9056A	Total/NA
Fluoride	1.43		0.500		mg/L	1		9056A	Total/NA
Sulfate	5450		250		mg/L	50		9056A	Total/NA
Total Dissolved Solids (TDS)	7980		100		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-49B

## Lab Sample ID: 280-167087-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	212		100		ug/L	1		6010D	Total/NA
Calcium	145000		200		ug/L	1		6010D	Total/NA
Lithium	50.5		20.0		ug/L	1		6010D	Total/NA
Barium	80.0		1.00		ug/L	1		6020B	Total/NA
Chromium	2.35		2.00		ug/L	1		6020B	Total/NA
Molybdenum	3.26		2.00		ug/L	1		6020B	Total/NA
Lead	1.03		1.00		ug/L	1		6020B	Total/NA
Chloride	26.3		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.604		0.500		mg/L	1		9056A	Total/NA
Sulfate	329		10.0		mg/L	2		9056A	Total/NA
Total Dissolved Solids (TDS)	773		10.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-21B

## Lab Sample ID: 280-167087-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	151		100		ug/L	1		6010D	Total/NA
Calcium	202000		200		ug/L	1		6010D	Total/NA
Lithium	50.2		20.0		ug/L	1		6010D	Total/NA
Barium	51.0		1.00		ug/L	1		6020B	Total/NA
Chromium	13.4		2.00		ug/L	1		6020B	Total/NA
Molybdenum	16.0		2.00		ug/L	1		6020B	Total/NA
Selenium	43.7		5.00		ug/L	1		6020B	Total/NA
Chloride	167		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.591		0.500		mg/L	1		9056A	Total/NA
Sulfate	531		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1310		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-41B

## Lab Sample ID: 280-167087-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	921		100		ug/L	1		6010D	Total/NA
Calcium	146000		200		ug/L	1		6010D	Total/NA
Lithium	52.4		20.0		ug/L	1		6010D	Total/NA
Barium	17.5		1.00		ug/L	1		6020B	Total/NA
Chromium	5.28		2.00		ug/L	1		6020B	Total/NA
Molybdenum	109		2.00		ug/L	1		6020B	Total/NA
Selenium	5.69		5.00		ug/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Denver

# Detection Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Client Sample ID: MW-41B (Continued)

Lab Sample ID: 280-167087-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	93.6		3.00		mg/L	1		9056A	Total/NA
Sulfate	780		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1520		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-53B

Lab Sample ID: 280-167087-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	174		100		ug/L	1		6010D	Total/NA
Calcium	145000		200		ug/L	1		6010D	Total/NA
Lithium	69.5		20.0		ug/L	1		6010D	Total/NA
Barium	158		1.00		ug/L	1		6020B	Total/NA
Cobalt	2.88		1.00		ug/L	1		6020B	Total/NA
Chromium	17.8		2.00		ug/L	1		6020B	Total/NA
Molybdenum	8.23		2.00		ug/L	1		6020B	Total/NA
Lead	2.99		1.00		ug/L	1		6020B	Total/NA
Selenium	11.0		5.00		ug/L	1		6020B	Total/NA
Chloride	51.6		3.00		mg/L	1		9056A	Total/NA
Fluoride	1.01		0.500		mg/L	1		9056A	Total/NA
Sulfate	255		10.0		mg/L	2		9056A	Total/NA
Total Dissolved Solids (TDS)	660		10.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-52B

Lab Sample ID: 280-167087-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	181		100		ug/L	1		6010D	Total/NA
Calcium	163000		200		ug/L	1		6010D	Total/NA
Lithium	63.5		20.0		ug/L	1		6010D	Total/NA
Barium	88.6		1.00		ug/L	1		6020B	Total/NA
Cobalt	2.27		1.00		ug/L	1		6020B	Total/NA
Chromium	3.78		2.00		ug/L	1		6020B	Total/NA
Molybdenum	3.93		2.00		ug/L	1		6020B	Total/NA
Lead	1.39		1.00		ug/L	1		6020B	Total/NA
Chloride	50.1		3.00		mg/L	1		9056A	Total/NA
Sulfate	506		25.0		mg/L	5		9056A	Total/NA
Total Dissolved Solids (TDS)	1080		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: FB-1

Lab Sample ID: 280-167087-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	501		200		ug/L	1		6010D	Total/NA

## Client Sample ID: MW-39B

Lab Sample ID: 280-167087-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	173		100		ug/L	1		6010D	Total/NA
Calcium	133000		200		ug/L	1		6010D	Total/NA
Lithium	67.6		20.0		ug/L	1		6010D	Total/NA
Barium	31.1		1.00		ug/L	1		6020B	Total/NA
Molybdenum	3.98		2.00		ug/L	1		6020B	Total/NA
Selenium	5.00		5.00		ug/L	1		6020B	Total/NA
Chloride	53.9		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.673		0.500		mg/L	1		9056A	Total/NA
Sulfate	481		25.0		mg/L	5		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Denver

# Detection Summary

Client: AECOM Technical Services Inc.  
 Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Client Sample ID: MW-39B (Continued)

Lab Sample ID: 280-167087-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids (TDS)	1150		20.0		mg/L	1		SM 2540C	Total/NA

## Client Sample ID: MW-40B

Lab Sample ID: 280-167087-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	166		100		ug/L	1		6010D	Total/NA
Calcium	131000		200		ug/L	1		6010D	Total/NA
Lithium	63.0		20.0		ug/L	1		6010D	Total/NA
Barium	28.9		1.00		ug/L	1		6020B	Total/NA
Molybdenum	7.23		2.00		ug/L	1		6020B	Total/NA
Selenium	5.24		5.00		ug/L	1		6020B	Total/NA
Chloride	32.7		3.00		mg/L	1		9056A	Total/NA
Fluoride	0.862		0.500		mg/L	1		9056A	Total/NA
Sulfate	324		10.0		mg/L	2		9056A	Total/NA
Total Dissolved Solids (TDS)	862		10.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

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# Method Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

Method	Method Description	Protocol	Laboratory
6010D	Metals (ICP)	SW846	EET DEN
6020B	Metals (ICP/MS)	SW846	EET DEN
7470A	Mercury (CVAA)	SW846	EET DEN
9056A	Anions, Ion Chromatography	SW846	EET DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET DEN
3010A	Preparation, Total Metals	SW846	EET DEN
3020A	Preparation, Total Metals	SW846	EET DEN
7470A	Preparation, Mercury	SW846	EET DEN

#### Protocol References:

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

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

#### Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

# Sample Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-167087-1	MW-42B	Water	09/27/22 10:01	09/30/22 11:10
280-167087-2	MW-43B	Water	09/27/22 11:37	09/30/22 11:10
280-167087-3	MW-47B	Water	09/27/22 12:27	09/30/22 11:10
280-167087-4	MW-46B	Water	09/27/22 13:22	09/30/22 11:10
280-167087-5	MW-45B	Water	09/27/22 14:18	09/30/22 11:10
280-167087-6	MW-44B	Water	09/27/22 14:55	09/30/22 11:10
280-167087-7	MW-37B	Water	09/27/22 16:06	09/30/22 11:10
280-167087-8	MW-36B	Water	09/27/22 16:48	09/30/22 11:10
280-167087-9	MW-32B	Water	09/27/22 17:49	09/30/22 11:10
280-167087-10	MW-14BR	Water	09/28/22 10:52	09/30/22 11:10
280-167087-11	DUP-1	Water	09/28/22 00:00	09/30/22 11:10
280-167087-12	MW-20B	Water	09/28/22 11:40	09/30/22 11:10
280-167087-13	MW-38B	Water	09/28/22 12:44	09/30/22 11:10
280-167087-14	MW-49B	Water	09/28/22 14:44	09/30/22 11:10
280-167087-15	MW-21B	Water	09/28/22 15:45	09/30/22 11:10
280-167087-16	MW-41B	Water	09/29/22 09:26	09/30/22 11:10
280-167087-17	MW-53B	Water	09/29/22 11:35	09/30/22 11:10
280-167087-18	MW-52B	Water	09/29/22 14:00	09/30/22 11:10
280-167087-19	FB-1	Water	09/29/22 13:00	09/30/22 11:10
280-167087-20	MW-39B	Water	09/29/22 15:46	09/30/22 11:10
280-167087-21	MW-40B	Water	09/29/22 16:42	09/30/22 11:10



# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: SW846 6010D - Metals (ICP)

**Client Sample ID: MW-42B**  
**Date Collected: 09/27/22 10:01**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-1**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	696		100		ug/L		10/04/22 09:00	10/04/22 17:20	1
Calcium	154000		200		ug/L		10/04/22 09:00	10/04/22 17:20	1
Lithium	41.0		20.0		ug/L		10/04/22 09:00	10/04/22 17:20	1

**Client Sample ID: MW-43B**  
**Date Collected: 09/27/22 11:37**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	321		100		ug/L		10/04/22 09:00	10/04/22 17:24	1
Calcium	101000		200		ug/L		10/04/22 09:00	10/04/22 17:24	1
Lithium	31.5		20.0		ug/L		10/04/22 09:00	10/04/22 17:24	1

**Client Sample ID: MW-47B**  
**Date Collected: 09/27/22 12:27**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-3**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	143		100		ug/L		10/04/22 09:00	10/04/22 17:29	1
Calcium	127000		200		ug/L		10/04/22 09:00	10/04/22 17:29	1
Lithium	28.0		20.0		ug/L		10/04/22 09:00	10/04/22 17:29	1

**Client Sample ID: MW-46B**  
**Date Collected: 09/27/22 13:22**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-4**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100		ug/L		10/04/22 09:00	10/04/22 17:33	1
Calcium	106000		200		ug/L		10/04/22 09:00	10/04/22 17:33	1
Lithium	28.2		20.0		ug/L		10/04/22 09:00	10/04/22 17:33	1

**Client Sample ID: MW-45B**  
**Date Collected: 09/27/22 14:18**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-5**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	192		100		ug/L		10/04/22 09:00	10/04/22 17:37	1
Calcium	155000		200		ug/L		10/04/22 09:00	10/04/22 17:37	1
Lithium	34.7		20.0		ug/L		10/04/22 09:00	10/04/22 17:37	1

**Client Sample ID: MW-44B**  
**Date Collected: 09/27/22 14:55**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-6**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	110		100		ug/L		10/04/22 09:00	10/04/22 17:57	1
Calcium	182000		200		ug/L		10/04/22 09:00	10/04/22 17:57	1
Lithium	38.1		20.0		ug/L		10/04/22 09:00	10/04/22 17:57	1

**Client Sample ID: MW-37B**  
**Date Collected: 09/27/22 16:06**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-7**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	168		100		ug/L		10/04/22 09:00	10/04/22 18:01	1
Calcium	221000		200		ug/L		10/04/22 09:00	10/04/22 18:01	1
Lithium	41.8		20.0		ug/L		10/04/22 09:00	10/04/22 18:01	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: SW846 6010D - Metals (ICP)

**Client Sample ID: MW-36B**  
**Date Collected: 09/27/22 16:48**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-8**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	121		100		ug/L		10/04/22 09:00	10/04/22 18:05	1
Calcium	130000		200		ug/L		10/04/22 09:00	10/04/22 18:05	1
Lithium	34.4		20.0		ug/L		10/04/22 09:00	10/04/22 18:05	1

**Client Sample ID: MW-32B**  
**Date Collected: 09/27/22 17:49**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-9**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	300		100		ug/L		10/04/22 09:00	10/04/22 18:09	1
Calcium	199000		200		ug/L		10/04/22 09:00	10/04/22 18:09	1
Lithium	80.1		20.0		ug/L		10/04/22 09:00	10/04/22 18:09	1

**Client Sample ID: MW-14BR**  
**Date Collected: 09/28/22 10:52**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-10**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	157		100		ug/L		10/04/22 09:00	10/04/22 18:13	1
Calcium	176000		200		ug/L		10/04/22 09:00	10/04/22 18:13	1
Lithium	34.2		20.0		ug/L		10/04/22 09:00	10/04/22 18:13	1

**Client Sample ID: DUP-1**  
**Date Collected: 09/28/22 00:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-11**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	160		100		ug/L		10/04/22 09:00	10/04/22 18:17	1
Calcium	180000		200		ug/L		10/04/22 09:00	10/04/22 18:17	1
Lithium	38.8		20.0		ug/L		10/04/22 09:00	10/04/22 18:17	1

**Client Sample ID: MW-20B**  
**Date Collected: 09/28/22 11:40**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-12**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	243		100		ug/L		10/04/22 09:00	10/04/22 18:21	1
Calcium	143000		200		ug/L		10/04/22 09:00	10/04/22 18:21	1
Lithium	38.3		20.0		ug/L		10/04/22 09:00	10/04/22 18:21	1

**Client Sample ID: MW-38B**  
**Date Collected: 09/28/22 12:44**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-13**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3090		100		ug/L		10/04/22 09:00	10/04/22 18:57	1
Calcium	476000		200		ug/L		10/04/22 09:00	10/04/22 18:57	1
Lithium	129		20.0		ug/L		10/04/22 09:00	10/04/22 18:57	1

**Client Sample ID: MW-49B**  
**Date Collected: 09/28/22 14:44**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-14**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	212		100		ug/L		10/04/22 09:00	10/04/22 19:02	1
Calcium	145000		200		ug/L		10/04/22 09:00	10/04/22 19:02	1
Lithium	50.5		20.0		ug/L		10/04/22 09:00	10/04/22 19:02	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: SW846 6010D - Metals (ICP)

**Client Sample ID: MW-21B**  
**Date Collected: 09/28/22 15:45**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-15**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	151		100		ug/L		10/04/22 09:00	10/04/22 19:06	1
Calcium	202000		200		ug/L		10/04/22 09:00	10/04/22 19:06	1
Lithium	50.2		20.0		ug/L		10/04/22 09:00	10/04/22 19:06	1

**Client Sample ID: MW-41B**  
**Date Collected: 09/29/22 09:26**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-16**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	921		100		ug/L		10/04/22 09:00	10/04/22 19:10	1
Calcium	146000		200		ug/L		10/04/22 09:00	10/04/22 19:10	1
Lithium	52.4		20.0		ug/L		10/04/22 09:00	10/04/22 19:10	1

**Client Sample ID: MW-53B**  
**Date Collected: 09/29/22 11:35**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-17**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	174		100		ug/L		10/04/22 09:00	10/04/22 19:14	1
Calcium	145000		200		ug/L		10/04/22 09:00	10/04/22 19:14	1
Lithium	69.5		20.0		ug/L		10/04/22 09:00	10/04/22 19:14	1

**Client Sample ID: MW-52B**  
**Date Collected: 09/29/22 14:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-18**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	181		100		ug/L		10/04/22 09:00	10/04/22 19:18	1
Calcium	163000		200		ug/L		10/04/22 09:00	10/04/22 19:18	1
Lithium	63.5		20.0		ug/L		10/04/22 09:00	10/04/22 19:18	1

**Client Sample ID: FB-1**  
**Date Collected: 09/29/22 13:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-19**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100		ug/L		10/04/22 09:00	10/04/22 20:10	1
Calcium	501		200		ug/L		10/04/22 09:00	10/04/22 20:10	1
Lithium	ND		20.0		ug/L		10/04/22 09:00	10/04/22 20:10	1

**Client Sample ID: MW-39B**  
**Date Collected: 09/29/22 15:46**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-20**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	173		100		ug/L		10/04/22 09:00	10/04/22 20:14	1
Calcium	133000		200		ug/L		10/04/22 09:00	10/04/22 20:14	1
Lithium	67.6		20.0		ug/L		10/04/22 09:00	10/04/22 20:14	1

**Client Sample ID: MW-40B**  
**Date Collected: 09/29/22 16:42**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-21**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	166		100		ug/L		10/04/22 09:00	10/04/22 20:18	1
Calcium	131000		200		ug/L		10/04/22 09:00	10/04/22 20:18	1
Lithium	63.0		20.0		ug/L		10/04/22 09:00	10/04/22 20:18	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: SW846 6020B - Metals (ICP/MS)

**Client Sample ID: MW-42B**  
**Date Collected: 09/27/22 10:01**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-1**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 16:59	1
Barium	17.4		1.00		ug/L		10/04/22 09:05	10/05/22 16:59	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 16:59	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 16:59	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 16:59	1
Chromium	2.31		2.00		ug/L		10/04/22 09:05	10/05/22 16:59	1
Molybdenum	41.8		2.00		ug/L		10/04/22 09:05	10/05/22 16:59	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 16:59	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 16:59	1
Selenium	18.0		5.00		ug/L		10/04/22 09:05	10/05/22 16:59	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 16:59	1

**Client Sample ID: MW-43B**  
**Date Collected: 09/27/22 11:37**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:01	1
Barium	28.0		1.00		ug/L		10/04/22 09:05	10/05/22 17:01	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:01	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:01	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:01	1
Chromium	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:01	1
Molybdenum	12.5		2.00		ug/L		10/04/22 09:05	10/05/22 17:01	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:01	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:01	1
Selenium	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:01	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:01	1

**Client Sample ID: MW-47B**  
**Date Collected: 09/27/22 12:27**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-3**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:02	1
Barium	74.9		1.00		ug/L		10/04/22 09:05	10/05/22 17:02	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:02	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:02	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:02	1
Chromium	5.27		2.00		ug/L		10/04/22 09:05	10/05/22 17:02	1
Molybdenum	5.79		2.00		ug/L		10/04/22 09:05	10/05/22 17:02	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:02	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:02	1
Selenium	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:02	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:02	1

**Client Sample ID: MW-46B**  
**Date Collected: 09/27/22 13:22**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-4**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:04	1
Barium	68.2		1.00		ug/L		10/04/22 09:05	10/05/22 17:04	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: SW846 6020B - Metals (ICP/MS) (Continued)

**Client Sample ID: MW-46B**  
**Date Collected: 09/27/22 13:22**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-4**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:04	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:04	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:04	1
Chromium	12.7		2.00		ug/L		10/04/22 09:05	10/05/22 17:04	1
Molybdenum	4.23		2.00		ug/L		10/04/22 09:05	10/05/22 17:04	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:04	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:04	1
Selenium	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:04	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:04	1

**Client Sample ID: MW-45B**  
**Date Collected: 09/27/22 14:18**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-5**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:06	1
Barium	42.6		1.00		ug/L		10/04/22 09:05	10/05/22 17:06	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:06	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:06	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:06	1
Chromium	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:06	1
Molybdenum	6.83		2.00		ug/L		10/04/22 09:05	10/05/22 17:06	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:06	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:06	1
Selenium	9.61		5.00		ug/L		10/04/22 09:05	10/05/22 17:06	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:06	1

**Client Sample ID: MW-44B**  
**Date Collected: 09/27/22 14:55**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-6**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:08	1
Barium	49.4		1.00		ug/L		10/04/22 09:05	10/05/22 17:08	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:08	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:08	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:08	1
Chromium	4.64		2.00		ug/L		10/04/22 09:05	10/05/22 17:08	1
Molybdenum	6.65		2.00		ug/L		10/04/22 09:05	10/05/22 17:08	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:08	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:08	1
Selenium	5.86		5.00		ug/L		10/04/22 09:05	10/05/22 17:08	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:08	1

**Client Sample ID: MW-37B**  
**Date Collected: 09/27/22 16:06**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-7**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:10	1
Barium	63.3		1.00		ug/L		10/04/22 09:05	10/05/22 17:10	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:10	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:10	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: SW846 6020B - Metals (ICP/MS) (Continued)

**Client Sample ID: MW-37B**  
**Date Collected: 09/27/22 16:06**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-7**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:10	1
Chromium	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:10	1
Molybdenum	73.8		2.00		ug/L		10/04/22 09:05	10/05/22 17:10	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:10	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:10	1
Selenium	13.6		5.00		ug/L		10/04/22 09:05	10/05/22 17:10	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:10	1

**Client Sample ID: MW-36B**  
**Date Collected: 09/27/22 16:48**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-8**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:12	1
Barium	66.5		1.00		ug/L		10/04/22 09:05	10/05/22 17:12	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:12	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:12	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:12	1
Chromium	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:12	1
Molybdenum	7.23		2.00		ug/L		10/04/22 09:05	10/05/22 17:12	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:12	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:12	1
Selenium	8.38		5.00		ug/L		10/04/22 09:05	10/05/22 17:12	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:12	1

**Client Sample ID: MW-32B**  
**Date Collected: 09/27/22 17:49**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-9**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:17	1
Barium	32.5		1.00		ug/L		10/04/22 09:05	10/05/22 17:17	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:17	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:17	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:17	1
Chromium	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:17	1
Molybdenum	3.12		2.00		ug/L		10/04/22 09:05	10/05/22 17:17	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:17	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:17	1
Selenium	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:17	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:17	1

**Client Sample ID: MW-14BR**  
**Date Collected: 09/28/22 10:52**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-10**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:19	1
Barium	44.6		1.00		ug/L		10/04/22 09:05	10/05/22 17:19	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:19	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:19	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:19	1
Chromium	7.80		2.00		ug/L		10/04/22 09:05	10/05/22 17:19	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: SW846 6020B - Metals (ICP/MS) (Continued)

**Client Sample ID: MW-14BR**  
**Date Collected: 09/28/22 10:52**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-10**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	10.1		2.00		ug/L		10/04/22 09:05	10/05/22 17:19	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:19	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:19	1
Selenium	15.0		5.00		ug/L		10/04/22 09:05	10/05/22 17:19	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:19	1

**Client Sample ID: DUP-1**  
**Date Collected: 09/28/22 00:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-11**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:21	1
Barium	45.9		1.00		ug/L		10/04/22 09:05	10/05/22 17:21	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:21	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:21	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:21	1
Chromium	7.96		2.00		ug/L		10/04/22 09:05	10/05/22 17:21	1
Molybdenum	10.3		2.00		ug/L		10/04/22 09:05	10/05/22 17:21	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:21	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:21	1
Selenium	16.0		5.00		ug/L		10/04/22 09:05	10/05/22 17:21	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:21	1

**Client Sample ID: MW-20B**  
**Date Collected: 09/28/22 11:40**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-12**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:23	1
Barium	54.8		1.00		ug/L		10/04/22 09:05	10/05/22 17:23	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:23	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:23	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:23	1
Chromium	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:23	1
Molybdenum	8.08		2.00		ug/L		10/04/22 09:05	10/05/22 17:23	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:23	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:23	1
Selenium	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:23	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:23	1

**Client Sample ID: MW-38B**  
**Date Collected: 09/28/22 12:44**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-13**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:36	1
Barium	16.5		1.00		ug/L		10/04/22 09:05	10/05/22 17:36	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:36	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:36	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:36	1
Chromium	7.28		2.00		ug/L		10/04/22 09:05	10/05/22 17:36	1
Molybdenum	203		2.00		ug/L		10/04/22 09:05	10/05/22 17:36	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:36	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: SW846 6020B - Metals (ICP/MS) (Continued)

**Client Sample ID: MW-38B**  
**Date Collected: 09/28/22 12:44**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-13**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:36	1
Selenium	5.38		5.00		ug/L		10/04/22 09:05	10/05/22 17:36	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:36	1

**Client Sample ID: MW-49B**  
**Date Collected: 09/28/22 14:44**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-14**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:38	1
Barium	80.0		1.00		ug/L		10/04/22 09:05	10/05/22 17:38	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:38	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:38	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:38	1
Chromium	2.35		2.00		ug/L		10/04/22 09:05	10/05/22 17:38	1
Molybdenum	3.26		2.00		ug/L		10/04/22 09:05	10/05/22 17:38	1
Lead	1.03		1.00		ug/L		10/04/22 09:05	10/05/22 17:38	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:38	1
Selenium	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:38	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:38	1

**Client Sample ID: MW-21B**  
**Date Collected: 09/28/22 15:45**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-15**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:40	1
Barium	51.0		1.00		ug/L		10/04/22 09:05	10/05/22 17:40	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:40	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:40	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:40	1
Chromium	13.4		2.00		ug/L		10/04/22 09:05	10/05/22 17:40	1
Molybdenum	16.0		2.00		ug/L		10/04/22 09:05	10/05/22 17:40	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:40	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:40	1
Selenium	43.7		5.00		ug/L		10/04/22 09:05	10/05/22 17:40	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:40	1

**Client Sample ID: MW-41B**  
**Date Collected: 09/29/22 09:26**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-16**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:42	1
Barium	17.5		1.00		ug/L		10/04/22 09:05	10/05/22 17:42	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:42	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:42	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:42	1
Chromium	5.28		2.00		ug/L		10/04/22 09:05	10/05/22 17:42	1
Molybdenum	109		2.00		ug/L		10/04/22 09:05	10/05/22 17:42	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:42	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:42	1
Selenium	5.69		5.00		ug/L		10/04/22 09:05	10/05/22 17:42	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: SW846 6020B - Metals (ICP/MS) (Continued)

**Client Sample ID: MW-41B**  
**Date Collected: 09/29/22 09:26**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-16**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:42	1

**Client Sample ID: MW-53B**  
**Date Collected: 09/29/22 11:35**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-17**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:43	1
Barium	158		1.00		ug/L		10/04/22 09:05	10/05/22 17:43	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:43	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:43	1
Cobalt	2.88		1.00		ug/L		10/04/22 09:05	10/05/22 17:43	1
Chromium	17.8		2.00		ug/L		10/04/22 09:05	10/05/22 17:43	1
Molybdenum	8.23		2.00		ug/L		10/04/22 09:05	10/05/22 17:43	1
Lead	2.99		1.00		ug/L		10/04/22 09:05	10/05/22 17:43	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:43	1
Selenium	11.0		5.00		ug/L		10/04/22 09:05	10/05/22 17:43	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:43	1

**Client Sample ID: MW-52B**  
**Date Collected: 09/29/22 14:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-18**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:45	1
Barium	88.6		1.00		ug/L		10/04/22 09:05	10/05/22 17:45	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:45	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:45	1
Cobalt	2.27		1.00		ug/L		10/04/22 09:05	10/05/22 17:45	1
Chromium	3.78		2.00		ug/L		10/04/22 09:05	10/05/22 17:45	1
Molybdenum	3.93		2.00		ug/L		10/04/22 09:05	10/05/22 17:45	1
Lead	1.39		1.00		ug/L		10/04/22 09:05	10/05/22 17:45	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:45	1
Selenium	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:45	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:45	1

**Client Sample ID: FB-1**  
**Date Collected: 09/29/22 13:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-19**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:47	1
Barium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:47	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:47	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:47	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:47	1
Chromium	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:47	1
Molybdenum	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:47	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:47	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:47	1
Selenium	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:47	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:47	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: SW846 6020B - Metals (ICP/MS)

**Client Sample ID: MW-39B**  
**Date Collected: 09/29/22 15:46**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-20**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 17:49	1
Barium	31.1		1.00		ug/L		10/04/22 09:05	10/05/22 17:49	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:49	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:49	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:49	1
Chromium	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:49	1
Molybdenum	3.98		2.00		ug/L		10/04/22 09:05	10/05/22 17:49	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:49	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 17:49	1
Selenium	5.00		5.00		ug/L		10/04/22 09:05	10/05/22 17:49	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 17:49	1

**Client Sample ID: MW-40B**  
**Date Collected: 09/29/22 16:42**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-21**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/05/22 06:47	10/05/22 17:11	1
Barium	28.9		1.00		ug/L		10/05/22 06:47	10/05/22 17:11	1
Beryllium	ND		1.00		ug/L		10/05/22 06:47	10/06/22 14:37	1
Cadmium	ND		1.00		ug/L		10/05/22 06:47	10/05/22 17:11	1
Cobalt	ND		1.00		ug/L		10/05/22 06:47	10/05/22 17:11	1
Chromium	ND		2.00		ug/L		10/05/22 06:47	10/05/22 17:11	1
Molybdenum	7.23		2.00		ug/L		10/05/22 06:47	10/05/22 17:11	1
Lead	ND		1.00		ug/L		10/05/22 06:47	10/05/22 17:11	1
Antimony	ND		2.00		ug/L		10/05/22 06:47	10/05/22 17:11	1
Selenium	5.24		5.00		ug/L		10/05/22 06:47	10/05/22 17:11	1
Thallium	ND		1.00		ug/L		10/05/22 06:47	10/05/22 17:11	1

## Method: SW846 7470A - Mercury (CVAA)

**Client Sample ID: MW-42B**  
**Date Collected: 09/27/22 10:01**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-1**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 18:51	1

**Client Sample ID: MW-43B**  
**Date Collected: 09/27/22 11:37**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 18:54	1

**Client Sample ID: MW-47B**  
**Date Collected: 09/27/22 12:27**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-3**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 18:56	1

# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: SW846 7470A - Mercury (CVAA)

**Client Sample ID: MW-46B**  
**Date Collected: 09/27/22 13:22**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-4**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 18:59	1

**Client Sample ID: MW-45B**  
**Date Collected: 09/27/22 14:18**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-5**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 20:35	1

**Client Sample ID: MW-44B**  
**Date Collected: 09/27/22 14:55**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-6**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 20:38	1

**Client Sample ID: MW-37B**  
**Date Collected: 09/27/22 16:06**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-7**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 20:40	1

**Client Sample ID: MW-36B**  
**Date Collected: 09/27/22 16:48**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-8**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 20:43	1

**Client Sample ID: MW-32B**  
**Date Collected: 09/27/22 17:49**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-9**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 20:45	1

**Client Sample ID: MW-14BR**  
**Date Collected: 09/28/22 10:52**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-10**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 20:48	1

**Client Sample ID: DUP-1**  
**Date Collected: 09/28/22 00:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-11**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 20:50	1

**Client Sample ID: MW-20B**  
**Date Collected: 09/28/22 11:40**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-12**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 20:53	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: SW846 7470A - Mercury (CVAA)

**Client Sample ID: MW-38B**  
**Date Collected: 09/28/22 12:44**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-13**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 21:06	1

**Client Sample ID: MW-49B**  
**Date Collected: 09/28/22 14:44**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-14**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 21:08	1

**Client Sample ID: MW-21B**  
**Date Collected: 09/28/22 15:45**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-15**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 21:11	1

**Client Sample ID: MW-41B**  
**Date Collected: 09/29/22 09:26**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-16**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 21:13	1

**Client Sample ID: MW-53B**  
**Date Collected: 09/29/22 11:35**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-17**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 21:16	1

**Client Sample ID: MW-52B**  
**Date Collected: 09/29/22 14:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-18**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 21:18	1

**Client Sample ID: FB-1**  
**Date Collected: 09/29/22 13:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-19**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 21:21	1

**Client Sample ID: MW-39B**  
**Date Collected: 09/29/22 15:46**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-20**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/05/22 11:40	10/05/22 16:59	1

**Client Sample ID: MW-40B**  
**Date Collected: 09/29/22 16:42**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-21**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/05/22 11:40	10/05/22 17:02	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## General Chemistry

**Client Sample ID: MW-42B**  
**Date Collected: 09/27/22 10:01**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-1**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	122		3.00		mg/L			10/06/22 18:58	1
Fluoride (SW846 9056A)	ND		0.500		mg/L			10/11/22 23:46	1
Sulfate (SW846 9056A)	959		25.0		mg/L			10/06/22 19:13	5
Total Dissolved Solids (TDS) (SM 2540C)	1770		20.0		mg/L			10/03/22 11:12	1

**Client Sample ID: MW-43B**  
**Date Collected: 09/27/22 11:37**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	51.9		3.00		mg/L			10/06/22 19:58	1
Fluoride (SW846 9056A)	0.583		0.500		mg/L			10/12/22 16:06	1
Sulfate (SW846 9056A)	392		10.0		mg/L			10/10/22 18:50	2
Total Dissolved Solids (TDS) (SM 2540C)	861		10.0		mg/L			10/03/22 11:12	1

**Client Sample ID: MW-47B**  
**Date Collected: 09/27/22 12:27**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-3**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	33.3		3.00		mg/L			10/06/22 20:13	1
Fluoride (SW846 9056A)	ND		0.500		mg/L			10/12/22 00:19	1
Sulfate (SW846 9056A)	319		10.0		mg/L			10/10/22 19:22	2
Total Dissolved Solids (TDS) (SM 2540C)	760		10.0		mg/L			10/03/22 11:12	1

**Client Sample ID: MW-46B**  
**Date Collected: 09/27/22 13:22**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-4**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	46.3		3.00		mg/L			10/06/22 20:28	1
Fluoride (SW846 9056A)	0.557		0.500		mg/L			10/12/22 00:27	1
Sulfate (SW846 9056A)	276		10.0		mg/L			10/10/22 20:26	2
Total Dissolved Solids (TDS) (SM 2540C)	709		10.0		mg/L			10/03/22 11:12	1

**Client Sample ID: MW-45B**  
**Date Collected: 09/27/22 14:18**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-5**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	48.8		3.00		mg/L			10/06/22 20:43	1
Fluoride (SW846 9056A)	0.922		0.500		mg/L			10/12/22 01:01	1
Sulfate (SW846 9056A)	380		10.0		mg/L			10/10/22 20:58	2
Total Dissolved Solids (TDS) (SM 2540C)	904		10.0		mg/L			10/03/22 11:12	1

**Client Sample ID: MW-44B**  
**Date Collected: 09/27/22 14:55**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-6**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	61.1		3.00		mg/L			10/07/22 00:43	1
Fluoride (SW846 9056A)	0.617		0.500		mg/L			10/12/22 01:09	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## General Chemistry (Continued)

**Client Sample ID: MW-44B**  
**Date Collected: 09/27/22 14:55**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-6**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate (SW846 9056A)	438		25.0		mg/L			10/10/22 21:30	5
Total Dissolved Solids (TDS) (SM 2540C)	1090		20.0		mg/L			10/03/22 11:12	1

**Client Sample ID: MW-37B**  
**Date Collected: 09/27/22 16:06**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-7**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	116		3.00		mg/L			10/06/22 20:58	1
Fluoride (SW846 9056A)	ND		0.500		mg/L			10/12/22 01:17	1
Sulfate (SW846 9056A)	601		25.0		mg/L			10/10/22 22:03	5
Total Dissolved Solids (TDS) (SM 2540C)	1370		20.0		mg/L			10/03/22 11:12	1

**Client Sample ID: MW-36B**  
**Date Collected: 09/27/22 16:48**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-8**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	46.0		3.00		mg/L			10/06/22 21:28	1
Fluoride (SW846 9056A)	0.715		0.500		mg/L			10/12/22 01:25	1
Sulfate (SW846 9056A)	341		10.0		mg/L			10/06/22 21:43	2
Total Dissolved Solids (TDS) (SM 2540C)	847		10.0		mg/L			10/03/22 11:12	1

**Client Sample ID: MW-32B**  
**Date Collected: 09/27/22 17:49**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-9**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	98.0		3.00		mg/L			10/06/22 21:58	1
Fluoride (SW846 9056A)	ND		0.500		mg/L			10/12/22 01:34	1
Sulfate (SW846 9056A)	899		25.0		mg/L			10/06/22 22:13	5
Total Dissolved Solids (TDS) (SM 2540C)	1790		20.0		mg/L			10/03/22 11:12	1

**Client Sample ID: MW-14BR**  
**Date Collected: 09/28/22 10:52**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-10**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	85.2		3.00		mg/L			10/07/22 00:13	1
Fluoride (SW846 9056A)	ND		0.500		mg/L			10/12/22 01:59	1
Sulfate (SW846 9056A)	389		10.0		mg/L			10/07/22 00:28	2
Total Dissolved Solids (TDS) (SM 2540C)	981		10.0		mg/L			10/03/22 11:12	1

**Client Sample ID: DUP-1**  
**Date Collected: 09/28/22 00:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-11**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	87.4		3.00		mg/L			10/06/22 22:58	1
Fluoride (SW846 9056A)	ND		0.500		mg/L			10/12/22 16:14	1
Sulfate (SW846 9056A)	393		10.0		mg/L			10/06/22 23:13	2

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## General Chemistry (Continued)

**Client Sample ID: DUP-1**  
**Date Collected: 09/28/22 00:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-11**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS) (SM 2540C)	1010		20.0		mg/L			10/03/22 11:12	1

**Client Sample ID: MW-20B**  
**Date Collected: 09/28/22 11:40**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-12**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	50.4		3.00		mg/L			10/10/22 23:55	1
Fluoride (SW846 9056A)	0.707		0.500		mg/L			10/12/22 16:22	1
Sulfate (SW846 9056A)	396		25.0		mg/L			10/14/22 12:48	5
Total Dissolved Solids (TDS) (SM 2540C)	943		10.0		mg/L			10/03/22 11:13	1

**Client Sample ID: MW-38B**  
**Date Collected: 09/28/22 12:44**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-13**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	303		15.0		mg/L			10/11/22 00:59	5
Fluoride (SW846 9056A)	1.43		0.500		mg/L			10/12/22 16:56	1
Sulfate (SW846 9056A)	5450		250		mg/L			10/12/22 17:04	50
Total Dissolved Solids (TDS) (SM 2540C)	7980		100		mg/L			10/03/22 11:13	1

**Client Sample ID: MW-49B**  
**Date Collected: 09/28/22 14:44**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-14**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	26.3		3.00		mg/L			10/11/22 01:31	1
Fluoride (SW846 9056A)	0.604		0.500		mg/L			10/12/22 17:12	1
Sulfate (SW846 9056A)	329		10.0		mg/L			10/12/22 17:20	2
Total Dissolved Solids (TDS) (SM 2540C)	773		10.0		mg/L			10/03/22 11:13	1

**Client Sample ID: MW-21B**  
**Date Collected: 09/28/22 15:45**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-15**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	167		3.00		mg/L			10/11/22 01:47	1
Fluoride (SW846 9056A)	0.591		0.500		mg/L			10/12/22 17:45	1
Sulfate (SW846 9056A)	531		25.0		mg/L			10/12/22 17:54	5
Total Dissolved Solids (TDS) (SM 2540C)	1310		20.0		mg/L			10/03/22 11:13	1

**Client Sample ID: MW-41B**  
**Date Collected: 09/29/22 09:26**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-16**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	93.6		3.00		mg/L			10/11/22 02:51	1
Fluoride (SW846 9056A)	ND		0.500		mg/L			10/12/22 18:02	1
Sulfate (SW846 9056A)	780		25.0		mg/L			10/12/22 18:10	5
Total Dissolved Solids (TDS) (SM 2540C)	1520		20.0		mg/L			10/03/22 11:13	1

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# Client Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## General Chemistry

**Client Sample ID: MW-53B**  
**Date Collected: 09/29/22 11:35**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-17**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	51.6		3.00		mg/L			10/11/22 03:23	1
Fluoride (SW846 9056A)	1.01		0.500		mg/L			10/12/22 18:18	1
Sulfate (SW846 9056A)	255		10.0		mg/L			10/12/22 18:27	2
Total Dissolved Solids (TDS) (SM 2540C)	660		10.0		mg/L			10/03/22 11:13	1

**Client Sample ID: MW-52B**  
**Date Collected: 09/29/22 14:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-18**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	50.1		3.00		mg/L			10/11/22 03:39	1
Fluoride (SW846 9056A)	ND		0.500		mg/L			10/12/22 18:35	1
Sulfate (SW846 9056A)	506		25.0		mg/L			10/12/22 18:43	5
Total Dissolved Solids (TDS) (SM 2540C)	1080		20.0		mg/L			10/03/22 11:13	1

**Client Sample ID: FB-1**  
**Date Collected: 09/29/22 13:00**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-19**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	ND		3.00		mg/L			10/11/22 04:10	1
Fluoride (SW846 9056A)	ND		0.500		mg/L			10/12/22 18:52	1
Sulfate (SW846 9056A)	ND		5.00		mg/L			10/11/22 04:10	1
Total Dissolved Solids (TDS) (SM 2540C)	ND		10.0		mg/L			10/03/22 11:13	1

**Client Sample ID: MW-39B**  
**Date Collected: 09/29/22 15:46**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-20**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	53.9		3.00		mg/L			10/11/22 05:46	1
Fluoride (SW846 9056A)	0.673		0.500		mg/L			10/12/22 19:00	1
Sulfate (SW846 9056A)	481		25.0		mg/L			10/12/22 19:25	5
Total Dissolved Solids (TDS) (SM 2540C)	1150		20.0		mg/L			10/03/22 11:13	1

**Client Sample ID: MW-40B**  
**Date Collected: 09/29/22 16:42**  
**Date Received: 09/30/22 11:10**

**Lab Sample ID: 280-167087-21**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	32.7		3.00		mg/L			10/11/22 06:18	1
Fluoride (SW846 9056A)	0.862		0.500		mg/L			10/12/22 19:33	1
Sulfate (SW846 9056A)	324		10.0		mg/L			10/12/22 19:41	2
Total Dissolved Solids (TDS) (SM 2540C)	862		10.0		mg/L			10/03/22 11:13	1

# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: 6010D - Metals (ICP)

**Lab Sample ID: MB 280-588617/1-A**  
**Matrix: Water**  
**Analysis Batch: 588861**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 588617**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100		ug/L		10/04/22 09:00	10/04/22 17:00	1
Calcium	ND		200		ug/L		10/04/22 09:00	10/04/22 17:00	1
Lithium	ND		20.0		ug/L		10/04/22 09:00	10/04/22 17:00	1

**Lab Sample ID: LCS 280-588617/2-A**  
**Matrix: Water**  
**Analysis Batch: 588861**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 588617**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2000	1897		ug/L		95	86 - 110
Calcium	50000	47880		ug/L		96	90 - 111
Lithium	1000	960.7		ug/L		96	90 - 112

**Lab Sample ID: LCSD 280-588617/3-A**  
**Matrix: Water**  
**Analysis Batch: 588861**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 588617**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	2000	1925		ug/L		96	86 - 110	2	20
Calcium	50000	48170		ug/L		96	90 - 111	1	20
Lithium	1000	971.5		ug/L		97	90 - 112	1	20

**Lab Sample ID: 280-167087-12 MS**  
**Matrix: Water**  
**Analysis Batch: 588861**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**  
**Prep Batch: 588617**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	243		2000	2245		ug/L		100	87 - 113
Calcium	143000		50000	187300		ug/L		88	75 - 125
Lithium	38.3		1000	1025		ug/L		99	89 - 114

**Lab Sample ID: 280-167087-12 MSD**  
**Matrix: Water**  
**Analysis Batch: 588861**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**  
**Prep Batch: 588617**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	243		2000	2247		ug/L		100	87 - 113	0	20
Calcium	143000		50000	187800		ug/L		89	75 - 125	0	20
Lithium	38.3		1000	1028		ug/L		99	89 - 114	0	20

**Lab Sample ID: MB 280-588644/1-A**  
**Matrix: Water**  
**Analysis Batch: 588861**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 588644**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100		ug/L		10/04/22 09:00	10/04/22 19:22	1
Calcium	ND		200		ug/L		10/04/22 09:00	10/04/22 19:22	1
Lithium	ND		20.0		ug/L		10/04/22 09:00	10/04/22 19:22	1

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# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: 6010D - Metals (ICP) (Continued)

**Lab Sample ID: LCS 280-588644/2-A**  
**Matrix: Water**  
**Analysis Batch: 588861**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 588644**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2000	1943		ug/L		97	86 - 110
Calcium	50000	48440		ug/L		97	90 - 111
Lithium	1000	970.3		ug/L		97	90 - 112

## Method: 6020B - Metals (ICP/MS)

**Lab Sample ID: MB 280-588642/1-A**  
**Matrix: Water**  
**Analysis Batch: 589050**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 588642**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.00		ug/L		10/04/22 09:05	10/05/22 16:55	1
Barium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 16:55	1
Beryllium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 16:55	1
Cadmium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 16:55	1
Cobalt	ND		1.00		ug/L		10/04/22 09:05	10/05/22 16:55	1
Chromium	ND		2.00		ug/L		10/04/22 09:05	10/05/22 16:55	1
Molybdenum	ND		2.00		ug/L		10/04/22 09:05	10/05/22 16:55	1
Lead	ND		1.00		ug/L		10/04/22 09:05	10/05/22 16:55	1
Antimony	ND		2.00		ug/L		10/04/22 09:05	10/05/22 16:55	1
Selenium	ND		5.00		ug/L		10/04/22 09:05	10/05/22 16:55	1
Thallium	ND		1.00		ug/L		10/04/22 09:05	10/05/22 16:55	1

**Lab Sample ID: LCS 280-588642/2-A**  
**Matrix: Water**  
**Analysis Batch: 589050**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 588642**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	40.0	39.92		ug/L		100	85 - 117
Barium	40.0	40.05		ug/L		100	85 - 118
Beryllium	40.0	39.61		ug/L		99	80 - 125
Cadmium	40.0	41.42		ug/L		104	85 - 115
Cobalt	40.0	39.80		ug/L		99	85 - 120
Chromium	40.0	39.36		ug/L		98	84 - 121
Molybdenum	40.0	39.63		ug/L		99	85 - 119
Lead	40.0	40.62		ug/L		102	85 - 118
Antimony	40.0	41.45		ug/L		104	85 - 115
Selenium	40.0	40.45		ug/L		101	77 - 122
Thallium	40.0	40.04		ug/L		100	85 - 118

**Lab Sample ID: 280-167087-12 MS**  
**Matrix: Water**  
**Analysis Batch: 589050**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**  
**Prep Batch: 588642**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	ND		40.0	40.18		ug/L		94	92 - 112
Barium	54.8		40.0	93.84		ug/L		98	92 - 117
Beryllium	ND		40.0	40.28		ug/L		101	87 - 118
Cadmium	ND		40.0	39.25		ug/L		98	91 - 114

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# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: 6020B - Metals (ICP/MS) (Continued)

**Lab Sample ID: 280-167087-12 MS**

**Matrix: Water**

**Analysis Batch: 589050**

**Client Sample ID: MW-20B**

**Prep Type: Total/NA**

**Prep Batch: 588642**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	
	Result	Qualifier	Added	Result	Qualifier				Limits	
Cobalt	ND		40.0	38.13		ug/L		95	94 - 115	
Chromium	ND		40.0	38.13		ug/L		95	91 - 114	
Molybdenum	8.08		40.0	47.88		ug/L		99	84 - 117	
Lead	ND		40.0	39.41		ug/L		99	95 - 116	
Antimony	ND		40.0	40.68		ug/L		102	80 - 111	
Selenium	ND		40.0	42.95		ug/L		101	90 - 115	
Thallium	ND		40.0	39.13		ug/L		98	94 - 115	

**Lab Sample ID: 280-167087-12 MSD**

**Matrix: Water**

**Analysis Batch: 589050**

**Client Sample ID: MW-20B**

**Prep Type: Total/NA**

**Prep Batch: 588642**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec		RPD	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	Limit	
Arsenic	ND		40.0	45.30		ug/L		107	92 - 112		12	20
Barium	54.8		40.0	95.35		ug/L		101	92 - 117		2	20
Beryllium	ND		40.0	42.21		ug/L		106	87 - 118		5	20
Cadmium	ND		40.0	40.77		ug/L		102	91 - 114		4	20
Cobalt	ND		40.0	40.41		ug/L		101	94 - 115		6	20
Chromium	ND		40.0	40.21		ug/L		101	91 - 114		5	20
Molybdenum	8.08		40.0	48.96		ug/L		102	84 - 117		2	20
Lead	ND		40.0	39.70		ug/L		99	95 - 116		1	20
Antimony	ND		40.0	41.65		ug/L		104	80 - 111		2	20
Selenium	ND		40.0	44.72		ug/L		105	90 - 115		4	20
Thallium	ND		40.0	40.03		ug/L		100	94 - 115		2	20

**Lab Sample ID: MB 280-588696/1-A**

**Matrix: Water**

**Analysis Batch: 589035**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 588696**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		5.00		ug/L		10/05/22 06:47	10/05/22 16:59	1
Barium	ND		1.00		ug/L		10/05/22 06:47	10/05/22 16:59	1
Cadmium	ND		1.00		ug/L		10/05/22 06:47	10/05/22 16:59	1
Cobalt	ND		1.00		ug/L		10/05/22 06:47	10/05/22 16:59	1
Chromium	ND		2.00		ug/L		10/05/22 06:47	10/05/22 16:59	1
Molybdenum	ND		2.00		ug/L		10/05/22 06:47	10/05/22 16:59	1
Lead	ND		1.00		ug/L		10/05/22 06:47	10/05/22 16:59	1
Antimony	ND		2.00		ug/L		10/05/22 06:47	10/05/22 16:59	1
Selenium	ND		5.00		ug/L		10/05/22 06:47	10/05/22 16:59	1
Thallium	ND		1.00		ug/L		10/05/22 06:47	10/05/22 16:59	1

**Lab Sample ID: MB 280-588696/1-A**

**Matrix: Water**

**Analysis Batch: 589155**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 588696**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Beryllium	ND		1.00		ug/L		10/05/22 06:47	10/06/22 14:26	1

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# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: 6020B - Metals (ICP/MS) (Continued)

**Lab Sample ID: LCS 280-588696/2-A**  
**Matrix: Water**  
**Analysis Batch: 589035**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 588696**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	40.0	41.23		ug/L		103	85 - 117
Barium	40.0	40.67		ug/L		102	85 - 118
Cadmium	40.0	41.14		ug/L		103	85 - 115
Cobalt	40.0	41.26		ug/L		103	85 - 120
Chromium	40.0	41.44		ug/L		104	84 - 121
Molybdenum	40.0	41.77		ug/L		104	85 - 119
Lead	40.0	40.59		ug/L		101	85 - 118
Antimony	40.0	39.71		ug/L		99	85 - 115
Selenium	40.0	40.74		ug/L		102	77 - 122
Thallium	40.0	40.06		ug/L		100	85 - 118

**Lab Sample ID: LCS 280-588696/2-A**  
**Matrix: Water**  
**Analysis Batch: 589155**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 588696**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	40.0	40.68		ug/L		102	80 - 125

**Lab Sample ID: LCSD 280-588696/3-A**  
**Matrix: Water**  
**Analysis Batch: 589035**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 588696**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	40.0	40.75		ug/L		102	85 - 117	1	10
Barium	40.0	41.81		ug/L		105	85 - 118	3	11
Cadmium	40.0	40.38		ug/L		101	85 - 115	2	7
Cobalt	40.0	40.66		ug/L		102	85 - 120	1	7
Chromium	40.0	41.48		ug/L		104	84 - 121	0	8
Molybdenum	40.0	42.25		ug/L		106	85 - 119	1	8
Lead	40.0	40.55		ug/L		101	85 - 118	0	7
Antimony	40.0	40.50		ug/L		101	85 - 115	2	9
Selenium	40.0	39.08		ug/L		98	77 - 122	4	9
Thallium	40.0	40.28		ug/L		101	85 - 118	1	5

**Lab Sample ID: LCSD 280-588696/3-A**  
**Matrix: Water**  
**Analysis Batch: 589155**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 588696**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Beryllium	40.0	41.77		ug/L		104	80 - 125	3	22

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 280-588755/1-A**  
**Matrix: Water**  
**Analysis Batch: 588882**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 588755**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/04/22 13:20	10/04/22 18:46	1

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# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

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

**Lab Sample ID: LCS 280-588755/2-A**  
**Matrix: Water**  
**Analysis Batch: 588882**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 588755**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.005496		mg/L		110	84 - 120

**Lab Sample ID: 280-167087-12 MS**  
**Matrix: Water**  
**Analysis Batch: 588882**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**  
**Prep Batch: 588755**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.00500	0.005484		mg/L		110	75 - 125

**Lab Sample ID: 280-167087-12 MSD**  
**Matrix: Water**  
**Analysis Batch: 588882**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**  
**Prep Batch: 588755**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.00500	0.005476		mg/L		110	75 - 125	0	20

**Lab Sample ID: MB 280-588756/1-A**  
**Matrix: Water**  
**Analysis Batch: 589052**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 588756**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/L		10/05/22 11:40	10/05/22 16:29	1

**Lab Sample ID: LCS 280-588756/2-A**  
**Matrix: Water**  
**Analysis Batch: 589052**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 588756**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.004958		mg/L		99	84 - 120

## Method: 9056A - Anions, Ion Chromatography

**Lab Sample ID: MB 280-589079/55**  
**Matrix: Water**  
**Analysis Batch: 589079**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00		mg/L			10/06/22 23:58	1
Sulfate	ND		5.00		mg/L			10/06/22 23:58	1

**Lab Sample ID: MB 280-589079/6**  
**Matrix: Water**  
**Analysis Batch: 589079**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00		mg/L			10/06/22 12:59	1
Sulfate	ND		5.00		mg/L			10/06/22 12:59	1

# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

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

**Lab Sample ID: LCS 280-589079/4**  
**Matrix: Water**  
**Analysis Batch: 589079**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	99.77		mg/L		100	90 - 110
Sulfate	100	99.76		mg/L		100	90 - 110

**Lab Sample ID: LCS 280-589079/53**  
**Matrix: Water**  
**Analysis Batch: 589079**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	99.71		mg/L		100	90 - 110
Sulfate	100	99.64		mg/L		100	90 - 110

**Lab Sample ID: LCSD 280-589079/5**  
**Matrix: Water**  
**Analysis Batch: 589079**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	99.81		mg/L		100	90 - 110	0	10
Sulfate	100	99.72		mg/L		100	90 - 110	0	10

**Lab Sample ID: LCSD 280-589079/54**  
**Matrix: Water**  
**Analysis Batch: 589079**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	99.82		mg/L		100	90 - 110	0	10
Sulfate	100	99.87		mg/L		100	90 - 110	0	10

**Lab Sample ID: MRL 280-589079/3**  
**Matrix: Water**  
**Analysis Batch: 589079**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	4.712		mg/L		94	50 - 150
Sulfate	5.00	4.388	J	mg/L		88	50 - 150

**Lab Sample ID: 280-167087-6 DU**  
**Matrix: Water**  
**Analysis Batch: 589079**

**Client Sample ID: MW-44B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	61.1		61.15		mg/L		0.05	15

**Lab Sample ID: MB 280-589386/52**  
**Matrix: Water**  
**Analysis Batch: 589386**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00		mg/L			10/11/22 04:58	1
Sulfate	ND		5.00		mg/L			10/11/22 04:58	1

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# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

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

**Lab Sample ID: MB 280-589386/6**  
**Matrix: Water**  
**Analysis Batch: 589386**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00		mg/L			10/10/22 11:45	1
Sulfate	ND		5.00		mg/L			10/10/22 11:45	1

**Lab Sample ID: LCS 280-589386/4**  
**Matrix: Water**  
**Analysis Batch: 589386**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	99.98		mg/L		100	90 - 110
Sulfate	100	99.93		mg/L		100	90 - 110

**Lab Sample ID: LCS 280-589386/50**  
**Matrix: Water**  
**Analysis Batch: 589386**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	101.3		mg/L		101	90 - 110
Sulfate	100	101.0		mg/L		101	90 - 110

**Lab Sample ID: LCSD 280-589386/5**  
**Matrix: Water**  
**Analysis Batch: 589386**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	99.86		mg/L		100	90 - 110	0	10
Sulfate	100	99.91		mg/L		100	90 - 110	0	10

**Lab Sample ID: LCSD 280-589386/51**  
**Matrix: Water**  
**Analysis Batch: 589386**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	101.9		mg/L		102	90 - 110	1	10
Sulfate	100	101.7		mg/L		102	90 - 110	1	10

**Lab Sample ID: MRL 280-589386/3**  
**Matrix: Water**  
**Analysis Batch: 589386**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	5.150		mg/L		103	50 - 150
Sulfate	5.00	4.855	J	mg/L		97	50 - 150

**Lab Sample ID: 280-167087-12 MS**  
**Matrix: Water**  
**Analysis Batch: 589386**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.4		50.0	102.8		mg/L		105	80 - 120

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# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

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

**Lab Sample ID: 280-167087-12 MSD**  
**Matrix: Water**  
**Analysis Batch: 589386**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.4		50.0	104.3		mg/L		108	80 - 120	1	20

**Lab Sample ID: 280-167087-12 DU**  
**Matrix: Water**  
**Analysis Batch: 589386**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	50.4		50.26		mg/L		0.2	15

**Lab Sample ID: MB 280-589546/6**  
**Matrix: Water**  
**Analysis Batch: 589546**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.500		mg/L			10/11/22 11:15	1

**Lab Sample ID: LCS 280-589546/4**  
**Matrix: Water**  
**Analysis Batch: 589546**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	5.00	5.051		mg/L		101	90 - 110

**Lab Sample ID: LCSD 280-589546/5**  
**Matrix: Water**  
**Analysis Batch: 589546**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	5.00	5.068		mg/L		101	90 - 110	0	10

**Lab Sample ID: MRL 280-589546/3**  
**Matrix: Water**  
**Analysis Batch: 589546**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.500	0.4744	J	mg/L		95	50 - 150

**Lab Sample ID: 280-167087-4 MS**  
**Matrix: Water**  
**Analysis Batch: 589546**

**Client Sample ID: MW-46B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.557		5.00	5.772		mg/L		104	80 - 120

**Lab Sample ID: 280-167087-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 589546**

**Client Sample ID: MW-46B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.557		5.00	5.832		mg/L		105	80 - 120	1	20

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# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: 9056A - Anions, Ion Chromatography

**Lab Sample ID: 280-167087-4 DU**  
**Matrix: Water**  
**Analysis Batch: 589546**

**Client Sample ID: MW-46B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.557		0.6076		mg/L		9	15

**Lab Sample ID: MB 280-589708/6**  
**Matrix: Water**  
**Analysis Batch: 589708**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00		mg/L			10/12/22 11:07	1
Fluoride	ND		0.500		mg/L			10/12/22 11:07	1
Sulfate	ND		5.00		mg/L			10/12/22 11:07	1

**Lab Sample ID: LCS 280-589708/4**  
**Matrix: Water**  
**Analysis Batch: 589708**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	101.4		mg/L		101	90 - 110
Fluoride	5.00	5.088		mg/L		102	90 - 110
Sulfate	100	99.31		mg/L		99	90 - 110

**Lab Sample ID: LCSD 280-589708/5**  
**Matrix: Water**  
**Analysis Batch: 589708**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	101.3		mg/L		101	90 - 110	0	10
Fluoride	5.00	5.112		mg/L		102	90 - 110	0	10
Sulfate	100	99.42		mg/L		99	90 - 110	0	10

**Lab Sample ID: MRL 280-589708/3**  
**Matrix: Water**  
**Analysis Batch: 589708**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	5.081		mg/L		102	50 - 150
Fluoride	0.500	0.5117		mg/L		102	50 - 150
Sulfate	5.00	5.030		mg/L		101	50 - 150

**Lab Sample ID: 280-167087-12 MS**  
**Matrix: Water**  
**Analysis Batch: 589708**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.707		5.00	5.514		mg/L		96	80 - 120

# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

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

**Lab Sample ID: 280-167087-12 MSD**  
**Matrix: Water**  
**Analysis Batch: 589708**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.707		5.00	5.598		mg/L		98	80 - 120	2	20

**Lab Sample ID: 280-167087-12 DU**  
**Matrix: Water**  
**Analysis Batch: 589708**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.707		0.7017		mg/L		0.7	15

**Lab Sample ID: MB 280-589985/6**  
**Matrix: Water**  
**Analysis Batch: 589985**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.00		mg/L			10/14/22 12:34	1

**Lab Sample ID: LCS 280-589985/4**  
**Matrix: Water**  
**Analysis Batch: 589985**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	100	99.80		mg/L		100	90 - 110

**Lab Sample ID: LCSD 280-589985/5**  
**Matrix: Water**  
**Analysis Batch: 589985**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	100	100.1		mg/L		100	90 - 110	0	10

**Lab Sample ID: MRL 280-589985/3**  
**Matrix: Water**  
**Analysis Batch: 589985**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	5.00	3.561	J	mg/L		71	50 - 150

**Lab Sample ID: 280-167087-12 MS**  
**Matrix: Water**  
**Analysis Batch: 589985**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	396		250	637.2		mg/L		97	80 - 120

**Lab Sample ID: 280-167087-12 MSD**  
**Matrix: Water**  
**Analysis Batch: 589985**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	396		250	638.3		mg/L		97	80 - 120	0	20

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# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Method: 9056A - Anions, Ion Chromatography

**Lab Sample ID: 280-167087-12 DU**  
**Matrix: Water**  
**Analysis Batch: 589985**

**Client Sample ID: MW-20B**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	396		398.5		mg/L		0.7	15

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

**Lab Sample ID: MB 280-588635/1**  
**Matrix: Water**  
**Analysis Batch: 588635**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10.0		mg/L			10/03/22 11:12	1

**Lab Sample ID: LCS 280-588635/2**  
**Matrix: Water**  
**Analysis Batch: 588635**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	501	480.0		mg/L		96	88 - 114

**Lab Sample ID: LCSD 280-588635/3**  
**Matrix: Water**  
**Analysis Batch: 588635**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	482.0		mg/L		96	88 - 114	0	20

**Lab Sample ID: 280-167087-10 DU**  
**Matrix: Water**  
**Analysis Batch: 588635**

**Client Sample ID: MW-14BR**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	981		971.0		mg/L		1	10

**Lab Sample ID: MB 280-588636/1**  
**Matrix: Water**  
**Analysis Batch: 588636**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10.0		mg/L			10/03/22 11:13	1

**Lab Sample ID: LCS 280-588636/2**  
**Matrix: Water**  
**Analysis Batch: 588636**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	501	486.0		mg/L		97	88 - 114

# QC Sample Results

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

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

Lab Sample ID: 280-167087-12 DU

Matrix: Water

Analysis Batch: 588636

Client Sample ID: MW-20B

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	943		944.0		mg/L		0.1	10

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# QC Association Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Metals

### Prep Batch: 588617

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-1	MW-42B	Total/NA	Water	3010A	
280-167087-2	MW-43B	Total/NA	Water	3010A	
280-167087-3	MW-47B	Total/NA	Water	3010A	
280-167087-4	MW-46B	Total/NA	Water	3010A	
280-167087-5	MW-45B	Total/NA	Water	3010A	
280-167087-6	MW-44B	Total/NA	Water	3010A	
280-167087-7	MW-37B	Total/NA	Water	3010A	
280-167087-8	MW-36B	Total/NA	Water	3010A	
280-167087-9	MW-32B	Total/NA	Water	3010A	
280-167087-10	MW-14BR	Total/NA	Water	3010A	
280-167087-11	DUP-1	Total/NA	Water	3010A	
280-167087-12	MW-20B	Total/NA	Water	3010A	
280-167087-13	MW-38B	Total/NA	Water	3010A	
280-167087-14	MW-49B	Total/NA	Water	3010A	
280-167087-15	MW-21B	Total/NA	Water	3010A	
280-167087-16	MW-41B	Total/NA	Water	3010A	
280-167087-17	MW-53B	Total/NA	Water	3010A	
280-167087-18	MW-52B	Total/NA	Water	3010A	
MB 280-588617/1-A	Method Blank	Total/NA	Water	3010A	
LCS 280-588617/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 280-588617/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	
280-167087-12 MS	MW-20B	Total/NA	Water	3010A	
280-167087-12 MSD	MW-20B	Total/NA	Water	3010A	

### Prep Batch: 588642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-1	MW-42B	Total/NA	Water	3020A	
280-167087-2	MW-43B	Total/NA	Water	3020A	
280-167087-3	MW-47B	Total/NA	Water	3020A	
280-167087-4	MW-46B	Total/NA	Water	3020A	
280-167087-5	MW-45B	Total/NA	Water	3020A	
280-167087-6	MW-44B	Total/NA	Water	3020A	
280-167087-7	MW-37B	Total/NA	Water	3020A	
280-167087-8	MW-36B	Total/NA	Water	3020A	
280-167087-9	MW-32B	Total/NA	Water	3020A	
280-167087-10	MW-14BR	Total/NA	Water	3020A	
280-167087-11	DUP-1	Total/NA	Water	3020A	
280-167087-12	MW-20B	Total/NA	Water	3020A	
280-167087-13	MW-38B	Total/NA	Water	3020A	
280-167087-14	MW-49B	Total/NA	Water	3020A	
280-167087-15	MW-21B	Total/NA	Water	3020A	
280-167087-16	MW-41B	Total/NA	Water	3020A	
280-167087-17	MW-53B	Total/NA	Water	3020A	
280-167087-18	MW-52B	Total/NA	Water	3020A	
280-167087-19	FB-1	Total/NA	Water	3020A	
280-167087-20	MW-39B	Total/NA	Water	3020A	
MB 280-588642/1-A	Method Blank	Total/NA	Water	3020A	
LCS 280-588642/2-A	Lab Control Sample	Total/NA	Water	3020A	
280-167087-12 MS	MW-20B	Total/NA	Water	3020A	
280-167087-12 MSD	MW-20B	Total/NA	Water	3020A	

# QC Association Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Metals

### Prep Batch: 588644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-19	FB-1	Total/NA	Water	3010A	
280-167087-20	MW-39B	Total/NA	Water	3010A	
280-167087-21	MW-40B	Total/NA	Water	3010A	
MB 280-588644/1-A	Method Blank	Total/NA	Water	3010A	
LCS 280-588644/2-A	Lab Control Sample	Total/NA	Water	3010A	

### Prep Batch: 588696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-21	MW-40B	Total/NA	Water	3020A	
MB 280-588696/1-A	Method Blank	Total/NA	Water	3020A	
LCS 280-588696/2-A	Lab Control Sample	Total/NA	Water	3020A	
LCSD 280-588696/3-A	Lab Control Sample Dup	Total/NA	Water	3020A	

### Prep Batch: 588755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-1	MW-42B	Total/NA	Water	7470A	
280-167087-2	MW-43B	Total/NA	Water	7470A	
280-167087-3	MW-47B	Total/NA	Water	7470A	
280-167087-4	MW-46B	Total/NA	Water	7470A	
280-167087-5	MW-45B	Total/NA	Water	7470A	
280-167087-6	MW-44B	Total/NA	Water	7470A	
280-167087-7	MW-37B	Total/NA	Water	7470A	
280-167087-8	MW-36B	Total/NA	Water	7470A	
280-167087-9	MW-32B	Total/NA	Water	7470A	
280-167087-10	MW-14BR	Total/NA	Water	7470A	
280-167087-11	DUP-1	Total/NA	Water	7470A	
280-167087-12	MW-20B	Total/NA	Water	7470A	
280-167087-13	MW-38B	Total/NA	Water	7470A	
280-167087-14	MW-49B	Total/NA	Water	7470A	
280-167087-15	MW-21B	Total/NA	Water	7470A	
280-167087-16	MW-41B	Total/NA	Water	7470A	
280-167087-17	MW-53B	Total/NA	Water	7470A	
280-167087-18	MW-52B	Total/NA	Water	7470A	
280-167087-19	FB-1	Total/NA	Water	7470A	
MB 280-588755/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-588755/2-A	Lab Control Sample	Total/NA	Water	7470A	
280-167087-12 MS	MW-20B	Total/NA	Water	7470A	
280-167087-12 MSD	MW-20B	Total/NA	Water	7470A	

### Prep Batch: 588756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-20	MW-39B	Total/NA	Water	7470A	
280-167087-21	MW-40B	Total/NA	Water	7470A	
MB 280-588756/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-588756/2-A	Lab Control Sample	Total/NA	Water	7470A	

### Analysis Batch: 588861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-1	MW-42B	Total/NA	Water	6010D	588617
280-167087-2	MW-43B	Total/NA	Water	6010D	588617
280-167087-3	MW-47B	Total/NA	Water	6010D	588617

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# QC Association Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Metals (Continued)

### Analysis Batch: 588861 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-4	MW-46B	Total/NA	Water	6010D	588617
280-167087-5	MW-45B	Total/NA	Water	6010D	588617
280-167087-6	MW-44B	Total/NA	Water	6010D	588617
280-167087-7	MW-37B	Total/NA	Water	6010D	588617
280-167087-8	MW-36B	Total/NA	Water	6010D	588617
280-167087-9	MW-32B	Total/NA	Water	6010D	588617
280-167087-10	MW-14BR	Total/NA	Water	6010D	588617
280-167087-11	DUP-1	Total/NA	Water	6010D	588617
280-167087-12	MW-20B	Total/NA	Water	6010D	588617
280-167087-13	MW-38B	Total/NA	Water	6010D	588617
280-167087-14	MW-49B	Total/NA	Water	6010D	588617
280-167087-15	MW-21B	Total/NA	Water	6010D	588617
280-167087-16	MW-41B	Total/NA	Water	6010D	588617
280-167087-17	MW-53B	Total/NA	Water	6010D	588617
280-167087-18	MW-52B	Total/NA	Water	6010D	588617
280-167087-19	FB-1	Total/NA	Water	6010D	588644
280-167087-20	MW-39B	Total/NA	Water	6010D	588644
280-167087-21	MW-40B	Total/NA	Water	6010D	588644
MB 280-588617/1-A	Method Blank	Total/NA	Water	6010D	588617
MB 280-588644/1-A	Method Blank	Total/NA	Water	6010D	588644
LCS 280-588617/2-A	Lab Control Sample	Total/NA	Water	6010D	588617
LCS 280-588644/2-A	Lab Control Sample	Total/NA	Water	6010D	588644
LCSD 280-588617/3-A	Lab Control Sample Dup	Total/NA	Water	6010D	588617
280-167087-12 MS	MW-20B	Total/NA	Water	6010D	588617
280-167087-12 MSD	MW-20B	Total/NA	Water	6010D	588617

### Analysis Batch: 588882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-1	MW-42B	Total/NA	Water	7470A	588755
280-167087-2	MW-43B	Total/NA	Water	7470A	588755
280-167087-3	MW-47B	Total/NA	Water	7470A	588755
280-167087-4	MW-46B	Total/NA	Water	7470A	588755
280-167087-5	MW-45B	Total/NA	Water	7470A	588755
280-167087-6	MW-44B	Total/NA	Water	7470A	588755
280-167087-7	MW-37B	Total/NA	Water	7470A	588755
280-167087-8	MW-36B	Total/NA	Water	7470A	588755
280-167087-9	MW-32B	Total/NA	Water	7470A	588755
280-167087-10	MW-14BR	Total/NA	Water	7470A	588755
280-167087-11	DUP-1	Total/NA	Water	7470A	588755
280-167087-12	MW-20B	Total/NA	Water	7470A	588755
280-167087-13	MW-38B	Total/NA	Water	7470A	588755
280-167087-14	MW-49B	Total/NA	Water	7470A	588755
280-167087-15	MW-21B	Total/NA	Water	7470A	588755
280-167087-16	MW-41B	Total/NA	Water	7470A	588755
280-167087-17	MW-53B	Total/NA	Water	7470A	588755
280-167087-18	MW-52B	Total/NA	Water	7470A	588755
280-167087-19	FB-1	Total/NA	Water	7470A	588755
MB 280-588755/1-A	Method Blank	Total/NA	Water	7470A	588755
LCS 280-588755/2-A	Lab Control Sample	Total/NA	Water	7470A	588755
280-167087-12 MS	MW-20B	Total/NA	Water	7470A	588755
280-167087-12 MSD	MW-20B	Total/NA	Water	7470A	588755

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# QC Association Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Metals

### Analysis Batch: 589035

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-21	MW-40B	Total/NA	Water	6020B	588696
MB 280-588696/1-A	Method Blank	Total/NA	Water	6020B	588696
LCS 280-588696/2-A	Lab Control Sample	Total/NA	Water	6020B	588696
LCSD 280-588696/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	588696

### Analysis Batch: 589050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-1	MW-42B	Total/NA	Water	6020B	588642
280-167087-2	MW-43B	Total/NA	Water	6020B	588642
280-167087-3	MW-47B	Total/NA	Water	6020B	588642
280-167087-4	MW-46B	Total/NA	Water	6020B	588642
280-167087-5	MW-45B	Total/NA	Water	6020B	588642
280-167087-6	MW-44B	Total/NA	Water	6020B	588642
280-167087-7	MW-37B	Total/NA	Water	6020B	588642
280-167087-8	MW-36B	Total/NA	Water	6020B	588642
280-167087-9	MW-32B	Total/NA	Water	6020B	588642
280-167087-10	MW-14BR	Total/NA	Water	6020B	588642
280-167087-11	DUP-1	Total/NA	Water	6020B	588642
280-167087-12	MW-20B	Total/NA	Water	6020B	588642
280-167087-13	MW-38B	Total/NA	Water	6020B	588642
280-167087-14	MW-49B	Total/NA	Water	6020B	588642
280-167087-15	MW-21B	Total/NA	Water	6020B	588642
280-167087-16	MW-41B	Total/NA	Water	6020B	588642
280-167087-17	MW-53B	Total/NA	Water	6020B	588642
280-167087-18	MW-52B	Total/NA	Water	6020B	588642
280-167087-19	FB-1	Total/NA	Water	6020B	588642
280-167087-20	MW-39B	Total/NA	Water	6020B	588642
MB 280-588642/1-A	Method Blank	Total/NA	Water	6020B	588642
LCS 280-588642/2-A	Lab Control Sample	Total/NA	Water	6020B	588642
280-167087-12 MS	MW-20B	Total/NA	Water	6020B	588642
280-167087-12 MSD	MW-20B	Total/NA	Water	6020B	588642

### Analysis Batch: 589052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-20	MW-39B	Total/NA	Water	7470A	588756
280-167087-21	MW-40B	Total/NA	Water	7470A	588756
MB 280-588756/1-A	Method Blank	Total/NA	Water	7470A	588756
LCS 280-588756/2-A	Lab Control Sample	Total/NA	Water	7470A	588756

### Analysis Batch: 589155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-21	MW-40B	Total/NA	Water	6020B	588696
MB 280-588696/1-A	Method Blank	Total/NA	Water	6020B	588696
LCS 280-588696/2-A	Lab Control Sample	Total/NA	Water	6020B	588696
LCSD 280-588696/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	588696

## General Chemistry

### Analysis Batch: 588635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-1	MW-42B	Total/NA	Water	SM 2540C	

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# QC Association Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## General Chemistry (Continued)

### Analysis Batch: 588635 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-2	MW-43B	Total/NA	Water	SM 2540C	
280-167087-3	MW-47B	Total/NA	Water	SM 2540C	
280-167087-4	MW-46B	Total/NA	Water	SM 2540C	
280-167087-5	MW-45B	Total/NA	Water	SM 2540C	
280-167087-6	MW-44B	Total/NA	Water	SM 2540C	
280-167087-7	MW-37B	Total/NA	Water	SM 2540C	
280-167087-8	MW-36B	Total/NA	Water	SM 2540C	
280-167087-9	MW-32B	Total/NA	Water	SM 2540C	
280-167087-10	MW-14BR	Total/NA	Water	SM 2540C	
280-167087-11	DUP-1	Total/NA	Water	SM 2540C	
MB 280-588635/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-588635/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-588635/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
280-167087-10 DU	MW-14BR	Total/NA	Water	SM 2540C	

### Analysis Batch: 588636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-12	MW-20B	Total/NA	Water	SM 2540C	
280-167087-13	MW-38B	Total/NA	Water	SM 2540C	
280-167087-14	MW-49B	Total/NA	Water	SM 2540C	
280-167087-15	MW-21B	Total/NA	Water	SM 2540C	
280-167087-16	MW-41B	Total/NA	Water	SM 2540C	
280-167087-17	MW-53B	Total/NA	Water	SM 2540C	
280-167087-18	MW-52B	Total/NA	Water	SM 2540C	
280-167087-19	FB-1	Total/NA	Water	SM 2540C	
280-167087-20	MW-39B	Total/NA	Water	SM 2540C	
280-167087-21	MW-40B	Total/NA	Water	SM 2540C	
MB 280-588636/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-588636/2	Lab Control Sample	Total/NA	Water	SM 2540C	
280-167087-12 DU	MW-20B	Total/NA	Water	SM 2540C	

### Analysis Batch: 589079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-1	MW-42B	Total/NA	Water	9056A	
280-167087-1	MW-42B	Total/NA	Water	9056A	
280-167087-2	MW-43B	Total/NA	Water	9056A	
280-167087-3	MW-47B	Total/NA	Water	9056A	
280-167087-4	MW-46B	Total/NA	Water	9056A	
280-167087-5	MW-45B	Total/NA	Water	9056A	
280-167087-6	MW-44B	Total/NA	Water	9056A	
280-167087-7	MW-37B	Total/NA	Water	9056A	
280-167087-8	MW-36B	Total/NA	Water	9056A	
280-167087-8	MW-36B	Total/NA	Water	9056A	
280-167087-9	MW-32B	Total/NA	Water	9056A	
280-167087-9	MW-32B	Total/NA	Water	9056A	
280-167087-10	MW-14BR	Total/NA	Water	9056A	
280-167087-10	MW-14BR	Total/NA	Water	9056A	
280-167087-11	DUP-1	Total/NA	Water	9056A	
280-167087-11	DUP-1	Total/NA	Water	9056A	
MB 280-589079/55	Method Blank	Total/NA	Water	9056A	
MB 280-589079/6	Method Blank	Total/NA	Water	9056A	

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# QC Association Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## General Chemistry (Continued)

### Analysis Batch: 589079 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-589079/4	Lab Control Sample	Total/NA	Water	9056A	
LCS 280-589079/53	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-589079/5	Lab Control Sample Dup	Total/NA	Water	9056A	
LCSD 280-589079/54	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-589079/3	Lab Control Sample	Total/NA	Water	9056A	
280-167087-6 MS	MW-44B	Total/NA	Water	9056A	
280-167087-6 MSD	MW-44B	Total/NA	Water	9056A	
280-167087-6 DU	MW-44B	Total/NA	Water	9056A	

### Analysis Batch: 589386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-2	MW-43B	Total/NA	Water	9056A	
280-167087-3	MW-47B	Total/NA	Water	9056A	
280-167087-4	MW-46B	Total/NA	Water	9056A	
280-167087-5	MW-45B	Total/NA	Water	9056A	
280-167087-6	MW-44B	Total/NA	Water	9056A	
280-167087-7	MW-37B	Total/NA	Water	9056A	
280-167087-12	MW-20B	Total/NA	Water	9056A	
280-167087-13	MW-38B	Total/NA	Water	9056A	
280-167087-14	MW-49B	Total/NA	Water	9056A	
280-167087-15	MW-21B	Total/NA	Water	9056A	
280-167087-16	MW-41B	Total/NA	Water	9056A	
280-167087-17	MW-53B	Total/NA	Water	9056A	
280-167087-18	MW-52B	Total/NA	Water	9056A	
280-167087-19	FB-1	Total/NA	Water	9056A	
280-167087-20	MW-39B	Total/NA	Water	9056A	
280-167087-21	MW-40B	Total/NA	Water	9056A	
MB 280-589386/52	Method Blank	Total/NA	Water	9056A	
MB 280-589386/6	Method Blank	Total/NA	Water	9056A	
LCS 280-589386/4	Lab Control Sample	Total/NA	Water	9056A	
LCS 280-589386/50	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-589386/5	Lab Control Sample Dup	Total/NA	Water	9056A	
LCSD 280-589386/51	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-589386/3	Lab Control Sample	Total/NA	Water	9056A	
280-167087-12 MS	MW-20B	Total/NA	Water	9056A	
280-167087-12 MSD	MW-20B	Total/NA	Water	9056A	
280-167087-12 DU	MW-20B	Total/NA	Water	9056A	

### Analysis Batch: 589546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-1	MW-42B	Total/NA	Water	9056A	
280-167087-3	MW-47B	Total/NA	Water	9056A	
280-167087-4	MW-46B	Total/NA	Water	9056A	
280-167087-5	MW-45B	Total/NA	Water	9056A	
280-167087-6	MW-44B	Total/NA	Water	9056A	
280-167087-7	MW-37B	Total/NA	Water	9056A	
280-167087-8	MW-36B	Total/NA	Water	9056A	
280-167087-9	MW-32B	Total/NA	Water	9056A	
280-167087-10	MW-14BR	Total/NA	Water	9056A	
MB 280-589546/6	Method Blank	Total/NA	Water	9056A	
LCS 280-589546/4	Lab Control Sample	Total/NA	Water	9056A	

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# QC Association Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## General Chemistry (Continued)

### Analysis Batch: 589546 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 280-589546/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-589546/3	Lab Control Sample	Total/NA	Water	9056A	
280-167087-4 MS	MW-46B	Total/NA	Water	9056A	
280-167087-4 MSD	MW-46B	Total/NA	Water	9056A	
280-167087-4 DU	MW-46B	Total/NA	Water	9056A	

### Analysis Batch: 589708

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-2	MW-43B	Total/NA	Water	9056A	
280-167087-11	DUP-1	Total/NA	Water	9056A	
280-167087-12	MW-20B	Total/NA	Water	9056A	
280-167087-13	MW-38B	Total/NA	Water	9056A	
280-167087-13	MW-38B	Total/NA	Water	9056A	
280-167087-14	MW-49B	Total/NA	Water	9056A	
280-167087-14	MW-49B	Total/NA	Water	9056A	
280-167087-15	MW-21B	Total/NA	Water	9056A	
280-167087-15	MW-21B	Total/NA	Water	9056A	
280-167087-16	MW-41B	Total/NA	Water	9056A	
280-167087-16	MW-41B	Total/NA	Water	9056A	
280-167087-17	MW-53B	Total/NA	Water	9056A	
280-167087-17	MW-53B	Total/NA	Water	9056A	
280-167087-18	MW-52B	Total/NA	Water	9056A	
280-167087-18	MW-52B	Total/NA	Water	9056A	
280-167087-19	FB-1	Total/NA	Water	9056A	
280-167087-20	MW-39B	Total/NA	Water	9056A	
280-167087-20	MW-39B	Total/NA	Water	9056A	
280-167087-21	MW-40B	Total/NA	Water	9056A	
280-167087-21	MW-40B	Total/NA	Water	9056A	
MB 280-589708/6	Method Blank	Total/NA	Water	9056A	
LCS 280-589708/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-589708/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-589708/3	Lab Control Sample	Total/NA	Water	9056A	
280-167087-12 MS	MW-20B	Total/NA	Water	9056A	
280-167087-12 MSD	MW-20B	Total/NA	Water	9056A	
280-167087-12 DU	MW-20B	Total/NA	Water	9056A	

### Analysis Batch: 589985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-167087-12	MW-20B	Total/NA	Water	9056A	
MB 280-589985/6	Method Blank	Total/NA	Water	9056A	
LCS 280-589985/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-589985/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-589985/3	Lab Control Sample	Total/NA	Water	9056A	
280-167087-12 MS	MW-20B	Total/NA	Water	9056A	
280-167087-12 MSD	MW-20B	Total/NA	Water	9056A	
280-167087-12 DU	MW-20B	Total/NA	Water	9056A	

# Lab Chronicle

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Client Sample ID: MW-42B

## Lab Sample ID: 280-167087-1

Date Collected: 09/27/22 10:01

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 17:20	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 16:59	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 18:51	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589079	10/06/22 18:58	MEC	EET DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	589079	10/06/22 19:13	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589546	10/11/22 23:46	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	588635	10/03/22 11:12	ASP	EET DEN

## Client Sample ID: MW-43B

## Lab Sample ID: 280-167087-2

Date Collected: 09/27/22 11:37

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 17:24	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:01	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 18:54	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589079	10/06/22 19:58	MEC	EET DEN
Total/NA	Analysis	9056A		2	10 mL	10 mL	589386	10/10/22 18:50	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589708	10/12/22 16:06	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	588635	10/03/22 11:12	ASP	EET DEN

## Client Sample ID: MW-47B

## Lab Sample ID: 280-167087-3

Date Collected: 09/27/22 12:27

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 17:29	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:02	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 18:56	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589079	10/06/22 20:13	MEC	EET DEN
Total/NA	Analysis	9056A		2	10 mL	10 mL	589386	10/10/22 19:22	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589546	10/12/22 00:19	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	588635	10/03/22 11:12	ASP	EET DEN

# Lab Chronicle

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Client Sample ID: MW-46B

## Lab Sample ID: 280-167087-4

Date Collected: 09/27/22 13:22

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 17:33	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:04	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 18:59	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589079	10/06/22 20:28	MEC	EET DEN
Total/NA	Analysis	9056A		2	10 mL	10 mL	589386	10/10/22 20:26	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589546	10/12/22 00:27	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	588635	10/03/22 11:12	ASP	EET DEN

## Client Sample ID: MW-45B

## Lab Sample ID: 280-167087-5

Date Collected: 09/27/22 14:18

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 17:37	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:06	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 20:35	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589079	10/06/22 20:43	MEC	EET DEN
Total/NA	Analysis	9056A		2	10 mL	10 mL	589386	10/10/22 20:58	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589546	10/12/22 01:01	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	588635	10/03/22 11:12	ASP	EET DEN

## Client Sample ID: MW-44B

## Lab Sample ID: 280-167087-6

Date Collected: 09/27/22 14:55

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 17:57	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:08	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 20:38	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589079	10/07/22 00:43	MEC	EET DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	589386	10/10/22 21:30	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589546	10/12/22 01:09	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	588635	10/03/22 11:12	ASP	EET DEN

# Lab Chronicle

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Client Sample ID: MW-37B

## Lab Sample ID: 280-167087-7

Date Collected: 09/27/22 16:06

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 18:01	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:10	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 20:40	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589079	10/06/22 20:58	MEC	EET DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	589386	10/10/22 22:03	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589546	10/12/22 01:17	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	588635	10/03/22 11:12	ASP	EET DEN

## Client Sample ID: MW-36B

## Lab Sample ID: 280-167087-8

Date Collected: 09/27/22 16:48

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 18:05	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:12	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 20:43	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589079	10/06/22 21:28	MEC	EET DEN
Total/NA	Analysis	9056A		2	10 mL	10 mL	589079	10/06/22 21:43	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589546	10/12/22 01:25	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	588635	10/03/22 11:12	ASP	EET DEN

## Client Sample ID: MW-32B

## Lab Sample ID: 280-167087-9

Date Collected: 09/27/22 17:49

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 18:09	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:17	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 20:45	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589079	10/06/22 21:58	MEC	EET DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	589079	10/06/22 22:13	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589546	10/12/22 01:34	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	588635	10/03/22 11:12	ASP	EET DEN

# Lab Chronicle

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Client Sample ID: MW-14BR

Date Collected: 09/28/22 10:52

Date Received: 09/30/22 11:10

## Lab Sample ID: 280-167087-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 18:13	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:19	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 20:48	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589079	10/07/22 00:13	MEC	EET DEN
Total/NA	Analysis	9056A		2	10 mL	10 mL	589079	10/07/22 00:28	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589546	10/12/22 01:59	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	588635	10/03/22 11:12	ASP	EET DEN

## Client Sample ID: DUP-1

Date Collected: 09/28/22 00:00

Date Received: 09/30/22 11:10

## Lab Sample ID: 280-167087-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 18:17	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:21	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 20:50	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589079	10/06/22 22:58	MEC	EET DEN
Total/NA	Analysis	9056A		2	10 mL	10 mL	589079	10/06/22 23:13	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589708	10/12/22 16:14	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	588635	10/03/22 11:12	ASP	EET DEN

## Client Sample ID: MW-20B

Date Collected: 09/28/22 11:40

Date Received: 09/30/22 11:10

## Lab Sample ID: 280-167087-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 18:21	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:23	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 20:53	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589386	10/10/22 23:55	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589708	10/12/22 16:22	EJS	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	589985	10/14/22 12:48	MEC	EET DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	588636	10/03/22 11:13	ASP	EET DEN

Eurofins Denver

# Lab Chronicle

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Client Sample ID: MW-38B

## Lab Sample ID: 280-167087-13

Date Collected: 09/28/22 12:44

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 18:57	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:36	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 21:06	PFM	EET DEN
Total/NA	Analysis	9056A		5	10 mL	10 mL	589386	10/11/22 00:59	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589708	10/12/22 16:56	EJS	EET DEN
Total/NA	Analysis	9056A		50	5 mL	5 mL	589708	10/12/22 17:04	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	588636	10/03/22 11:13	ASP	EET DEN

## Client Sample ID: MW-49B

## Lab Sample ID: 280-167087-14

Date Collected: 09/28/22 14:44

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 19:02	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:38	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 21:08	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589386	10/11/22 01:31	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589708	10/12/22 17:12	EJS	EET DEN
Total/NA	Analysis	9056A		2	5 mL	5 mL	589708	10/12/22 17:20	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	588636	10/03/22 11:13	ASP	EET DEN

## Client Sample ID: MW-21B

## Lab Sample ID: 280-167087-15

Date Collected: 09/28/22 15:45

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 19:06	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:40	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 21:11	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589386	10/11/22 01:47	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589708	10/12/22 17:45	EJS	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	589708	10/12/22 17:54	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	588636	10/03/22 11:13	ASP	EET DEN

# Lab Chronicle

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Client Sample ID: MW-41B

## Lab Sample ID: 280-167087-16

Date Collected: 09/29/22 09:26

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 19:10	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:42	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 21:13	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589386	10/11/22 02:51	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589708	10/12/22 18:02	EJS	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	589708	10/12/22 18:10	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	588636	10/03/22 11:13	ASP	EET DEN

## Client Sample ID: MW-53B

## Lab Sample ID: 280-167087-17

Date Collected: 09/29/22 11:35

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 19:14	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:43	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 21:16	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589386	10/11/22 03:23	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589708	10/12/22 18:18	EJS	EET DEN
Total/NA	Analysis	9056A		2	5 mL	5 mL	589708	10/12/22 18:27	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	588636	10/03/22 11:13	ASP	EET DEN

## Client Sample ID: MW-52B

## Lab Sample ID: 280-167087-18

Date Collected: 09/29/22 14:00

Matrix: Water

Date Received: 09/30/22 11:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588617	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 19:18	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:45	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 21:18	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589386	10/11/22 03:39	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589708	10/12/22 18:35	EJS	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	589708	10/12/22 18:43	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	588636	10/03/22 11:13	ASP	EET DEN

# Lab Chronicle

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Client Sample ID: FB-1

Date Collected: 09/29/22 13:00

Date Received: 09/30/22 11:10

## Lab Sample ID: 280-167087-19

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588644	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 20:10	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:47	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588755	10/04/22 13:20	CEH	EET DEN
Total/NA	Analysis	7470A		1			588882	10/04/22 21:21	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589386	10/11/22 04:10	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589708	10/12/22 18:52	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	588636	10/03/22 11:13	ASP	EET DEN

## Client Sample ID: MW-39B

Date Collected: 09/29/22 15:46

Date Received: 09/30/22 11:10

## Lab Sample ID: 280-167087-20

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588644	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 20:14	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588642	10/04/22 09:05	KMS	EET DEN
Total/NA	Analysis	6020B		1			589050	10/05/22 17:49	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588756	10/05/22 11:40	CEH	EET DEN
Total/NA	Analysis	7470A		1			589052	10/05/22 16:59	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589386	10/11/22 05:46	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589708	10/12/22 19:00	EJS	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	589708	10/12/22 19:25	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	588636	10/03/22 11:13	ASP	EET DEN

## Client Sample ID: MW-40B

Date Collected: 09/29/22 16:42

Date Received: 09/30/22 11:10

## Lab Sample ID: 280-167087-21

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	588644	10/04/22 09:00	KMS	EET DEN
Total/NA	Analysis	6010D		1			588861	10/04/22 20:18	KRP	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588696	10/05/22 06:47	MAB	EET DEN
Total/NA	Analysis	6020B		1			589035	10/05/22 17:11	LMT	EET DEN
Total/NA	Prep	3020A			50 mL	50 mL	588696	10/05/22 06:47	MAB	EET DEN
Total/NA	Analysis	6020B		1			589155	10/06/22 14:37	LMT	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	588756	10/05/22 11:40	CEH	EET DEN
Total/NA	Analysis	7470A		1			589052	10/05/22 17:02	PFM	EET DEN
Total/NA	Analysis	9056A		1	10 mL	10 mL	589386	10/11/22 06:18	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	589708	10/12/22 19:33	EJS	EET DEN
Total/NA	Analysis	9056A		2	5 mL	5 mL	589708	10/12/22 19:41	EJS	EET DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	588636	10/03/22 11:13	ASP	EET DEN

Eurofins Denver

# Lab Chronicle

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

**Laboratory References:**

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

- 1
- 2
- 3
- 4
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# Accreditation/Certification Summary

Client: AECOM Technical Services Inc.  
Project/Site: Basin 2020 Support

Job ID: 280-167087-2

## Laboratory: Eurofins Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4025-011	01-09-23

- 1
- 2
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- 14



**Eurofins Denver**  
 4955 Yarrow Street  
 Arvada, CO 80002  
 Phone (303) 736-0100 Phone (303) 431-7171

# Chain of Custody Record

**eurofins** | Environment Testing  
 America

<b>Client Information</b>		Sampler: Lab PM: McEntee, Patrick J		Carrier Tracking No(s): 280-120021-33729.1			
Company: AECOM Technical Services Inc		Phone: Ms. Katie Abbott		State of Origin: CO			
Address: 7595 Technology Way		E-Mail: Patrick.McEntee@et.eurofins.com		Page: Page 1 of 5			
City: Denver		PWSID		Job#			
State, Zip: CO, 80237		Due Date Requested:		Preservation Codes:			
Phone:		TAT Requested (days):		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Archlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:			
Email: katie.abbott@aecom.com		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)			
Project Name: CCR - Basin Electric 2022		PO # 136447		Total Number of Containers			
Site: Basin LRS site		WO # AECOM Project# 60632474		Special Instructions/Note:			
		Project # 28020759		MS/MSD			
		SSOW#					
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Over-sat, A=All)	Field Filtered Sample (Yes or No)	Analysis Requested	Special Instructions/Note
MW-20B	9/28/22	1140	G	W	X	610C-3 Total Metals (B, Ca & Li) 2540C Calcd - Solids, Total Dissolved (TDS) 9056A_280 - Chloride, Fluoride, Sulfate 6020A-1 Total Metals (Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Mo,Se,Tl) 7470A - Total Mercury 9315_Ra226 9320_Ra228 Combined Radium226 and Radium228	
MW-35B		1244	G	W	X		
MW-49B		1444	G	W	X		
MW-21B		1545	G	W	X		
MW-41B	9/29/22	0926	G	W	X		
MW-53B		1135	G	W	X		
MW-52B		1400	G	W	X		
FB-1		1700	G	W	X		
MW 39B		1546	G	W	X		
MW-40B		1642	G	W	X		
				<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months <b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b> Special Instructions/QC Requirements:			
Possible Hazard Identification		Date:		Method of Shipment:			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Empty Kit Relinquished by:		Relinquished by:			
Deliverable Requested: I, II, III, IV, Other (specify)		Date/Time: 9/30/22 1110		Date/Time: 9/30/22 1110			
Relinquished by:		Date/Time:		Date/Time:			
Relinquished by:		Date/Time:		Date/Time:			
Relinquished by:		Date/Time:		Date/Time:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Company: ETADEN			





# Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 280-167087-2

**Login Number: 167087**

**List Number: 1**

**Creator: Roehsner, Karen P**

**List Source: Eurofins Denver**

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





Environment

Submitted to:  
Basin Electric Laramie River Station

Submitted by:  
AECOM  
Denver, CO

December 13, 2022  
Inorganic and Radiochemistry  
Limited Data Validation Report

Basin Electric Laramie, Wyoming  
Groundwater Sampling – September 2022  
Analyzed by Eurofins TestAmerica Laboratories

Prepared By Katie Abbott  
Chemist

## **Overview**

The samples analyzed for the September 2022 sampling event are listed in the Table of Samples Validated (page 3). Limited data validation was performed on a total of nineteen groundwater samples, one field duplicate sample, and one field blank Quality Control (QC) sample.

Samples were submitted to Eurofins TestAmerica Laboratories of Denver, Colorado (TA-DEN).

The reviewed analyses were Select Total Metals by SW-846 Methods 6010C, 6020A, and 7470A, Chloride, Fluoride, and Sulfate by SW-846 Method 9056A, Total Dissolved Solids (TDS) by SM2540C, Radium-226 by SW-846 Method 9315, Radium-228 by SW-846 Method 9320, and combined Radium-226 and Radium-228 by calculation.

The Analytical Limited Data Validation Checklist is presented as pages 4-8. Data were evaluated using guidance set forth in the *United States Environmental Protection Agency (USEPA) contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Superfund Methods Data Review*, document number EPA-542-R-20-006, November 2020; method requirements, and laboratory criteria.

The following data components were reviewed during the data validation procedure:

<b>Submitted Deliverables</b>
Case Narratives (including any assigned laboratory flags)
Chain-of-Custody form(s) and sample integrity
Sample results, reporting limits, dilution factors
Holding times
Method (preparation) blank results
Field blank results
Laboratory control sample (LCS), laboratory control sample duplicate (LCSD) results
Matrix spike (MS), matrix spike duplicate (MSD) results
Laboratory duplicate (or spiked duplicate) results
Field duplicate (FD) results (calculated Relative Percent Differences [RPD])
Electronic data deliverables (EDDs) – EQUIS format

### **Data Validation Qualifiers Assigned During this Review**

- J+ The result is an estimated quantity, but the result may be biased high.  
UJ The result is an estimated quantity.

Assigned qualifiers are detailed in the Analytical Data Validation Checklist and are summarized in the Table of Qualified Analytical Results (page 9).

### **Overall Data Assessment**

Field and laboratory precision, field and laboratory accuracy, method compliance, and data set completeness are determined to be acceptable based on the data reported. No data are missing or rejected, therefore the completeness of the data set was calculated to be 100% and is acceptable. All reported data are suitable for their intended use as reported with the clarifications and qualifications noted.

**Table of Samples Validated  
Basin Electric – Laramie, Wyoming  
September 2022 Sampling  
Eurofins TestAmerica Laboratories**

Matrix	Sample ID	Lab SDG	Lab ID	Sample Type
WG	MW-42B	280-167087-1 280-167087-2	280-167087-1	N
WG	MW-43B		280-167087-2	N
WG	MW-47B		280-167087-3	N
WG	MW-46B		280-167087-4	N
WG	MW-45B		280-167087-5	N
WG	MW-44B		280-167087-6	N
WG	MW-37B		280-167087-7	N
WG	MW-36B		280-167087-8	N
WG	MW-32B		280-167087-9	N
WG	MW-14BR		280-167087-10	N
WG	DUP-1		280-167087-11	FD
WG	MW-20B		280-167087-12	N
WG	MW-38B		280-167087-13	N
WG	MW-49B		280-167087-14	N
WG	MW-21B		280-167087-15	N
WG	MW-41B		280-167087-16	N
WG	MW-53B		280-167087-17	N
WG	MW-52B		280-167087-18	N
WQ	FB-1		280-167087-19	FB
WG	MW-39B		280-167087-20	N
WG	MW-40B		280-167087-21	N

FB – Field Blank  
 FD – Field Duplicate Sample  
 ID – Identification  
 N – Normal Investigative Sample  
 SDG – Sample Delivery Group  
 WG – Ground Water  
 WQ – Water Quality Sample

Project Name: Basin Electric Laramie River Station, Wyoming	Laboratory: Eurofins TestAmerica Denver, Colorado (6010C Metals, 7470A Mercury, 9056A Anions, and TDS) Eurofins TestAmerica Canton (6020A Metals) Eurofins TestAmerica Saint Louis, Missouri (Radiochemistry)
Project Reference: Sampling – June 2022	Sample Matrix: Groundwater
AECOM Project: 60632474 Task 8.2	Sample Start Date: 9/27/2022
Validator/Date Validated: Katie Abbott / December 23, 2022	Sample End Date: 9/29/2022
Secondary Review by: Dwight Parks	Secondary Review Date: December 28, 2022
Samples Analyzed: See Table of Samples Validated (page 3).	
Parameters Validated: Total Metals by SW-846 Method 6010C Total Metals by SW-846 Method 6020A Total Mercury by SW-846 Method 7470A Anions (Chloride, Fluoride, and Sulfate) by SW-846 Method 9056A TDS by SM2540C Radium-226 by SW-846 Method 9315 Radium-228 by SW-846 Method 9320 Combined Radium-226 and Radium-228	
Laboratory Project IDs/Sample Delivery Groups (SDGs): 280-167087-1 and 280-167087-2	

<b>PRECISION, ACCURACY, METHOD COMPLIANCE, AND COMPLETENESS ASSESSMENT</b>						
Precision:	<b>X</b>	Acceptable		Unacceptable	KA	Initials
<p>Comments: Precision is the measure of variability of individual sample measurements. Field precision was evaluated by reviewing the field duplicate results, and laboratory precision was evaluated by reviewing method duplicate sample results, laboratory control sample (LCS) to laboratory control sample duplicate (LCSD) results, and matrix spike (MS) to matrix spike duplicate (MSD) results.</p> <p>The following criteria was used to evaluate the field duplicate results:</p> <ul style="list-style-type: none"> <li>• For results where both reported values were greater than five times the reporting limit (RL), the relative percent difference between the samples and its field duplicate were compared against a criterion of 30%.</li> <li>• For results where either value reported was less than five times the RL, the absolute difference between the results was compared to a criterion of agreement within <math>\pm 2</math> times the RL</li> <li>• The replicate error ratio (RER) for radiochemical parameters was <math>\leq 2</math>.</li> </ul> <p>Laboratory criteria was used to evaluate laboratory precision.</p> <p>Field and laboratory precision is acceptable because no data are rejected. Precision measurements are reviewed in items 17 and 21.</p>						
Accuracy:	<b>X</b>	Acceptable		Unacceptable	KA	Initials
<p>Comments: Field accuracy, a measure of the sampling bias, can be determined by reviewing field and equipment blank results for evidence of sample contamination stemming from sampling activities and/or field conditions. Laboratory accuracy is a measure of the system bias, and was measured by evaluating LCS, MS, and MSD percent recoveries (%Rs). LCS %Rs demonstrated the overall performance of the analysis. MS, MSD %Rs provided information on sample matrix interferences. Accuracy measurements were evaluated using laboratory control limits. Overall field and laboratory accuracy is acceptable because the majority of the results are unqualified based on accuracy and no data are rejected. Accuracy measurements are reviewed in items 12, 14, 15, 16, and 20.</p>						
Method Compliance:	<b>X</b>	Acceptable		Unacceptable	KA	Initials
<p>Comments: For this data set, method compliance was determined by evaluating sample integrity, holding time, reporting limits, and laboratory blanks against method specified requirements. Overall method compliance is acceptable because the majority of the results were unqualified based on the method compliance parameters reviewed. Method compliance measurements are also reviewed in items 4, 6, 8, 11, 13, 18, 19, 20, and 22.</p>						
Completeness:	<b>X</b>	Acceptable		Unacceptable	KA	Initials
<p>Comments: Completeness is the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of chain of custody records, laboratory analytical methods and reporting limits, laboratory case narratives, and project requirements. Completeness also included 100% review of the laboratory sample data results, QC summary reports, and electronic data deliverables (EDDs). Any EDD modifications were made as documented in item 23.</p>						

### VALIDATION CRITERIA CHECK

Data validation qualifiers potentially assigned during this review:

J+ The result is an estimated quantity, but the result may be biased high.

UJ The result is an estimated quantity.

The following comments identifying sample results requiring qualification are in bold type. The other comments are of interest, but qualification of the sample results is not necessary.

1. Did the laboratory identify any non-conformances related to the analytical results?	<b>X</b>	Yes		No	KA	Initials
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Comments: Data qualification, if any, related to the narrative comments and/or assigned laboratory flags contained in the analytical reports are discussed in the following sections.

2. Were sample Chain-of-Custody (COC) forms complete?	<b>X</b>	Yes		No	KA	Initials
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Comments: With the exceptions noted below, no issues were observed, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.

Samples RW-1 and RW-2 listed on the COC are included in separate data packages (280-167087-3 and 280-167087-4). The analytical results associated with these samples were not considered as part of this validation.

3. Were all the analyses requested for the samples on the COCs completed by the laboratory?	<b>X</b>	Yes		No	KA	Initials
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Comments: All requested analyses were completed by the laboratory.

4. Were samples received in good condition and at the appropriate temperature?	<b>X</b>	Yes		No	KA	Initials
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Comments: With the exception noted below, all samples were received intact and within the recommended <6°C temperature for the applicable methods.

The laboratory noted that two coolers were received at 12.0°C and 15.8°C. As the methods associated with the bottles in these coolers do not require temperature preservation, data qualification was not considered necessary.

5. Were the reported analytical methods in compliance with WP/QAPP, permit, or COC?	<b>X</b>	Yes		No	KA	Initials
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Comments: The reported target analytes and methods are in compliance with parameters and methods listed on the COC.

6. Were detection limits in accordance with WP/QAPP, permit, or method?		Yes	<b>X</b>	No	KA	Initials
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Comments: With the exceptions noted below, no results were reported as non-detect at elevated reporting limits.

**Data Package 280-167087-1**

The laboratory noted that a reduced sample volume was reported for samples MW-53B and MW-52B due to matrix interferences for the analysis of radium-228. The detection limits were adjusted accordingly. The associated non-detect results will need to be evaluated by the end user of the data with respect to project objectives.

7. Do the laboratory reports include only those constituents requested to be reported for a specific analytical method?	<b>X</b>	Yes		No	KA	Initials
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Comments: Only the requested target analytes were reported.

8. Were sample holding times met?	<b>X</b>	Yes		No	KA	Initials
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Comments: Sample preparation and analytical holding times were within the method requirements.

9. Were correct concentration units reported?	<b>X</b>	Yes		No	KA	Initials
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Comments: Metals and general chemistry data were reported as mg/L (ppm) and radiochemistry data was reported in picocuries per liter (pCi/L).

**VALIDATION CRITERIA CHECK**

10. Were the reporting requirements for flagged data met? **X** Yes No KA Initials

Comments: Laboratory flags were reviewed and considered during the data validation procedure. Data validation qualifiers override assigned laboratory flags.

11. Were laboratory blank samples free of target analyte contamination? Yes **X** No KA Initials

Comments: With the following exception, the laboratory blanks were free of target analyte contamination.

Laboratory Blank/ Associated Samples	Analyte	Concentration (pCi/L)	Qualification
<b>MB 160-585731/1-A</b> MW-46B MW-45B MW-44B MW-37B MW-36B MW-32B MW-14BR DUP-1 MW-20B MW-38B MW-49B	Radium-228	0.5080	The associated results reported at concentrations <5x the concentration of the blank contamination were qualified estimated (J+ bl).

< – Less Than  
 bl – Laboratory blank contamination  
 J+ – The result is an estimated quantity, but the result may be biased high.  
 MB – Method Blank  
 pCi/L – PicoCuries per Liter

**Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 9).**

12. Were trip blank, field blank, and/or equipment rinse blank samples free of target analyte contamination? **X** Yes No KA Initials

Comments: A trip blank and equipment blank were not required for this sampling event. One field blank was collected. The field blank was free of target analyte contamination.

13. Were instrument calibrations within method or data validation control limits? **NA** Yes **NA** No KA Initials

Comments: Not applicable for the analytical methods reported.

14. Were surrogate/tracer recoveries within control limits? **X** Yes No KA Initials

Comments: The associated tracer recoveries were within control limits.

15. Were laboratory control sample recoveries and relative percent difference (RPDs) within control limits? **X** Yes No KA Initials

Comments: LCS and/or LCSD percent recoveries and RPDs were within laboratory control limits.

16. Were matrix spike recoveries and RPDs within control limits? Yes **X** No KA Initials

Comments: A matrix spike/matrix spike duplicate (MS/MSD) was performed on sample MW-20B for all analyses. With the exceptions noted below, the recoveries and RPDs/DERs were within control limits.

Sample	Analyte	%R (Limits)	RPD/RER (Limits)	Comment
MW-20B	Radium-226	<b>26</b> /80 (60-140)	3.85 (1)	As the potential bias was considered to be low, and the RER was outside of control limits, the associated result was qualified as estimated (UJ m,ld).
	Radium-228	<b>13</b> /103 (60-140)	4.48 (1)	

**Bold indicates a recovery or RPD outside acceptance limit.**  
 %R – Percent Recovery  
 ld – Laboratory Duplicate  
 m – Matrix spike/matrix spike duplicate recovery failure  
 m – Matrix spike/matrix spike duplicate recovery failure  
 RER – Relative Error Ratio  
 RPD – Relative Percent Difference  
 UJ –Estimated

VALIDATION CRITERIA CHECK						
<b>Refer to the Table of Qualified Analytical Results for a listing of the samples, analytes, and concentrations qualified (page 9).</b>						
17. Were laboratory duplicate RPDs and/or serial dilution %Ds within control limits?	<b>X</b>	Yes		No	KA	Initials
Comments: A laboratory duplicate was performed on sample MW-44B for chloride, sample MW-20B for anions, sample MW-46B for fluoride, and sample MW-14BR for total dissolved solids. The RPDs for target analytes in project-specific laboratory duplicate samples were within laboratory control limits. Serial dilutions were not evaluated for this level of validation.						
18. Were organic system performance criteria met?	<b>NA</b>	Yes	<b>NA</b>	No	KA	Initials
Comments: Not applicable for this level of limited data validation or for the methods reported.						
19. Were internal standards within method criteria for ICP-MS sample analyses?	<b>NA</b>	Yes	<b>NA</b>	No	KA	Initials
Comments: Not evaluated for this level of data validation. No internal standard issues were noted in the case narrative.						
20. Were system performance criteria met?	<b>NA</b>	Yes	<b>NA</b>	No	KA	Initials
Comments: Not evaluated for this level of data validation.						
21. Were field duplicates collected? If so, discuss the precision (RPD and/or RER) of the results.	<b>X</b>	Yes		No	KA	Initials
Duplicate Sample No.	DUP-01		Primary Sample No.	MW-14BR		
Comments: The duplicate sample pair met the acceptance criteria.						
22. Were qualitative criteria for organic target analyte identification met?	<b>NA</b>	Yes	<b>NA</b>	No	KA	Initials
Comments: Not applicable for this level of limited data validation or for the methods reported.						
23. Were 10% of the EDD concentrations and reporting limits compared to the hardcopy data reports?	<b>X</b>	Yes		No	KA	Initials
Comments: During the validation procedure, 10% of the positive sample concentrations and 100% of the RLs for project samples were compared to hardcopy laboratory reports. The data validator made sure that RLs were entered into the correct EDD fields.						
24. General Comments: Data were also evaluated using guidance set forth in the <i>United States Environmental Protection Agency (USEPA) contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Superfund Methods Data Review</i> , document number EPA-542-R-20-006, November 2020; method requirements, and laboratory criteria. All data is considered usable.						

**Table of Qualified Analytical Results  
Basin Electric – Laramie, Wyoming  
September 2022 Sampling  
Eurofins TestAmerica Laboratories**

Laboratory Group	Sample ID	Lab Sample ID	Analytical Method	Analyte	Flag	Reason Code
280-167087-1	MW-46B	280-167087-4	SW9320	Radium-228	J+	bl
280-167087-1	MW-36B	280-167087-8	SW9320	Radium-228	J+	bl
280-167087-1	MW-46B	280-167087-9	SW9320	Radium-228	J+	bl
280-167087-1	MW-14BR	280-167087-10	SW9320	Radium-228	J+	bl
280-167087-1	DUP-1	280-167087-11	SW9320	Radium-228	J+	bl
280-167087-1	MW-20B	280-167087-12	SW9315	Radium-226	UJ	m,ld
280-167087-1	MW-20B	280-167087-12	SW9320	Radium-228	UJ	m,ld
280-167087-1	MW-38B	280-167087-13	SW9320	Radium-228	J+	bl
280-167087-1	MW-49B	280-167087-14	SW9320	Radium-228	J+	bl

bl – Laboratory blank contamination  
 ID – Identification  
 J+ – The result is an estimated quantity, but the result may be biased high.  
 ld – Laboratory duplicate imprecision  
 m – Matrix spike/matrix spike duplicate recovery failure  
 UJ – The result is an estimated quantity.

## **Attachment B**

# **Statistical Analysis Methods, Background Upper/Lower Prediction Limits and 2022 Results**

Attachment B: Input data for Calculation of Upper and Lower Predictive Limits  
CCR Monitoring Wells for Multi-units  
Laramie River Station - Wheatland, Wyoming

Pond 1 Unit

Well	date	Result	D-Result	Result																
Analyte (Abbreviation)	B	D_B	Ca	D_Ca	Cl	D_Cl	F	D_F	pH	D_pH	SO	D_SO	TDS	D_TDS	Sb	D_Sb	As	D_As	Ba	
MW-52B	7/19/2017	0.15	1	120	1	33	1	0.5	1	7.91	1	370	1	820	1	0.002	0	0.005	0	0.13
MW-52B	8/25/2017	0.16	1	120	1	41	1	0.5	0	7.54	1	410	1	920	1	0.002	0	0.005	0	0.12
MW-52B	8/31/2017	0.16	1	160	1	41	1	0.5	0	7.61	1	420	1	930	1	0.002	0	0.005	0	0.24
MW-52B	9/6/2017	0.17	1	140	1	41	1	0.5	0	7.61	1	430	1	980	1	0.002	0	0.005	0	0.11
MW-52B	9/14/2017	0.16	1	130	1	43	1	0.5	0	7.46	1	430	1	940	1	0.002	0	0.005	0	0.12
MW-52B	9/18/2017	0.15	1	130	1	41	1	0.5	0	7.45	1	420	1	1000	1	0.002	0	0.005	0	0.11
MW-52B	9/27/2017	0.15	1	140	1	40	1	0.5	0	7.55	1	430	1	960	1	0.002	0	0.005	0	0.11
MW-52B	10/3/2017	0.15	1	130	1	42	1	0.5	0	7.74	1	430	1	1000	1	0.002	0	0.005	0	0.096
MW-52B	4/4/2018							0.5	0											0.109
MW-52B	6/27/2018	0.16	1	175	1	39.4	1	0.5	0	7.39	1	499	1	1080	1	0.002	0	0.005	0	0.0861
MW-52B	10/24/2018	0.159	1	168	1	41.1	1	0.5	0			469	1	1100	1	0.002	0	0.005	0	0.0819
MW-52B	6/5/2019	0.152	1	169	1	42.8	1	0.5	0	6.94	1	493	1	1120	1					0.075
MW-52B	10/22/2019	0.154	1	174	1	39.3	1	0.5	0	7.55	1	471	1	1040	1	0.002	0	0.005	0	0.0752
MW-52B	6/3/2020	0.149	1	167	1	34.8	1	0.5	0	7.53	1	450	1	1890	1	0.002	0	0.005	0	0.0715
MW-52B	10/7/2020	0.187	1	161	1	40.7	1	0.5	0	7.58	1	923	1	1140	1	0.002	0	0.005	0	0.0514
MW-52B	6/4/2021	0.174	1	158	1	47.7	1	0.5	0	7.66	1	455	1	1130	1	0.002	0	0.005	0	0.0653
MW-52B	10/7/2021	0.166	1	159	1	49.1	1	0.5	0	7.52	1	480	1	1090	1	0.002	0	0.005	0	0.0512
MW-53B	7/19/2017	0.1	0	95	1	32	1	0.96	1	8.63	1	220	1	570	1	0.002	0	0.005	0	0.1
MW-53B	8/25/2017	0.1	0	81	1	34	1	0.91	1	8.48	1	210	1	560	1	0.002	0	0.005	0	0.12
MW-53B	8/31/2017	0.1	0	82	1	33	1	0.88	1	8.72	1	220	1	540	1	0.002	0	0.005	0	0.13
MW-53B	9/6/2017	0.1	0	79	1	33	1	1	1	8.98	1	210	1	560	1	0.002	0	0.005	0	0.13
MW-53B	9/14/2017	0.1	0	77	1	33	1	0.93	1	7.79	1	220	1	590	1	0.002	0	0.005	0	0.094
MW-53B	9/18/2017	0.1	0	76	1	33	1	1	1	7.52	1	210	1	580	1	0.002	0	0.005	0	0.094
MW-53B	9/27/2017	0.1	0	78	1	32	1	1.1	1	7.96	1	220	1	620	1	0.002	0	0.005	0	0.07
MW-53B	10/3/2017	0.1	0	78	1	33	1	1.1	1	7.79	1	220	1	610	1	0.002	0	0.005	0	0.081
MW-53B	4/4/2017							1.14	1							0.002	0	0.005	0	0.0546
MW-53B	6/27/2018	0.104	1	102	1	36.6	1	1.33	1	7.62	1	242	1	691	1	0.002	0	0.005	0	0.0522
MW-53B	10/24/2018	0.106	1	97.8	1	40.5	1	1.21	1			231	1	711	1					0.0531
MW-53B	6/5/2019	0.1	0	104	1	45.7	1	1.08	1	7.2	1	247	1	699	1					0.0451
MW-53B	10/22/2019	0.1	0	102	1	47	1	0.919	1	7.81	1	222	1	686	1	0.002	0	0.005	0	0.0477
MW-53B	6/3/2020	0.1	0	101	1	41.2	1	0.939	1	7.76	1	220	1	697	1	0.002	0	0.005	0	0.0504
MW-53B	10/7/2020	0.117	1	102	1	42.1	1	0.958	1	7.74	1	238	1	709	1	0.002	0	0.005	0	0.0427
MW-53B	6/4/2021	0.113	1	99.7	1	51.1	1	1.02	1	7.93	1	220	1	698	1	0.002	0	0.005	0	0.0427
MW-53B	10/6/2021	0.115	1	103	1	52.7	1	0.948	1	7.78	1	208	1	683	1	0.002	0	0.005	0	0.0527

Notes:  
results in mg/L

Attachment B: Input data for Calc  
CCR Monitoring Wells for Multi-u  
Laramie River Station - Wheatlan

Pond 1 Unit

Well	date	D-Result	Result	D-Result	Result	D-Result	Result														
Analyte (Abbreviation)	D_Ba	Be	D_Be	Cd	D_Cd	Cr	D_Cr	Co	D_Co	Pb	D_Pb	Li	D_Li	Hg	D_Hg	Mo	D_Mo	Ra	D_Ra	Se	
MW-52B	7/19/2017	1	0.001	0	0.001	0	0.0058	1	0.0014	1	0.001	0	0.048	1	0.0002	0	0.013	1	0.347	0	0.005
MW-52B	8/25/2017	1	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.039	1	0.0002	0	0.0094	1	0.903	1	0.005
MW-52B	8/31/2017	1	0.001	0	0.001	0	0.011	1	0.004	1	0.0041	1	0.063	1	0.0002	0	0.0088	1	1.25	0	0.005
MW-52B	9/6/2017	1	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.045	1	0.0002	0	0.0083	1	1.2	0	0.005
MW-52B	9/14/2017	1	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.049	1	0.0002	0	0.0071	1	0.482	1	0.005
MW-52B	9/18/2017	1	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.049	1	0.0002	0	0.0066	1	0.566	1	0.005
MW-52B	9/27/2017	1	0.001	0	0.001	0	0.002	0	0.001	1	0.001	0	0.05	1	0.0002	0	0.0063	1	0.37	0	0.005
MW-52B	10/3/2017	1	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.048	1	0.0002	0	0.0056	1	0.576	0	0.005
MW-52B	4/4/2018	1	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0475	1	0.0002	0	0.00531	1	0.617	1	0.005
MW-52B	6/27/2018	1	0.001	0	0.001	0	0.002	0			0.001	0	0.0476	1	0.0002	0	0.00452	1	0.873	0	0.005
MW-52B	10/24/2018	1					0.002	0	0.001	0			0.0393	1			0.00407	1			0.005
MW-52B	6/5/2019	1					0.002	0	0.001	0			0.0467	1			0.00417	1			0.005
MW-52B	10/22/2019	1	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0403	1	0.0002	0	0.00418	1	0.775	1	0.005
MW-52B	6/3/2020	1	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0426	1	0.0002	0	0.01	0	0.669	1	0.005
MW-52B	10/7/2020	1	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0406	0	0.0002	0	0.01	0	0.626	1	0.005
MW-52B	6/4/2021	1	0.001	0	0.001	0	0.005	0	0.001	0	0.001	0	0.0456	1	0.0002	0	0.01	0	1.02	0	0.005
MW-52B	10/7/2021	1	0.001	0	0.001	0	0.005	0	0.001	0	0.001	0	0.0385	1	0.0002	0	0.01	0	0.934	0	0.005
MW-53B	7/19/2017	1	0.001	0	0.001	0	0.0045	1	0.001	0	0.001	0	0.042	1	0.0002	0	0.014	1	0.682	0	0.006
MW-53B	8/25/2017	1	0.001	0	0.001	0	0.0038	1	0.001	0	0.001	0	0.033	1	0.0002	0	0.014	1	1.09	1	0.005
MW-53B	8/31/2017	1	0.001	0	0.001	0	0.0045	1	0.001	0	0.001	0	0.042	1	0.0002	0	0.015	1	0.426	0	0.005
MW-53B	9/6/2017	1	0.001	0	0.001	0	0.0052	1	0.001	0	0.001	0	0.035	1	0.0002	0	0.015	1	0.407	0	0.005
MW-53B	9/14/2017	1	0.001	0	0.001	0	0.0028	1	0.001	0	0.001	0	0.038	1	0.0002	0	0.012	1	0.424	0	0.005
MW-53B	9/18/2017	1	0.001	0	0.001	0	0.0033	1	0.001	0	0.001	0	0.041	1	0.0002	0	0.012	1	0.432	0	0.005
MW-53B	9/27/2017	1	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.042	1	0.0002	0	0.01	1	0.375	0	0.005
MW-53B	10/3/2017	1	0.001	0	0.001	0	0.0022	1	0.001	0	0.001	0	0.04	1	0.0002	0	0.011	1	1.88	0	0.005
MW-53B	4/4/2017	1	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0418	1	0.0002	0	0.00696	1	0.37	0	0.00689
MW-53B	6/27/2018	1	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0384	1	0.0002	0	0.00851	1	0.4	0	0.00636
MW-53B	10/24/2018	1					0.002	0	0.001	0	0.001	0	0.0412	1			0.00669	1			0.00708
MW-53B	6/5/2019	1					0.002	0					0.0375	1			0.00563	1			0.00854
MW-53B	10/22/2019	1	0.001	0	0.001	0	0.002	0	0.001	0			0.0317	1	0.0002	0	0.00606	1	0.595	0	0.00935
MW-53B	6/3/2020	1	0.001	0	0.001	0	0.0024	1	0.001	0	0.001	0	0.0378	1	0.0002	0	0.01	0	0.505	0	0.00951
MW-53B	10/7/2020	1	0.001	0	0.001	0	0.0027	1	0.001	0	0.001	0	0.0331	0	0.0002	0	0.01	0	0.632	0	0.0106
MW-53B	6/4/2021	1	0.001	0	0.001	0	0.005	0	0.001	0	0.001	0	0.0341	1	0.0002	0	0.01	0	0.767	1	0.0103
MW-53B	10/6/2021	1	0.001	0	0.001	0	0.005	0	0.001	0	0.001	0	0.035	1	0.0002	0	0.01	0	0.749	0	0.0106

Notes:  
results in mg/L

**Attachment B: Input data for Calc  
CCR Monitoring Wells for Multi-u  
Laramie River Station - Wheatlan**

**Pond 1 Unit**

Well	date	D-Result	Result	D-Result
Analyte (Abbreviation)		D_Se	Th	D_Th
MW-52B	7/19/2017	0	0.001	0
MW-52B	8/25/2017	0	0.001	0
MW-52B	8/31/2017	0	0.001	0
MW-52B	9/6/2017	0	0.001	0
MW-52B	9/14/2017	0	0.001	0
MW-52B	9/18/2017	0	0.001	0
MW-52B	9/27/2017	0	0.001	0
MW-52B	10/3/2017	0	0.001	0
MW-52B	4/4/2018	0	0.001	0
MW-52B	6/27/2018	0	0.001	0
MW-52B	10/24/2018	0		
MW-52B	6/5/2019	0		
MW-52B	10/22/2019	0	0.001	0
MW-52B	6/3/2020	0	0.001	0
MW-52B	10/7/2020	0	0.001	0
MW-52B	6/4/2021	0	0.001	0
MW-52B	10/7/2021	0	0.001	0
MW-53B	7/19/2017	1	0.001	0
MW-53B	8/25/2017	0	0.001	0
MW-53B	8/31/2017	0	0.001	0
MW-53B	9/6/2017	0	0.001	0
MW-53B	9/14/2017	0	0.001	0
MW-53B	9/18/2017	0	0.001	0
MW-53B	9/27/2017	0	0.001	0
MW-53B	10/3/2017	0	0.001	0
MW-53B	4/4/2017	1	0.001	0
MW-53B	6/27/2018	1	0.001	0
MW-53B	10/24/2018	1		
MW-53B	6/5/2019	1		
MW-53B	10/22/2019	1	0.001	0
MW-53B	6/3/2020	1	0.001	0
MW-53B	10/7/2020	1	0.001	0
MW-53B	6/4/2021	1	0.001	0
MW-53B	10/6/2021	1	0.001	0

Notes:  
results in mg/L

Attachment B: Input data for Calculation of Upper and Lower Predictive Limits  
CCR Monitoring Wells for Multi-units  
Laramie River Station - Wheatland, Wyoming

Pond2,3 Multi-unit

Well	date	Result	D-Result																		
Analyte(Abbreviation)	B	D_B	Ca	D_Ca	Cl	D_Cl	F	D_F	pH	D_pH	SO	D_SO	TDS	D_TDS	Sb	D_Sb	As	D_As	Ba	D_Ba	
MW-32B	9/1/2016	0.27	1	200	1	83	1	0.54	1	7.21	1	820	1	1700	1	0.002	0	0.005	0	0.077	1
MW-32B	11/11/2016	0.28	1	210	1	83	1	0.6	1	6.37	1	820	1	1700	1	0.002	0	0.005	0	0.057	1
MW-32B	12/15/2016	0.27	1	190	1	84	1	0.59	1	7.5	1	830	1	1700	1	0.002	0	0.005	0	0.053	1
MW-32B	2/13/2017	0.28	1	200	1	84	1	0.63	1	7.6	1	830	1	1700	1	0.002	0	0.005	0	0.047	1
MW-32B	4/4/2017	0.31	1	190	1	83	1	0.59	1	7.19	1	830	1	1700	1	0.02	0	0.05	0	0.038	1
MW-32B	5/16/2017	0.29	1	180	1	84	1	0.6	1	7.23	1	830	1	1700	1	0.002	0	0.005	0	0.04	1
MW-32B	6/13/2017	0.28	1	190	1	84	1	0.64	1	7.29	1	840	1	1800	1	0.002	0	0.005	0	0.041	1
MW-32B	7/26/2017	0.26	1	190	1	86	1	0.53	1	7.28	1	790	1	1700	1	0.002	0	0.005	0	0.044	1
MW-32B	4/3/2018							0.639	1	7.37	1					0.002	0	0.005	0	0.0387	1
MW-32B	6/27/2018	0.294	1	189	1	85.6	1	0.657	1	7.35	1	845	1	1780	1	0.002	0	0.005	0	0.0371	1
MW-32B	6/5/2019	0.293	1	202	1	94.3	1	0.5	0	6.61	1	877	1	1830	1					0.0349	1
MW-32B	10/23/2019	0.295	1	198	1	89.5	1	0.5	0	7.36	1	840	1	1780	1	0.002	0	0.005	0	0.0323	1
MW-32B	6/2/2020	0.305	1	203	1	85.2	1	0.5	0	7.37	1	820	1	1820	1	0.002	0	0.005	0	0.0351	1
MW-32B	10/7/2020	0.306	1	191	1	83.8	1	0.5	0	7.25	1	833	1	1810	1	0.002	0	0.005	0	0.0309	1
MW-32B	6/2/2021	0.313	1	201	1	97.1	1	0.5	0	7.24	1	832	1	1830	1	0.002	0	0.005	0	0.0332	1
MW-32B	10/6/2021	0.296	1	196	1	94.3	1	0.604	1	7.25	1	839	1	1840	1	0.002	0	0.005	0	0.0333	1
MW-39B	9/2/2016	0.17	1	170	1	43	1	0.79	1	7.31	1	450	1	400	1	0.002	0	0.0057	1	0.11	1
MW-39B	11/10/2016	0.19	1	190	1	45	1	0.65	1	7.11	1	530	1	970	1	0.002	0	0.005	0	0.073	1
MW-39B	12/14/2016	0.18	1	180	1	46	1	0.63	1	7.5	1	540	1	1300	1	0.002	0	0.005	0	0.064	1
MW-39B	2/13/2017	0.19	1	200	1	46	1	0.66	1	7.7	1	540	1	1200	1	0.002	0	0.005	0	0.069	1
MW-39B	4/4/2017	0.2	1	180	1	46	1	0.61	1	7.02	1	550	1	1300	1	0.02	0	0.05	0	0.048	1
MW-39B	5/16/2017	0.21	1	170	1	46	1	0.66	1	7.13	1	540	1	1300	1	0.002	0	0.005	0	0.051	1
MW-39B	6/13/2017	0.18	1	170	1	46	1	0.66	1	7.17	1	550	1	1300	1	0.002	0	0.005	0	0.046	1
MW-39B	7/26/2017	0.18	1	180	1	47	1	0.64	1	7.18	1	540	1	1300	1	0.002	0	0.005	0	0.05	1
MW-39B	4/3/2018							0.641	1	7.33	1					0.002	0	0.005	0	0.0472	1
MW-39B	6/27/2018	0.192	1	181	1	46.4	1	0.686	1	7.38	1	582	1	1350	1	0.002	0	0.005	0	0.0404	1
MW-39B	6/5/2019	0.189	1	197	1	49.9	1	0.5	0	6.71	1	602	1	1340	1					0.0402	1
MW-39B	10/23/2019	0.183	1	191	1	45.8	1	0.5	0	7.26	1	542	1	1310	1	0.002	0	0.005	0	0.038	1
MW-39B	6/3/2020	0.185	1	195	1	40.7	1	0.5	0	7.12	1	537	1	1360	1	0.002	0	0.005	0	0.0356	1
MW-39B	10/7/2020	0.192	1	183	1	40.8	1	0.5	0	7.2	1	556	1	1340	1	0.002	0	0.005	0	0.0321	1
MW-39B	6/2/2021	0.189	1	202	1	47.8	1	0.5	0	7.16	1	562	1	1300	1	0.002	0	0.005	0	0.0332	1
MW-39B	10/6/2021	0.173	1	181	1	47	1	1.19	1	7.22	1	659	1	1310	1	0.002	0	0.005	0	0.0342	1

Notes:  
results in mg/L

Attachment B: Input data for Calculat  
CCR Monitoring Wells for Multi-units  
Laramie River Station - Wheatland, W

Pond2,3 Multi-unit

Well	date	Result	D-Result	Result	D-Result	Result	D-Result	Result	D-Result	Result	D-Result	Result	D-Result	Result	D-Result	Result	D-Result	Result	D-Result	Result	D-Result	Result	D-Result
Analyte(Abbreviation)		Be	D_Be	Cd	D_Cd	Cr	D_Cr	Co	D_Co	Pb	D_Pb	Li	D_Li	Hg	D_Hg	Mo	D_Mo	Ra	D_Ra	Se	D_Se	Th	D_Th
MW-32B	9/1/2016	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.074	1	0.0002	0	0.018	1	1.2	1	0.005	0	0.001	0
MW-32B	11/11/2016	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.08	1	0.0002	0	0.0076	1	0.716	1	0.005	0	0.001	0
MW-32B	12/15/2016	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.073	1	0.0002	0	0.0064	1	0.471	1	0.005	0	0.001	0
MW-32B	2/13/2017	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.075	1	0.0002	0	0.0061	1	0.713	1	0.005	0	0.001	0
MW-32B	4/4/2017	0.01	0	0.01	0	0.02	0	0.01	0	0.01	0	0.081	1	0.0002	0	0.02	0	0.375	1	0.05	0	0.01	0
MW-32B	5/16/2017	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.069	1	0.0002	0	0.0085	1	0.752	1	0.005	0	0.001	0
MW-32B	6/13/2017	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.081	1	0.0002	0	0.0079	1	0.793	1	0.005	0	0.001	0
MW-32B	7/26/2017	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.072	1	0.0002	0	0.0095	1	0.915	0	0.005	0	0.001	0
MW-32B	4/3/2018	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0804	1	0.0002	0	0.00502	1	0.983	1	0.005	0	0.001	0
MW-32B	6/27/2018	0.001	0	0.001	0	0.002	0			0.001	0	0.0769	1	0.0002	0	0.00568	1	0.687	0	0.005	0	0.001	0
MW-32B	6/5/2019					0.002	0					0.0837	1			0.00358	1	0.58	0	0.005	0		
MW-32B	10/23/2019	0.001	0	0.001	0	0.00245	1	0.001	0	0.001	0	0.0739	1	0.0002	0	0.00389	1	0.414	0	0.005	0	0.001	0
MW-32B	6/2/2020	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0734	1	0.0002	0	0.01	0	0.48	0	0.005	0	0.001	0
MW-32B	10/7/2020	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0648	0	0.0002	0	0.01	0	0.726	1	0.005	0	0.001	0
MW-32B	6/2/2021	0.001	0	0.001	0	0.005	0	0.001	0	0.001	0	0.0743	1	0.0002	0	0.01	0	0.69	1	0.005	0	0.001	0
MW-32B	10/6/2021	0.001	0	0.001	0	0.005	0	0.001	0	0.001	0	0.0714	1	0.0002	0	0.01	0	1.76	1	0.005	0	0.001	0
MW-39B	9/2/2016	0.001	0	0.001	0	0.002	0	0.0028	1	0.001	0	0.073	1	0.0002	0	0.069	1	0.823	1	0.005	0	0.001	0
MW-39B	11/10/2016	0.001	0	0.001	0	0.002	0	0.0015	1	0.001	0	0.069	1	0.0002	0	0.039	1	0.926	1	0.005	0	0.001	0
MW-39B	12/14/2016	0.001	0	0.001	0	0.002	0	0.0012	1	0.001	0	0.066	1	0.0002	0	0.028	1	0.797	1	0.005	0	0.001	0
MW-39B	2/13/2017	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.068	1	0.0002	0	0.02	1	0.609	1	0.005	0	0.001	0
MW-39B	4/4/2017	0.01	0	0.01	0	0.02	0	0.01	0	0.01	0	0.069	1	0.0002	0	0.02	0	0.556	1	0.05	0	0.01	0
MW-39B	5/16/2017	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.062	1	0.0002	0	0.017	1	0.373	0	0.005	0	0.001	0
MW-39B	6/13/2017	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.064	1	0.0002	0	0.016	1	0.671	1	0.005	0	0.001	0
MW-39B	7/26/2017	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.063	1	0.0002	0	0.017	1	0.426	0	0.005	0	0.001	0
MW-39B	4/3/2018	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0661	1	0.0002	0	0.0134	1	0.758	1	0.005	0	0.001	0
MW-39B	6/27/2018	0.001	0	0.001	0	0.002	0			0.001	0	0.0608	1	0.0002	0	0.0134	1	0.806	0	0.005	0	0.001	0
MW-39B	6/5/2019					0.002	0					0.0704	1			0.00966	1	0.508	0	0.005	0		
MW-39B	10/23/2019	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0565	1	0.0002	0	0.00683	1	0.452	1	0.005	0	0.001	0
MW-39B	6/3/2020	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0588	1	0.0002	0	0.01	0	0.552	1	0.005	0	0.001	0
MW-39B	10/7/2020	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0555	0	0.0002	0	0.01	0	0.874	1	0.005	0	0.001	0
MW-39B	6/2/2021	0.001	0	0.001	0	0.005	0	0.001	0	0.001	0	0.0579	1	0.0002	0	0.01	0	0.725	1	0.005	0	0.001	0
MW-39B	10/6/2021	0.001	0	0.001	0	0.005	0	0.001	0	0.001	0	0.0529	1	0.0002	0	0.01	0	0.762	1	0.005	0	0.001	0

Notes:  
results in mg/L

Attachment B: Input data for Calculation of Upper and Lower Predictive Limits  
CCR Monitoring Wells for Multi-units  
Laramie River Station - Wheatland, Wyoming

Emergency Holding Ponds

Well	date	Result	D-Result	Result																
Analyte(abbreviation)	B	D_B	Ca	D_Ca	Cl	D_Cl	F	D_F	pH	D_pH	SO	D_SO	TDS	D_TDS	Sb	D_Sb	As	D_As	Ba	
MW-41B	8/31/2016	0.61	1	240	1	160	1	0.5	0	7.41	1	1300	1	2300	1	0.002	0	0.005	0	0.069
MW-41B	11/11/2016	0.68	1	270	1	170	1	0.5	0	6.45	1	1800	1	2400	1	0.002	0	0.005	0	0.05
MW-41B	12/15/2016	0.66	1	260	1	180	1	0.5	0	7.6	1	1500	1	2500	1	0.002	0	0.005	0	0.045
MW-41B	2/14/2017	0.64	1	280	1	180	1	0.5	0	7.7	1	1500	1	2600	1	0.002	0	0.005	0	0.046
MW-41B	4/3/2017	0.7	1	270	1	180	1	0.5	0	7.8	1	5	0	2700	1	0.02	0	0.05	0	0.036
MW-41B	5/16/2017	0.66	1	270	1	190	1	0.5	0	7.53	1	1600	1	2800	1	0.002	0	0.005	0	0.037
MW-41B	6/13/2017	0.6	1	270	1	190	1	0.5	0	7.43	1	1600	1	2800	1	0.002	0	0.005	0	0.032
MW-41B	7/26/2017	0.64	1	280	1	200	1	0.5	0	7.9	1	1500	1	2700	1	0.002	0	0.005	0	0.034
MW-41B	6/26/2018	0.703	1	351	1	225	1	0.5	0	7.48	1	1660	1	3050	1	0.002	0	0.005	0	0.0334
MW-41B	6/4/2019	0.714	1	396	1	277	1	0.5	0	7.47	1	2030	1	3400	1	0.002	0	0.005	0	0.0351
MW-41B	10/21/2019	0.862	1	333	1	200	1	1	0	7.56	1	1480	1	2800	1	0.002	0	0.005	0	0.032
MW-41B	6/2/2020	0.972	1	284	1	172	1	0.5	0	7.44	1	1300	1	2590	1	0.002	0	0.005	0	0.0273
MW-41B	10/6/2020	1.02	1	257	1	155	1	0.5	0	7.35	1	1160	1	2230	1	0.002	0	0.005	0	0.0254
MW-41B	6/3/2021	0.857	1	244	1	135	1	0.5	0	7.58	1	1060	1	2020	1	0.002	0	0.005	0	0.0207
MW-41B	10/5/2021	0.902	1	195	1	120	1	0.5	0	7.59	1	985	1	1950	1	0.002	0	0.005	0	0.02
MW-42B	8/31/2016	0.94	1	530	1	320	1	0.763	1	7.56	1	2200	1	3800	1	0.002	0	0.005	0	0.0193
MW-42B	11/11/2016	0.92	1	330	1	230	1	0.5	0	7.6	1	1700	1	2800	1	0.002	0	0.005	0	0.061
MW-42B	12/14/2016	0.89	1	320	1	210	1	0.68	1	7.6	1	1600	1	2700	1	0.002	0	0.005	0	0.047
MW-42B	2/15/2017	0.91	1	340	1	220	1	0.69	1	7.4	1	1600	1	2900	1	0.02	0	0.05	0	0.046
MW-42B	4/3/2017	0.94	1	450	1	320	1	0.7	1	6.52	1	5	0	3900	1	0.002	0	0.005	0	0.046
MW-42B	5/17/2017	0.87	1	430	1	320	1	0.5	0	7.6	1	2200	1	3900	1	0.002	0	0.005	0	0.03
MW-42B	6/13/2017	0.82	1	450	1	310	1	0.5	0	7.85	1	2200	1	4000	1	0.002	0	0.005	0	0.032
MW-42B	7/27/2017	1	1	410	1	300	1	0.5	0	7.8	1	1900	1	3400	1	0.002	0	0.005	0	0.03
MW-42B	6/26/2018	1.07	1	384	1	245	1	0.5	0	7.47	1	1760	1	3170	1	0.002	0	0.005	0	0.027
MW-42B	6/4/2019	0.897	1	413	1	297	1	0.739	1	7.47	1	2120	1	3470	1	0.002	0	0.005	0	0.0268
MW-42B	10/21/2019	0.89	1	332	1	203	1	0.532	1	7.9	1	1470	1	2700	1	0.002	0	0.005	0	0.0252
MW-42B	6/3/2020	0.733	1	173	1	133	1	1	0	7.47	1	980	1	1940	1	0.002	0	0.005	0	0.0316
MW-42B	10/7/2020	0.767	1	204	1	143	1	0.5	0	7.48	1	1030	1	2090	1	0.002	0	0.005	0	0.0219
MW-42B	6/3/2021	0.756	1	163	1	114	1	0.536	1	7.4	1	918	1	1770	1	0.002	0	0.005	0	0.0219
MW-42B	10/5/2021	0.621	1	193	1	173	1	0.5	0	7.37	1	1200	1	2260	1	0.002	0	0.005	0	0.0211
MW-43B	9/1/2016	0.33	1	180	1	69	1	0.545	1	7.39	1	660	1	1300	1	0.002	0	0.005	0	0.0189
MW-43B	11/11/2016	0.35	1	140	1	42	1	1.07	1	7.66	1	470	1	1000	1	0.002	0	0.005	0	0.0262
MW-43B	12/14/2016	0.34	1	120	1	40	1	0.5	0	7.68	1	450	1	970	1	0.02	0	0.05	0	0.056
MW-43B	2/15/2017	0.35	1	120	1	39	1	0.5	0	7.64	1	410	1	910	1	0.002	0	0.005	0	0.038
MW-43B	4/4/2017	0.35	1	100	1	42	1	0.5	0	7.88	1	400	1	890	1	0.002	0	0.005	0	0.034
MW-43B	5/17/2017	0.36	1	110	1	47	1	0.5	0	7.58	1	420	1	910	1	0.002	0	0.005	0	0.034
MW-43B	6/13/2017	0.32	1	100	1	48	1	0.5	0	7.19	1	420	1	930	1	0.002	0	0.005	0	0.033
MW-43B	7/26/2017	0.34	1	110	1	50	1	0.5	0	6.49	1	430	1	930	1	0.002	0	0.005	0	0.031
MW-43B	6/26/2018	0.366	1	118	1	47.2	1	0.5	0	7.7	1	423	1	996	1	0.002	0	0.005	0	0.029
MW-43B	6/4/2019	0.319	1	146	1	81.7	1	0.5	0	7.62	1	611	1	1170	1	0.002	0	0.005	0	0.03
MW-43B	10/21/2019	0.32	1	172	1	67.6	1	0.5	0	7.9	1	663	1	1290	1	0.002	0	0.005	0	0.0383
MW-43B	6/3/2020	0.316	1	149	1	52.9	1	0.5	0	7.37	1	550	1	1200	1	0.002	0	0.005	0	0.0309
MW-43B	10/7/2020	0.328	1	122	1	31.3	1	0.5	0	7.42	1	413	1	1000	1	0.002	0	0.005	0	0.039
MW-43B	6/3/2021	0.296	1	94.4	1	34	1	0.5	0	8	1	343	1	811	1	0.002	0	0.005	0	0.044
MW-43B	10/5/2021	0.305	1	92.2	1	36.3	1	0.587	1	7.5	1	342	1	798	1	0.002	0	0.005	0	0.0371

Notes:  
results in mg/L

Attachment B: Input data for C  
CCR Monitoring Wells for Multi  
Laramie River Station - Wheatl

Emergency Holding Ponds

Well	date	D-Result	Result	D-Result	Result	D-Result	Result	D-Result	Result	D-Result	Result	D-Result	Result	D-Result	Result	D-Result	Result	D-Result	Result	D-Result	Result
Analyte(abbreviation)		D_Ba	Be	D_Be	Cd	D_Cd	Cr	D_Cr	Co	D_Co	Pb	D_Pb	Li	D_Li	Hg	D_Hg	Mo	D_Mo	Ra	D_Ra	Se
MW-41B	8/31/2016	1	0.001	0	0.001	0	0.002	0	0.0016	1	0.001	0	0.05	1	0.0002	0	0.037	1	1.02	1	0.0097
MW-41B	11/11/2016	1	0.001	0	0.001	0	0.0039	1	0.001	0	0.001	0	0.057	1	0.0002	0	0.048	1	0.807	1	0.005
MW-41B	12/15/2016	1	0.001	0	0.001	0	0.0042	1	0.001	0	0.001	0	0.053	1	0.0002	0	0.045	1	0.938	1	0.005
MW-41B	2/14/2017	1	0.001	0	0.001	0	0.0051	1	0.001	0	0.001	0	0.055	1	0.0002	0	0.055	1	0.358	0	0.01
MW-41B	4/3/2017	1	0.01	0	0.01	0	0.02	0	0.01	0	0.01	0	0.062	1	0.0002	0	0.053	1	0.408	1	0.005
MW-41B	5/16/2017	1	0.001	0	0.001	0	0.0048	1	0.001	0	0.001	0	0.054	1	0.0002	0	0.06	1	0.373	1	0.005
MW-41B	6/13/2017	1	0.001	0	0.001	0	0.0042	1	0.001	0	0.001	0	0.058	1	0.0002	0	0.056	1	0.538	1	0.011
MW-41B	7/26/2017	1	0.001	0	0.001	0	0.004	1	0.001	0	0.001	0	0.054	1	0.0002	0	0.054	1	0.609	0	0.005
MW-41B	6/26/2018	1	0.001	0	0.001	0	0.00336	1	0.001	0	0.001	0	0.0655	1	0.0002	0	0.0637	1	0.398	0	0.005
MW-41B	6/4/2019	1	0.001	0	0.001	0	0.00335	1	0.00114	1	0.001	0	0.0631	1	0.0002	0	0.0678	1	0.73	0	0.011
MW-41B	10/21/2019	1	0.001	0	0.001	0	0.00282	1	0.001	0	0.001	0	0.0731	1	0.0002	0	0.097	1	0.483	0	0.005
MW-41B	6/2/2020	1	0.001	0	0.001	0	0.00314	1	0.001	0	0.001	0	0.0601	1	0.0002	0	0.132	1	0.547	0	0.005
MW-41B	10/6/2020	1	0.001	0	0.001	0	0.00327	1	0.00118	1	0.001	0	0.0541	1	0.0002	0	0.14	1	0.486	0	0.05
MW-41B	6/3/2021	1	0.001	0	0.001	0	0.00389	1	0.001	0	0.001	0	0.0507	0	0.0002	0	0.135	1	0.53	1	0.05
MW-41B	10/5/2021	1	0.001	0	0.001	0	0.005	0	0.0012	1	0.001	0	0.0532	1	0.0002	0	0.139	1	0.563	1	0.05
MW-42B	8/31/2016	1	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0411	1	0.0002	0	0.118	1	0.535	1	0.012
MW-42B	11/11/2016	1	0.001	0	0.001	0	0.0024	1	0.001	0	0.001	0	0.085	1	0.0002	0	0.18	1	0.488	0	0.0065
MW-42B	12/14/2016	1	0.001	0	0.001	0	0.0029	1	0.001	0	0.001	0	0.066	1	0.0002	0	0.15	1	0.59	1	0.005
MW-42B	2/15/2017	1	0.01	0	0.01	0	0.0036	1	0.01	0	0.01	0	0.061	1	0.0002	0	0.13	1	0.509	0	0.011
MW-42B	4/3/2017	1	0.001	0	0.001	0	0.02	0	0.001	0	0.001	0	0.063	1	0.0002	0	0.15	1	0.477	1	0.005
MW-42B	5/17/2017	1	0.001	0	0.001	0	0.0027	1	0.001	0	0.001	0	0.083	1	0.0002	0	0.17	1	0.397	1	0.005
MW-42B	6/13/2017	1	0.001	0	0.001	0	0.0024	1	0.001	0	0.001	0	0.075	1	0.0002	0	0.18	1	0.609	1	0.011
MW-42B	7/27/2017	1	0.001	0	0.001	0	0.0025	1	0.001	0	0.001	0	0.081	1	0.0002	0	0.17	1	0.503	0	0.0055
MW-42B	6/26/2018	1	0.001	0	0.001	0	0.00319	1	0.001	0	0.001	0	0.071	1	0.0002	0	0.15	1	0.508	1	0.005
MW-42B	6/4/2019	1	0.001	0	0.001	0	0.00217	1	0.001	0	0.001	0	0.0684	1	0.0002	0	0.121	1	0.472	0	0.00886
MW-42B	10/21/2019	1	0.001	0	0.001	0	0.00272	1	0.001	0	0.001	0	0.0708	1	0.0002	0	0.143	1	0.413	0	0.0077
MW-42B	6/3/2020	1	0.001	0	0.001	0	0.00235	1	0.001	0	0.001	0	0.0765	1	0.0002	0	0.138	1	0.478	0	0.005
MW-42B	10/7/2020	1	0.001	0	0.001	0	0.0022	1	0.001	0	0.001	0	0.0561	1	0.0002	0	0.106	1	0.475	0	0.00832
MW-42B	6/3/2021	1	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0428	1	0.0002	0	0.0772	1	0.393	0	0.00714
MW-42B	10/5/2021	1	0.001	0	0.001	0	0.005	0	0.001	0	0.001	0	0.0437	0	0.0002	0	0.0706	1	0.855	0	0.005
MW-43B	9/1/2016	1	0.001	0	0.001	0	0.003	1	0.001	0	0.001	0	0.0431	1	0.0002	0	0.0662	1	0.525	1	0.00611
MW-43B	11/11/2016	1	0.001	0	0.001	0	0.008	1	0.001	1	0.001	0	0.0653	1	0.0002	0	0.0653	1	0.722	1	0.00699
MW-43B	12/14/2016	1	0.01	0	0.01	0	0.0089	1	0.01	0	0.01	0	0.041	1	0.0002	0	0.049	1	0.714	0	0.005
MW-43B	2/15/2017	1	0.001	0	0.001	0	0.0076	1	0.001	0	0.001	0	0.04	1	0.0002	0	0.048	1	0.46	0	0.00638
MW-43B	4/4/2017	1	0.001	0	0.001	0	0.02	0	0.001	0	0.001	0	0.038	1	0.0002	0	0.043	1	0.316	0	0.00998
MW-43B	5/17/2017	1	0.001	0	0.001	0	0.003	1	0.001	0	0.001	0	0.035	1	0.0002	0	0.039	1	0.315	0	0.005
MW-43B	6/13/2017	1	0.001	0	0.001	0	0.0024	1	0.001	0	0.001	0	0.035	1	0.0002	0	0.032	1	0.64	1	0.00562
MW-43B	7/26/2017	1	0.001	0	0.001	0	0.004	1	0.001	0	0.001	0	0.031	1	0.0002	0	0.034	1	0.384	0	0.0124
MW-43B	6/26/2018	1	0.001	0	0.001	0	0.00246	1	0.001	0	0.001	0	0.037	1	0.0002	0	0.031	1	0.393	0	0.005
MW-43B	6/4/2019	1	0.001	0	0.001	0	0.00218	1	0.001	0	0.001	0	0.033	1	0.0002	0	0.03	1	0.322	0	0.00608
MW-43B	10/21/2019	1	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0399	1	0.0002	0	0.0366	1	0.457	0	0.0119
MW-43B	6/3/2020	1	0.001	0	0.001	0	0.002	0	0.001	0	0.001	0	0.0305	1	0.0002	0	0.0346	1	0.971	1	0.005
MW-43B	10/7/2020	1	0.001	0	0.001	0	0.002	0					0.035	1			0.0196	1	0.474	0	0.00652
MW-43B	6/3/2021	1	0.001	0	0.001	0	0.00514	1					0.0328	1			0.0208	1	0.582	0	0.0161
MW-43B	10/5/2021	1	0.001	0	0.001	0	0.005	0					0.0353	1			0.0192	1	1.01	1	0.005

Notes:  
results in mg/L

**Attachment B: Input data for C  
CCR Monitoring Wells for Multi  
Laramie River Station - Wheatl**

**Emergency Holding Ponds**

Well	date	D-Result	Result	D-Result
Analyte(abbreviation)		D_Se	Th	D_Th
MW-41B	8/31/2016	1	0.001	0
MW-41B	11/11/2016	0	0.001	0
MW-41B	12/15/2016	0	0.001	0
MW-41B	2/14/2017	1	0.001	0
MW-41B	4/3/2017	0	0.01	0
MW-41B	5/16/2017	0	0.001	0
MW-41B	6/13/2017	1	0.001	0
MW-41B	7/26/2017	0	0.001	0
MW-41B	6/26/2018	0	0.001	0
MW-41B	6/4/2019	1	0.001	0
MW-41B	10/21/2019	0	0.001	0
MW-41B	6/2/2020	0	0.001	0
MW-41B	10/6/2020	0	0.001	0
MW-41B	6/3/2021	0	0.001	0
MW-41B	10/5/2021	0	0.001	0
MW-42B	8/31/2016	1	0.001	0
MW-42B	11/11/2016	1	0.001	0
MW-42B	12/14/2016	0	0.001	0
MW-42B	2/15/2017	1	0.01	0
MW-42B	4/3/2017	0	0.001	0
MW-42B	5/17/2017	0	0.001	0
MW-42B	6/13/2017	1	0.001	0
MW-42B	7/27/2017	1	0.001	0
MW-42B	6/26/2018	0	0.001	0
MW-42B	6/4/2019	1	0.001	0
MW-42B	10/21/2019	1	0.001	0
MW-42B	6/3/2020	0	0.001	0
MW-42B	10/7/2020	1	0.001	0
MW-42B	6/3/2021	1	0.001	0
MW-42B	10/5/2021	0	0.001	0
MW-43B	9/1/2016	1	0.001	0
MW-43B	11/11/2016	1	0.001	0
MW-43B	12/14/2016	0	0.01	0
MW-43B	2/15/2017	1	0.001	0
MW-43B	4/4/2017	1	0.001	0
MW-43B	5/17/2017	0	0.001	0
MW-43B	6/13/2017	1	0.001	0
MW-43B	7/26/2017	1	0.001	0
MW-43B	6/26/2018	0	0.001	0
MW-43B	6/4/2019	1	0.001	0
MW-43B	10/21/2019	1	0.001	0
MW-43B	6/3/2020	0	0.001	0
MW-43B	10/7/2020	1	0.001	0
MW-43B	6/3/2021	1	0.001	0
MW-43B	10/5/2021	0		

Notes:  
results in mg/L



